Implementation Framework

LITTLE NEGLEY RUN AT LARIMER PARK

Pittsburgh Parks Conservancy
www.PittsburghParks.org

NEGLEY RUN WATERSHED TASK FORCE

December 2021 | Pittsburgh, PA

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A PROJECT OF:

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NEGLEY RUN WATERSHED TASK FORCE

https://tinyurl.com/a42pgh

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Contents

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This report and its many related projects throughout Negley Run Watershed are made possible through the commitment and openness of Task Force members.

The Negley Run Watershed Task Force is an interdisciplinary collaboration to engage community, creatives, and professionals in urban ecosystem regeneration through innovative rainwater stewardship and conveyance strategies.

https://tinyurl.com/a42pgh

LETTER FROM THE PROJECT TEAM

Dear Readers,

Thank you for taking up this report, which outlines our search for the hidden potentials along the ravine below East Liberty Boulevard and on the hillsides bordering the Larimer community.

Many years ago the Larimer community presented a vision of a stormwater conveyance from East Liberty to the Allegheny River that would provide resiliency and multiple co-benefits, including mitigating dangerous flash flooding in the valley. As a result, investments provided by HUD's Choice Neighborhood program transformed the headwaters as part of new open space: Liberty Green and River Roots. Now, as final touches and improvements are made to the new landscape, it is time to better identify the best potentials and define the next phases of implementation for the Little Negley Run Conveyance.

The Pittsburgh Parks Conservancy and the Negley Run Watershed Task Force retained an experienced and talented team of professionals to build upon past studies with more interdisciplinary dialogue and community input. While a pandemic put dampers on our intention for in-person, on-site workshops, it did not dampen the spirit of innovation and vision for holistic stormwater management established by partners within the Negley Run Watershed Task Force.

Capturing the ecological, community, and hydrological benefits of the proposed Little Negley Run requires agency leadership, not yet defined. The Negley Run Watershed Task Force and the Pittsburgh Parks Conservancy will facilitate the additional discussions among community members, agencies, and professionals necessary to overcome barriers and challenges. We see this report as the beginning of conversation between the community and agency partners. The land of the ravine remains, waiting for Larimer and Pittsburgh residents to put it to use - to convey water, to expand ecological open space, to create connecting corridors, and to enjoy new respites from the noise of the city. We hope this document frames the issues and sets a path forward, progressed through collaboration and led by community.

Sincerely,

Pittsburgh Parks Conservancy

Negley Run Watershed Task Force


1

Introduction

Larimer has been thinking about stormwater and open space for 20 years. Two major concepts have emerged from planning processes in Larimer.

The first is Little Negley Run. Little Negley Run pays homage to the historic stream that ran through the valley by recreating a surface stream to carry stormwater and groundwater-fed surface water directly to the Allegheny River, without putting it into the combined sewer system.

The second is the idea of Larimer Park. Larimer Park is a major green space to be created in Larimer and connected to Highland Park and Little Negley Run. The first phase of Larimer Park (Zone A) was completed in the Spring of 2021. This report summarizes the work to develop the conceptual plan for the second phase - Zone B - which could be the first place that a new stream channel for Little Negley Run is constructed within the park.

Future entry to Zone B from River Roots (Zone A) below East Liberty Boulevard.

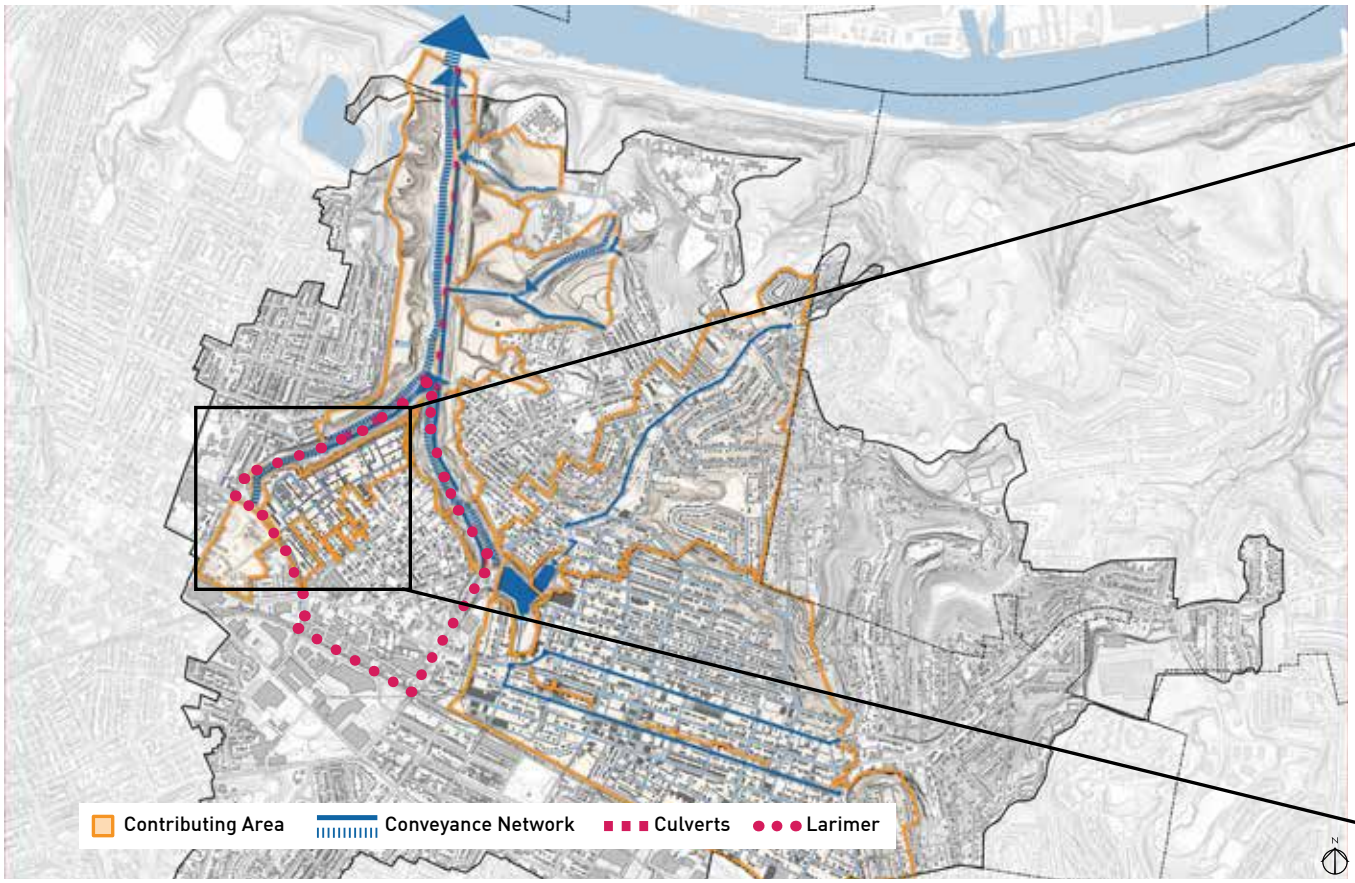
BACKGROUND AND PREVIOUS STUDIES

The Larimer Community has been planning for over 20 years. The Choice Neighborhoods plan of 2013 was a critical tipping point, bringing 50 million dollars of investment to the neighborhood. That same year, the Living Waters of Larimer (LWOL) project kicked off. LWOL was an artist-led project that worked with the Larimer Consensus Group (LCG) and green team to visualize the Larimer Community as if water were a resource to be harnessed, rather than a waste product to be disposed of. This involved a community visioning process and organized the community around stormwater issues.

Larimer is only one small portion of the larger Negley Run watershed, and so the LWOL project transitioned into the Negley Run Watershed Task Force, bringing together representatives from all the neighborhoods in the watershed and agencies related to stormwater. Many reports grew out of this work, which have formed the basis of the current project. The first of these reports was the *Larimer Neighborhood Conceptual Stormwater Management Plan* in 2015. In this report, the URA asked the Task Force to help visualize how to manage stormwater from the neighborhood and the new Choice Neighborhood housing.

This plan was the first time that the concept of Little Negley Run was expressed. The idea was to capture stormwater on the Larimer plateau and convey it to the Allegheny River as a truly separated system. The original Negley Run was buried in pipes long ago as part of the combined sewer system. This new conveyance was called Little Negley Run to harken back to the original stream, while acknowledging that daylighting the original stream was not feasible or desirable.

This report was also the first discussion of the microshed concept. Microsheds, like watersheds, are zones within a community where rainwater flows from rooftops, driveways, and lawns



The A-42 Negley Run phasing strategy as drafted by evolveEA with EnviroSocial Capital and eDesign Dynamics in partnership with the Green Building Alliance.

downhill to the same point. Microsheds are a manageable scale for planning for green, community-based stormwater infrastructure projects in urban areas with an existing combined sewer system. The Living Waters of Larimer team and partners proposed microsheds as a tool for designing the capture of rainwater in Larimer for conveyance to a future Little Negley Run. The microshed concept was developed in detail in the 2019 *Meadow Street Microshed Study*, which looked at how to do watershed separation in a specific Microshed. The Meadow Street microshed is part of the drainage area for Zone B.

In 2016, Pittsburgh Water and Sewer Authority (PWSA) issued its Green First Plan, focusing on the use of green stormwater infrastructure for the largest sewersheds in the City, including Negley Run. The Negley Run watershed and sewershed is the largest shed in the City, and contributes more than any other shed to the City's combined sewer overflow (CSO) problem. As a result of community planning efforts, PWSA was able to secure state funding to work with the United States Army Corps of Engineers (USACE) to create a new stream conveyance for stormwater that would connect to the Allegheny River. That same year the City conducted a multi-agency *Watershed Resilience Accelerator Pittsburgh* (WRAP) plan to develop a high level policy to transform the Negley Run watershed and separate the stormwater. The 2018 Negley Run Corridor Vision Plan by the Task Force, the Pittsburgh Parks Conservancy and PWSA sought to develop the concept and vision for this separated conveyance.

Larimer has also been experiencing growth and development in a similar time frame, which has helped to provide both the funding and the opportunity to implement green infrastructure.

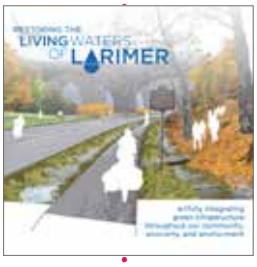
While the idea of creating a major park in Larimer dates back to the 2010 Larimer Vision Plan, Larimer Park Planning began in 2015 as part of the Choice Neighborhood housing process. The image below shows the park location and the three Zones.

BACKGROUND AND PREVIOUS STUDIES

Plans

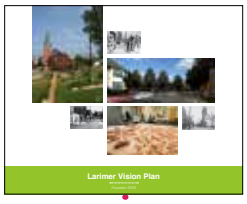
Choice Neighborhood Plan

Living Waters of Larimer Project begins



Living Cities Masterplan

Larimer Vision Plan



Drowning Deaths on Washington Boulevard

1998 2004 2008 2010 2011 2012 2013 2014

Built Projects

Fairfield Apartments

URA/KBK New Housing

Choice Neighborhoods Housing Phase 1

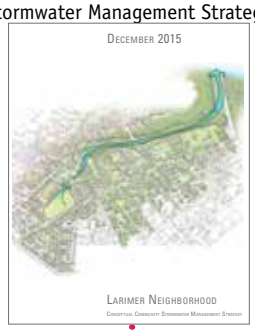
ZONE B

Negley Run Watershed Task Force Created

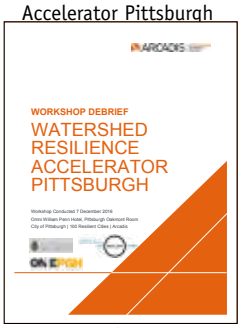
NEGLEY RUN WATERSHED TASK FORCE

Negley Run Stormwater Management Project

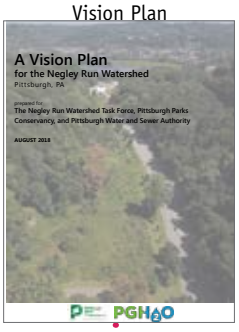
Larimer Neighborhood Conceptual Community Stormwater Management Strategy



Watershed Resilience Accelerator Pittsburgh



Negley Run Corridor Vision Plan



Larimer Park Zone B Study

Meadow Street Microshed Study

Larimer Park Planning

Interagency Cooperation Agreement on Larimer Park

2015 2016 2018 2019 2020 2021 2022

Choice Neighborhoods Housing Phase 2

Village Green Liberty Green & River Roots

Choice Neighborhoods Housing Phases 3&4

PARK PROGRAMMING AND ENGAGEMENT

Larimer Park is situated within Larimer, which has a robust system of parks serving different users. Liberty Green (Zone A) and Larimer Park provide more active recreation, and the recently recreated Village Green provides community space. Zone B provides opportunities for more passive types of recreation. Programming ideas for Zone B were first discussed in 2015 during community planning meetings about Liberty Green and River Roots (Zone A). The concept developed in 2015 for Zone B is that the park become a stormwater feature and amenity with trails and new park features on the plateau area adjacent to Auburn Street and a new stair connection from Auburn Street to Negley Run Boulevard.

Programming discussions picked up again in 2020 and 2021 during the current planning process through the Negley Run Watershed Task Force Meetings, a virtual Water Walk video (due to COVID-19), an online survey, and meetings with individual community groups, including:

- Harriet Tubman Terrace and Guild
- Cornerstone Resident's Council
- Larimer Consensus Group,
- Highland Park Community Council

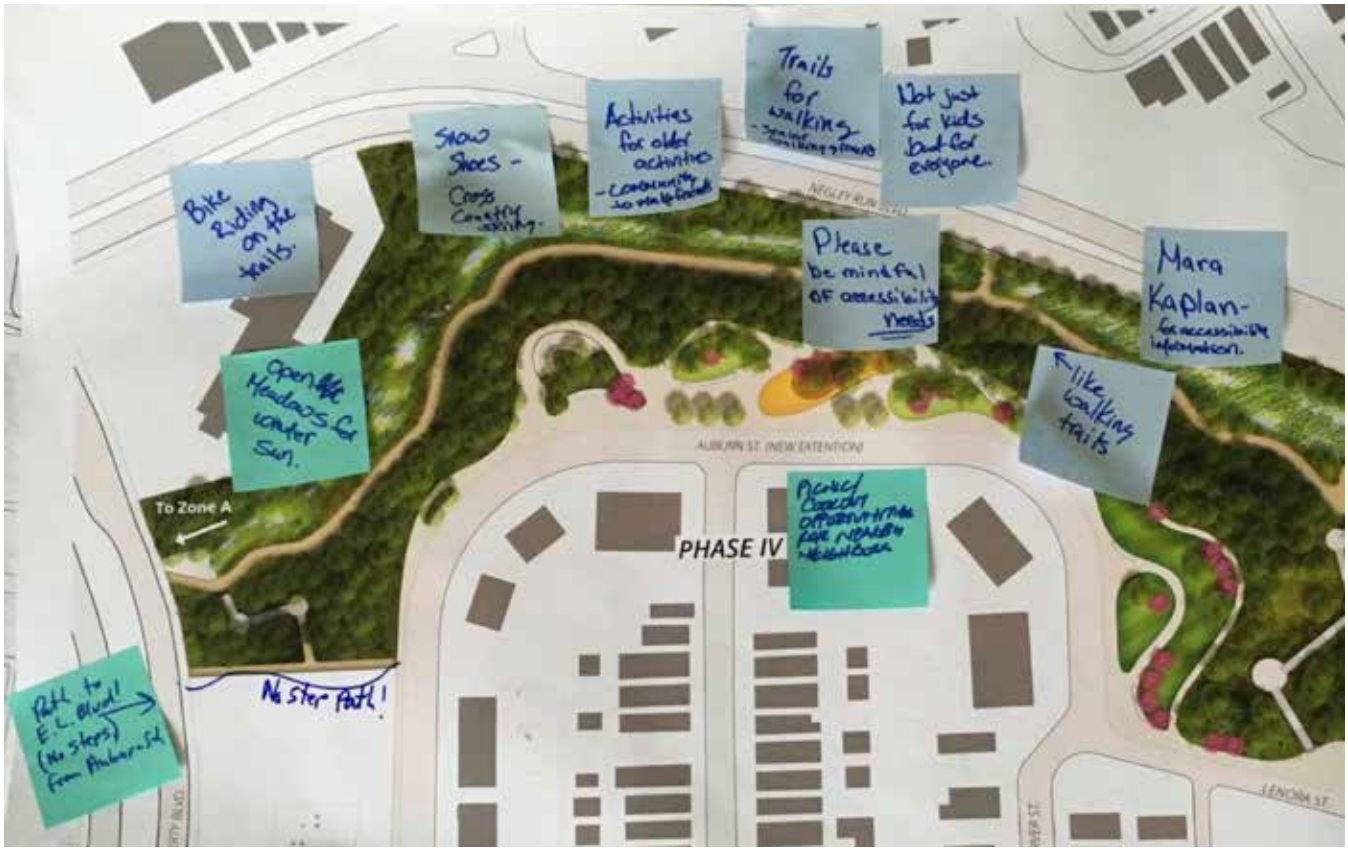
The more recent programming discussions largely confirmed the general concept developed in 2015. Zone B of the park is actually larger than what was envisioned in 2015, which provides more opportunities to capture stormwater and for amenity space.

Larimer Park Space. Larimer has an existing system of parks and public space. Programming for Larimer Park Zone B should complement, not duplicate that system.

DESIRED PROGRAM ELEMENTS

- Rebuild the steps next to the Meadow Street Bridge
- Pathways for bikes and pedestrians
- Open meadows for winter sun
- Senior walking groups
- Picnic/Cook out opportunities for neighbors
- Stormwater management
- Accessibility, including an accessible path from Auburn Street to East Liberty Boulevard.

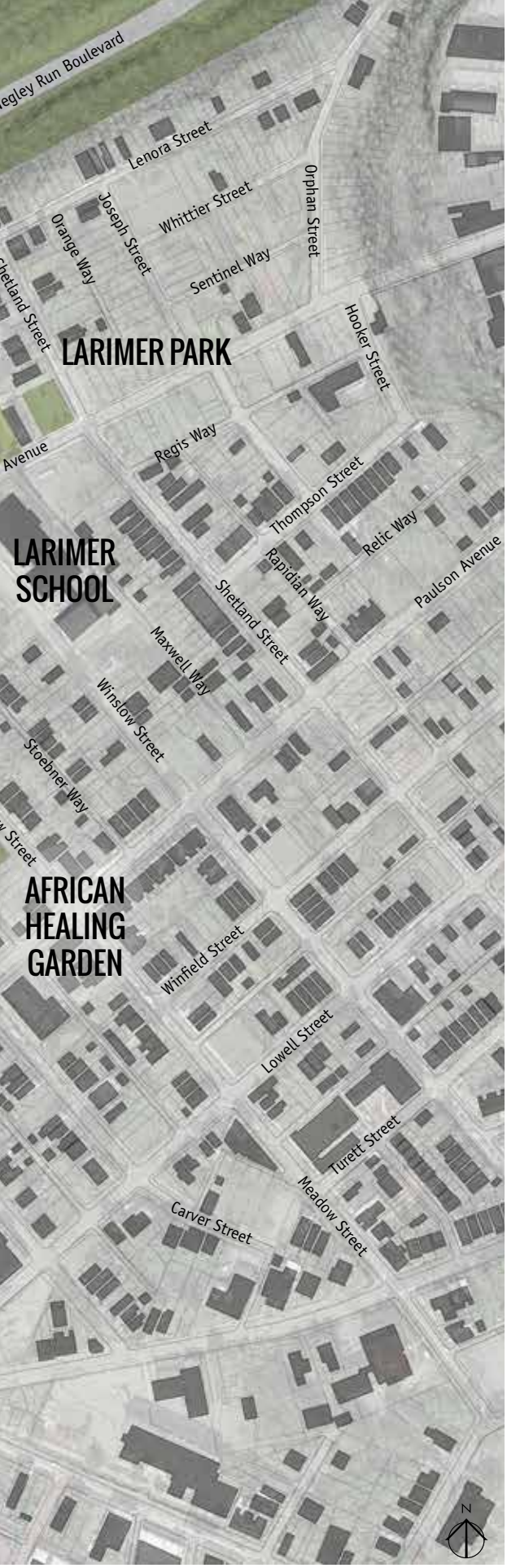
Images from the 2015 park planning process.




2
OBAMA ACADEMY
HIGHLAND PARK
ZONE B
HARRIET TUBMAN GUILD
HOME DEPOT
RIVER ROOTS
VILLAGE GREEN
EECO CENTER
LIBERTY GREEN
KINGSLEY ASSOCIATION
Carmine Way
St. Marie Street
Stanton Avenue
Violin Way
Chinn Way
Bosley way
Moga Street
Meadow Street
Huntress Street
North Sheridan Avenue
Collin Street
Negley Run Boulevard
Lenora Street
McDonald Street
Indiana Way
Larimer
North Highland Avenue
East Liberty Boulevard
Manetto Way
Auburn Street
Pace Way
Carver Street
Emans Way
Mayflower Street
Linn Way
Braden Way
Rodman Street
East Liberty Boulevard
Larimer Avenue
Ashley Street
Dodge Way
Station Street
Kalida Drive
Princeton Place
Polk Way
Tyler Way
Dix Way
Paulson Avenue
Center Avenue
Broad Street

Existing Conditions

Larimer Park is situated within Larimer, and adjacent to the neighborhoods of Highland Park and East Liberty. It is also across Negley Run Boulevard from Highland Park, one of the regional parks. Larimer Park is also one park within the system of parks and open space in Larimer.



The existing park site along Auburn Street has some large mature trees. The townhouses have been demolished, but the site is still fenced off from the public.

PROPERTY OWNERSHIP & STRUCTURES

The majority of the property in Zone B is owned by the Housing Authority of the City of Pittsburgh (HACP). A few smaller lots by the Meadow Street Bridge are owned by the City of Pittsburgh and one lot in that area is owned by the School District. There is also an existing public right-of-way in the valley (formerly Everett Street) that contains utilities. The Zone B site neighbors the Harriet Tubman Guild property, which occupies the lot between the right of way, East Liberty Boulevard and Negley Run Boulevard. The East Liberty Redevelopment Plan states that the Everett Street Right of Way was to be vacated and transferred to the Guild, with the City retaining pedestrian and utility easements, although according to county real estate records this has not yet happened.

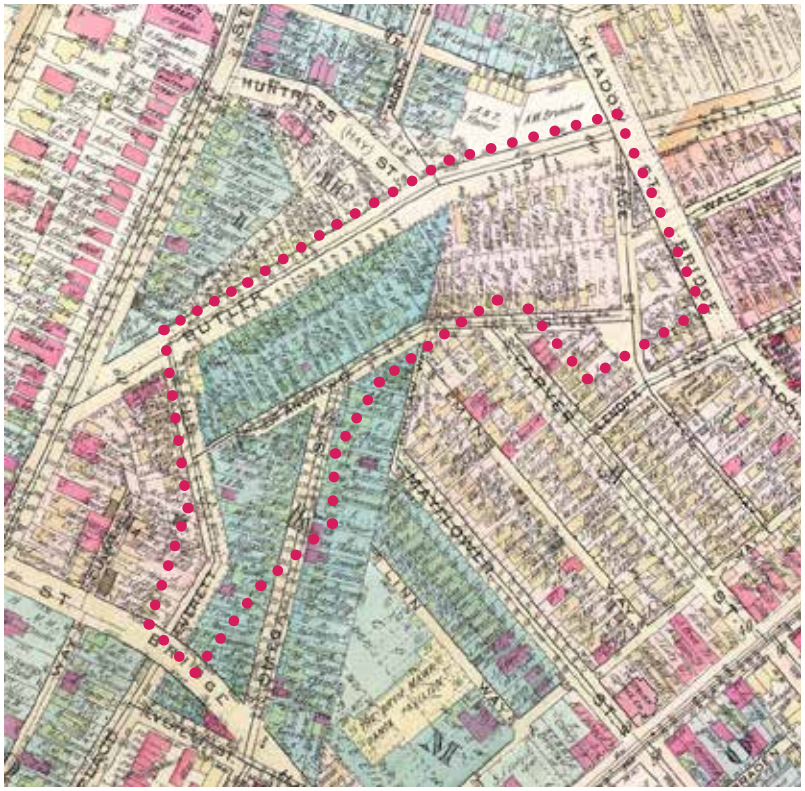
The site was home to the Hamilton-Larimer townhouses, but these were demolished by HACP in late 2020. As part of the Choice Neighborhoods agreement, HACP agreed that their property would eventually become a park. Although the buildings were demolished, the sewer laterals that served these buildings were abandoned in place and could potentially be reused for future park green infrastructure.

The site is currently fenced off and not available to the public. According to interviews with the HACP conducted as part of this project, the fence will remain in place while HACP owns the property due to liability concerns. The property would have to be conveyed to the City before the fence can be removed.

It is unclear whether all of Auburn Street is a dedicated City right of way. The section of Auburn Street that runs parallel to East Liberty is owned by HACP and is not right-of-way. HACP filed an application with the City to dedicate the street as right of way in 2017, but the process has not moved forward.

The portion of Auburn Street parallel to Negley Run Boulevard may not be a City right of way either. According to HACP, they performed the maintenance on Auburn Street when the Hamilton Larimer apartments were occupied. It is not historic and first appears on City maps when the Hamilton Larimer Apartments were constructed in the 1960s. That portion of Auburn Street is in poor condition and does not conform to City standards for roadways. Typically, the City will not take ownership of streets that are not built to City standards. In addition, the City would independently evaluate whether they want to take ownership of new streets. If the street is not right of way, either it needs to be brought up to City standards so that it can be dedicated to the City, or another mechanism for providing maintenance of that street is required.

Because the HACP property is federally owned, the process for HACP to dispose of the property is lengthy, involving approval by the federal Department of Housing and Urban Development, an environmental review and a historic review by the State Historic Preservation Office. Normally restriction on disposition of federal property is strict, requiring that the Authority receive fair market value for the property or that the disposition provides a clear public benefit to housing residents. Because the property was designated as future park in the Choice Neighborhoods agreement the public benefit criteria should be met, but the process must still be followed.

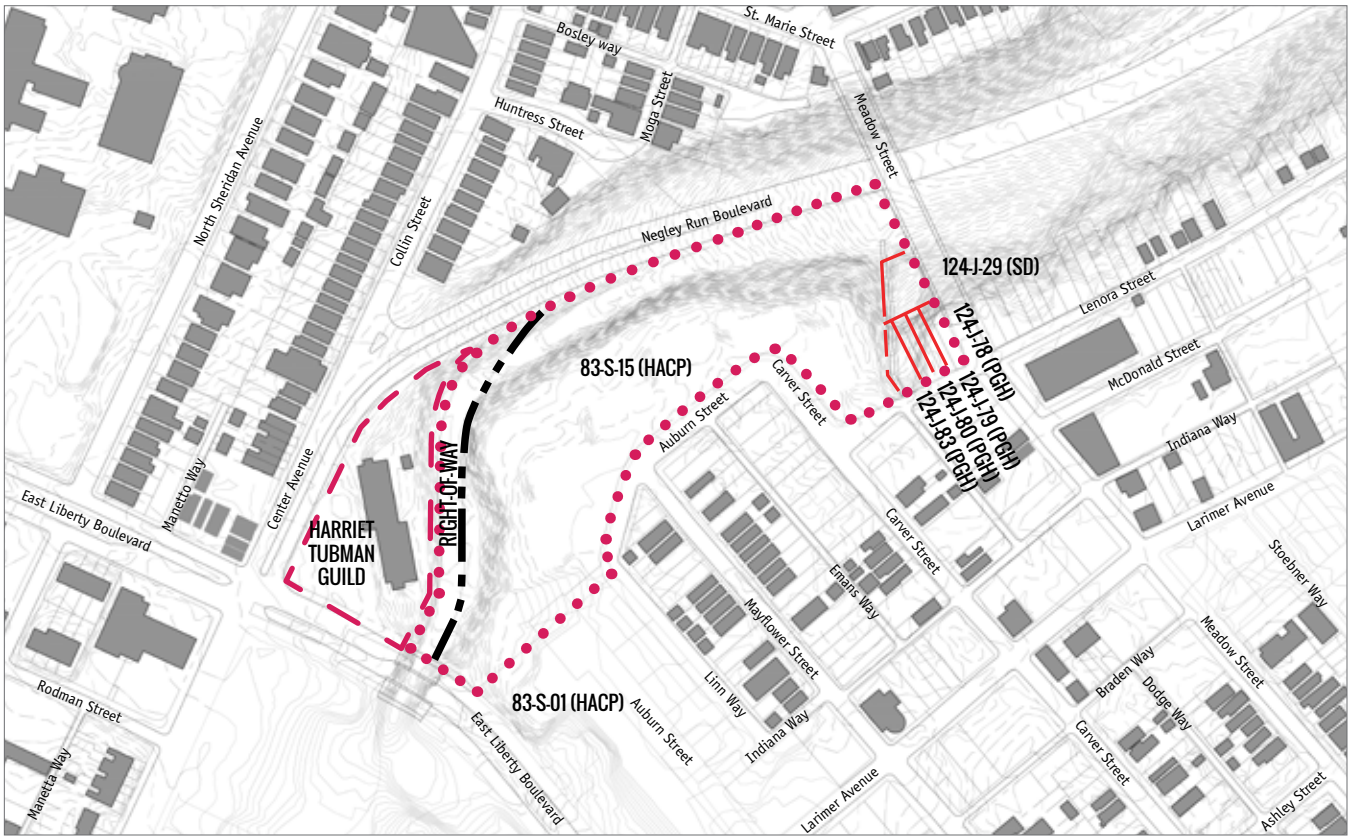


1923 map of the area with Zone B location overlaid.

1957 aerial image of the area with Zone B location overlaid.

1967 aerial image of the area with Zone B location overlaid. The Hamilton Larimer Townhouses are visible in this image

Current parcel ownership within and adjacent to Zone B.



SITE CONFIGURATION

The site had **three distinct zones**.

The **Valley** is the lowest part of the site and would be the natural place for a stream channel. There is an existing asphalt path in the valley in the City right-of-way that connects under East Liberty Boulevard to the River Roots site to the southwest and to Negley Run Boulevard to the northwest. The valley is characterized by steep slopes, with stone outcroppings on the Larimer side and is dominated by invasive species. The valley is the natural entry point to the park from Negley Run Boulevard and from East Liberty via River Roots (Zone A).

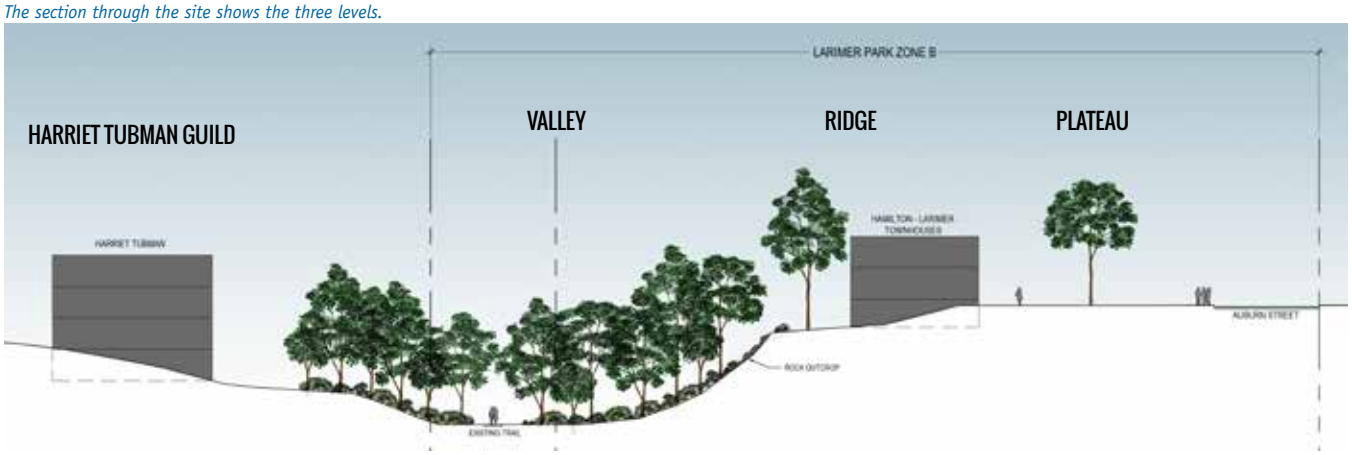
The **Plateau** is at the level of Auburn Street in Larimer and corresponds to the front yards of the former townhouses. The Plateau is the natural entry area to the park from the Larimer neighborhood and is visible from and well connected to the neighborhood.

Finally, the **Ridge** area corresponds to the backyards of the former townhouses. This provides a secondary level that is not visible from the valley or from Auburn Street.

View of the Valley section of the site. This area is highlighted in blue in the map to the right.

View of the Ridge and Plateau areas of the site. These area are highlighted in brown and green in the map to the right.

The site has three main zones: the valley, the ridge and the plateau.
The section through the site shows the three levels.



PLANT COMMUNITIES

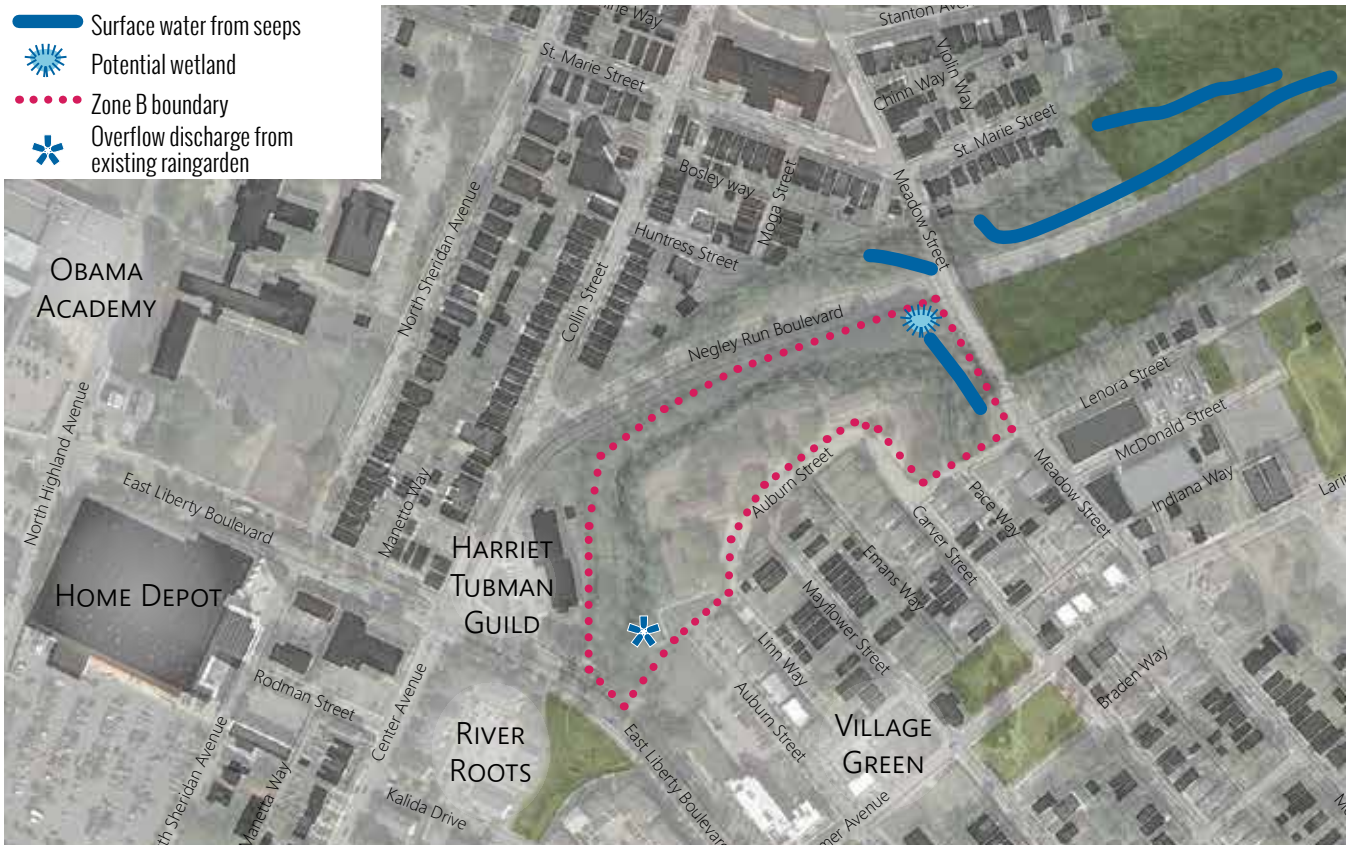
The project team performed an ecological assessment that looked at vegetation communities, species composition and invasive species, as well as other natural features, such as surface water. The full ecological assessment can be found in the appendix.

The Plateau and Ridge areas feature large, mature trees that are mostly native species and overall appear to be in good health. These trees would have been planted when the townhouses were constructed in the 1960s.

The Valley is dominated by non-native invasive species, such as Japanese knotweed, porcelain berry, tree of heaven and Norway maple. Between the Harriet Tubman Terrace and the existing asphalt path are some relatively open areas dominated by Japanese knotweed and porcelain berry. These areas are located on the Harriet Tubman Terrace property and could be replaced with a native forest community relatively easily. The existing forested areas of the slopes are also largely dominated by invasive species, primarily Norway maple. The challenge will be to maintain these areas in a forested condition and over time replace these invasive trees with more appropriate native vegetation, while keeping a forest cover on the site. Forest cover provides ecological services, such as slope stabilization, rainwater interception, evapotranspiration, and infiltration. This could potentially be achieved by opportunistic replacement of invasive species in wooded areas with native tree and understory plants.

Open area below the Harriet Tubman Terrace dominated by porcelain berry, an invasive vine.

The map below shows existing water features in and near Zone B.



WATER

While the valley portion of the park contains the historic stream bed, there is currently no evidence of a stream running through the site. The stream itself was buried in a sewer in the late 19th century. A fair bit of surface water exists within the area of the park and beyond. These include a natural groundwater seep near the base of the Meadow Street Bridge, discharge from the existing rain garden and tank under the parking lot along Auburn Street, and overflow from the River Roots project in Zone A.

The seep at the Meadow Street Bridge flows downhill to a potential wetland that drains into a storm drain below the Meadow Street Bridge close to Negley Run Boulevard. Additional tie-ins from upstream sources could create the potential for a stream channel in future.

There is also abundant surface water flowing on the other side of Negley Run Boulevard, downstream of the Zone B site, demonstrating the potential for a perennial stream to receive hydrology from the site. Further down Negley Run Boulevard on the Highland Park side is the Penn State Center Bioswale which collects water from part of Negley Run Boulevard.

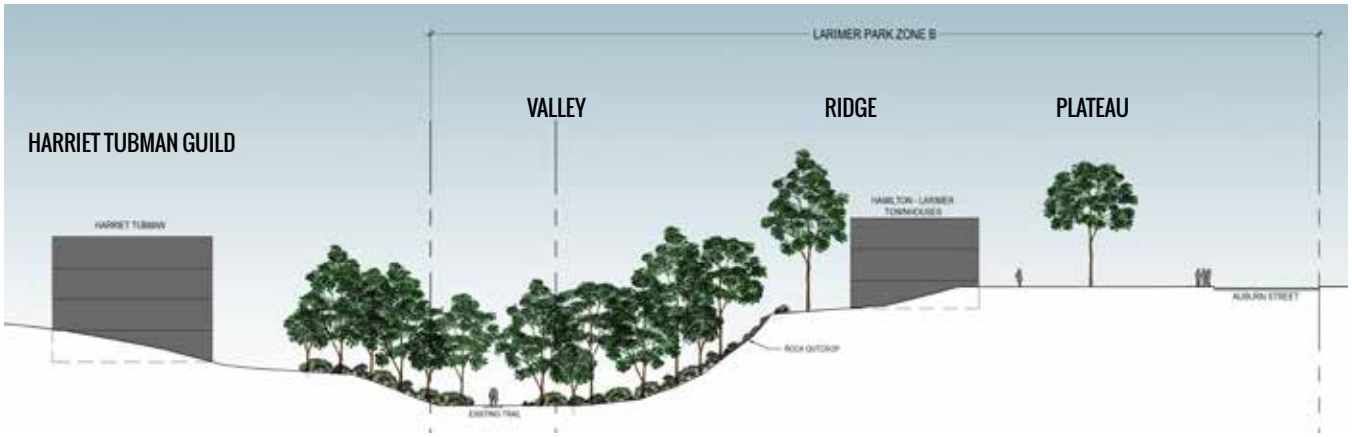
The design of Zone B will need to contend with where the water from Zone B will go, given that the stream connection to the river does not yet exist. Also, next steps in the design process will need to understand the existing pinch points in that downstream conveyance so that the site design can accommodate these constraints.

STEEP SLOPES AND SOILS

The project team also conducted a preliminary geohazards assessment. The assessment and preliminary geohazard map can be found in the appendix. The valley slopes on the Larimer side are characterized by bedrock outcrops of sandstone, siltstone, and redbeds. The slopes, particularly on the Larimer side, have moderate to severe susceptibility to landslides due to the outcropping of redbeds. Slopes throughout the park are steeper than1.5H:1V in many areas. Slopes of this steepness, particularly those consisting of redbeds, are typically unstable. There is also evidence of slope movement near the Meadow Street Bridge.

As the design for the park moves forward care will need to be taken that park construction and any infiltration of green infrastructure does not destabilize these slopes. Green infrastructure on the ridge and plateau areas may need to be lined to prevent infiltration, which could further destabilize these slopes. Green infrastructure in Zone A had to be lined due to soil contamination issues. Similar precautions may be required in Zone B, pending an assessment of soil contamination in the Zone B area.

Section through the site showing the three levels.



3


Collin Street
Negley Run Boulevard
Auburn Street
East Liberty Boulevard
Auburn Street

The Plan

Larimer Park offers the opportunity to create a park system that connects East Liberty, Larimer and Highland Park down to the River. Zone B will strengthen pedestrian connections between the park and the neighborhood, Highland Park, and parks in Larimer. The park can also be a way to separate stormwater flows from the combined system, alleviate flooding on Washington Boulevard, and convey stormwater to the river, recreating Little Negley Run at Larimer Park.

The entrances to the park are opportunities to celebrate and make visible the movement of people and water into and through the park.

CONCEPTUAL PLAN: ELEMENTS

Create Little Negley Run as a surface stream channel.

Build new rain gardens.

Provide new pedestrian & bike trail.

Build a new picnic pavilion and capture roof water.

Preserve existing trees.

Provide new park entry.

Preserve existing rain garden.

Reopen and improve existing sidewalk connection beneath E. Liberty Boulevard Bridge.

River Roots was designed to overflow into Little Negley Run.

Provide a new crosswalk on East Liberty Boulevard to create an accessible connection from Larimer to Negley Run Boulevard.

Provide a new crosswalk on Negley Run Boulevard to provide pedestrian connections to Highland Park and a future path along Little Negley Run.

Reconstruct the steps adjacent to Meadow Street Bridge.

Combine surface flow from the groundwater seep with runoff from the neighborhood to create anew stream channel.

Plant the Ridge area as a meadow.

Build new sidewalks with runnels adjacent to convey stormwater from sidewalk & pavilion to Little Negley Run.

Provide new park entry with sidewalks, signage, seating & raingardens.

Reconstruct portions of Auburn Street, Carver Street and Lenora Street with permeable pavers.

Sidewalks shown in yellow below are wheel-chair, stroller, and bike accessible. Getting an accessible route from the upper to the lower part of the park will required a new crosswalk on East Liberty Boulevard.

CONCEPTUAL PLAN

Create a stream channel for Little Negley Run. It might be dry some of the time and flowing during and after rainfall.

Naturalized raingarden would create additional stormwater storage and provide habitat and natural beauty.

Planting the steep slopes of the ridge as a meadow would provide a different kind of habitat, help infiltrate stormwater and provide sunny areas in the park, particularly important in winter.

Sidewalk runnels would visibly convey water from impervious surfaces to the raingardens.

Build new steps to express water flow using water from the runnels.

Rebuild steps at Meadow Street Bridge.

Rebuild Auburn Street with permeable pavers.

Capture roof water at pavilion.

STORMWATER CAPTURE, STORAGE & CONVEYANCE

From this point water is either conveyed under the road and then on the surface directly to the river, once downstream conveyance is complete,

OR

It goes back into the combined sewer system.

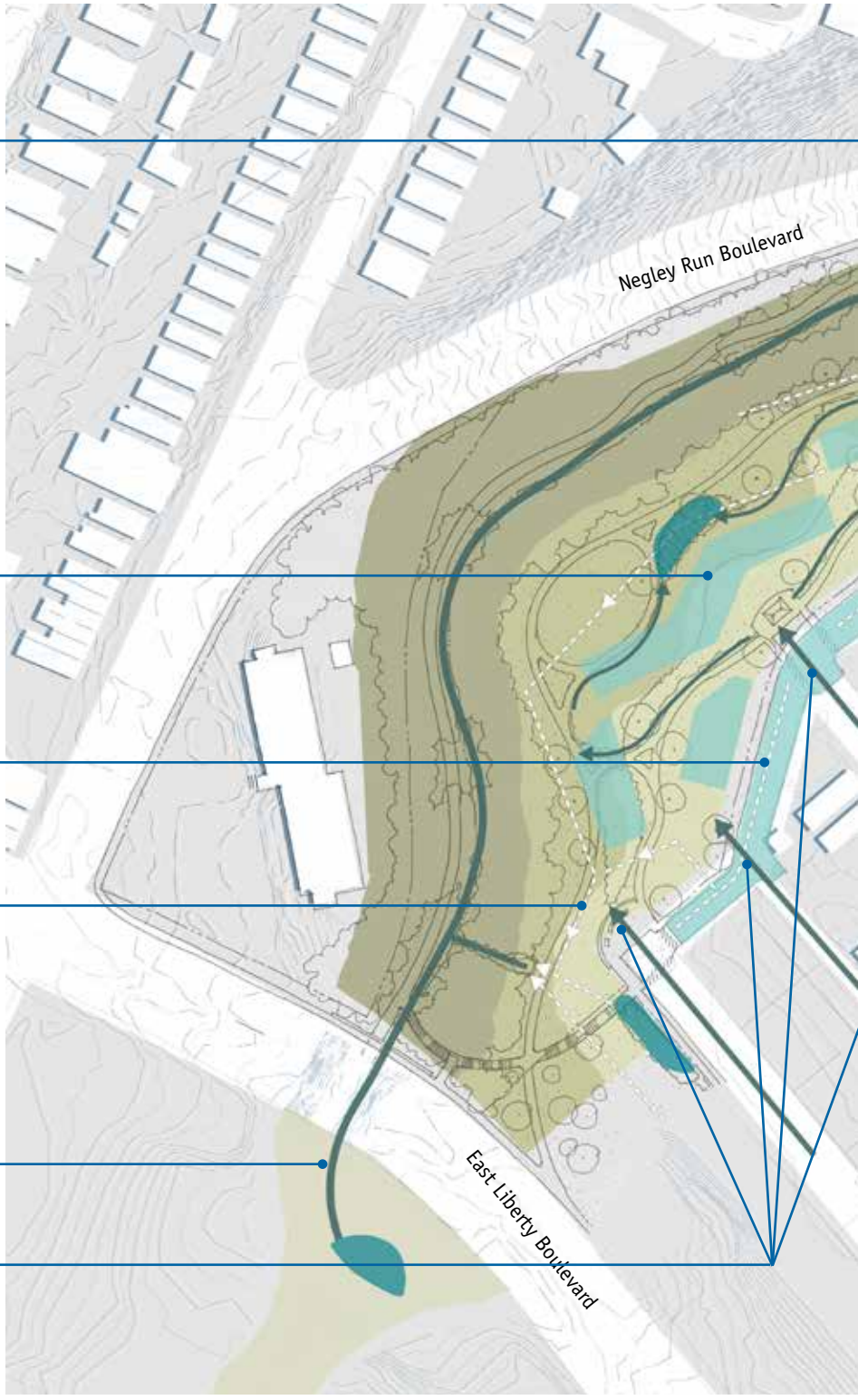
The footprints of the former townhouses and flatter areas of the ridge and plateau portions of the park are ideal locations for underground storage tanks.

Permeable pavers in Auburn Street provide an additional storage location.

Existing sewer pipes from the demolished townhouses will be repurposed to convey storm water from storage in the ridge and plateau to the new stream surface conveyance.

Overflow from River Roots in very large rain events will flow into Zone B.

Water from the neighborhood can be conveyed to the park and stored.



To make Little Negley Run a reality, the park needs to be able to capture, store, and convey stormwater. Bringing water to the site and conveying it as surface flow keeps water out of the combined sewer, reducing combined sewer overflows, provides flow for Little Negley Run, and can attenuate flooding along Washington Boulevard.

Providing for conveyance (the stream) through the park and all the way to the river will help to reduce the number and size of combined sewer overflows and significantly alleviate flooding along Washington Boulevard. Until the conveyance to the River downstream of Zone B is constructed, any overflow from Zone B would tie back into the combined sewer system near the Meadow Street Bridge.

Providing storage on the Zone B site and elsewhere in the sewershed in the absence of conveyance all the way to the river will help mitigate flooding along Washington Boulevard. It will also remove stormwater from the system during peak flow, releasing that water slowly to the system after the peak has subsided. Storage will also provide other benefits, such as reducing sediment load to the sewer system.

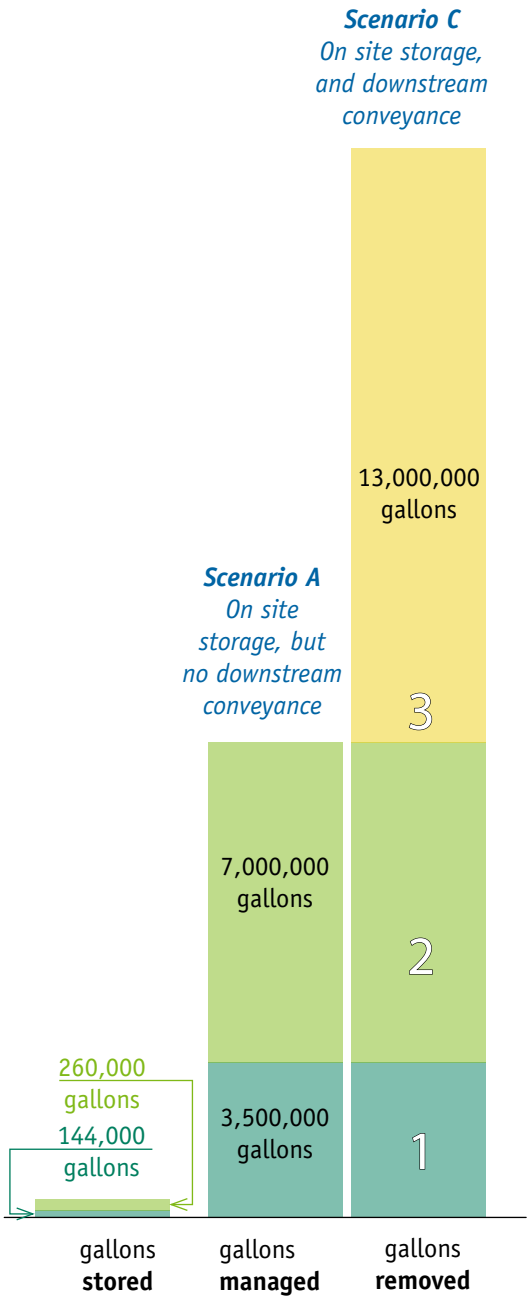
Storage in addition to a direct conveyance to the river will provide added resilience. Storage will also allow for the control of stormwater flows leaving Zone B and ensure that the stream system downstream is not overwhelmed. The footprints of the former townhouses and the flatter areas of the Plateau and Ridge are ideal locations for underground storage tanks. The sewer pipes from the former townhouse development were left in place and can be reused to convey stormwater on the site from underground storage to surface conveyance.

LEGEND

- Surface conveyance
- Underground conveyance
- Surface storage (raingardens)
- Underground storage tanks


Carmine Way
Stanton Avenue
St. Marie Street
Violin Way
Chinn Way
St. Marie Street
Bosley way
Moga Street
Meadow Street
Huntress Street
North Sheridan Avenue
Collin Street
Negley Run Boulevard
Lenora Street
McDonald Street
Indiana Way
Meadow Street
Pace Way
Auburn Street
Carver Street
Emans Way
Mayflower Street
Linn Way
Auburn Street
Braden Way
North Highland Avenue
East Liberty Boulevard
Manetto Way
Rodman Street
Center Avenue
North Sheridan Avenue
Manetta Way
Kalida Drive
East Liberty Boulevard
Larimer Avenue
Station Street
Kalida Drive
Princeton Place
Station Street
Ashley Street
Carver Street
Polk Way
Mayflower Street
Tyler Way
Auburn Street
Dix Way
Paulson Avenue
East Liberty Boulevard
Center Avenue
Broad Street
Larimer Avenue
1
2
3
3

Stormwater Capture areas. Tiers1 and 2 could be captured and stored in the park. Tier 3 could be captured and conveyed through the park to the river if the stream were recreated all the way to the river.



Capture Areas

The map outlines three capture areas for stormwater.

Tier 1 (dark green) are the areas that are currently draining to Zone B and can be captured and stored in the Plateau and Ridge areas and eventually convey the water to Little Negley Run.

Tier 2 (light green) are areas that could drain to Zone B with some minor modifications to grades, curbs, and inlets and be captured and stored in the Plateau and Ridge areas and eventually convey to Little Negley Run.

Tier 3 (yellow) are areas that could be brought to the valley portion of Zone B to help create Little Negley Run and provide a separated stormwater conveyance to the river, once that conveyance has been constructed. By integrating additional floodplain storage into the lower portion of Zone B and by providing additional stormwater storage within tier 3 to the east of Zone B as part of a redevelopment strategy, additional CSO and flood reduction could be provided.

Some of the strategies for getting water from tier 2 and tier 3 areas to the park and Little Negley Run were addressed in detail in the Meadow Street Microshed Study. Some of these strategies, including raingardens, stormwater tree pits, and porous pavers, could also provide additional storage in the right of way, in addition to the storage that could be provided in Zone B.

Stormwater Management Scenarios

There are three scenarios for how stormwater could be captured, stored and conveyed and how these will influence flooding along Washington Boulevard and CSO reduction. These have different costs, provide variable benefits, and could potentially be phased in over time.

Scenario A is to provide storage in Zone B, but not conveyance to the river. In this case, stormwater leaving Zone B would be conveyed back into the combined sewer system. This would have some impact on CSO reduction and some impact on flooding. The impacts to flooding would be very dependent on the volume of storage provided. This is the easiest and least costly scenario and could be phase 1.

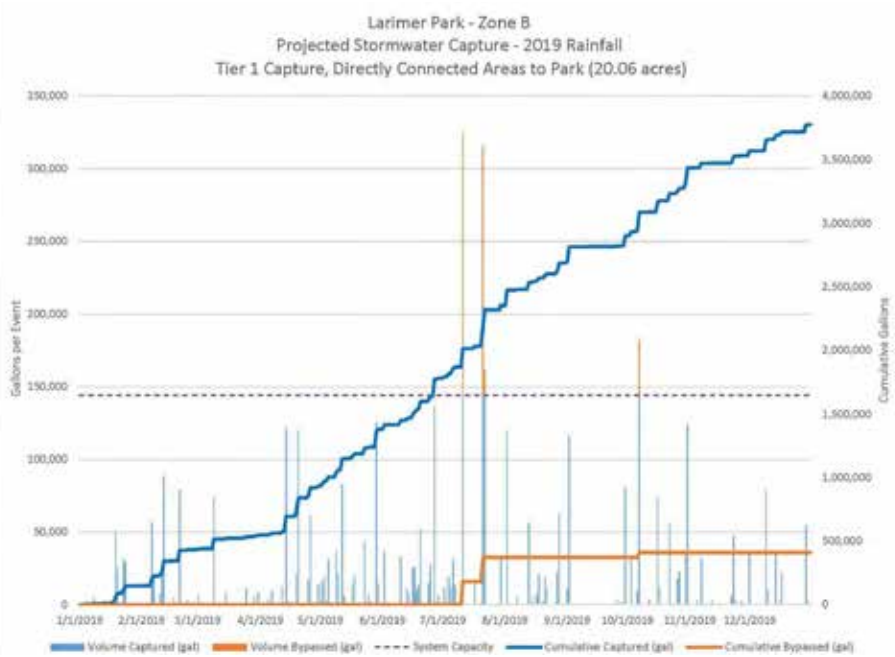
Scenario B is to provide conveyance with little or no storage. This is the scenario where the stream is built and connected all the way to the River, but storage is not provided in Zone B, or elsewhere. This would have a significant impact on flooding up to the design storm used to size the stream channel. So if, for example, the channel is designed to convey the 10 year storm, then flooding would be eliminated up to the 10 year storm. Flooding for larger storm events would be attenuated, but would still occur. Conveyance will also help to reduce combined sewer overflows.

Scenario C is to provide storage and conveyance. This scenario would combine scenarios A and B. It would have the most positive impact on both CSO reduction and flooding, as storage capacity provides added resilience for storms bigger than the channel capacity, but would also be the most costly.

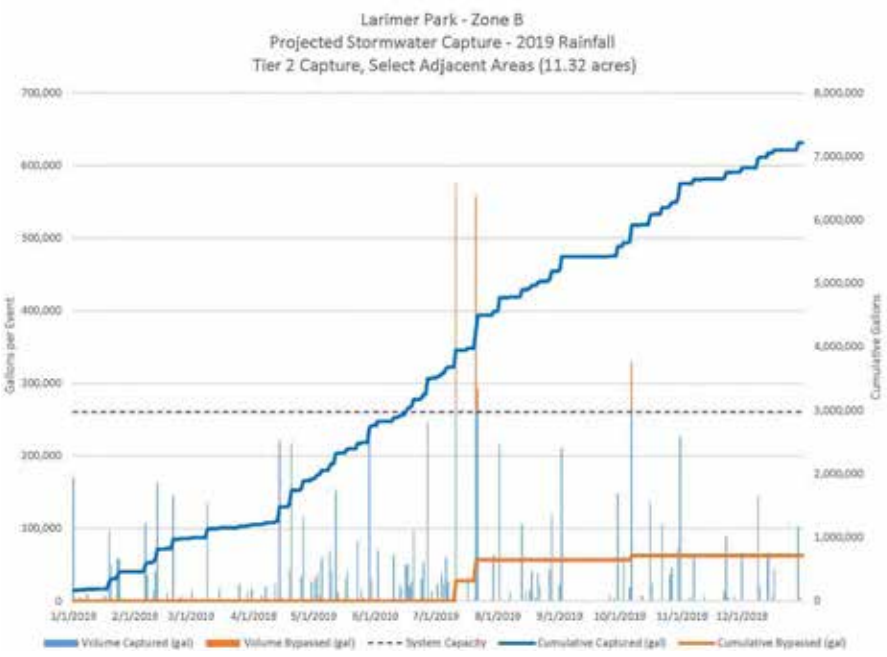
Hydrology Analysis

A hydrology analysis was conducted to understand the volume of water that could be collected, stored and conveyed through the site. At the right are graphs analyzing the capture, storage and runoff potentials for the tiers 1, 2 & 3 areas. The vertical lines on the chart are all rainfall events for 2019.

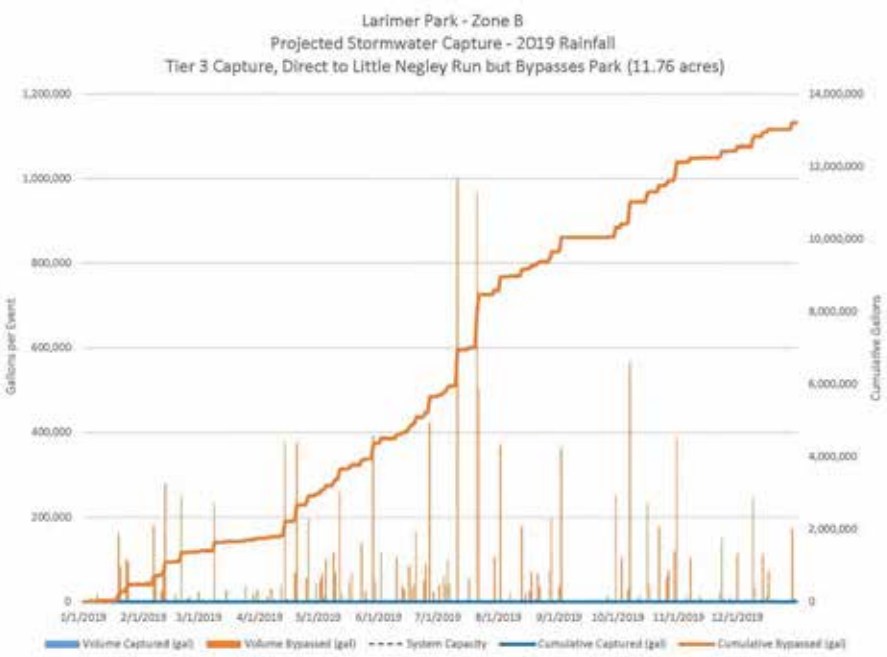
For **tier 1,** most of those events are below the 150,000 gallons per event threshold. If the park provides that amount of storage, then the park would manage most storm events. The blue line in the graphs is the amount of water being managed by such a system. The orange line is the amount of water that would run off uncontrolled from the site. If the park is able to store 144,000 gallons of stormwater on site, then over 3.5 million gallons of stormwater could be managed in the park and removed from the combined sewer system each year.



Tier 1 Capture Analysis



Tier 2 Capture Analysis



Tier 3 Capture Analysis

If **tier 2** areas are added, then storage would need to be increased by an additional 260,000 gallons in order to manage most storm events. The benefit of the increased storage would be to manage an additional 7 million gallons of stormwater in the park and remove them from the combined sewer system each year. A detailed analysis of how such storage could be provided in the park is included in the appendix.

For **tier 3**, because most of these areas are lower than the upper portion of the park where storage can be easily provided, no new storage would be provided for tier 3 flows, except possibly as pools in the stream system itself. The quantity of runoff from tier 3 could, however, be conveyed directly to the river via Little Negley Run once the full length is constructed and connected to the river. The quantity of water that can be captured in all three tiers will impact the sizing of the stream connecting to the river.

In all three tiers, new development will have to provide stormwater management for their sites. The new choice housing in the western portion of tier 3 already provides significant stormwater management on site and in the Liberty Green and River Roots parks. Additional stormwater management could be provided in all three areas in the right way using the strategies outlined in the Meadow Street Microshed Study.


4

Implementation

Zone B needs to be understood as part of a larger system. The benefits provided by Zone B depend on the existence of stormwater conveyance and storage opportunities upstream, downstream, and on the site. Implementation of Zone B will require acting together at the scale of Little Negley Run all the way to the river as well as work at the Zone B scale.

In addition, implementation will require leadership from the community and elected representatives. Ultimately the entire idea for the Larimer park system and the design and construction of Liberty Green and River Roots parks is a result of community initiative and engagement. Continued community engagement advocating for the park and the stream will be critical to implementation of both the Larimer Park and Little Negley Run visions.

Finally implementation will require cooperation and coordination between all agencies and organizations with expertise in green stormwater infrastructure and responsibility for implementation.

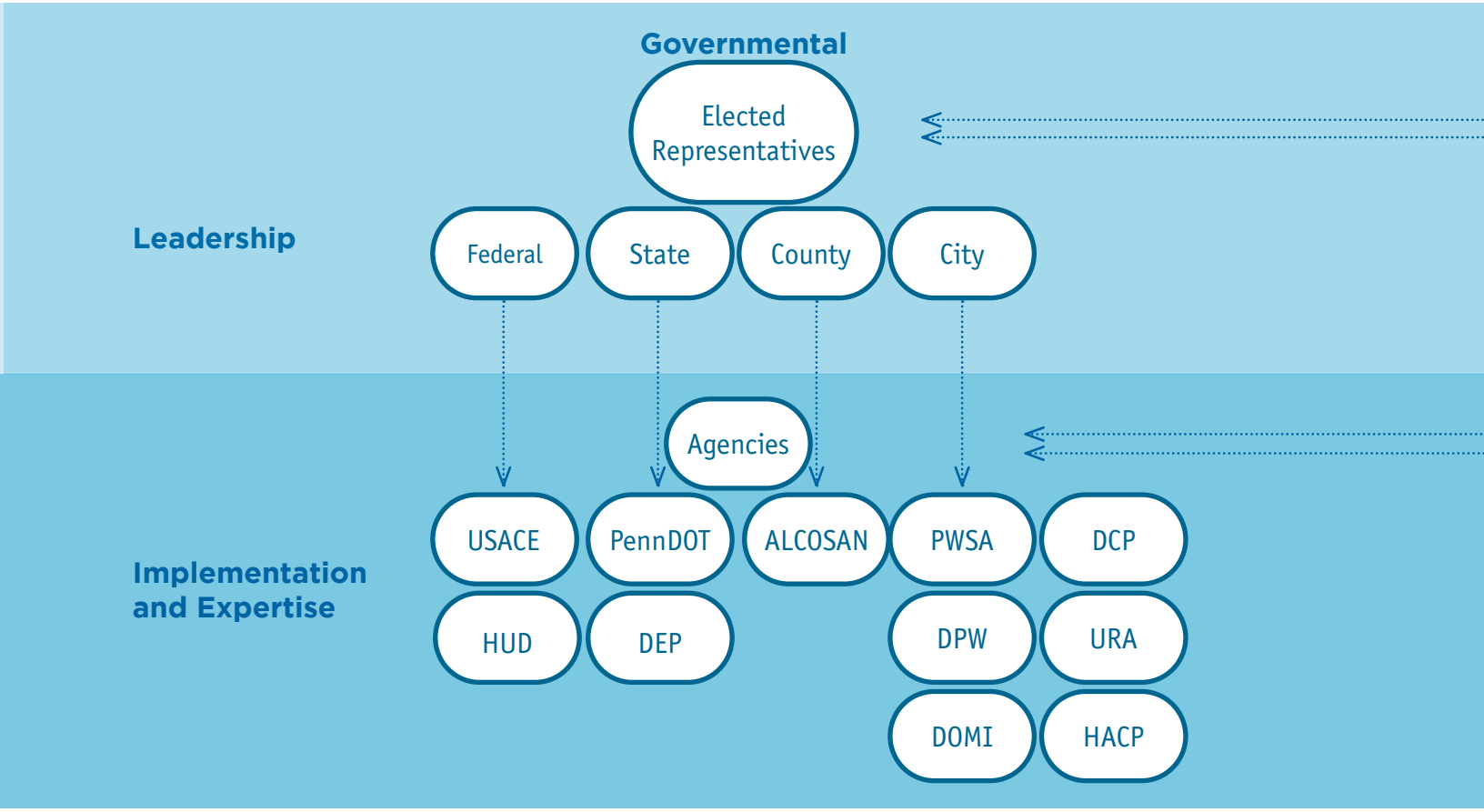
Grading work by the Housing Authority following demolition of the townhouses. The fence will remain in place and the site inaccessible to the public until the property is transferred to the city as either a park or a greenway.

ACTING TOGETHER: SHED-WIDE

LEGEND

- Completed Projects
- Projects in planning
- Future projects (not currently in planning)
- Future Stream conveyance
- Portion of Washington Boulevard protected by Flood Gates

ACTING TOGETHER: SHED-WIDE



Leadership Recommended Action

Elected Representatives

Local

- ☐ Support City-level green stormwater infrastructure funding.
- ☐ Direct PWSA and City departments to cooperate on and invest in the creation of Little Negley Run.
- ☐ Direct City, URA, and PWSA to enter into a new cooperation agreement for the implementation of Larimer Park Zone B, modeled on the one for Zone A.
- ☐ Direct agencies to encourage alternative financing mechanisms for green stormwater infrastructure
- ☐ Participate in Negley Run Watershed Task Force (NRWTF) Meetings.

County

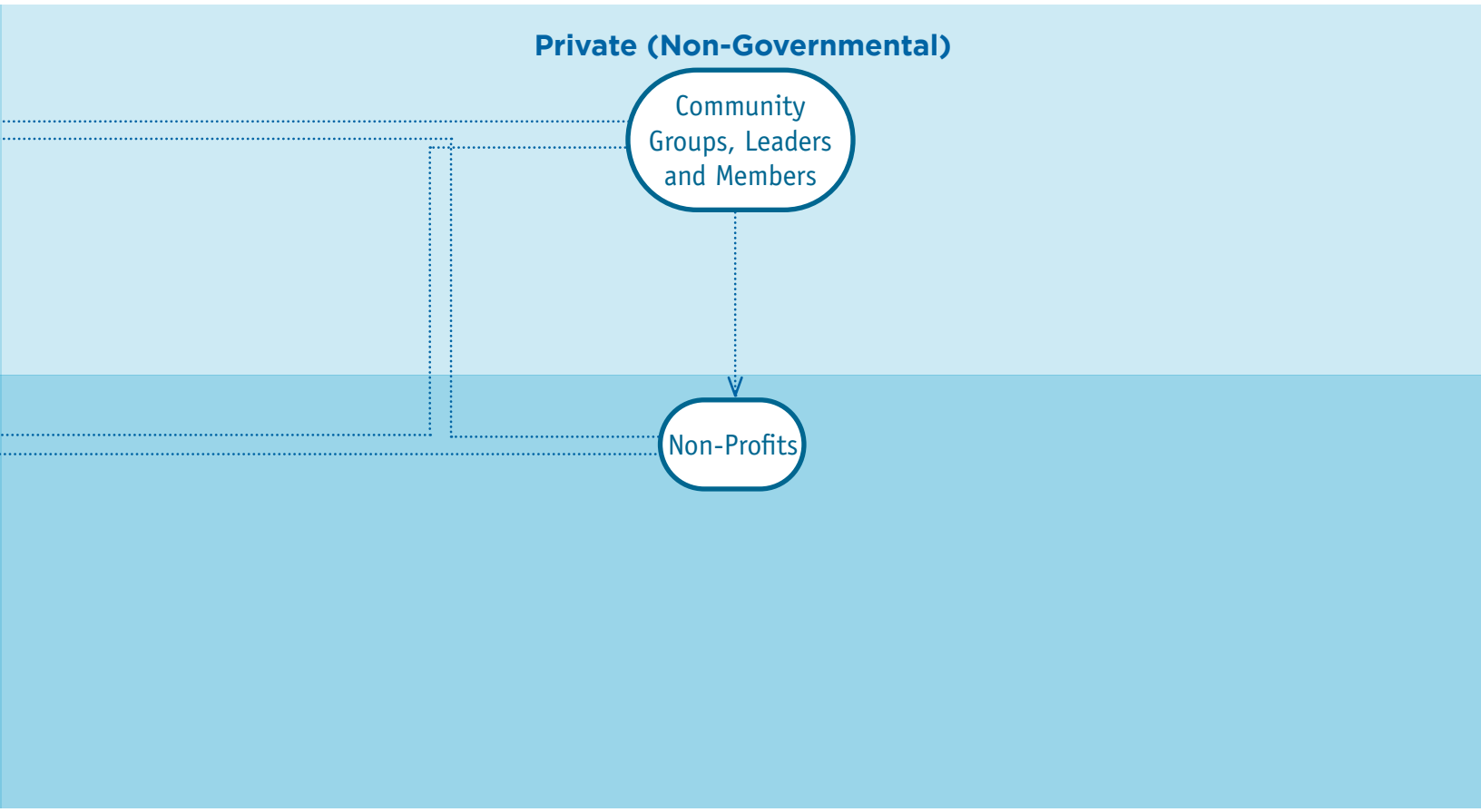
- ☐ Support county-level green stormwater infrastructure funding.
- ☐ Direct ALCOSAN to prioritize the creation of Little Negley Run and to Cooperate with the Army Corps, PWSA, and the City of Pittsburgh on creating the stream and addressing Washington Boulevard flooding.

State

- ☐ Support state-level green stormwater infrastructure funding.
- ☐ Direct PennDOT to coordinate with PWSA, ALCOSAN, and Army Corps on Washington Boulevard improvements.

Federal

- ☐ Support federal-level stormwater infrastructure funding.
- ☐ Direct the US Army Corps of Engineers to prioritize the creation of Little Negley Run.



Community Groups, Leaders and Members

- ☐ Advocate for green stormwater infrastructure policies and investments that benefit low-income and minority communities.
- ☐ Advocate for investment in the creation of Little Negley Run.
- ☐ Engage fellow community members on the importance of green stormwater infrastructure, Little Negley Run, and Larimer Park.
- ☐ Attend PWSA project meetings to learn more, ask questions, and get involved. pgh2o.com/gi-what-we-are-doing.
- ☐ Volunteer in your local parks: pittsburghparks.org/volunteer.
- ☐ Contact your neighborhood planner to learn what's going on in your neighborhood, as questions, and get involved: pittsburghpa.gov/dcp/neighborhood-planner.
- ☐ Attend programs, events, and workshops at Pittsburgh Parks: pittsburghparks.org/park-events.
- ☐ Sign up for Soak Alerts from ALCOSAN to find out when overflows affect our water ways.
- ☐ Attend the ALCOSAN open house, a family friendly event about water quality in the region hosted every fall at the ALCOSAN treatment facility. Learn more at 3riversproud.com.
- ☐ Support and participate in NRWTF meetings.

IMPLEMENTATION AND EXPERTISE RECOMMENDED ACTIONS

Agencies

City

Pittsburgh Water and Sewer Authority (PWSA) - Staff

- ☐ Prioritize the creation of Little Negley Run and provide funding.
- ☐ Continue to coordinate with the Army Corps, ALCOSAN, and PennDOT on the creation of Little Negley Run.
- ☐ Conduct a feasibility study of the conveyance from Zone B to the project 15206 bioswale.
- ☐ Coordinate with the City, URA, and HACP on the creation of a new Cooperation Agreement for Implementation of Zone B, modeled on the one for Zone A.
- ☐ Support implementation of the Meadow Street Microshed strategies.
- ☐ Participate in NRWTF meetings.

PWSA - Board

- ☐ Advocate for green stormwater infrastructure policies and investments.
- ☐ Advocate for investment in the creation of Little Negley Run.

Department of Public Works (DPW) - Leadership

- ☐ Coordinate with City departments to relocate the public safety buildings in the valley to other locations.

DPW - Park Maintenance & Forestry

- ☐ Invest in NGICP training for all maintenance and management staff.
- ☐ Develop and implement ecosystem restoration plan for Larimer Park zones B and C in cooperation with PPC and Tree Pittsburgh.
- ☐ Participate in NRWTF meetings.

Department of Mobility and Infrastructure (DOMI)

- ☐ Act as a convener and liaison between water focused groups (ALCOSAN, PWSA, USACE, NRWTF) and transportation focused agencies (PennDOT).
- ☐ Share lessons learned from Wightman Park right of way green stormwater infrastructure improvements.
- ☐ Support implementation of the Meadow Street Microshed Study strategies.
- ☐ Participate in NRWTF meetings.

Department of City Planning (DCP)

- ☐ Plan for divestment from flood-prone areas of Negley Run through zoning, greenway dedication, or park dedication
- ☐ Explore the possibility of applying for a GROW grant for Zone B.
- ☐ Coordinate with City departments to relocate the public safety buildings in the valley to other locations.
- ☐ Participate in NRWTF meetings.

Urban Redevelopment Authority (URA) - Staff

- ☐ Coordinate with City departments to relocate the public safety buildings in the valley to other locations.
- ☐ Collaborate with the City and PWSA on an updated cooperation agreement for Zone B.
- ☐ Televise the existing sewer pipes on the Zone B site.
- ☐ Coordinate with City agencies and HACP to transfer ownership of the zone B property from HACP to the City of Pittsburgh as part of the Larimer Park System.

URA - Board

- ☐ Advocate for green stormwater infrastructure policies and investments that benefit low-income and minority communities, in alignment with the URA's mission and vision.
- ☐ Advocate for investment in the creation of Little Negley Run.

Housing Authority of the City of Pittsburgh (HACP)

- ☐ Coordinate with URA other city agencies on the transfer of the HACP property in Zone B to the City as part of the Larimer Park System.
- ☐ Coordinate with the City, URA, and PWSA on the creation of a new Cooperation Agreement for Implementation of Zone B, modeled on the one for Zone A.

County

Allegheny County Sanitary Authority (ALCOSAN) - Staff

- ☐ Prioritize the creation of Little Negley Run and provide funding to keep stormwater out of the trunk sewer.
- ☐ Continue to coordinate with the Army Corps, PWSA, and PennDOT on the creation of Little Negley Run.
- ☐ Provide capital and operation funding for the creation of Little Negley Run beyond potential GROW grant funds.
- ☐ Consider Zone B for a GROW grant.
- ☐ Develop a plan for how the stream passes the public safety and velodrome sites.
- ☐ Conduct a detailed survey of all conveyance bottlenecks from Zone B to the mouth of Little Negley Run
- ☐ Encourage projects that keep rainwater out of the sewer system.
- ☐ Participate in NRWTF meetings.

ALCOSAN - Board

- ☐ Advocate for green stormwater infrastructure policies and investments.
- ☐ Advocate for investment in the creation of Little Negley Run.

State

Pennsylvania Department of Transportation (PennDOT)

- ☐ Commit to redesigning Washington Boulevard to align with water-focused agencies' and community priorities and provide fundings.
- ☐ Coordinate investments in Washington Boulevard and Allegheny River Boulevard with investments by ALCOSAN, PWSA, and the Army Corps.
- ☐ Participate in NRWTF meetings.

Federal

United States Army Corps of Engineers (USACE)

- ☐ Prioritize the creation of Little Negley Run and provide funding.
- ☐ Participate in quarterly NRWTF meetings.

Non-Profits

Many non-profits have a role to play in implementing Little Negley Run, including those focused on the urban forest, trails, ecology, clean water, air pollution, urban agriculture and others. This report focuses on specific tasks for NRWTF and PPC, but the contribution of all partners is invited and welcomed.

Negley Run Watershed Task Force (NRWTF)

- ☐ Advocate for green stormwater infrastructure policies and investments that benefit low-income and minority communities.
- ☐ Develop a comprehensive plan and funding strategy for the creation of Little Negley Run.
- ☐ Advocate for investment in the creation of Little Negley Run.
- ☐ Advocate for parks and green space as critical public infrastructure.
- ☐ Convene panels of experts, policymakers, and community members to discuss innovative GSI financing and Joint Benefits Authority. Invite leaders from other cities (Buffalo, Washington D.C., Philadelphia) as well as thought leaders on the topic. Ideate how some of these mechanisms could be used in the Negley Run Watershed.
- ☐ Convene a work session to review the entire conveyance corridor from Liberty Green to the River to further identify partners and funding mechanisms.
- ☐ Convene topic area experts to develop innovative approaches to implementing, maintaining, and financing green stormwater infrastructure in the Negley Run Watershed.
- ☐ Lead quarterly NRWTF meetings.
- ☐ Convene community organizations and leaders from all neighborhoods in the watershed.

Pittsburgh Parks Conservancy (PPC)

- ☐ Advocate for green stormwater infrastructure policies and investments that benefit low-income and minority communities.
- ☐ Advocate for investment in the creation of Little Negley Run.
- ☐ Advocate for parks and green space as critical public infrastructure.
- ☐ Coordinate with DPW-City Forestry, Tree Pittsburgh, and others on a reforestation and ecosystem restoration strategy for the Zone B and C sites, replacing invasives species with natives over time.
- ☐ Explore the possibility of creating a Negley Run Valley parks system master plan, that would include Highland Park, Larimer Park, as well as neighborhood parks and green space through out the watershed, including Lincoln-Lemington Belmar.
- ☐ Support and participate in NRWTF meetings.

ACTING TOGETHER: ZONE B

Currently the Zone B site is fenced off and not accessible to the public. It is likely to remain this way while the HACP maintains ownership. Implementation of Zone B will involve both short term actions to make the site accessible to the public and begin the process of ecological restoration, while plans are developed and funds procured for the full project build out.

Park or Greenway?

Zone B could come to the City as either a park or a greenway. The onus is on either the URA or the City to begin the property disposition process. HACP agreed it would be a park in the Choice Neighborhoods process. But it could potentially also come in as a greenway.

To become a park, the property would be conveyed to the URA and the park would be designed, constructed, and dedicated to the City. It would be the responsibility of DPW to maintain the park. This has been the process for the Liberty Green and River Roots site (Larimer Park Zone A) and Village Green. This process would likely take a number of years. Parks also come with dedicated funding, including funding from the regional asset district (RAD) for regional parks, and the recently enacted parks tax. For Zone B to receive RAD funding, it would have to become part of a regional park, such as Highland Park.

If Zone B were to come to the City as a greenway, the process would likely be shorter, depending on the improvements to be made. To become an officially designated greenway, there would need to be a maintenance agreement with a neighborhood group which would perform maintenance, similar to the Hazelwood Greenway project. There are currently no dedicated funds to support construction or maintenance of greenways, although it remains to be determined if revenue generated by the new park tax might also be available to greenways.

Interagency Cooperation

For Implementation of Zone A, the City of Pittsburgh, the Housing Authority, PWSA, and the URA entered into a cooperation and license agreement regarding the implementation of parks in the Larimer and East Liberty Choice Neighborhoods area. The agreement references Larimer Park Zones A, B and C. The purpose of the agreement was to identify roles and obligations with respect to implementation of Larimer Park Zones A, B & C because the City, URA and HACP owned many of the parcels and because it was anticipate that the project/park would include stormwater infrastructure, for which PWSA has responsibility.

The intent expressed in the agreement was that all parcels within the three park zones would be dedicated to the City after completion of the project phases. At the time of the agreement the parcels in Zone A were already in public ownership. The transfer of parcels in zones B & C to the City was made contingent on the City having or receiving funds and resources to maintain Zones B & C as public park spaces.

The agreement dealt primarily with Zone A and spelled out the roles and responsibilities of the parties during construction, transfer of Zone A to the City upon completion, and funding for maintenance of Zone A. For Zones B & C, the agreement stated that the parties contemplated agreeing to share the cost of construction for these zones, but provided no detail.

The agreement terminates upon the completion and dedication of all the parcels in Zone A to the City, meaning that additional agreements will be required for Zones B & C. The new agreement should specifically address the long-term maintenance guidelines for the park that should be developed as part of the design process and ensure the involvement of the final owner during all phases of design and construction.

Site of the future park entry at the corner of Lenora and Meadow Streets. This section of Lenora Street could be permeable pavers. This would also be where water collected in the Meadow Street Microshed would enter the park.

Funding

As identified in the Cooperation Agreement, securing funding sources to both construct and maintain Zone B will be critical. In terms of capital funds for park construction there are several possible sources, or likely a combination of all these sources:

- City Budget, which would be easier to get if there are matching funds
- ALCOSAN Budget PWSA Capital Budget
- PennDOT and the Army Corps

ALCOSAN

The Grow program is part of ALCOSAN's Clean Water Plan and can be used to install green stormwater infrastructure. Only municipalities or municipal sewers authorities are eligible to apply, so either the City of Pittsburgh or PWSA would need to be the applicant. In addition, as part of ALCOSAN's regionalization strategy, the City and PWSA will be transferring sewer trunk lines, such as the trunk line that runs through the Negley Run Valley, to ALCOSAN. ALCOSAN should encourage and provide capital funding to projects that keep rain water out of the trunk lines as part of this transfer process.

PWSA

In the past, PWSA has constructed and maintained some green infrastructure projects. One possible avenue is that PWSA could take on maintenance responsibilities for the green infrastructure proposed within zone B, whether it is a park or a greenway. At Liberty Green and River Roots, for example The City Department of Public Works is responsible for maintenance of surface elements and PWSA is responsible for the underground infrastructure, including tanks. Currently, PWSA is at the beginning of a stormwater planning process that will identify their priorities and the process for getting projects into the PWSA capital budget.

PWSA is moving forward with the Corridor Improvement Study along Washington Boulevard to understand the benefits that a Little Negley Run conveyance system would have for stormwater in terms of CSO reduction. To make such a conveyance worthwhile there needs to be a way of routing stormwater to that conveyance system.

The stormwater planning effort that PWSA has recently begun will provide further guidance as to the level of service that will be required by future PWSA supported projects. In other words, the planning effort will determine the criteria for stormwater management that must be met in order for a project to be considered for funding from PWSA. The primary issues for PWSA are likely to be the benefit to CSO reduction (how many fewer gallons of CSO release can be attributed to a project) and the cost per impervious acre managed.

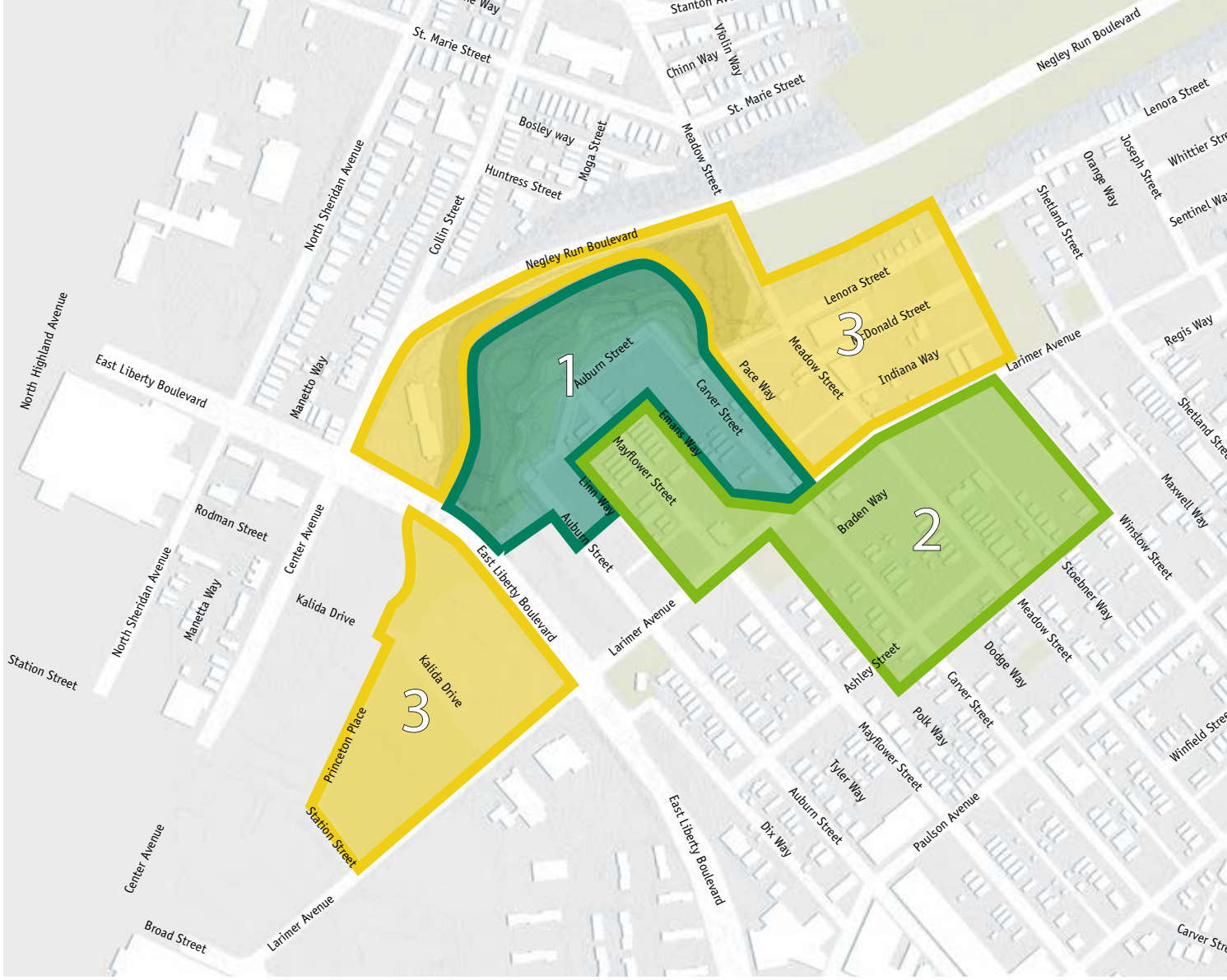
PennDOT and Army Corps

PennDOT and the Army Corps also have a potential financial interest in solving the Washington Boulevard flooding issue. These agencies are most likely to contribute to funding the larger conveyance network to the river. However, added resilience provided by additional storage in the upper watershed, at Zone B and elsewhere, is a reason for them to provide funding for construction of that storage.

Site of the future park pavilion and entry to the Park at the end of Mayflower Street. This portion of Auburn Street could be permeable pavers.

Site of the future park entry at the end of Auburn Street.

	VALLEY ZONE	PLATEAU & RIDGE ZONES
COMMUNITY ACTION	☐ Watershed Walks. ☐ Cleanups - trash and invasives. ☐ Tree planting.	☐ Pop-up events. ☐ Tree tender activities to protect existing trees.
STUDIES PLANS AND INVESTIGATIONS	☐ Develop and implement an ecosystem restoration plan to replace non-native tree species with natives over time.	☐ Televise existing sewer pipes abandoned in place to determine if they can be reused for GSI.
OWNERSHIP AND CONTROL STRATEGIES	☐ Explore whether the right of way portion of the valley be dedicated as a greenway in the short term. ☐ Remove fence under East Liberty Boulevard between River Roots and Zone B. ☐ Coordinate with Harriet Tubman Guild on maintenance and cleanup of Everett Street Right of Way and ecosystem restoration plan.	



ZONE B ALL

CONTRIBUTING AREAS (MICROSHEDS)

- ☐ Advocate for implementation of the Meadow Street Microshed Study.
- ☐ Watershed walks.
- ☐ Community events at River Roots.

- ☐ Develop cost estimates and establish a budget for the project.
- ☐ Determine whether parks tax funding be available for this park and whether it would be available if it's a greenway.
- ☐ Further geotechnical investigation for steps and GSI.
- ☐ Phase 1 environmental assessment to determine if there are any soil contamination issues the park design needs to address.

- ☐ Support implementation of the Meadow Street Microshed Study.

- ☐ Updated cooperation agreement for Zone B.
- ☐ Determine whether Zone B could be dedicated to the City as a greenway in the short term, before updating it to park and whether this approach would be acceptable to HUD.

- ☐ Survey research to determine whether Auburn Street is public right of way.

5

APPENDICES

A. ECOLOGICAL ASSESSMENT

B. GEOHAZARD ASSESSMENT

C. STORMWATER STORAGE ANALYSIS

D. COOPERATION AGREEMENT

E. PUBLIC ENGAGEMENT SURVEY

ECOLOGICAL ASSESSMENT

Larimer Park Zone B Ecological Assessment: Brief Overview of Initial Findings

1. General Site Description

The Larimer Park Zone B is divided into hilltop and hillslope/valley. Closed apartment buildings are located on the hilltop and the hillslope and valley are dominated by forest. A natural gas right of way runs through the valley from East Liberty Boulevard to Negley Run Boulevard adjacent to an unmaintained asphalt trail. A dilapidated staircase was observed in the northeastern portion of the site originating at Lenora Street and paralleling the Meadow Street Bridge. A small, moderately maintained pocket park is located at the corner of Lenora Street and Meadow Street. The Harriet Tubman Apartment building is located at the corner of Negley Run Boulevard and East Liberty Boulevard and is not included in the project area.

2. Forest Health and Composition and Vegetation Land Cover

The assessment team (comprised of ecologists from Civil & Environmental Consultants) divided the area into several zones for the purpose of describing relatively distinct vegetation types. These are described in the follow sections, and are mapped in the accompanying Google Earth KMZ file.

1.1.1 Hillcrest Apartments Complex

The hill-top the area adjacent to the apartment buildings is fenced off from public access and the lawn is mowed and maintained. Many large shade trees (honey locusts, red maples, pin oaks, and white pines) are well spaced throughout the lawn and appear to be mature and mostly healthy. Some maple trees are experiencing crown dieback.

Photo from Google Street View


Larimer Park
Vegetation Zones
Legend
Valley top
Open area
Hillcrest Upper Fence Line
Hillslope Near Harriet Tubman Apts
Stairs Area
Steep Slope
Valley Middle/Japanese Knotweed
Valley Middle/Porcelain Berry
Norway maple, honeylocust, linden, slippery elm
Norway maple
Large open grown trees:
Pin oak
Red maple
White pine
Lawn
Japanese knotweed
Norway maple
Tree of Heaven
Porcelain berry
Sumac
Tree of heaven
Porcelain berry
Norway maple
Sycamore maple
Black locust
Tree of heaven
Mulberry
Red maple
American elm
Google Earth


Larimer Park
Vegetation Zones
Legend
Potential wetland
Rock outcrops
Abundant flowing surface water from seeps
Potential vistas
Natural groundwater seep
Old stairs
Asphalt path
Google Earth
N

1.1.2 Open Area at Meadow Street Bridge

Larimer Park is a small pocket park at the corner of Lenora and Meadow Streets. The lawn is mowed and maintained and ornamental vegetation (Chinese silvergrass and ornamental rose) has been planted at the edge of the forest (Norway maple, catalpa, tree of heaven, frost grape, black raspberry, oriental bittersweet, mugwort).

Photo from Google Street View

1.1.3 Stairs Area

A damaged cement staircase is located on the steep hillslope between Lenora Street and Negley Run Boulevard. Public dumping and broken concrete walls were observed through the area. Canopy cover was complete and dominated by native and invasive trees (black cherry, Norway maple, catalpa, tree of heaven, mulberry, and sweet birch). The understory had very few shrubs (rose of Sharon) and was dominated by herbaceous vegetation (white snakeroot, intermediate wood fern, Japanese knotweed, Virginia creeper, pokeweed, garlic mustard, stickseed, poison ivy, wood strawberry, spotted jewelweed, willowherb, and bitter night shade). Large vines were also observed (oriental bittersweet, Japanese honeysuckle, and frost grape)

.

1.1.4 Steep Slope

The steep hill slope behind the Hillcrest Apartment complex was entirely dominated by a monoculture of Norway maple. No shrubs, herbaceous vegetation, or vines were dominant within this area.

1.1.5 Hillslope Near Harriet Tubman Apartments

The hill-top and hill slope near the Harriet Tubman apartment building had canopy cover was complete and dominated by native and invasive trees (Norway maple, honey locust, slippery elm, and linden) and a dense shrub understory (European buckthorn and European privet). The area had no herbaceous understory.

1.1.6 Valley Middle/Japanese Knotweed

The northern portion of the valley between the Harriet Tubman and Hillcrest Apartments is relatively open with limited canopy cover (Norway maple and tree of heaven). The understory is dominated by a dense monoculture of Japanese knotweed.

1.1.7 Valley Middle/Porcelain Berry

The southern portion of the valley between the Harriet Tubman and Hillcrest Apartments is entirely open with no canopy cover. The understory is dominated by a dense monoculture of porcelain berry growing over dead Japanese knotweed.

1.1.8 Hillcrest Upper Fence Line

The area behind the Hillcrest Apartment buildings facing the Harriet Tubman Apartment building is a narrow ridge near the top of a hill adjacent to a fence. The canopy cover is approximately 50% (sumac and tree of heaven) and dense vines (porcelain berry) entirely dominate this area.

1.1.9 Valley/Site Top

The top of the valley has complete canopy coverage and is dominated by a diverse community of mature trees (Norway maple, black locust, sycamore maple, tree of heaven, mulberry, red maple, American elm, and slippery elm). The understory was dominated by sporadic herbaceous vegetation (Japanese knotweed, garlic mustard, wingstem, stickseed, and wood strawberry) and mature vines (frost grape).



1.1.10 Valley Lower

The lower valley is bordered by Negley Run Boulevard to the north and steep hillslopes to the south. It has complete canopy coverage and is dominated by a diverse community of mature trees (Norway maple, catalpa, linden, slippery elm, American elm, white pine, river birch, horse chestnut, and Callery pear). The understory is dominated by herbaceous vegetation (garlic mustard, orchard grass, wood strawberry, Japanese knotweed, clear weed, and ironweed).



3. Wildlife Habitat

Limited signs of deer were observed throughout the valley. Forest songbirds such as blue jays, black capped chickadees, and European starlings were observed on the hilltop around the apartment complex. Songbirds are expected in the valley and hillslope but ambient road noise made them difficult to locate.

4. Topography and Drainage

The Larimer Park Zone B consists of a relatively level hill top, severe to moderate slopes, and a valley. One seep and one potential wetland were observed on the northeastern side of the site near the Meadow Street Bridge.

5. Natural Resource Features

Numerous rock outcrops were observed in the central area of the site. To the east and west of the outcrops the hill slope is less severe and may present an opportunity to create new access points to the valley.

6. Vistas

Access was limited on the hillslope behind the townhouses due the topography, the fence, and dense vegetation; however, it is expected scenic overlooks may be created at the top of the hill slope adjacent to the current apartment complex.

7. Illegal Activities

Graffiti was observed on manmade vertical concrete surfaces; otherwise little signs of vandalism were observed. One encampment was observed on the southwestern side of the site. Evidence of significant dumping was observed in the southwestern area of the site and near the broken stairs. Trash and broken glass was observed throughout the wooded area.

GEOHAZARDS ASSESSMENT

Civil & Environmental Consultants, Inc.

October 21, 2020

Claudia Saladin, RLA, ASLA
Senior Project Manager
evolve environment::architecture
6020 Broad Street, Pittsburgh, PA 15206

Dear Claudia:

Subject: Geohazard Assessment & Proposed Exploration Letter
Larimer Park Zone B Water and Circulation Plan Development
City of Pittsburgh, Allegheny County, Pennsylvania
CEC Project 302-740

Civil & Environmental Consultants, Inc. (CEC) presents to evolve environment::architecture (evolveEA) the following findings of the Larimer Park Zone B geohazard assessment.

1.0 BACKGROUND & PURPOSE

CEC was retained by evolveEA to review available soil, bedrock, coal, and landslide mapping, and to develop a geotechnical investigation plan for the Pittsburgh Parks Conservancy (PPC) – Larimer Park Zone B Water and Circulation Plan Development project located in the City of Pittsburgh, Allegheny County, Pennsylvania.

CEC's review of publically available references was performed to document and assess the site for geologic hazards within the limits of the park. At the time of this letter, the project is in the conceptual design phase. CEC understands that future development will likely consist of a design for water conveyance through the Larimer Park Zone B, a stair rehabilitation concept to provide a connection between Little Negley Run and Highland Park, and development of a Larimer segment of the One Water Trail concept plan for Highland Park. A stairway previously provided pedestrian access between Lenora Street and Negley Run Boulevard. The ruins of those stairs still partially exist in an existing corridor. CEC understands that the current condition of the stairs prevents re-use, the existing stairs will be removed, and new stairs are to be constructed within the existing stair corridor. The data obtained and CEC's conclusions on the potential geologic constraints (geohazards) associated with the proposed improvements are summarized below. A Geohazard Map for the project is provided in Attachment A.

2.0 DESKTOP LITERATURE REVIEW

2.1 REFERENCES

CEC reviewed the following publically available information to identify potential "Geohazard Areas" that may exist within the park limits:

- Erg, T.M., Edmunds, W.E., Geyer, A.R., and others, compiler, 1980. Geologic Map of Pennsylvania: Pennsylvania Geologic Survey, 4th ser., Map 1, 2nd ed., 3 sheets. Scale 1:250,000
- Pennsylvania Bureau of Topographic and Geologic Survey, Department of Conservation and Natural Resources, Miles, C.E., and Whitefield, T.G., compilers, 2001, Bedrock Geology of Pennsylvania, edition 1.0 digital map, scale 1:250

- USDA Custom Soils Report for Allegheny County, PA, generated October 2020.
- Allegheny County Landslide Portal, accessed October 2020. http://landslide-portal-alcogis.opendata.arcgis.com/pages/map-tools, accessed October, 2020
- Pomeroy, John S., 'Landslides and Related Features of the Pittsburgh East, PA Quadrangle." United States Geological Survey Open File Map 79-1314 (D-1). (1979)
- Commonwealth of Pennsylvania Department of Environmental Resources Office of Resources Management, Bureau of Topographic and Geologic Survey, "Coal Resources of Allegheny County, Pennsylvania, Part 1. Coal Crop Lines, Mined-out Areas, and Structure Contours." Mineral Resources Report 89, Part 1. Pages 62-66 (1985)
- PAMAP Program, Light Detection and Ranging (LiDAR) data, dated 2006
- Pennsylvania Department of Conservation of Natural Resources, "Bedrock Geology of Pennsylvania", ArcGIS database, downloaded June 2019
- Pennsylvania Department of Environmental Protection's (PADEP) Online Pennsylvania Mine Map Atlas, accessed October 2020. W.P.A Project No. 4483, Pittsburgh Sheet Nos. 1 & 2, Pittsburgh Seam, 1934
- A.C. Ackenheil and Associates, Inc., "Mining and Physiographic Study," Allegheny County Board of County Commissioners, November 4, 1968.
- Commonwealth of Pennsylvania Department of Environmental Resources Bureau of Topographic and Geologic Survey, "Greater Pittsburgh Region Geologic Map", Map 42, Plate 1, by W.R. Wagner, J.L. Craft, L. Heyman, and J.A. Harper, 1975. (Map 42)Historic Aerial Photography, accessed October 2020. www.historicaerials.com

2.2 TOPOGRAPHY

According to the accessed LiDAR information, the topography of the park ranges from approximate Elevation 830 to the northeast, along Negley Run Boulevard (passing underneath the Meadow Street Bridge), to Elevation 900 to the south/southeast, along Lenora Street. The park in its entirety consists of existing slopes with little to no flat or relatively flat grades. The flatter portions of the park are noted to the north, closest to Negley Run Boulevard and the northern end of the stair corridor. The park slopes to the north toward Negley Run Boulevard with slopes generally steeper than 2 horizontal to 1 vertical (H:V) with several slopes steeper than 1.5H:1V. Some of the slopes steeper than 1.5H:1V, particularly to the east and west of the stair corridor, and to the north of Negley Run Boulevard are associated with steep rock outcrops at or near the elevations of the Meadow Street Bridge foundations. CEC ecological field staff visited the site on October 9, 2020, and noted rock outcrops near the Meadow Street Bridge foundations, between approximate existing elevations 830 and 840.

2.3 SOILS

The United States Department of Agriculture (USDA) soil survey for Allegheny County, Pennsylvania indicates that the site soils consist mainly of residual soil comprised of the Gilpin-Upshur Complex. The Gilpin-Upshur Complex consists of acid fine-loamy residual soils weathered from shale, and siltstone. According to the USDA soil survey, the depth to a water-restricting feature at the site (fragipan or bedrock) typically ranges from approximately 20 to 40 inches below ground surface (bgs), and the water table is more than 80 inches bgs.

Around the perimeter of the park, the soils belong to the Urban Land-Rainsboro complex and Urban Land-Culleoka complex series. The Urban Land soil series consists of areas covered by pavement, buildings, or

other human-transported materials, with the Rainsboro consisting of old alluvial materials and the Culleoka consisting of fine-loamy residual materials weathered from sandstone and siltstone.

According to PADEP's Geologic Research Map 42, the upper site slopes around the perimeter of the park consist of alluvial terrace deposits of unconsolidated sand, clay, and gravel. The terrace deposits are located in abandoned river channels that were created during glacial events of the region. The sand, clay, and gravel were deposited during the river activity during the time the channel was active.

2.4 BEDROCK

The USGS digital map indicates the bedrock at the project location belongs primarily to the lower Casselman Formation overlapping the upper Glenshaw Formation, of Pennsylvanian age. The Casselman Formation consists of cyclic sequences of shale, siltstone, sandstone, red beds, thin, impure limestone, and thin, nonpersistent coal. The base of the Casselman Formation is at the top of Ames Limestone. The Glenshaw Formation consists of sequences of shale, sandstone, red beds, and thin limestone and coal. The base of the Glenshaw Formation is at the top of the Upper Freeport Coal. Red beds, which are associated with landslides, are mapped as outcropping along the park slopes.

According to PADEP's Geologic Research Map 42, the formations contact near approximate Elevation 830, where the Ames Limestone is noted to outcrop. Utilizing the Ackenheil Stratigraphic Column, the approximate elevation of the geologic formation contact, and the observed outcropping bedrock near the bridge foundations, CEC concludes that the outcropping bedrock near the bridge foundations likely belongs to the Birmingham Sandstone, which is known to contain interbedded seams of shale. The bedrock dips gentle to the north-northwest at less than 0.5 degrees. CEC noted groundwater seeps at or near the elevation of the outcropping bedrock. It is common for perched groundwater to exist at or near geologic formation contacts. It cannot be determined if the observed groundwater seeps are natural, or due to other manmade forces (ruptured pipes, changes in surface water flow, etc.) within the scope of this investigation.

According to Ackenheil Mining and Physiographic study, the residual site soils are derived mostly from claystone associated with the lower Casselman and Upper Glenshaw Formations.

2.5 LANDSLIDES

According to the referenced Allegheny County Landslide Portal (ACLP) and the United States Geologic Survey (USGS) Landslide maps, the majority of the park slopes have been labeled as slopes with moderate to severe susceptibility to landsliding due to the outcropping red beds. Red beds are soft claystone, which can weather to weak, highly plastic clay, and are commonly associated with slope instability. Based on the review of the site geology and the USGS and ACLP maps, red beds, are mapped along nearly all of the existing slopes. The USGS and ACLP references however did not identify any areas labeled as active, recent, or prehistoric landslides within the subject site location.

CEC's review of the most recent (2006) LiDAR data using hillshading indicates four (4) areas where suspected slope movement has occurred. LiDAR identified landslide features may exist as shallow or deep-seated stability issues/slope movement, which result in hummocky ground. Field investigation in the vicinity of the LiDAR identified features would be required to determine if they are related to past movement or are the result of man-made earth disturbance.

Additional landslide features may be present, but not identified, because they have occurred after the reference publication and/or LiDAR survey dates.

2.6 COAL AND MINING

The Pennsylvania Geological Survey "Coal Resources of Allegheny County, Pennsylvania," the WPA Project No. 4483 (Pittsburgh Sheets No. 1 & 2), and online mine subsidence insurance maps developed by the PADEP, indicate that no underground or surface mining has occurred within the vicinity of the park. Based on the mapping reviewed, the Pittsburgh Coal seam outcropped at approximate elevations ranging from 1120 to 1130, which is above the highest elevations of the subject site. Mining of non-commercially mined coal seams may have occurred at the site; however, the references reviewed do not maintain these records.

2.7 HISTORIC AERIAL PHOTOS

Based on the historic aerial photos of the project site, it appears that several single-family dwellings existed between Lenora and Auburn Streets and Negley Run Boulevard between the late 1940's and late 1960's, before construction of the current apartments north of Auburn Street. Based on the historic aerial photos, the single-family dwelling existed on slopes flatter than 1.5H:1V at the crest of the slopes, near Lenora/Auburn Streets and at the toe of the existing slopes near Negley Run Boulevard. Due to the quality of the historic aerial photos, it is difficult to determine the exact extents of the previously existing single-family dwellings.

3.0 CONCLUSIONS & RECOMMENDATIONS

CEC presents the following conclusions and recommendations regarding the geohazards identified based on the desktop review and the scope of the anticipated geotechnical investigation for design of the stair system.

3.1 EXISTING SLOPES

Four (4) areas of suspected slope movement were identified on the slopes of the park, primarily to the east and west of the stair corridor. If proposed developments cannot be easily relocated and are to be constructed within the areas of suspected movement, further investigation should be performed to determine if the identified features are hummocky ground related to past movement, or are the result of man-made earth disturbance activity. Additionally, the suspected slope movement areas are along slopes closest to the existing stair corridor and in areas of known red bed outcrops.

Red beds outcrop along a significant portion of the park slopes. Red beds include zones of weak claystone and indurated clay in which abundant, ancient, and recent landsliding has occurred. It should be recognized that claystone and red beds weather and decompose rapidly when exposed to air and water. As the red beds weather and decompose, they experience a significant loss of strength. Slopes in these materials can erode and/or slump and slide over time, resulting in downslope instability and deposition of weathered claystone and clay along the base of the slope. Development plans should account for the issues associated with red beds, including the potential for weathering and instability over time.

Slopes that are steeper than 1.5H:1V exist throughout the park, as illustrated on the attached Geohazard Map. The majority of the 1.5H:1V or steeper slopes exist along the southern limit of the area of interest,

nearest to the existing developments and buildings and along Lenora Street. Slopes steeper than 1.5H:1V are typically stable when the exposed slope face consists of competent bedrock. Slopes steeper than 1.5H:1V that consist of soil, especially red beds or weak bedrock, are typically unstable and should be avoided during future development. Other park slopes steeper than 1.5H:1V should be field evaluated to determine if a stability risk exists.

3.2 FIELD RECONNAISSANCE

The conclusions and recommendations presented herein are based solely on a desktop study and could change if actual field conditions differ. Areas of geologic hazards not identified on the references reviewed by CEC are likely to exist within the park. CEC recommends a geotechnical professional perform a field reconnaissance prior to any development to assess the actual risks associated with identified geohazards and to verify that other geohazards are not present.

3.3 SUBSURFACE INVESTIGATION

CEC recommends performing a subsurface investigation at the stair corridor to develop opinions of soil, bedrock, and groundwater conditions; and present conclusions and recommendations for construction of the new stairway system. CEC recommends performing a minimum of two test borings at the northern and southern extents of the proposed stairway corridor at the intersection with Negley Run Boulevard and Lenora Street, respectively. CEC understands that a majority of the proposed alignment of the stairwell corridor is inaccessible by traditional geotechnical exploration equipment, and recommends a minimum of four (4) hand operated Wildcat Dynamic Cone Penetrometer (DCP) tests to estimate in-situ consistency and density, and classification of near surface soils. The approximate test boring and DCP testing locations are provided on the attached Geohazard Map.

The test borings should be extended to auger refusal at the top of bedrock, which is anticipated to be encountered at approximately 15 to 20 feet below the existing ground surface (bgs). Samples should be collected continuously with a split-spoon sampler using the Standard Penetration Test (SPT) in accordance with ASTM D1586. Test borings should be extended to auger or sampler refusal. If needed, NQ-size core can be obtained in accordance with ASTM D2113.

Qualified geotechnical representatives should monitor the subsurface exploration, and perform DCP testing. The representatives should log the subsurface materials sampled, perform pocket penetrometer (unconfined compressive strength) tests on select soil samples, collect bag samples of soil, and prepare computer-generated field logs containing the data collected. A qualified laboratory should perform testing on selected samples selected by the geotechnical engineer. CEC anticipates that laboratory testing will include Atterberg Limits (plasticity), grain size analysis, moisture content, and standard Proctor testing of soil samples.

A qualified geotechnical engineer should review the results of the test drilling, DCP's, and laboratory testing, and perform geotechnical analyses to develop recommendations for stairway foundation options, addressing landslides and red bed geology. A geotechnical report should be prepared describing the subsurface conditions encountered, and presenting conclusions and recommendations. The report should include subsurface cross sections, test-boring logs, DCP test results, a test boring location plan, and the results of the laboratory testing.

3.4 PRELIMINARY STAIRWAY RECOMMENDATIONS

Information regarding the type and depth of the existing stairs are unknown at the time of this letter. Based on observations during our visits to the site however, it appears that the existing stairs are supported on columns supported by shallow foundations. Based on the red bed outcrops mapped at the park slopes, and the potential for encountering landslide-prone soils, the final stairway foundation system should extend below any unstable soils that exist near the existing ground surface and resist loads from potential slope movement.

The geotechnical engineer of record should determine the final stairway foundations after completion of the subsurface investigation. The foundation options provided below are based solely on a desktop study and must be finalized based on actual field conditions and project requirements. Based on CEC's experience with similar site soils and structures, we recommend that the project team consider the three (3) foundation options below.

Shallow Foundations: If the encountered soil conditions indicate the presence of shallow, residual soil or bedrock, the proposed stairs can be supported on shallow spread footings, similar to the existing stair system. CEC recommends that the stringers be elevated and not supported by the existing ground surface. Similarly, to the existing stairs, the new stairway stringers can be supported by concrete columns or structural steel framing.

Helical Piers: Also referred to as "screw piles", are solid steel shafts with helices that are twisted, or screwed into the ground as a deep foundation system. If the encountered soil conditions indicate the presence of deep, poor condition soils and deeper bedrock, the proposed stairs can be supported on helical piers. The new stairway stringers can be supported by concrete columns or structural steel framing.

Drilled Shafts: If the encountered soil conditions indicate that helical piers are not an option due to an excessive depth of bedrock, obstructions within the soil zone, or excessive lateral stresses, the stairs could be supported on traditional drilled shafts (caissons). The new stairway stringers can be supported by concrete columns or structural steel framing.

3.5 PRELIMINARY EARTHWORK RECOMMENDATIONS

CEC recommends that final excavated slopes in residual soil and bedrock be excavated no steeper than 2H:1V. Cut slopes in areas of suspected slope movements may need to be flatter and should be assessed further for stability. Cut slopes performed in soil should be closely monitored during construction. If cut slopes in soil appear unstable, they may need to be flattened or buttressed. Fill slopes should be constructed no steeper than 2H:1V. Soil fill slopes constructed steeper than 2H:1V require mechanical stabilization, such as geo-grid reinforcement.

Soil fill placed at the site should classify as GW, GP, GM, GC, SW, SP, SM, SC, ML, or CL according to the USCS. All soil fill should be placed in a controlled manner in maximum 8-inch thick loose lifts. Each lift should be compacted with at least 5 passes using "heavy", full-size compaction equipment. Fill material containing more than 10% fines should be compacted to at least 95% of the maximum dry density and within 3% of optimum moisture content as estimated by the standard Proctor (ASTM D698) compaction test.

4.0 DISCLAIMER

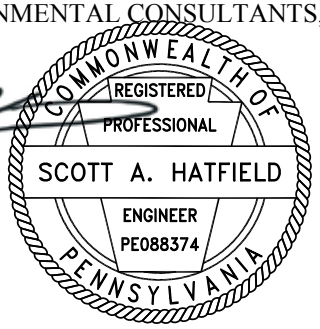
This report discusses geohazards identified in literature to aid evolveEA and the PPC in future planning for Larimer Park Zone B. The geohazards identified are based on review of the referenced documents only. Additional geohazards may exist that have not been identified. The services performed by CEC were conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the geotechnical engineering profession practicing contemporaneously under similar conditions in the locality of the project. No warranty, express or implied, is made.

5.0 CLOSING REMARKS

CEC appreciates this opportunity to be of service to evolveEA. Please call if you have any questions or comments.

Very truly yours,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.



Scott Hatfield, P.E.
Project Manager

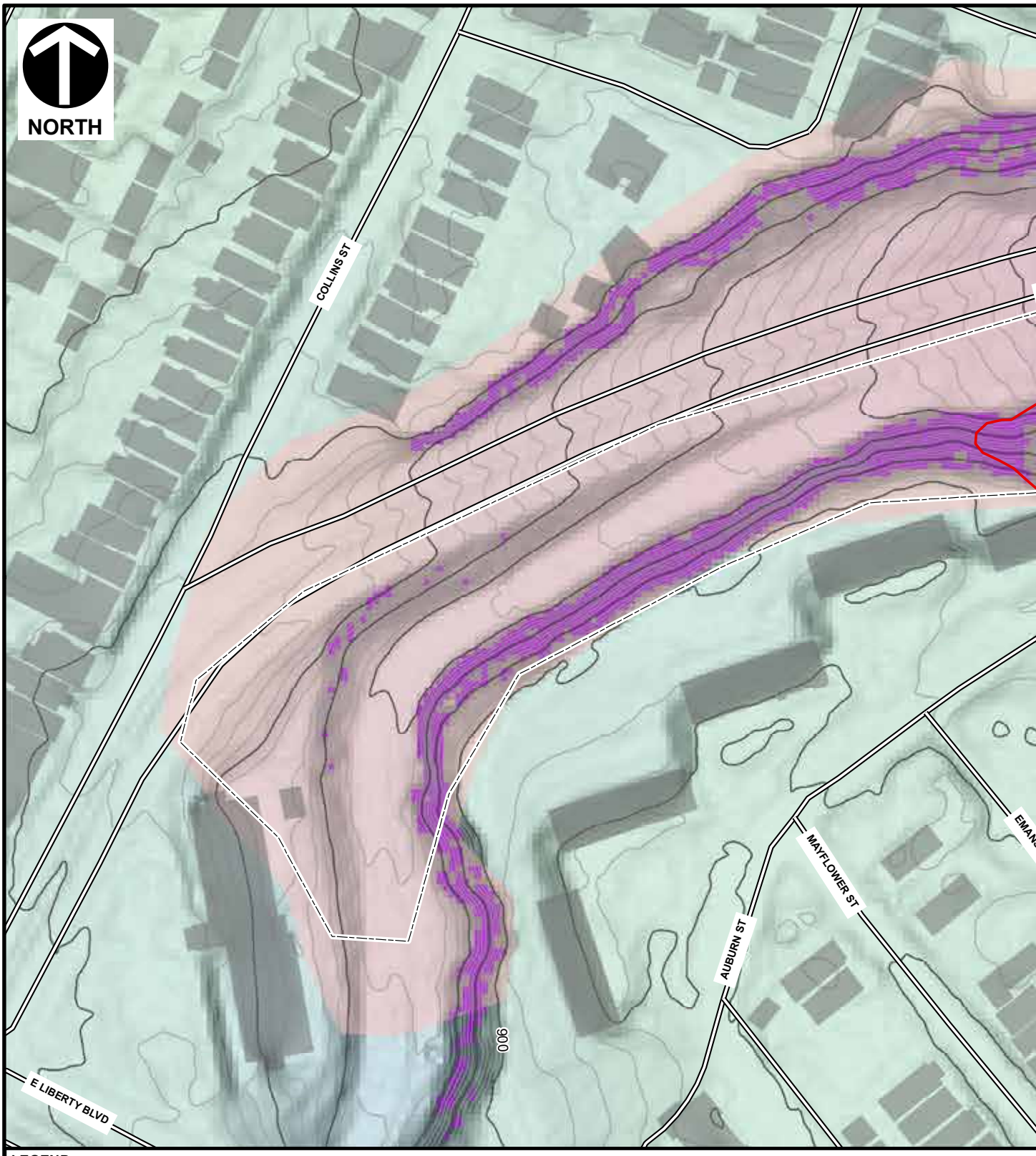
Douglas M. Clark, P.E.
Principal

Attachment A – Geohazard Map (Figure 1)

302-740-LR-Geohazard Assessment-10.21.20

ATTACHMENT A

GEOHAZARD MAP



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LEGEND

- LARIMER PARK AREA OF INTEREST
- STAIR CORRIDOR
- SUSPECTED SLOPE MOVEMENT
- LANDSLIDE PRONE SOIL
- SLOPES STEEPERTHAN 1.5H:1V
- BUILDING FOOTPRINT
- ROAD
- INDEX CONTOUR
- INTERMEDIATE CONTOUR

ELEVATION GRADIENT

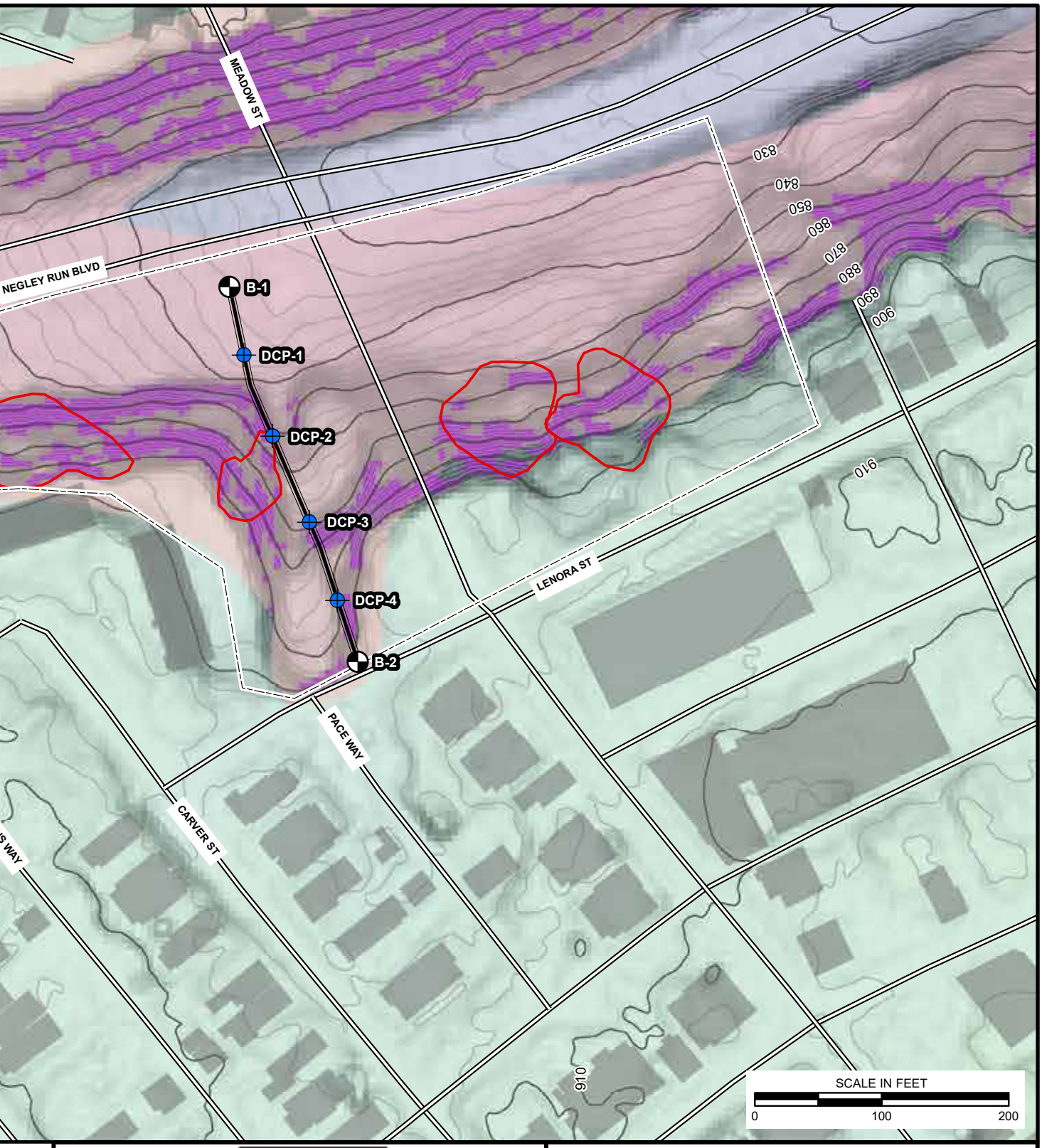
- EL. 1066
- EL. 773
- PROPOSED TEST BORING LOCATION
- PROPOSED WILDCAT DCP TESTING LOCATION

REFERENCES

1. POMEROY, J.S., "LANDSLIDE SUSCEPTIBILITY AND LAND MODI BY MAN MAP OF PART OF THE BADEN 7-1/2 MINUTE QUADRAN ALLEGHENY COUNTY, AND VICINITY, PENNSYLVANIA" US GEOI SURVEY, 1974

2. ALLEGHENY COUNTY LANDSLIDE PORTAL (ACLP) ONLINE SOU DATE ACCESSED: 10/15/2020

3. TOPOGRAPHY GENERATED FROM 2017 PAMAP PROGRAM LID FOR ALLEGHENY COUNTY. TOPOGRAPHIC CONTOURS MAPPE AN INTERVAL OF 2 FEET.



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EVOLVE ENVIRONMENT:: ARCHITECTURE
LARIMER PARK ZONE B
ALLEGHENY COUNTY, PENNSYLVANIA

GEOHAZARD MAP

DRAWN BY:	HCC	CHECKED BY:	KID/SAH	APPROVED BY: * Hand signature on file	DMC*	FIGURE NO:	1
DATE:	10/21/2020	SCALE:	1 " = 100 '	PROJECT NO:	302-740		

STORMWATER STORAGE ANALYSIS

Project: Larimer Park
Task: Rtank Sizing

Performed By:
Date:

R-Tank Specifications

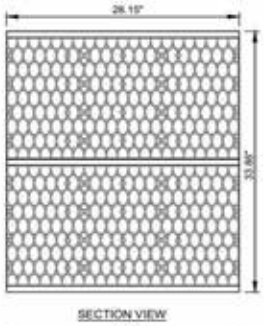
Model	Per Unit Volume (cf)	Per Unit Volume (gal)	Length (ft)	Width (ft)
Singles	4.22	31.57	2.35	1.31
Double	8.25	61.71	2.35	1.31
Triples	12.28	91.86	2.35	1.31
Quads	16.31	122.01	2.35	1.31
Pents	20.34	152.15	2.35	1.31

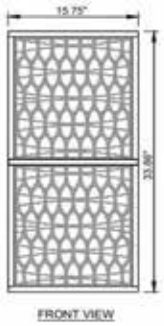
Scenarios / Analysis

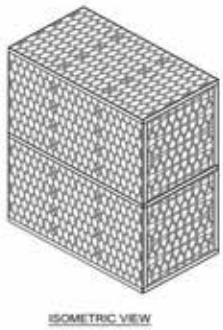
Scenario	Volume Capture (gal)	Singles No. Units	Singles Length (ft)	Singles Width (ft)	Doubles No. Units	Doubles Length (ft)	Doubles Width (ft)
Drainage Area 1	144,000	34,123	433	242	17,454.55	310	173
Drainage Area 2	260,000	61,611	582	326	31,515.15	416	233
Drainage Area 3	-	-	-		-		

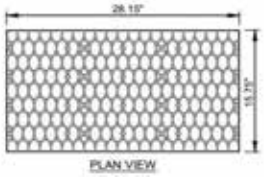
LARIMER PARK
DRAINAGE AREAS
1 MARCH 2021

Triples			Quads			Pents		
No. Units	Length (ft)	Width (ft)	No. Units	Length (ft)	Width (ft)	No. Units	Length (ft)	Width (ft)
11,726.38	254	142	8,828.94	220	123	7,079.65	197	110
21,172.64	341	191	15,941.14	296	166	12,782.69	265	148
-			-			-		









1A-1C DRAINS TO LARIMER PARK
2A-2D DRAINS TO PARK WITH GRADING WORK
3A-3J DRAINS TO NEGLEY RUN VALLEY
WOODS
LAWN
ROOF
ROADS/SIDEWALKS/DRIVEWAYS

COOPERATION AGREEMENT

EAST LIBERTY/LARIMER PARK
COOPERATION AND LICENSE AGREEMENT

THIS COOPERATION AND LICENSE AGREEMENT (the "Agreement"), effective as of the 6th day of January, 2017, is made by and between the CITY OF PITTSBURGH, a municipal corporation of the Commonwealth of Pennsylvania (the "City"), the HOUSING AUTHORITY OF THE CITY OF PITTSBURGH ("HACP"), the PITTSBURGH WATER AND SEWER AUTHORITY ("PWSA"), and the URBAN REDEVELOPMENT AUTHORITY OF PITTSBURGH, a redevelopment authority organized and existing under the Pennsylvania Urban Redevelopment Law, Act of May 24, 1945, P.L. 991, as amended (the "URA"). Each of the foregoing may be referred to herein as a "Party" and collectively as the "Parties."

WITNESSETH:

WHEREAS, the neighborhoods of Larimer and East Liberty are the site of a federal Choice Neighborhoods Implementation Grant award in the amount of $30 million for the comprehensive redevelopment of the Choice Neighborhoods area, and planning and development of neighborhoods parks will form a key part of the redevelopment;

WHEREAS, the City, HACP, and the URA have developed plans to develop parks in the Larimer and East Liberty Choice Neighborhoods area in three zones (the "Project");

WHEREAS, Zone A of the Project will be constructed on an approximately two and a half-acre site bordered by Station Street on the west, Princeton Place on the north, Kalida Drive on the east, and Larimer Avenue on the south on land currently owned by the URA and HACP (block and lot numbers 83-S-146, 83-S-190, and 83-S-196) and on an approximately three-quarter-acre parcel located on East Liberty Boulevard on land owned by HACP and leased by Larimer/East Liberty Phase I, L.P. (block and lot number 83-S-202) (the "Zone A Lessee"), as shown on the map attached hereto as Exhibit A and labeled as "Zone A" (collectively, "Zone A");

WHEREAS, it is contemplated that Zone B of the Project will be constructed on an approximately 6-7 acre site located at 6200 Auburn Street on land currently owned by HACP (block and lot number 83-S-15) and various parcels owned by the City, as shown on the map attached hereto as Exhibit A and labeled as "Zone B" ("Zone B");

WHEREAS, it is contemplated that Zone C of the Project will be constructed on an approximately 20-25 acre site located on the northwest corner of Larimer Avenue along Negley Run Boulevard, Orphan Street, Larimer Avenue, and Shetland Avenue on land currently owned by the City and third Parties, as shown on the map attached hereto as Exhibit A and labeled as "Zone C" ("Zone C");

WHEREAS, due to ownership by each of the City, the URA, and HACP of various parcels in Zone A, Zone B, and Zone C (each a "Zone," and collectively, the "Zones" or the "Project Phases") and due to PWSA's role in developing storm water infrastructure within the Project, the Parties have entered into this Agreement to state their respective roles and obligations in the Project,

to grant mutual access to the property located within the Project, and to facilitate the prompt completion and dedication of the Project Phases;

WHEREAS, HACP must obtain certain approval and releases for the proposed use of the HACP-owned properties in Zone A and Zone B, specifically the approval of the U.S. Department of Housing and Urban Development ("HUD"), the release of any existing declaration of trust and/or modification of any existing restrictive covenants or other HACP agreements, and the consent of the Zone A Lessee and Parties to other agreements related to block and lot 83-S-202;

WHEREAS, PWSA has received funding from the Army Corps of Engineers that PWSA will use for storm water infrastructure related to the design of the Project Phases and of Little Negley Run;

WHEREAS, subject to the requirements set forth in the body of this Agreement and applicable law, all parcels located within Zone A will be dedicated and transferred to the City by each parcel's respective owner, and such parcels comprising Zone A will be promptly accepted by the City after completion of Zone A;

WHEREAS, subject to the requirements set forth in the body of this Agreement (including any amendments hereto) and applicable law, all parcels located within the Project Phases are contemplated to be dedicated and transferred to the City by their respective owners, and the subject parcels comprising each of Zone B and Zone C will be promptly accepted by the City, after completion of each respective Project Phase;

WHEREAS, transfers to the City of parcels comprising Zone B and Zone C are further contingent upon the City having or receiving designated funding sources and adequate resources for maintenance of both Zone B and Zone C parcels as public park spaces; and

WHEREAS, subject to the terms of this Agreement, Project maintenance responsibilities for Zone A, excluding below-ground storm water infrastructure that will be maintained by PWSA, shall transfer to the City upon completion of Zone A and upon dedication and transfer of its constituent parcels to the City.

NOW, THEREFORE, for and in consideration of the mutual promises contained herein, and intending to be legally bound hereby, the Parties agree as follows:

1. INCORPORATION OF RECITALS: The recitals appearing above constitute a material part of this Agreement and are incorporated herein.

2. ZONE A LICENSE: The City and HACP, respectively, authorize and license the URA, and/or its designated agents, to apply for all requisite licenses and permits for construction of Zone A, including on property within Zone A owned by HACP (except with regard to block and lot 83-S-202, for which such authorization is subject to the consent of the lessee for block and lot 83-S-202). The City and HACP further respectively authorize and license the URA to contract for the design, construction, and inspection of Zone A in accordance with the Project Funding Plan, in the form attached hereto as Exhibit "B," the final version of which shall be approved, or rejected, in writing by the Director of the Department of Public Works within forty-five (45) days of receipt.

HACP further authorizes and licenses the URA to enter upon the properties comprising Zone A to which HACP holds title for all purposes reasonable, necessary, and in furtherance of this Agreement. Zone A shall be constructed in accordance with City and PWSA standards and plans approved by the City (the City's approval shall follow the approval protocol set forth in Paragraph 5 below and in the Approval Protocol, attached as Exhibit "C"), HACP, the Choice Neighborhoods Implementation Working Team, and HUD. Notwithstanding the foregoing or anything to the contrary herein, the construction of the Project on Zone A shall not be commenced until (1) conveyance of HACP-owned properties within Zone A to the URA, (2) written approval by the Director of the Department of Public Works of the Project Funding Plan, and (3) written approval by the City, HACP, the Choice Neighborhoods Implementation Working Team, and HUD of the construction plans.

3. ZONE B: It is currently contemplated that the Parties hereto will agree to share the cost of construction of Zone B of the Project pursuant to an amendment to this Agreement or to a separate agreement.

4. ZONE C: It is currently contemplated that the Parties hereto will agree to share the cost of construction of Zone C of the Project pursuant to an amendment to this Agreement or to a separate agreement.

5. TRANSFER OF ZONE A TO THE CITY:

A. Upon completion of Zone A of the Project by the URA, the URA will notify the City in writing of its plans to convey the parcels comprising Zone A to the City. Conveyance of the Zone A parcels shall be contingent upon the following:

i. Prior approval of the Project work for Zone A by the City in accordance with Exhibit C; and
ii. Receipt by the City of a legal description of each parcel comprising Zone A, a site map, and a title report for each parcel;

B. Within forty-five (45) days of notice by the URA that the criteria in Paragraph 5(A) have been met, the Director of DPW will respond to the URA in writing and either (i) accept the proposed transfer(s), or (ii) object to the proposed transfer(s), which objection shall be made in compliance with Paragraph 5(C) below.

C. In the event of an objection, the City, through the Director of DPW, will provide the URA with a written statement of objections. Within forty-five (45) days of receiving such statement, the URA shall prepare a written plan as to how such objections shall be, or have been, cured. The City is under no obligation to accept the transfer of the parcels comprising Zone A until its objections are cured to the City's reasonable satisfaction, provided, however, that the City's objections to Zone A shall be limited to any failure to comply with the construction plans for Zone A that were previously approved by the City.

D. After written acceptance of the proposed transfer(s) by the City, the URA will deliver to the City a general warranty deed conveying the parcels comprising Zone A to the

City for and in consideration of One Dollar ($1.00). The URA will pay all applicable realty transfer taxes and recording fees.

E. At the time of conveyance to the City, the URA will assign all warranties for Project work on Zone A to the City, and the URA will require all warranties for Project work on Zone A to be assignable. The City and the URA agree that, during the period of their respective ownership of any portion of Zone A, they will remain compliant with the provisions necessary to maintain all warranties for Project work.

6. EASEMENTS: The City, HACP, PWSA, and the URA agree to grant all easements and/or to assist with obtaining those easements on their respective property that are required to effect the Project construction.

7. TERM: The term of this Agreement shall commence as of the date set forth above and shall conclude upon completion of all transfers of parcels within Zone A to the City.

8. FUNDING FOR MAINTENANCE FOR ZONE A:

A. Funding Generally. Except as set forth below, the respective owners of property within Zone A shall pay for maintenance on their respective parcels until the date of conveyance of the parcels comprising Zone A to the City, after which point the City shall be solely responsible for maintenance and funding for maintenance of the parcels conveyed.

B. Zone A Maintenance. The City currently intends to use, among other things, existing funding for East Liberty Park for maintenance of Zone A. The Parties acknowledge that final funding decisions are subject to the annual budget approval process of City Council.

C. Other Funding Sources. The Parties agree to cooperate and work together to obtain additional outside funding sources for the long-term maintenance of the Zones.

9. GOVERNING LAW: This Agreement shall be construed and interpreted in accordance with the laws of the Commonwealth of Pennsylvania without regard to its principles of conflict of law.

10. OTHER REQUIREMENTS: In connection with Project work conducted on property owned by a Party to this Agreement other than the contracting party, the contracting Party shall comply with the following, or substantially similar, requirements:

A. Insurance: the contracting Party shall require its general contractor to procure and provide proof of insurance coverage as set forth herein with the other Parties named as additional insured as to general liability and automobile liability on such policy throughout the term of the Project work. The contracting Party shall require that the general contractor provide the Parties hereto with a certificate of insurance evidencing such coverage, in not less than the following limits:

General Liability:	Per Occurrence	Aggregate
Bodily injury, including death, and property damage	$500,000	$1,000,000
Automobile liability	$500,000	$1,000,000

Worker's Compensation – Statutory

All policies shall be on an occurrence basis. In the event that the term of the insurance shall expire prior to the expiration of the agreement at issue, the contracting party shall ensure that its general contractor renew its insurance coverage in a timely manner and promptly cause a certificate of insurance evidencing such renewal. The contracting Party shall also provide the Parties with evidence of errors and omissions insurance coverage with respect to any architect(s) of record for the Project.

B. Indemnification. The contracting Party shall require its general contractor performing the Project work to indemnify and hold harmless the City, HACP, PWSA, and the URA, their officers, employees, and attorneys, from and against all liens, charges, claims, demands, losses, costs, judgments, liabilities and damages of every kind and nature whatsoever, including court costs and attorneys' fees, for personal injury, including death, and property damage, including loss or destruction thereof, arising out of any accident or occurrence on or adjacent to the URA, City and/or HACP property as a result of the Project work performed by it and/or any subcontractor(s) hired by such general contractor to perform the Project work.

C. Compliance with Laws. The contracting Party shall require its contractors to fully obey and comply with all federal, state and local laws, statutes, ordinances, resolutions and administrative regulations applicable to the Project work and any construction activities to be performed under any agreements relating to such Project work.

11. HOME RULE CHARTER: This Agreement is subject to the provisions of the Pittsburgh Home Rule Charter.

12. ANTI-DISCRIMINATION: All Parties hereto shall comply with the applicable sections of the Pittsburgh Code: Title Six - Conduct, Article V - Discrimination, and any amendments thereto.

13. COMPLIANCE WITH LAWS: All Parties hereto shall fully obey and comply with all laws, ordinances, and administrative regulations applicable to the subject of this Agreement.

14. AMENDMENT AND TERMINATION: This Agreement contains all terms and conditions agreed upon by the Parties hereto, and no other agreement, oral or otherwise, regarding the subject matter of this Agreement shall be deemed to exist or to bind any of the Parties hereto. This Agreement may not be changed, modified, discharged or extended except by a written amendment duly executed by the Parties.

15. ASSIGNMENT: No Party to this Agreement may assign its rights or duties to another individual or entity, except as set forth in this Agreement or with the prior written consent of the other Parties to this Agreement.

16. AUTHORIZING RESOLUTIONS: This Agreement is entered into by the City of Pittsburgh pursuant to Resolution No. 481 of 2017, effective August 10, 2017, by PWSA Agenda Item No. 109 dated May 26, 2017, and by the URA pursuant to Resolution No. 49 of 2015 and No. 110 of 2016, duly adopted by its members on February 12, 2015 and April 14, 2016.

17. PARK NAMING RIGHTS. The Parties to this Agreement acknowledge and agree that the naming rights to all City properties, including parks, are subject to Chapter 173 of the Pittsburgh City Code, Commission on Naming Public properties. The Parties shall not attempt to name, or offer to name, any property within Zone A without prior written approval of the City.

18. DESIGN NOTIFICATIONS. The URA (or other entity managing Project work on Zone A) shall provide the City (including DPW, Parks Department, Department of City Planning, and the Mayor's Office) with design drawings for review and comment at conclusion of (1) schematic design, and (2) design development, and shall provide construction documents prior to construction commencement. The City shall have forty-five (45) days to provide comments to each set of drawings. If no comments are received within this period, the URA will move forward with design/construction.

[SIGNATURE PAGES FOLLOW]

WITNESS/ATTEST:

Secretary to Mayor

CITY OF PITTSBURGH

By: _____
Mayor

WITNESS/ATTEST:

10-4-17

By: _____ 10/4/17
Director
Department of Public Works

WITNESS/ATTEST:

By: _____
Director
Department of Parks & Recreation

EXAMINED BY:

Deputy City Solicitor

APPROVED AS TO LEGAL FORM:

City Solicitor

WITNESS/ATTEST:

Assistant Secretary

URBAN REDEVELOPMENT
AUTHORITY OF PITTSBURGH

By: _____
Robert Rubinstein
Executive Director

APPROVED AS TO LEGAL FORM:

Attorney

WITNESS/ATTEST:

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

By: _____
Caster D. Binion
Executive Director

APPROVED AS TO LEGAL FORM:

_____
Attorney

WITNESS/ATTEST:

PITTSBURGH WATER & SEWER AUTHORITY

By: _____
Robert A. Weimar
Interim Executive Director
Pittsburgh Water & Sewer Authority

APPROVED AS TO LEGAL FORM:

_____
Attorney

EXHIBIT A
Map

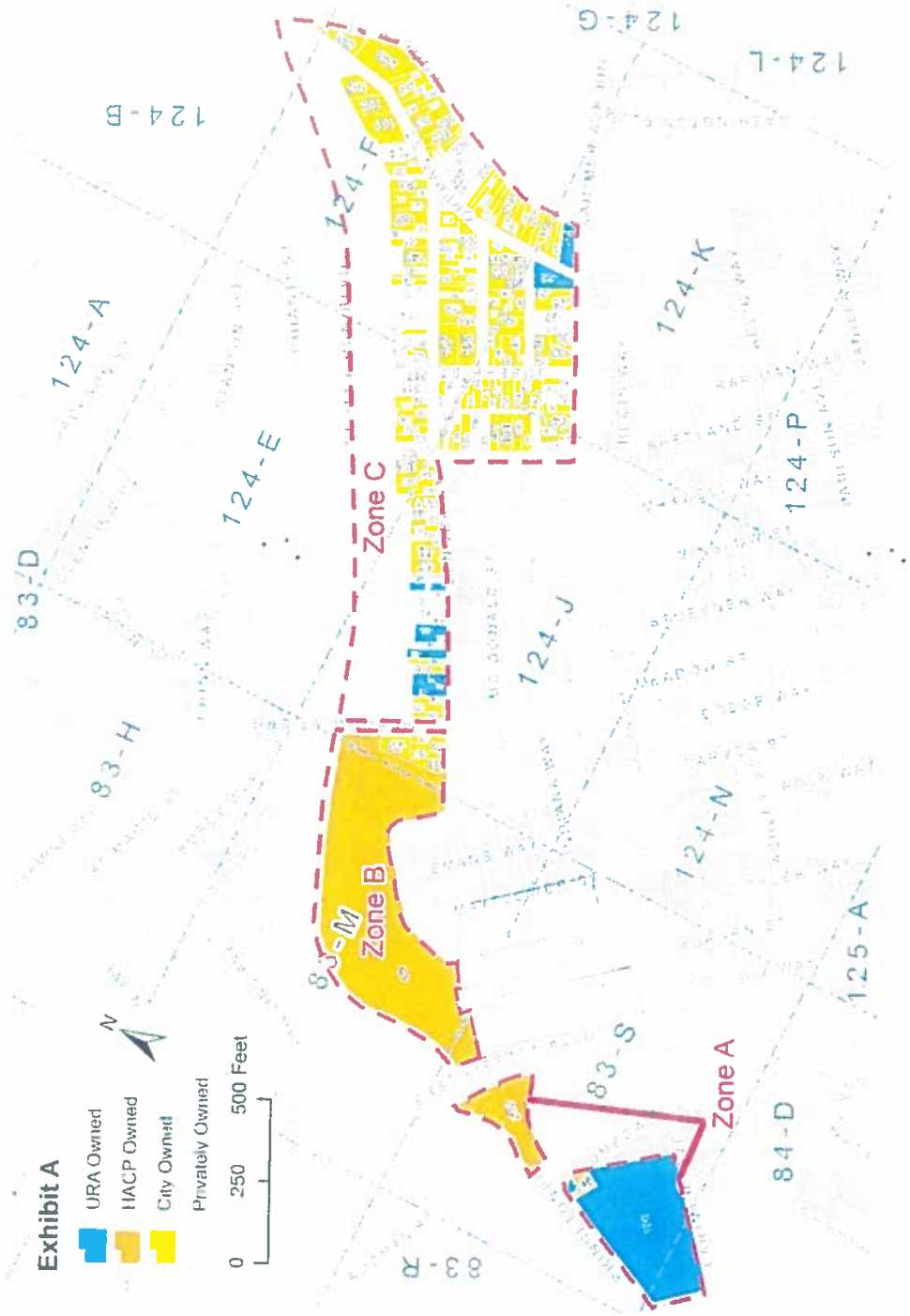


EXHIBIT B

Liberty Green + River Roots Funding Plan

Uses		
PPC Coordination + Community Engagement	$ 25,000.00	
Larimer Park Design + Community Engagement	$ 562,370.00	
River Roots Design + Community Engagement	$ 120,000.00	
River Roots Artist Fees	$ 60,000.00	
Construction - Liberty Green*	$ 4,611,430.00	
Construction - River Roots*	$ 280,000.00	
Construction Administration**	$ 342,400.10	
Total	$ 6,001,200.10	
Sources	**Committed**	*Request Funding - Decisions Pending*
City		
URA Miscellaneous Funds	$ 320,950.00	
CNI Capital Funds - City* **	$ 1,000,000.00	
PWSA - Choice Commitment Stormwater	$ 500,000.00	
ALCOSAN GROW Fund	$ 302,000.00	
County - CITF		*$ 250,000.00*
State		
GTRP	$ 150,000.00	
DCNR C2P2	$ 250,000.00	
RACP		*$ 2,000,000.00*
CNI Funds - Federal	$ 1,000,000.00	
Foundation		
The Heinz Endowments		*$ 650,000.00*
Richard King Mellon Foundation		*$ 650,000.00*
McCune Foundation		*$ 275,000.00*
Art Place America Grant	$ 400,020.00	
Committed Sources	**$ 3,922,970.00**	
Pending Sources		*$ 3,825,000.00*
Project Gap	$ (2,078,230.10)	

*Construction cost estimates are based on design development with 15% contingency.

** Construction Administration estimated to be 7% of total construction costs.

The URA is currently fundraising to fill the projected gap. The URA has more than $3.8 million in pending grant applications and is awaiting decisions.

***In the final Project Funding Plan, which must be approved via the process set forth in Paragraph 2 of this Cooperation and License Agreement, the URA will itemize the sources and planned expenditures for the City's contribution, which shall be limited to amounts separately authorized by City Council via legislation and/or agreements, as applicable. Each source listed should include reference to the project name, amount, and account code information.

EXHIBIT C
Approval Protocol

A. All Project Work transferred or contemplated to be transferred to the City shall be accomplished in accordance with applicable laws (including applicable public bidding laws) and all design plans/construction documents shall be subject to the prior written approval of the City. The City's approval shall include a review and approval of plans and specifications by the City's Department of Public Works ("DPW"), and the Art Commission, as applicable. DPW shall approve or object to Project plans within forty-five (45) days of receipt of complete plans and specifications in accordance with the provisions of Paragraph 5 of the Agreement. Any City objections shall be provided in writing and provide detail sufficient for the URA to respond to its concerns. The URA shall provide a copy of all As-Built Drawings to the City upon completion of the Project work, or significant parts thereof, as applicable. Additionally, during the completion of the Project work, the City will be a participant in all construction-related job meetings and will receive a copy of all minutes from construction-related job meetings.

B. During the pendency of the Project, the URA will provide DPW with a monthly Project Status Report, including a Statement of Values for construction and a pending construction schedule.

C. Upon completion of the Project work in Zone A, the URA will notify the City in writing of the completed work prior to accepting the contractor's work. Upon receipt of such notification, the City will have forty-five (45) days to inspect the contractor's completed Project work.

D. Upon completing its inspection and absent any objection thereto or after any outstanding punch list items have been corrected, the City will forward to the URA written approval of the Director of DPW to accept said work.

COMMUNITY SURVEY

Little Negley Run at Larimer Park (Larimer Park Zone B)

The Pittsburgh Parks Conservancy and the Negley Run Watershed Task Force have engaged a consultant team to create a vision for Little Negley Run at Larimer Park to connect people and water from Larimer and Highland Park to Little Negley Run and to each other. This survey is designed to solicit community feedback on their priorities for a future park and how they see it fitting into the neighborhood.

Map of parks and green space in Larimer

Little Negley Run at Larimer Park

1**a)** **Of the other parks in the neighborhood, which features are you most excited about or which will you use most** (Circle all that apply)

Liberty Green/River Roots:

- Trails/pathways/sidewalks
- Playground
- Open Areas
- Artwork
- Water features

Village Green:

- Stage and amphitheater
- Open Areas
- Benches/seating

Larimer Park:

- Basketball court
- Open Field
- Playground
- Walking Path

Other: _____

_____

_____

_____

_____

1b) Would you like to see all the parks in the neighborhood linked together in some way?

- Yes.
- No.
- Not sure.

1c) In the space below, please elaborate on your answer to the question above.

_____

_____

_____

_____

2) What are the top 3 things you want to see in Larimer Park Zone B in the upper portion (former housing authority site)? Select from the choices below (up to 3) or write-in your own.

- Picnic Tables
- Playground
- Benches
- Exercise equipment
- Trail System
- Overlooks
- Gathering Spaces
- Connection to Highland Park
- Accessible Areas for users of all abilities
- Rain Gardens (stormwater capture)
- Seeing how water moves through the site (stormwater conveyance)
- Opportunities to explore nature
- New Meadow Street Steps
- Preserve existing trees
- Get rid of invasive species
- Other _____

_____

3) What are the top 3 things you want to see in Larimer Park Zone B in the lower portion (valley along Negley Run Blvd)? Select from the choices below (up to 3) or write-in your own.

- Picnic Tables
- Benches
- Exercise equipment
- Trail System
- Overlooks
- Gathering Spaces
- Connection to Highland Park
- Rain Gardens (stormwater capture)
- Seeing how water moves through the site (stormwater conveyance)
- Accessible Areas for users of all abilities
- New Meadow Street Steps
- Opportunities to explore nature
- Rock outcrops
- Stream
- Other _____

_____

4) What are the biggest opportunities in creating this park? Select from the choices below (up to 3) or write-in your own.

- New connections for the neighborhood
- Integrating movement of water and people through natural area
- Connecting separated stormwater upstream to a stream and the river.
- Management of stormwater runoff and flood mitigation
- More green space for the community
- Learning about the park's role in the watershed.
- Other _____

_____

5) What are the biggest challenges in creating this park? Select from the choices below (up to 3) or write-in your own.

- Financing
- Interagency coordination
- Long-term management and maintenance
- Ensuring the park meets the needs of the community
- Providing a park experience that's access for users of all abilities
- Other _____

_____

6) Is there anything else we should know or concerns you have about this project?

_____

_____

_____

_____

_____

_____

_____

Thank you for participating in the Little Negley Run at Larimer Park Survey!

For more information contact:

John Stephen
Negley Run Watershed Task Force
(412) 606-7149
jwsdi@yahoo.com

The Virtual Watershed Walk video can be viewed at:

http://www.livingwaterspgh.org/landing-page/living-watersheds/negley-run-a42/projects-in-negley-run/lnrlarimerpark/


Pittsburgh
Parks
Conservancy
www.PittsburghParks.org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