



IMPLEMENTATION STRATEGY

PROJECT PRIORITIZATION

While the Action Plan represents an exciting, community-driven vision for the future of Mellon Park, the park in its current condition is still a well-used, important community asset. Attempting to implement the Action Plan in a singular construction effort would be cost-prohibitive and significantly disruptive to the use of the park for several years. A phased implementation approach ensures the park remains a vibrant, usable open space for the community while transforming into a space that will better serve generations to come.

Project Delineation

The Action Plan was carefully studied, analyzed, and delineated into a series of individual, implementable projects that consider the scale and scope of the improvements, potential impacts on park use during construction, and cost of construction.

These project delineations are suggestions only. The projects identified can be grouped into larger construction efforts, or broken down into even smaller projects as budget allows or community priorities shift.

Evaluating Priorities

The order in which projects are implemented is also critical to meeting the needs of the community. A scoring matrix was developed to better understand how each project met the community goals and priorities identified in the Action Plan.

Each project was evaluated based on the following criteria: Community Priority, Construction Sequence, Stormwater Benefit, and Cost. Projects were scored on a scale of 1 to 3 for each category, as explained herein:

Community Priority



Projects were first scored based on their ability to address community needs and priorities identified during the engagement process. Projects that addressed significant community needs were given the highest scores in this category.

- 1- Low Community Priority
- 2- Moderate Community Priority
- 3- High Community Priority

Construction Sequencing



Projects were next scored based on how they fit into a phased implementation approach. Projects that are independent of other work were given the highest score, as these provide the greatest flexibility for future implementation. Projects that are sequence dependent, or require other work to take place before they can be implemented, were scored lower.

- 1- Cannot be constructed until other projects have been completed.
- 2- Project must be constructed before other projects can be completed.
- 3- Standalone project that can be constructed at any time.

Stormwater Benefit



Projects were also evaluated on their potential to provide stormwater benefit to the park and surrounding area. Projects that support the implementation of stormwater infrastructure were given the highest score, as they have the potential to provide stormwater benefit to the surrounding community and support other projects that are unable to effectively manage stormwater due to scope or site constraints.

- 1- Little or no stormwater management infrastructure
- 2- Moderate stormwater management infrastructure
- 3- Significant stormwater management infrastructure

Cost \$\$\$

Finally, projects were scored based on their estimated cost to implement. Projects with lower costs scored the highest, as they are easier to fund raise for and implement. Projects with higher costs require more planning and funding sources, and scored lower.

- 1- Significant cost, \$3M and higher
- 2- Moderate cost, \$1M to \$3M
- 3- Low cost, \$1M and under.

Priority Organization

After each project was scored, they were then further evaluated and organized into groups or 'Tiers'.

Tier 1 Priority Projects

Tier 1 represents projects that are high community priority, relatively lower-cost, standalone construction projects. These projects provide the greatest community impact and are more readily achievable from a construction sequencing and fundraising perspectives. Tier 1 projects should be the initial focus for implementation.

These projects do not need to be constructed in the sequence shown, however projects that provide stormwater benefits should be implemented first, as they can accommodate potential stormwater impacts from future phases.

Tier 2 Priority Projects

Tier 2 represents projects that are high community priority, but must follow a specific sequence for construction and implementation. These projects have been organized in a sequence the minimizes the disruption of park uses and amenities to the greatest extent possible. Consideration should be made to grouping projects together into larger efforts, as this will help expedite completion and deliver community priorities.

Tier 3 Priority Projects

Tier 3 represents projects that are standalone construction projects, but are not deemed to be high community priorities. These should be viewed as 'projects of opportunity' and be considered if specific funding sources become available that would facilitate implementation. The order in which these projects are organized is not critical, but projects with stormwater benefits should be implemented sooner.

Tier 4 Priority Projects

Tier 4 projects were categorized as park-wide improvements that can be easily implemented incrementally or in larger capital investment projects. These projects are generally ongoing maintenance, repairs, and upgrades of existing park amenities and infrastructure that the Action Plan proposes to preserve and keep in its current configuration.

Budget Considerations

The COVID-19 pandemic and subsequent supply chain issues and labor shortages have had a profound impact on the design and construction industry. Recent pricing for labor and materials has become volatile and unpredictable. Due to the uncertainty around cost estimation, the Action Plan does not list estimated project budgets, as these numbers could be unreliable depending on changing market conditions and the timing of implementation.

The Action Plan does however provide guiding design principles, anticipated project scope, and recommendations for consultant teams. It is the intention that these resources will help the city and their partners properly and accurately budget for the design and construction of priority projects when funding becomes available.

PRIORITY PROJECT MATRIX

		COMMUNITY PRIORITY		CONSTRUCTION SEQUENCE		STORMWATER BENEFIT		COST		SCORE
TIER 1	Rectangular Field Improvements	  	3	  	3	  	3	\$\$\$	3	12
	Traffic Calming / Beechwood Blvd.	  	3	  	3	  	3	\$\$\$\$\$\$	2	11
	Existing Entrance Upgrades	  	3	  	3		1	\$\$\$	3	10
	New Entrances & Pathways	  	3	  	3		1	\$\$\$	3	10
	Terrace Garden Restoration	  	3	  	3		1	\$\$\$\$\$\$	2	9
TIER 2	Playground/Splash Pad Relocation	  	3	 	2		1	\$\$\$\$\$\$	2	8
	Basketball Court #1 Relocation	 	2	 	2	 	2	\$\$\$	3	9
	North Parking Lot & Basketball Court #2	  	3		1	  	3	\$\$\$\$\$\$\$\$\$	1	8
	Community Green & Plaza	  	3		1	 	2	\$\$\$\$\$\$	2	8
TIER 3	Olmsted Rain Garden	 	2	 	2	 	2	\$\$\$	3	9
	Mellon Lawn & Frew Knoll	 	2	 	2		1	\$\$\$	3	8
	Little League Baseball Field Upgrades	 	2	 	2		1	\$\$\$\$\$\$	2	7
	Community Garden Space		1	 	2		1	\$\$\$\$\$\$	2	6
	Pickleball Court		1	  	3		1	\$\$\$	3	8
	Full-sized Baseball Field Upgrades		1	 	3	  	3	\$\$\$\$\$\$\$\$\$	1	8
	South Parking Lot Upgrades	 	2		1	 	2	\$\$\$\$\$\$	2	7
TIER 4	'Campus' Facility Upgrades	 	2	 	2		1	\$\$\$\$\$\$	2	7
	Pathway & Lighting Improvements	  	3	 	2		1	\$\$\$\$\$\$	2	8
	Historic Walls & Fence Restoration		1	 	2		1	\$\$\$\$\$\$	2	6
	Tree Planting	  	3	 	2	  	3	\$\$\$	3	11
	Lawn Conversion		1	 	2	 	2	\$\$\$	1	6
	Site Amenity Upgrades	  	3	 	2		1	\$\$\$	3	9

TIER 1

PRIORITY PROJECTS



- P1 Rectangular Field
- P2 Traffic Calming and Beechwood Blvd.
- P3 Existing Entrance Upgrades
- P4 New Entrances and Pathways
- P5 Terrace Garden Restoration

P1

TIER 1 PRIORITY PROJECT RECTANGULAR FIELD IMPROVEMENTS



SCOPE

- Rectangular field, approximate minimum dimensions of 150' x 180'.
- Crowned field grading with under-drainage
- Athletic field lighting
- Terraced seating, bike racks, drinking fountain, and other amenities
- Stormwater storage and associated infrastructure
- New sidewalk, pathways, and stair connections
- Electrical and water connections to accommodate events and field maintenance
- New trees and naturalized planting areas
- Restoration of ancillary areas to lawn space
- Thoughtful incorporation of sculpture or art

Guiding Concepts

The rectangular field is intended to provide informal practice space for youth football, soccer, cheer, and other sports. The field should be sized to provide adequate space to facilitate practices and skill development. Ideally, the field should be at least half of a regulation football field, or a U-10 soccer field.

The space should be flexible to accommodate both organized practices, informal field use, and host community events. Terraced seating and site amenities should be thoughtfully integrated into the design to make it a desirable location for field users and community members alike. The designers should incorporate water and power access to facilitate field maintenance and event management.

The field should be appropriately graded with a center crown and provide adequate drainage to ensure playability in wet conditions

or after storm events. Field lighting should be included to allow for evening use.

The rectangular field is an ideal location for potential stormwater storage. At a minimum, stormwater infrastructure should be designed to capture and treat runoff associated with this project and later Tier 1 Priority projects. Additional storage should be considered as grant opportunities or funding partners allow.

Other considerations

Permitting of the field space should give priority to youth football, cheer, soccer, and other sports that utilize a rectangular field. The field should only be used 500-600 hours per year.

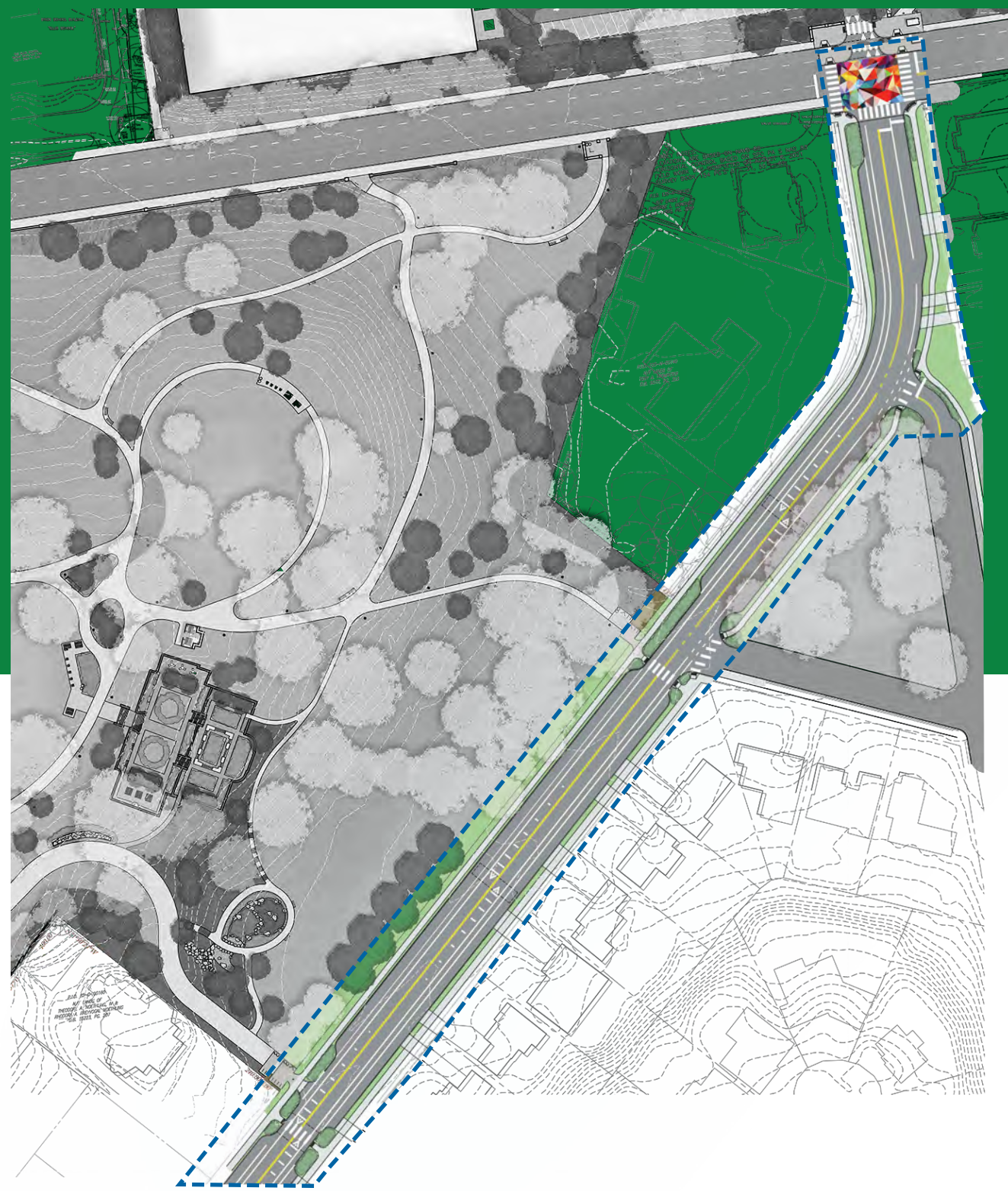
If funding allows, the Rectangular Field Improvements and Little League Baseball Field Upgrades projects could be designed and constructed as part of the same phase.

RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Civil Engineer
- Structural/Geotechnical Engineer
- Electrical Engineer
- Event Space Planner
- Artist
- Arborist

P2

TIER 1 PRIORITY PROJECT TRAFFIC CALMING & BEECHWOOD BLVD IMPROVEMENTS



Guiding Concepts

Providing safe access to the park for pedestrians and cyclists is one of the biggest priorities of the community. At a minimum, traffic signals should be reprogrammed to provide a pedestrian-only crossing phase at the intersections of Shady and Fifth Avenues, Beechwood Blvd and Fifth Avenue, Fifth and Penn Avenues, and Penn Avenue and Bakery Square Blvd. These crossing phases should be pedestrian activated to limit the impact on vehicular traffic through the area.

Additional traffic calming measures should be considered at Fifth Avenue, including reducing the speed limit to 25 MPH, and the incorporation of transverse markings to alert drivers to the speed reduction.

Beechwood Blvd should serve as the main pedestrian route of connection between the two sides of the park. As such, the roadway improvements should be designed to calm traffic and

encourage pedestrian and cyclist use. Trees and rain garden planting should be considered to provide a more 'park-like' aesthetic. Direct connections to the Lyndhurst Green open space should also be factored into the design.

The proposed road improvements also provide an opportunity to integrate stormwater storage in the right-of-way. It is of paramount importance that the street trees be protected and that proposed stormwater interventions and utility connections consider impacts to root systems of adjacent trees.

Other Considerations

The designers should consider the use of art or signage to reinforce and enhance the pedestrian and cyclist connection along Beechwood Blvd. Potential traffic calming measures on Shady Avenue and Penn Avenue should be studied and considered.

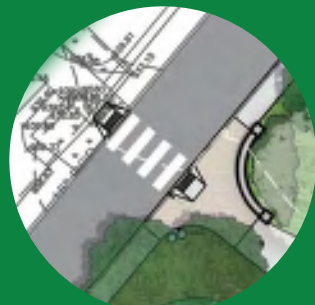
SCOPE

- Dedicated pedestrian-only crossing phase at signaled intersections
- Reduction of speed limit to 25 MPH and transverse markings Fifth Avenue
- Reconstruction of Beechwood Boulevard to include bulb outs and raised crosswalks
- Reconfiguration of intersection of Beechwood Blvd and Reynolds Street
- Subsurface stormwater storage below bike and parking lanes.
- Tree plantings, rain gardens and surface stormwater storage at bulb outs

RECOMMENDED CONSULTANT TEAM

- Civil Engineer (Prime)
- Traffic Engineer
- Landscape Architect
- Geotechnical Engineer
- Artist
- Arborist

P3 TIER 1 PRIORITY PROJECT EXISTING ENTRANCE IMPROVEMENTS



BAKERY SQ. BLVD &
SALLY'S PATH



BAKERY SQ. BLVD &
LIVING PLACE



BAKERY SQ. BLVD
& PENN AVE



FIFTH AVENUE @
TENNIS BUBBLE



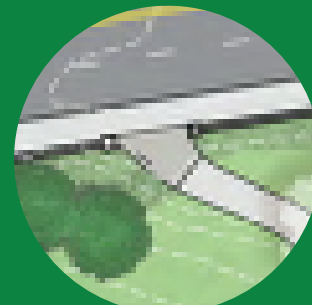
FIFTH AVE &
BEECHWOOD BLVD



FIFTH AVE
(WEST ENTRANCE)



FIFTH AVE
(MAIN ENTRANCE)



FIFTH AVE
(EAST ENTRANCE)



BEECHWOOD AVE
(WEST ENTRANCE)



BEECHWOOD AVE
(EAST ENTRANCE)

SCOPE

- New entry plazas with specialty paving at existing entrances
- Seatwalls, piers, or other form of gateway where appropriate
- Park I.D. signage, wayfinding signage, and interpretive signage where appropriate
- Benches, trash receptacles, bike racks, and other site furnishings where appropriate
- Ancillary site work

Guiding Concepts

The existing park entrances should be upgraded to provide clarity, consistency, and uniformity to how park users experience an open and welcoming sense of arrival at both sides of the park. These entrance upgrades will provide a sense of identity for Mellon Park as a whole and help to unify the two sides of the park.

Designers should consider the organization of signage, site amenities, and materials at all park entrances, as well as the appropriateness of defining primary and secondary park entrances. The standards identified in this project will apply to future entrances and other projects.

Improvements to park entrances should include the creation of appropriately scaled entry plazas, coupled with signage and site furnishings to clearly identify Mellon

Park as public open space. Where appropriate, piers, walls or some other form of 'gateway' should be incorporated into the entry sequence.

Park signage should be thoughtfully integrated into existing entrances using the city's signage standards. Designers should consider which entrances should receive park identification signage, wayfinding signage, interpretive signage, or a combination of the three. Interior park signage should also be considered as appropriate.

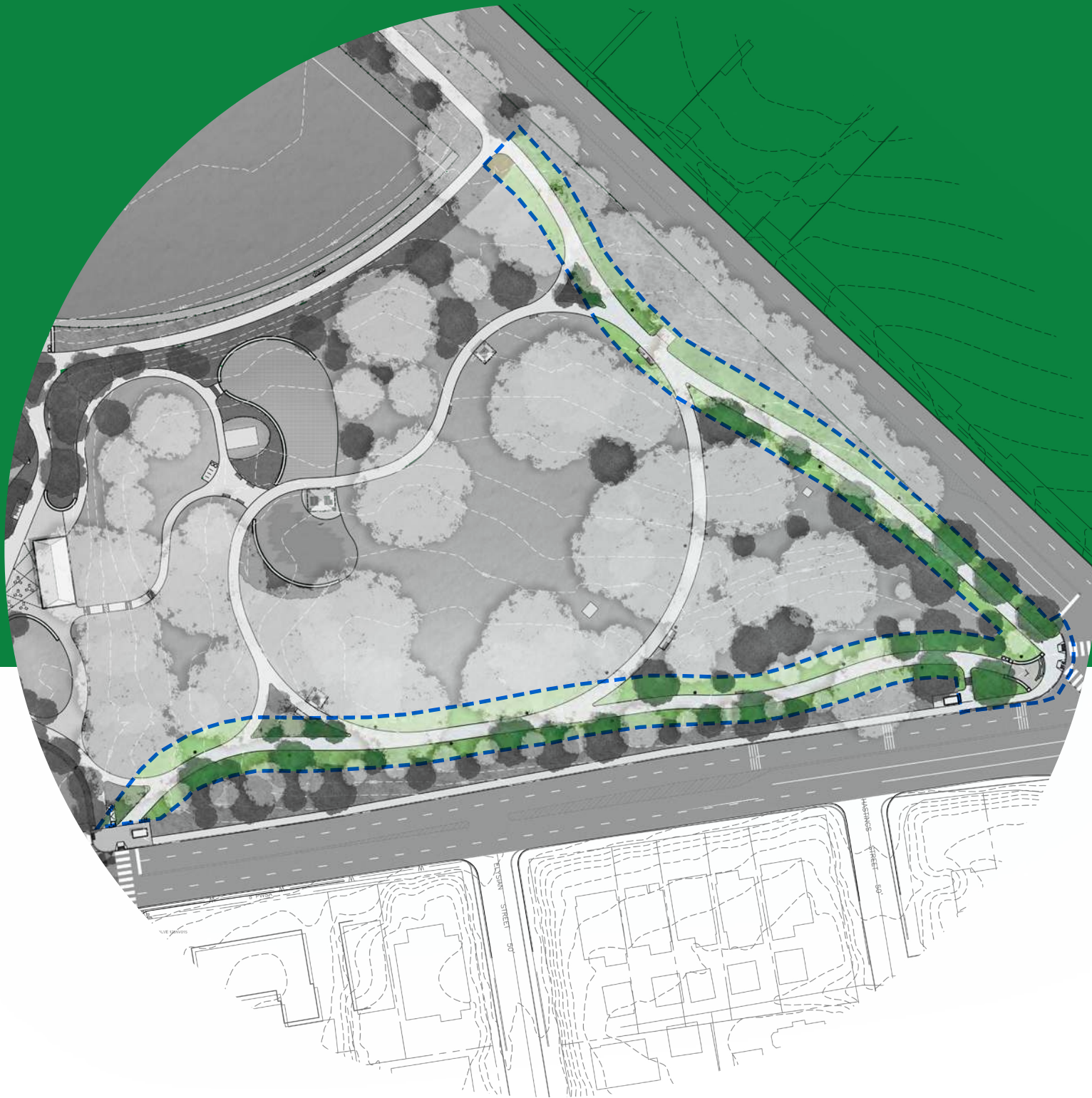
Material choices need to be carefully selected to ensure appropriateness in the context of both historic and non-historic site features.

OTHER CONSIDERATIONS

If funding allows, the New Entrances and Pathways project (P4) could be designed and constructed as part of the same phase. Park I.D. signage at entrances should be considered a high priority, and can be installed before entry plaza work if funding allows.

RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Preservation Landscape Architect/Historian
- Civil Engineer
- Structural/Geotechnical Engineer
- Artist
- Arborist



Guiding Concepts

New park entrances and pathways should be designed to increase opportunities for park access and improve connectivity between current and future park amenities. Park entrances should follow the signage and material design standards set forth during the P3-Existing Entrance Upgrades project. In general, all new pathway connections shall meet ADA requirements to greatest extent achievable.

Improvements in Mellon Park South should focus on creating additional points of entry and provide better connections to the 'campus' facilities located in the western portion of the park. A new park entrance should be established at the corner of Fifth and Shady Avenue, reincorporating the existing historic stairs and providing an accessible route. A new park entrance should also be provided at the eastern most portion of the Fifth Avenue park edge, in

the approximate location of the Darsie Residence driveway that had once existed on site. Pathway connections should be established from these new entrances into the interior of the park make stronger connections between the existing buildings and the rest of the park.

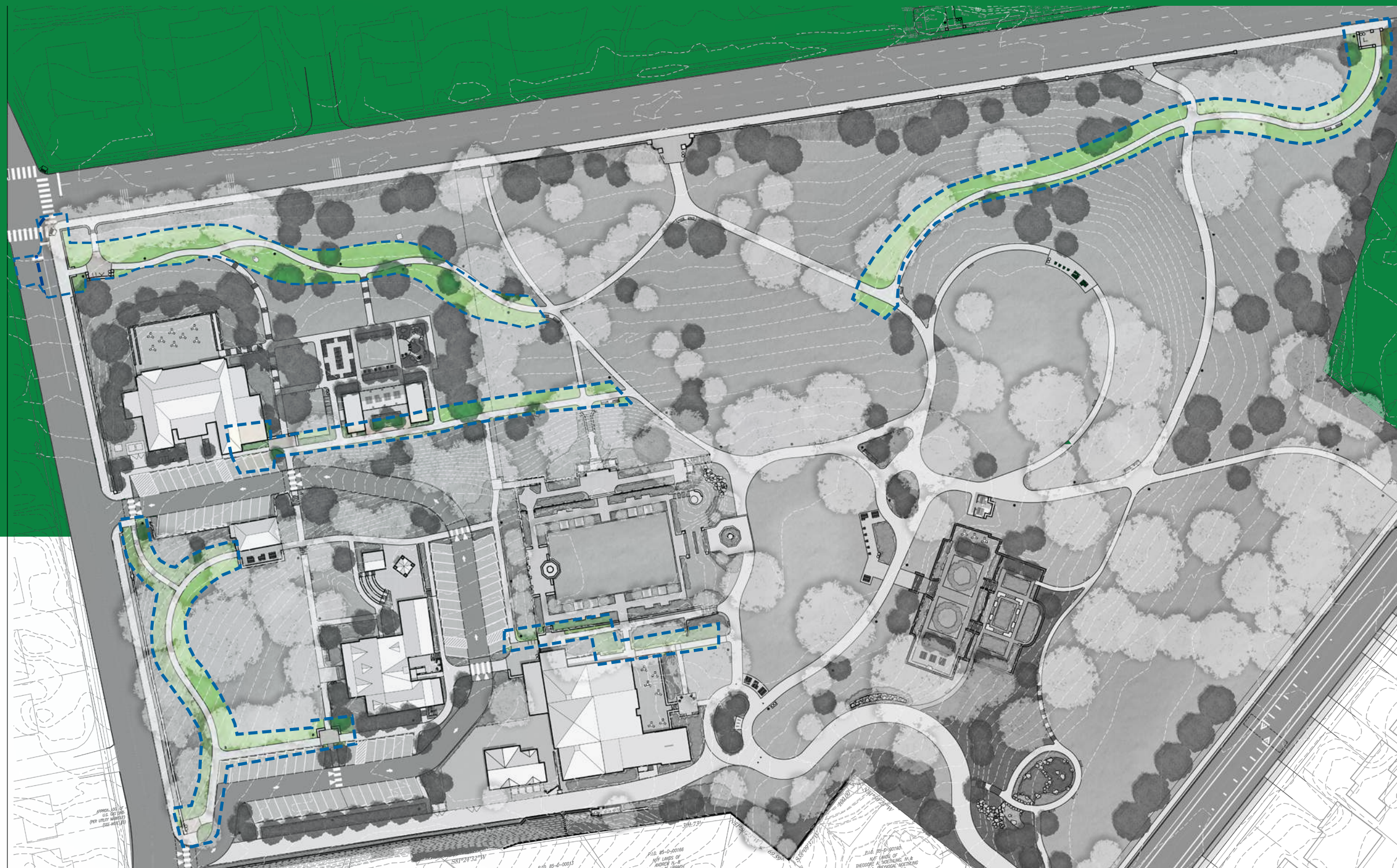
Improvements on Mellon Park North should focus on creating a new park entrance at the corner of Fifth and Penn Avenues. Pathway improvements should establish new shared use paths, connecting the corner of Fifth and Penn Avenues to the park entrance at Fifth and Beechwood and to the existing 10'-wide shared use path running parallel to Penn Avenue (adjacent to the full-sized baseball field).

Designers should consider the incorporation and implementation of pathway lighting, benches and other site furnishings, tree planting, and other associated site work closely associated with new pathways and entrances.

SCOPE

Mellon Park North

- New park entrance at the corner of Fifth and Penn Avenues.
- New shared use pathway from the intersection of Beechwood Blvd and Fifth Avenue to the corner of Fifth and Penn Avenues.
- Pathway lighting and site furnishings where appropriate.



OTHER CONSIDERATIONS

If budget allows, consideration should be given to grouping the New Entrances and Pathway project with the Existing Entry Upgrades project. Additionally, there may be opportunity to group this work with general pathway upgrades and maintenance work required in the park.

RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Preservation Landscape Architect/ Historian
- Civil Engineer
- Structural/Geotechnical Engineer
- Artist
- Arborist

SCOPE

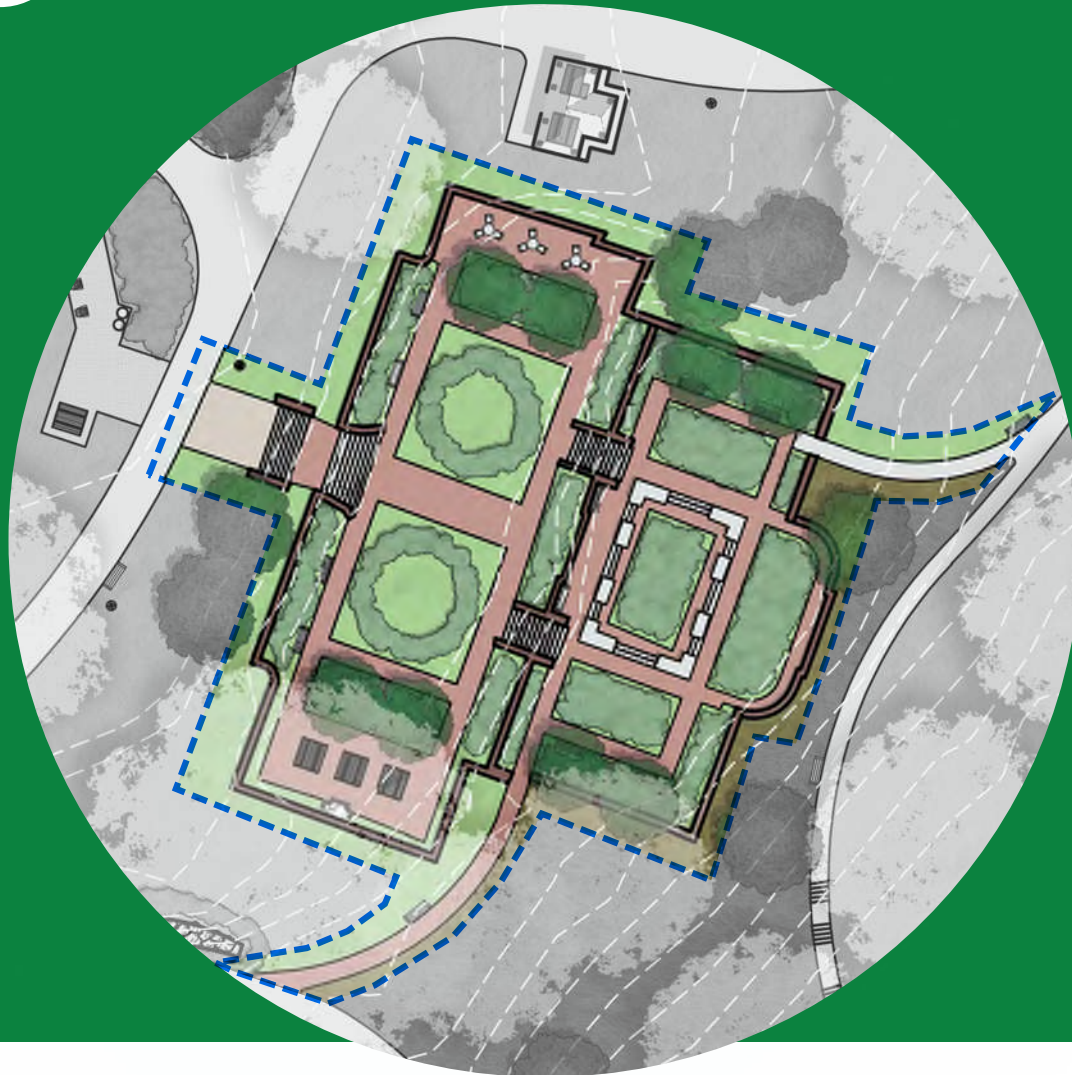
Mellon Park South

- New park entrances at the corner and the eastern most portion of the Fifth Avenue edge.
- Pathway connections from new entrances to interior of the park.
- Pathway connections from 'campus' area to the interior of the park, including new accessible routes.
- Pathway lighting and site furnishings where appropriate.

P5

TIER 1 PRIORITY PROJECT

TERRACE GARDEN RESTORATION



Guiding Concepts

The Terrace Garden is a unique historic asset in the city's park system. The space should be restored to the same level of quality and thoughtfulness that was provided to the Walled Garden as part of its 2009 restoration effort. These spaces should be considered complimentary to one another, and should be designed accordingly.

The designers should use the Secretary of Interior's Standards for the Treatment of Historic Properties as a guide for the restoration and reconstruction of this historic space. A thorough assessment of the garden walls, stairs, paving, and other structures should be performed to understand which site features can be restored, repaired, or require reconstruction.

The design must also recognize that the function of the garden has changed over the years. It is imperative that the designers

strike a balance between restoring and honoring the historic design, and providing for and enhancing contemporary uses. Examples of this include preserving the Shakespeare planting design on the lower terrace, which has been cared for by the Herb Society. Other considerations include reinterpreting the historic planting design of the upper terrace using native plant material, which provide greater biodiversity and habitat opportunities for city wildlife.

A complete, historically accurate restoration of the garden will be cost prohibitive. The designers should carefully consider material choices, construction techniques, and other design options that respect the historic design while being cost effective.

SCOPE

- Restoration, repair, and reconstruction of historic walls and stairs.
- Restoration of historic paving patterns.
- Reconstruction/reinterpretation of coping, balustrades, sculptures, and other site features using contemporary materials.
- Preservation of existing trees and the Shakespeare Garden on the lower terrace.
- Reinterpretation of historic planting design using native plant material.
- New benches, tables, and other site furnishings.
- Water and electrical connections to facilitate garden maintenance and small scale events.

OTHER CONSIDERATIONS

If budget allows, consideration should be given to grouping the Terrace Garden Restoration project with the Olmsted Rain Garden project. This approach would both provide stormwater infrastructure to offset any potential stormwater impacts from the restoration effort.

RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Preservation Landscape Architect/Historian
- Civil Engineer
- Structural/Geotechnical Engineer
- Artist
- Arborist

TIER 2

PRIORITY PROJECTS

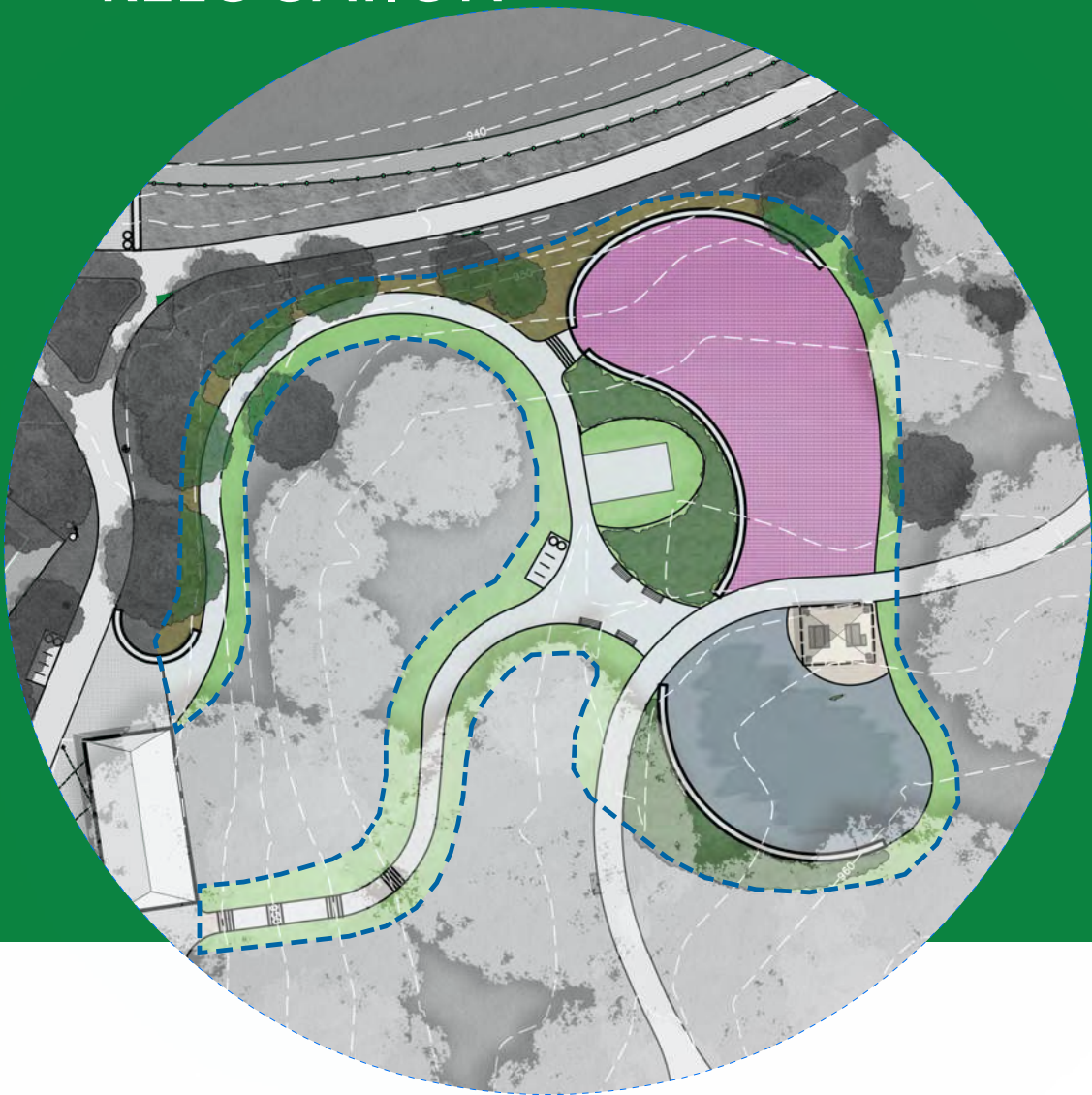


- P6** Playground & Splash Pad Relocation
- P7** Basketball Court #1 Relocation
- P8** North Parking Lot and Basketball Court #2
- P9** Community Green and Plaza Space

P6

TIER 2 PRIORITY PROJECT

PLAYGROUND & SPLASH PAD RELOCATION



Guiding Concepts

The playground and splash pad will need to be relocated first to facilitate the proposed reconfiguration of the north parking lot. The proposed location of these spaces is intended to create a ‘children’s grove’ for kids and families, nestled amongst existing trees and located away from vehicular traffic and busier sections of the park.

The design of the play equipment and splash pad should take inspiration from the park’s arboretum status. The designers should consider play equipment, colors, and materials that reinforce natural themes and elements, and would be considered appropriate for an arboretum setting. Vertical play equipment should be considered to both give children a sense of immersion in the tree canopy, while also minimizing the footprint on the ground plane. The play spaces and site amenities should also be designed to embrace and encourage the use of the large open lawn space for play, gathering, and other informal uses.

The new playground and splash pad areas should be moderately sized, thoughtfully designed into the existing landscape and topography, and

should limit site disturbance to the greatest extent possible. Retaining walls should be used where practical to limit the extents of grading, provide seating opportunities, and provide a sense of enclosure where needed. The designers should also consider the use of slopes and embankments as play elements to accommodate grade changes.

To reduce water consumption and the need for high-flow water service, the proposed splash pad should be designed to operate on a recirculating system. Record plans show existing electrical, water, and sewer utilities are present at the top of the hill in the relative proximity of the proposed play spaces. The designers should evaluate the conditions of these utilities and reuse them to the greatest extent possible to limit utility runs and trenching.

Existing trees and their rootzones must be preserved and protected. An arborist should be included on the project team to evaluate tree health and develop specifications and procedures for the design and construction of the play spaces in and around the tree canopy.

SCOPE

- New playground space, play equipment, and rubber safety surfacing, approximately 5,250 SF in size
- New splash pad, spray features, recirculation system, and associated utility connections, approximately 3,500 SF in size
- New accessible pathways, stairs, site walls, and other site features
- Benches, bike racks, drinking fountain, trash receptacles, picnic tables, and other site amenities
- New picnic shelter
- Demolition of existing playground, splash pad, and picnic shelter and conversion into temporary lawn space
- Thoughtful incorporation of sculpture or art
- New trees and ornamental planting using native plant species.

OTHER CONSIDERATIONS

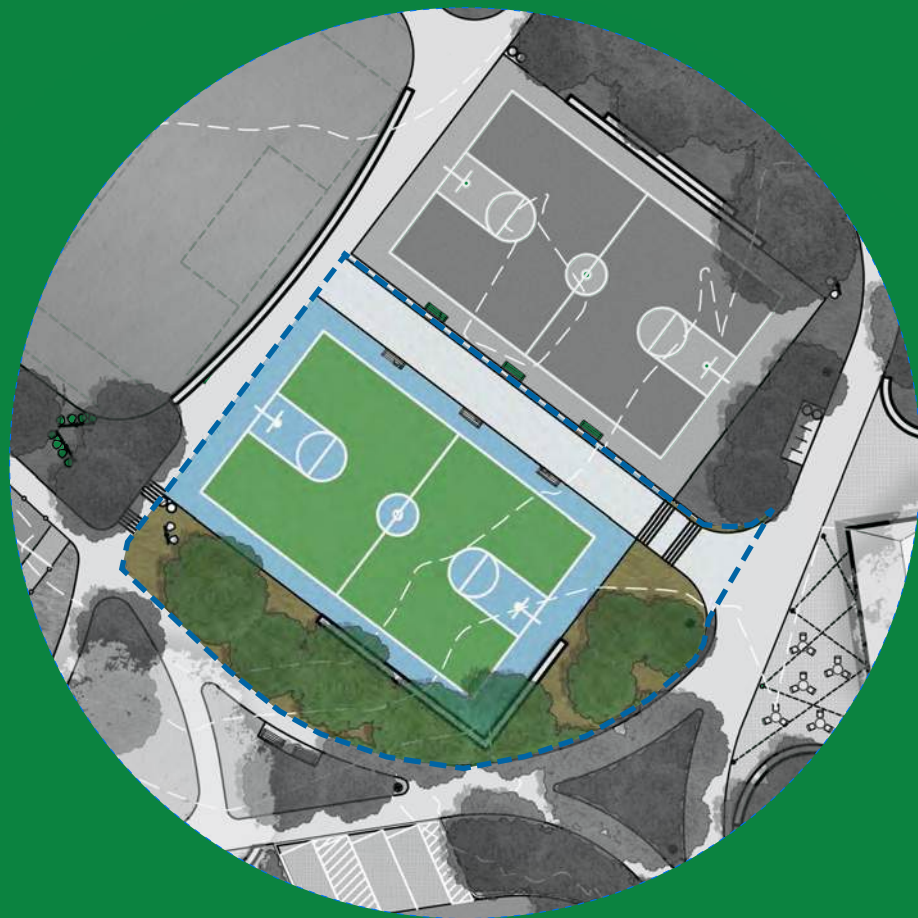
The playground and splash pad areas should also be considered opportunities for artistic expression. Custom pieces that provide play value while serving as an artistic element in the site should be explored in the early design stages.

RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Civil Engineer
- Structural/Geotechnical Engineer
- Electrical Engineer
- Event Space Planner
- Artist
- Arborist

P7

TIER 2 PRIORITY PROJECT
BASKETBALL COURT #1 RELOCATION



Guiding Concepts

The basketball courts will also need to be relocated to facilitate the proposed reconfiguration of the north parking lot. However, the relocation of both courts would impact existing parking spaces, which are already insufficient to support demand. Assuming a phased approach, the relocation of a single court would provide for a space to play basketball when the existing courts are taken offline as part of the parking lot reconfiguration project.

The basketball court should be designed to provide a minimum of 50' x 84' of playing space, with at least 5' of overrun space past the side and endlines. The court should use city standard equipment and color sealcoating. Terrace seat walls should be implemented to help mitigate grade change and provide spectator seating. Bike racks, trash receptacles, and drinking fountains should also be incorporated to ensure user comfort

and enjoyment. Court lighting should also be considered to accommodate early evening use in the spring and fall.

The installation of subsurface stormwater infrastructure should also correspond with the basketball court relocation. At a minimum, the stormwater infrastructure should be sized to accommodate run off from the basketball court relocation, as well as any future projects.

The existing courts could remain in place until the North Parking Lot Reconfiguration project. However, the design team should consider demolition of one of the existing courts if a reduction in impervious surfacing is required to meet stormwater ordinances.

SCOPE

- New basketball court, 50'x84', city standard equipment and color sealcoating.
- Terraced seatwalls, stairs, pathway connections, and other structural elements.
- Court lighting and associated utility connections.
- Benches, trash receptacles, bike racks, drinking fountain, and other site furnishings
- Subsurface stormwater infrastructure and associated utility connections
- Optional: Demolition of one existing court and conversion into temporary lawn space
- Thoughtful incorporation of sculpture or art
- New Trees and naturalized planting area

OTHER CONSIDERATIONS

This project could be grouped with the larger North Parking Lot Relocation project, however, construction should be sequenced to install the new courts first and ensure no disruption of service to court users.

The basketball court surface should be considered an opportunity for murals or art early in the design process.

RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Civil Engineer
- Structural/Geotechnical Engineer
- Electrical Engineer
- Artist
- Arborist

P8

TIER 2 PRIORITY PROJECT

NORTH PARKING LOT & BASKETBALL COURT #2 RELOCATION



Guiding Concepts

During the planning process, community members expressed both a desire for expanded parking opportunities and a hesitancy to lose valuable green space to asphalt parking spaces. As such, the design of the relocated and reconfigured North Parking lot should aim to expand parking while maintaining a green, parklike aesthetic.

The parking lot design and layout should prioritize pedestrian safety and limit pedestrian and vehicular conflicts to the greatest extent possible. The design team should consider the use of one-way circulation, angled parking, bump outs, and strategically placed raised crossings to calm traffic and provide safe and clear pedestrian access. Entry plazas and associated pathways should be designed to complete pedestrian connections from the parking area to the rest of the park.

The parking lot design should also incorporate planted islands, tree

planting, and porous paving to break-up expanses of asphalt and maintain a parking lot aesthetic that is appropriate for a park setting. While removal of some trees will be required, the design should strive to protect and preserve as many existing trees as possible. The designers should consider how these site features can contribute to stormwater management on site. The parking lot should also be considered an opportunity to implement subsurface stormwater infrastructure.

The second basketball court should be relocated as part of this project. The court should be located adjacent to the previous relocated Basketball Court, and designed to match the dimensions, equipment standards, and sealcoating scheme of Basketball Court #1. Terrace seat walls, court lighting, and site furnishings should be designed to complement the first court and complete the space.

Scope

- New basketball court, 50'x84', city standard equipment and color sealcoating
- New parking lot layout with one-way circulation and 75-degree angled parking. Provide approximately 59 standard spaces and 6 ADA spaces
- Porous paving and subsurface stormwater storage
- Raised crosswalks, pedestrian sidewalks, and planted bumpouts and center island
- New basketball court and parking lot lighting.
- New entry plazas with seat walls and amenities.
- Associated pedestrian pathway connections and ancillary site work.

OTHER CONSIDERATIONS

The designers should consider sequencing construction to complete Basketball Court #2 prior to constructing the new parking lot area, ensuring no loss in service to park users.

The basketball court surface should be considered an opportunity for murals or art early in the design process.

RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Civil Engineer
- Structural/Geotechnical Engineer
- Electrical Engineer
- Artist
- Arborist

COMMUNITY GREEN & PLAZA SPACE



SCOPE

- ‘Community Green’ lawn space, approximately 3,000 SF.
- ‘Community Plaza’ space with porous pavers
- New park building with restrooms, small concessions area, and small storage area, approximately 1,250 SF
- Seatwalls, benches, and movable cafe seating
- 10’-wide shared use pathway with appropriate pavement markings or signage
- Trash receptacles, bike racks, drinking fountain, and other site furnishings
- Overhead catenary lighting and pathway lighting
- Water and electrical connections to facilitate small events and programs
- Thoughtful incorporation of sculpture or art
- New Trees, ornamental planting and rain garden planting areas

Guiding Concepts

Taking inspiration from the Mellon Lawn in the south side of the park, the Community Green and Plaza will serve as a central gathering space that draws in park users as they enter the park. The space should act as the hub which all other park amenities are connected to and organized around.

The community green and plaza spaces should be designed to be welcoming, comfortable, and pedestrian scaled gathering spaces. The designers should carefully consider the placement of static seating, such as benches and seat walls, as well movable site furniture, to provide flexibility and options for groups of varying sizes and changing weather conditions. The use of softer, overhead catenary lighting is also recommended to provide a warmer, more welcoming setting in evening hours.

The restrooms and concessions building should be designed to be attractive and contemporary, while still serving as a durable park building. The designers should consider both prefabricated or modular structures, as well as custom designs. Restroom facilities should be adequately sized

to accommodate anticipated park need. Unisex or family changing rooms should also be considered. The concessions area is intended to be a shared space, to be utilized primarily by vendors associated with sports teams or leagues using the field facilities. The space should be equipped to serve refreshments and light snacks only. Storage space for sports equipment or field maintenance equipment should also be considered.

The designers should also consider the reconfiguration and completion of the shared use path. Careful consideration should be given to pavement materials, markings, and signage to ensure safe pedestrian and cyclist circulation and minimize user conflicts.

Given its prominence, the Community Green and Plaza space has significant potential to serve as a showcase space for public art, including performance art, temporary art installations, or permanent pieces. It is essential that the role of art be budgeted for and strongly considered early in the design process.

OTHER CONSIDERATIONS

The Community Green and Plaza space can only be constructed upon the completion of the playground and splash pad, basketball courts, and parking lot relocation projects. If budget allows, consideration should be made to grouping the project with the North Parking Lot reconfiguration to get this central space constructed sooner.

The Community Green and Plaza should be considered a space to host small-scale community focused events and programming. However, given the space should not be considered a permissible space for private or large events.

RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Civil Engineer
- Structural/Geotechnical Engineer
- Electrical Engineer
- Event Space Planner
- Artist
- Arborist

TIER 3

PRIORITY PROJECTS



- P10 Olmsted Rain Garden
- P11 Mellon Lawn and Frew Knoll
- P12 Little League Baseball Field Upgrades
- P13 Community Garden Space
- P14 Pickleball Court
- P15 Adult Baseball Field Upgrades
- P16 South Parking Lot Upgrades



SCOPE

- Reconstruction of historic garden space as a rain garden
- Reinterpreted plant palette using historic planting as basis of design
- Reconstruction of historic pathway and stair connections
- New pathway and stair connection
- Benches, trash receptacles, and other site amenities as appropriate
- Interpretive signage
- Thoughtful incorporation of art or sculpture
- Stub connections, sleeves, or other accommodations for future stormwater connections.

Guiding Concepts

The Olmsted Rain Garden should be designed to reconstruct the Olmsted Brother's historic design of the frog pond, but reinterpret the space for contemporary use. The designers should rely on existing plan records and photographs of the historic space as a framework and basis for the rain garden design.

The rain garden should be ornamental in nature. The designers should review the historic planting plans, reuse historic plant selections where appropriate, and identify suitable replacement species that will thrive in a rain garden environment. Replacement plant species should closely resemble the size, texture, form, color, and other characteristics of the original plant selections. Rain garden infrastructure, such as forebays and overflow inlets, should be thoughtfully placed in a manner that respects the historic design. In general, native plant species should be used to the greatest extent possible.

Pathway layouts and grading should mimic the historic design to the greatest extent possible, but should be modified to ensure ADA accessibility and code compliance. New pathways and stairs should

be considered to provide greater connectivity to the other spaces in the park.

The rain garden should be designed to provide the greatest amount of stormwater storage achievable, while still honoring the historic design. The designers should consider both surface and subsurface storage, and perform infiltration tests and appropriate site investigations to determine the most appropriate solutions.

The design team should analyze the proposed improvements for the entire south side of the park, and look for opportunities to capture and manage stormwater from future improvement projects. The designers should include sleeves, stub connections or other accommodations to facilitate tying into future stormwater connections where appropriate.

Due to the presence of several mature canopy trees in the immediate vicinity, it is imperative that an arborist be consulted to identify potential tree impacts and develop plans and specifications to protect existing trees.

OTHER CONSIDERATIONS

Given its stormwater management benefit and potential to capture stormwater from future projects, it is recommended that the Olmsted Rain Garden be one of the first major capital projects to take place in the south side of the park.

The design team should consider relocating the frog sculpture from the Walled Garden to its original location in the rain garden. Creation of a new sculptural art piece should also be considered.

RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Preservation Landscape Architect/ Historian
- Civil Engineer
- Structural/Geotechnical Engineer
- Artist
- Arborist



SCOPE

- Accessible pathway at Frew Knoll
- Overlook seating area with porous pavers, picnic tables, lounge seating, trash receptacles, water and electrical connections.
- Mellon Lawn seating area interpreting former front terrace of Mellon Estate with porous pavers, picnic tables, lounge seating, and trash receptacles.
- Mellon Lawn seating area with porous pavers, picnic tables, trash receptacles, water and electrical connections.
- Shade structure designed to mimic the former children's playhouse at the Mellon Estate
- New plantings, pathway and lighting upgrades.

Guiding Concepts

Improvements to the 'Frew Knoll' and 'Mellon Lawn' should respect and enhance the existing character of these cherished spaces. The proposed interventions should be minimally intrusive while making the spaces more functional and accessible on an everyday basis. The improvements must also consider the organization, management, and facilitation of events that are held in these spaces.

Improvements to the Frew Knoll include a new accessible pathway and overlook seating area. The overlook seating area should be sited to take advantage of sweeping views and provide a visual connection to the north half of the park. This paved space could also be used as a potential stage location for events, and the size, location, and orientation should be considered with this in mind. The overlook seating area should be constructed with permeable paving, if feasible, and include picnic tables, lounge seating, trash receptacles, and other amenities.

Improvements to Mellon Lawn include creating two new seating

areas furnished with picnic tables, lounge seating, and porous pavers. The seating area on the eastern portion of the lawn should be designed to mimic the footprint of the front terrace of the former Mellon estate. The second seating space, located on the south portion of the lawn, has the potential to serve as a stage location for events, and should be furnished with water and electrical connections. Additional improvements include upgrades to pathways and lighting and new plantings.

A new shade structure should also be considered at the location of children's playhouse that was once part of the Mellon Estate. The shade structure should be custom built, using historic photos and descriptions of the playhouse as a basis for design.

Due to the presence of several mature canopy trees in the immediate vicinity, an arborist must be consulted to identify potential tree impacts and develop plans and specifications to protect existing trees.

OTHER CONSIDERATIONS

The role and impact of events at the Frew Knoll and Mellon Lawn need to be carefully analyzed and considered early in the design process. A professional specializing in event space planning and design should be consulted to both guide design decisions and develop guidelines. Consideration should be given to defining appropriate event size, rules and regulations, and event infrastructure to minimize the impact that events have on public space.

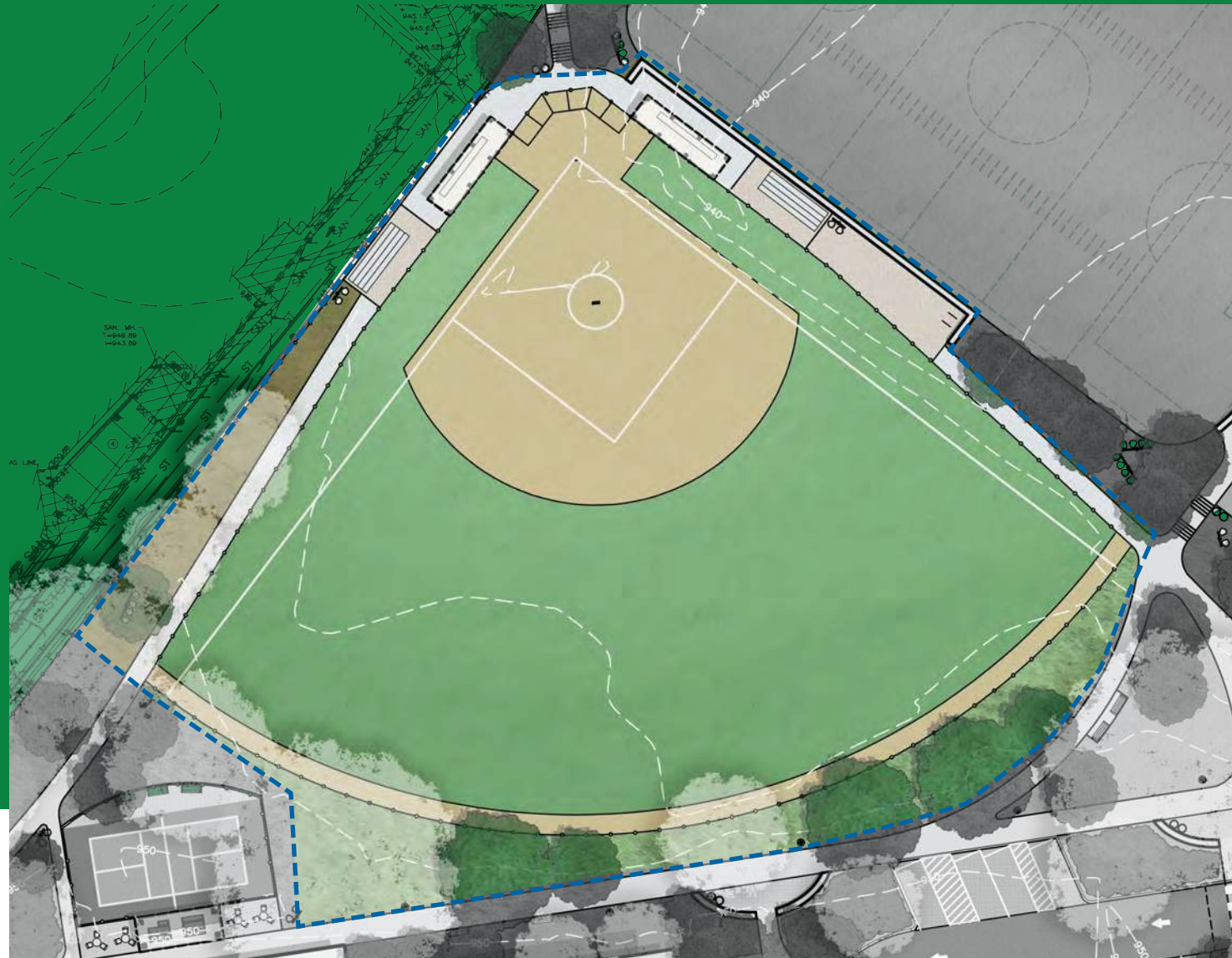
RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Preservation Landscape Architect/ Historian
- Civil Engineer
- Architect
- Structural/Geotechnical Engineer
- Electrical Engineer
- Event Space Planner
- Artist
- Arborist

P12

TIER 3 PRIORITY PROJECT

LITTLE LEAGUE BASEBALL FIELD UPGRADES



SCOPE

- New field construction with minimum 60' base lines and 200' from home field to outfield fence.
- Field under-drainage and associated utility connections
- Field lighting
- Base anchors and plugs, movable pitchers mound, and other amenities to support different age and user groups.
- New backstop and fencing.
- Shade structures, players benches, bleachers, bike racks, trash receptacles, drinking fountain, and other site furnishings
- Retaining wall and spectator viewing area.
- Water and electrical connections to support maintenance or special events.

Guiding Concepts

The improvements to the Little League Baseball Field (also known as Field 3) will create a full-sized field space with upgraded, quality amenities.

The location and layout of the field should be shifted to provide a minimum distance of 200' from home plate to the outfield fencing. It should be noted that the presence of existing mature canopy trees at the outfield edge will set constraints for fence location, limits of earthwork and disturbance. The design of the field should accommodate the protection and preservation of these trees.

If possible, the field should be graded with the infield sloping away from the pitchers mound in all directions, and the outfield sloping away from the infield at a consistent 1.5%-2% grade. The field should be designed with sufficient under-drainage to ensure playability after storm events.

The infield should be designed to support youth baseball and

softball play at different levels and age groups. Ground anchors and plugs for bases, movable pitcher's mounds, and other field equipment should be considered.

Anticipated grade change between the Little League Baseball Field and Rectangular field may necessitate the use of a retaining wall. It is recommended that an informal 'spectator viewing area' be created, allowing users to stand or set up personal chairs to view sporting events on either field. This space could also be used to set up a stage for community events taking place on the rectangular field space. If possible, porous paving should be considered in this location to limit impervious surfacing.

Additional upgrades include new players benches and shade structures, spectator bleachers, new backstop and fencing, field lighting to accommodate evening use. Bike racks, trash receptacles, and a drinking fountain should also be incorporated into the design.

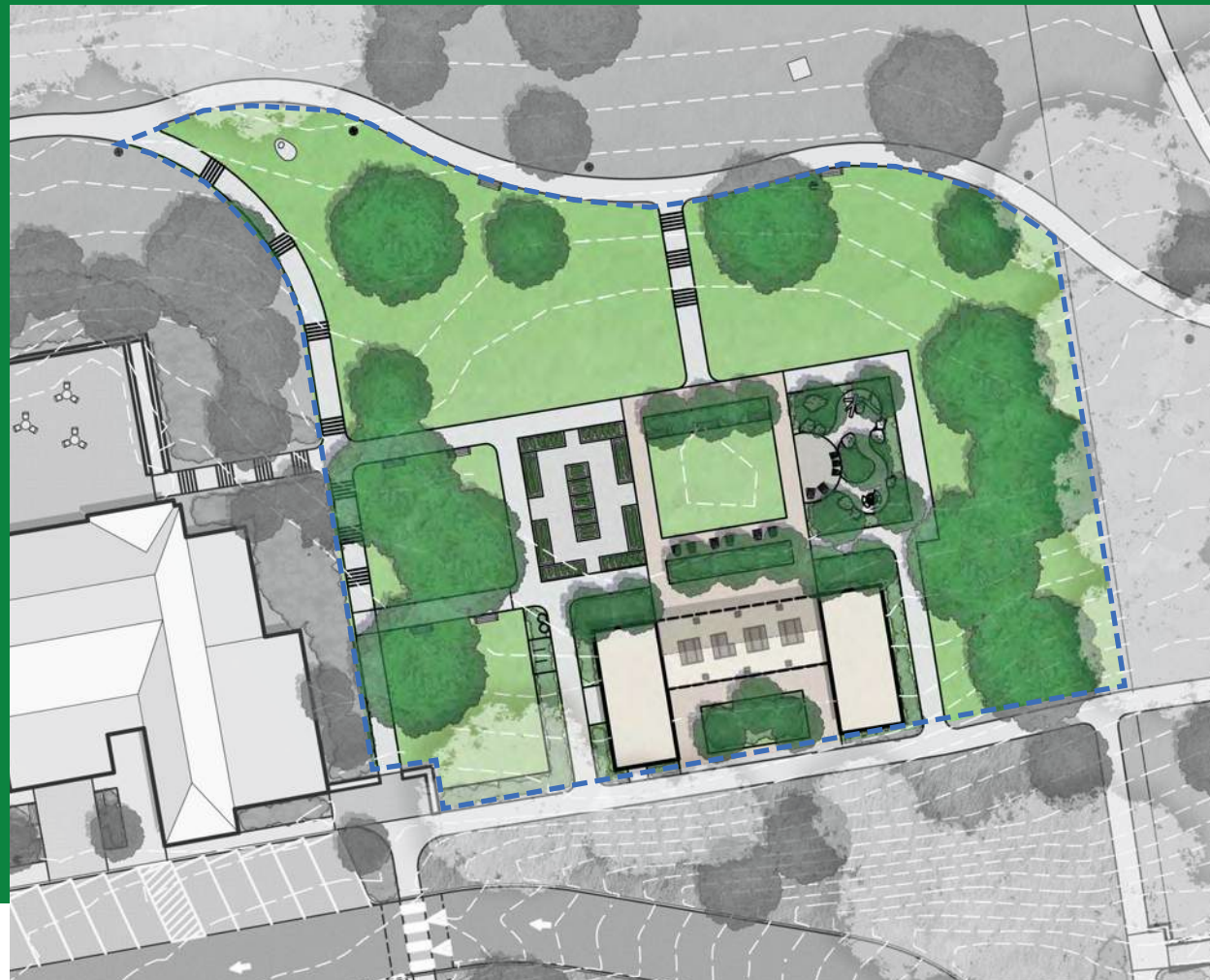
OTHER CONSIDERATIONS

It should be noted that a 200' distance to the outfield fence is a minimum dimension, and many little league and softball fields are designed to be 225'. Site constraints prohibit this distance, however taller outfield fencing could help extend the playability for older youth if desired by local leagues.

Field permitting should give priority to youth baseball and softball. The field should only be used 500-600 hours per year.

RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Civil Engineer
- Structural/Geotechnical Engineer
- Electrical Engineer
- Artist
- Arborist



SCOPE

- Renovation or reconstruction of the 'Chicken Coop' building to provide public restrooms, a garden support space, and open-air covered seating area.
- New sewer, water, and other utility connections as required
- Community garden teaching space with garden plots, fencing, hose bibs, and other amenities
- Children's garden space with sensory planting, play elements, seating, and other amenities
- Open, level lawn space with lounge seating and other site amenities to facilitate informal gatherings
- Ornamental display gardens and tree plantings
- New pathway and stair connections

Guiding Concepts

The condition of the 'Chicken Coop' building requires further evaluation to understand if the existing structure can be renovated or if a full reconstruction is required. The assessment should include review of the building's structural components, roof, walls, floors, door and window assemblies, electrical systems, and the feasibility to provide new water and sewer connections to the existing structure. Given it's age, the building should also be assessed for the presence of lead paint, asbestos, and other hazardous materials, and a remediation plan developed accordingly.

Renovations or reconstruction of the 'Chicken Coop' building should occupy roughly the same footprint as the original building. While the exterior architecture should respect the historic design, thoughtful upgrades to materials and design elements should be considered to provide a more contemporary building.

The building should be designed with three separate wings. The eastern wing of the building should be converted into public restrooms. Due to space limitations, single occupancy unisex or family bathrooms should be considered.

The center of the building should be constructed as an open-air breezeway with covered seating space. The west wing of the building should be designed as a support space for the proposed garden spaces.

The community garden space should be a learning space, focused on teaching the principals of urban agriculture. The intent is for the space to be operated and maintained by non-profit partners who advocate for improved access to produce for undeserved communities. The designers should work carefully with non-profit partners to design an attractive, functional space that meets their needs and fits in with the character and aesthetic of the park itself.

The children's garden is also intended to be a learning space. The garden should be designed to provide informal, sensory-based play and exploration opportunities for children of all ages and abilities. These garden spaces could also serve as venues for gardening or horticultural classes through other non-profit organizations, such as the Phipps Garden Center.

OTHER CONSIDERATIONS

The success of the Community Garden Space will rely on participation from the city, community, and other non-profit partners. The project should only be considered for implementation when commitments and funding are in place to manage and maintain the space through a memorandum of understanding or other agreement.

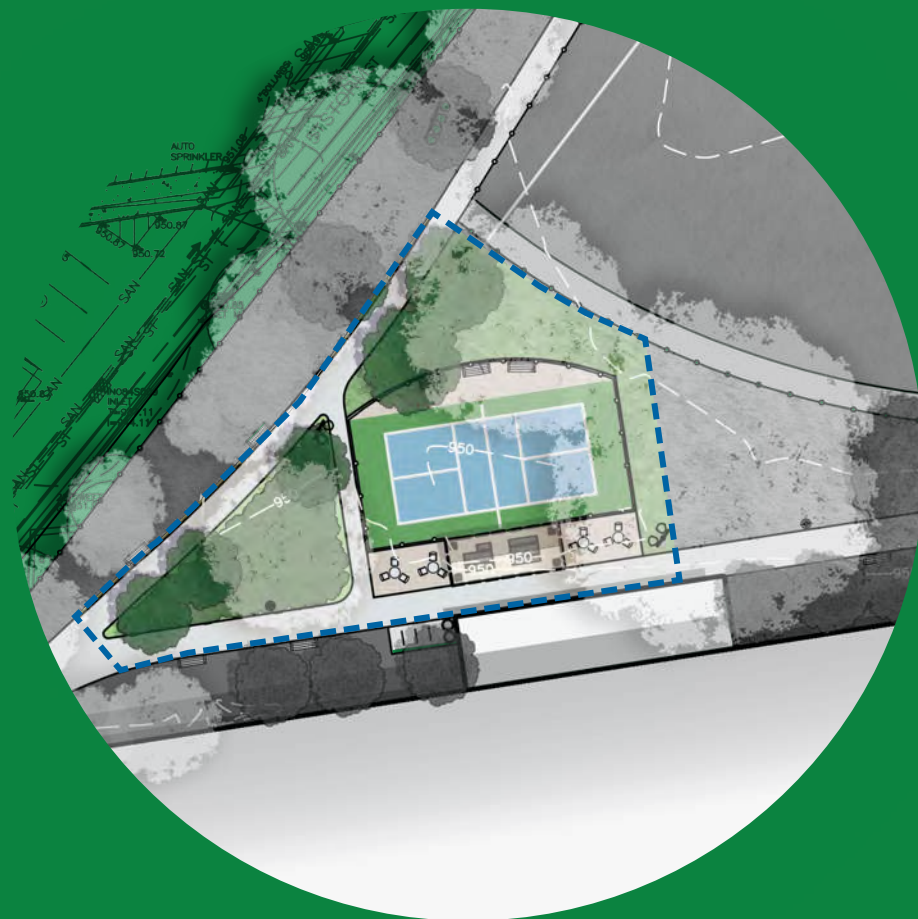
If upon assessment, it is determined that the 'Chicken Coop' building is not salvageable, consideration should be made to razing the structure and restoring the area to open lawn space until the project can be fully implemented.

RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Architect
- Preservation Landscape Architect/ Historian
- Civil Engineer
- Structural/Geotechnical Engineer
- MEP Engineer
- Event Space Planner
- Artist

P14

TIER 3 PRIORITY PROJECT PICKLEBALL COURT



Guiding Concepts

The Pickleball Court should be located in the vicinity of the former Citiparks trailer that served as the office space for the Tennis Bubble. The space will provide a new park amenity as well as an informal gathering area.

The court should be designed to standard 20' x 44' dimensions, with a minimum 5' over run area around the sidelines. The court should include 10'-ht chainlink fencing, city standard netting, and sealcoating. A tennis bangboard should also be considered, to allow for informal tennis use when no active pickleball games are occurring.

Additional improvements should include benches, trash receptacles, picnic and cafe tables, and a small shade shelter. The intention of this space is create to an informal gathering space that can serve as spectator seating as well as an

outdoor seating area for tennis bubble users to gather while they wait for court time. Court lighting should also be considered for evening use.

Due to the presence of several mature canopy trees in the immediate vicinity, it is imperative that an arborist be consulted to identify potential tree impacts and develop plans and specifications to protect existing trees.

As the new court is somewhat isolated from proposed stormwater management infrastructure, small rain garden areas should be considered.

SCOPE

- New standard size pickleball court- 20'x44' with 5' of overrun space
- City standard netting, fencing, and color sealcoating
- Benches, trash receptacles, picnic tables, cafe tables, and other site furnishings
- Small shade structure
- Court lighting and associated utility connections
- New tree and rain garden planting
- Associated pathway connections and ancillary site work

OTHER CONSIDERATIONS

If budget allows, the Pickleball court project and the Little League Baseball Field project could be grouped together.

RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Civil Engineer
- Structural/Geotechnical Engineer
- Electrical Engineer
- Artist
- Arborist



TIER 3 PRIORITY PROJECT

FULL-SIZED BASEBALL FIELD UPGRADES



SCOPE

- Regrading and new field underdrainage
- New outfield fencing and warning track
- New batting cage
- Fence, backstop, and other field amenity upgrades as required
- New overlook terrace with retaining wall, shade shelter, picnic table and lounge seating
- Extensive subsurface stormwater storage
- Pathway reconfigurations and upgrades as required

Guiding Concepts

The full-sized Baseball Field was identified as having the greatest opportunity to incorporate significant stormwater management infrastructure in the form of subsurface storage. While ongoing repairs and maintenance should always be considered, it is recommended that any extensive upgrades or improvements to the field be coupled with the construction of stormwater infrastructure.

New field upgrades should include new outfield fencing and warning track, a batting cage, and general refurbishment or repair of existing field amenities as required. The field should also be regraded and new field underdrainage should be installed to ensure playability after rain events.

A new overlook terrace should be constructed near center field, immediately adjacent to the shared-use pathway. This space is intended to provide a viewing area for spectators, as well as an informal gathering space equipped with picnic tables, lounge seating, and a shade structure. This space also has the potential to serve as an elevated stage space for special community events that may be permitted.

Other Considerations

While special event permits should be considered, field permitting should give preference to baseball and softball use. The field should only be permitted for 500-600 hours of use per year.

RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Civil Engineer
- Structural/Geotechnical Engineer
- Electrical Engineer
- Artist
- Arborist



TIER 3 PRIORITY PROJECT

SOUTH PARKING LOT UPGRADES



SCOPE

- New one-way circulation pattern with 75-degree angled parking
- Bump-outs, raised crosswalks, and planted islands
- Upgraded sidewalks and pathways connections
- Upgraded lighting
- New tree plantings
- Conversion of cobble drive into service access and appropriate signage
- Porous paving and subsurface stormwater storage where appropriate

Guiding Concepts

Upgrades in the South Parking Lot should focus on enhancing pedestrian safety and connections, and creating a more green, park-like aesthetic appropriate for the setting.

The layout and dimensions of the existing parking area do not meet current code. Upgrading the current parking layout to meet code would require expansion of the parking footprint. Due to the presence of existing buildings and mature trees, expansion of the current parking layout is not a viable option. Consequently, any improvements or upgrades to the parking lot will result in a net loss of spaces.

One-way vehicular circulation and 75-degree angled parking was selected to provide the greatest amount of parking possible while working within the site constraints. This one-way vehicular circulation also improves pedestrian safety and helps limit pedestrian and vehicular conflicts.

Additional improvements should include bump outs and strategically placed raised crossings to calm traffic and provide safe and clear pedestrian access. The parking lot design should also incorporate planted islands, tree planting, and porous paving to break-up expanses of asphalt and maintain a parking lot aesthetic that is appropriate for a park setting.

The existing cobble drive should be converted into a service drive, intended for use by DPW vehicles or deliveries to the Phipps Garden Center building. Appropriate signage should be incorporated to provide clear direction for drivers.

As the various buildings in the 'campus' area provide popular evening classes, it is important that safe, dark-sky compliant lighting be incorporated into the design. The designers should also consider opportunities for stormwater storage where feasible under the reconstructed parking areas.

OTHER CONSIDERATIONS

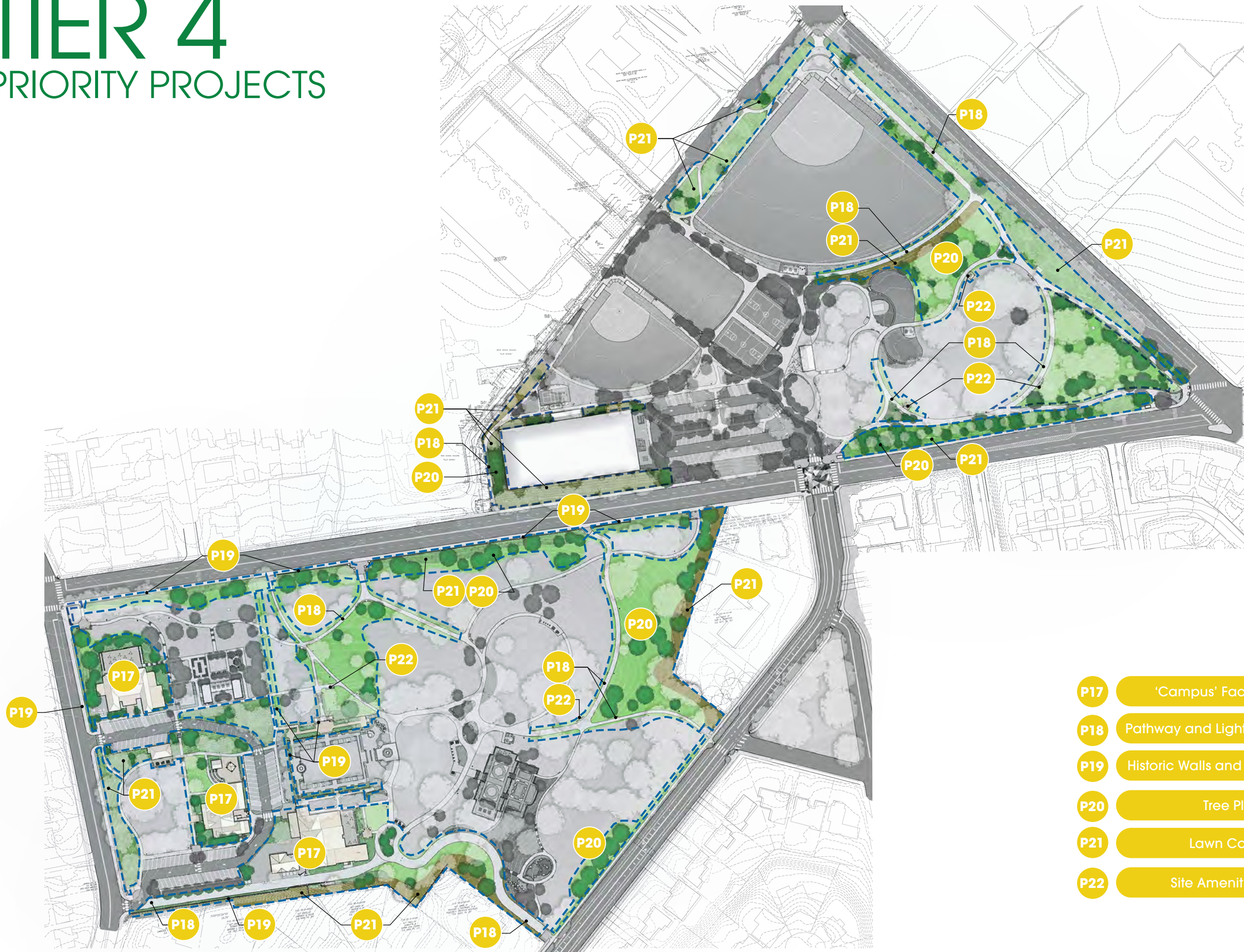
Given that the parking areas are divided into three distinct lots, it is possible to upgrade the parking lot in stages. Consideration should be made to coordinate parking lot upgrades with any major facility improvements being considered for the Marshall Building, Scaife Building, Scaife Garage, or Garden Center.

RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Civil Engineer
- Preservation Landscape Architect/ Historian
- Structural/Geotechnical Engineer
- Electrical Engineer
- Artist
- Arborist

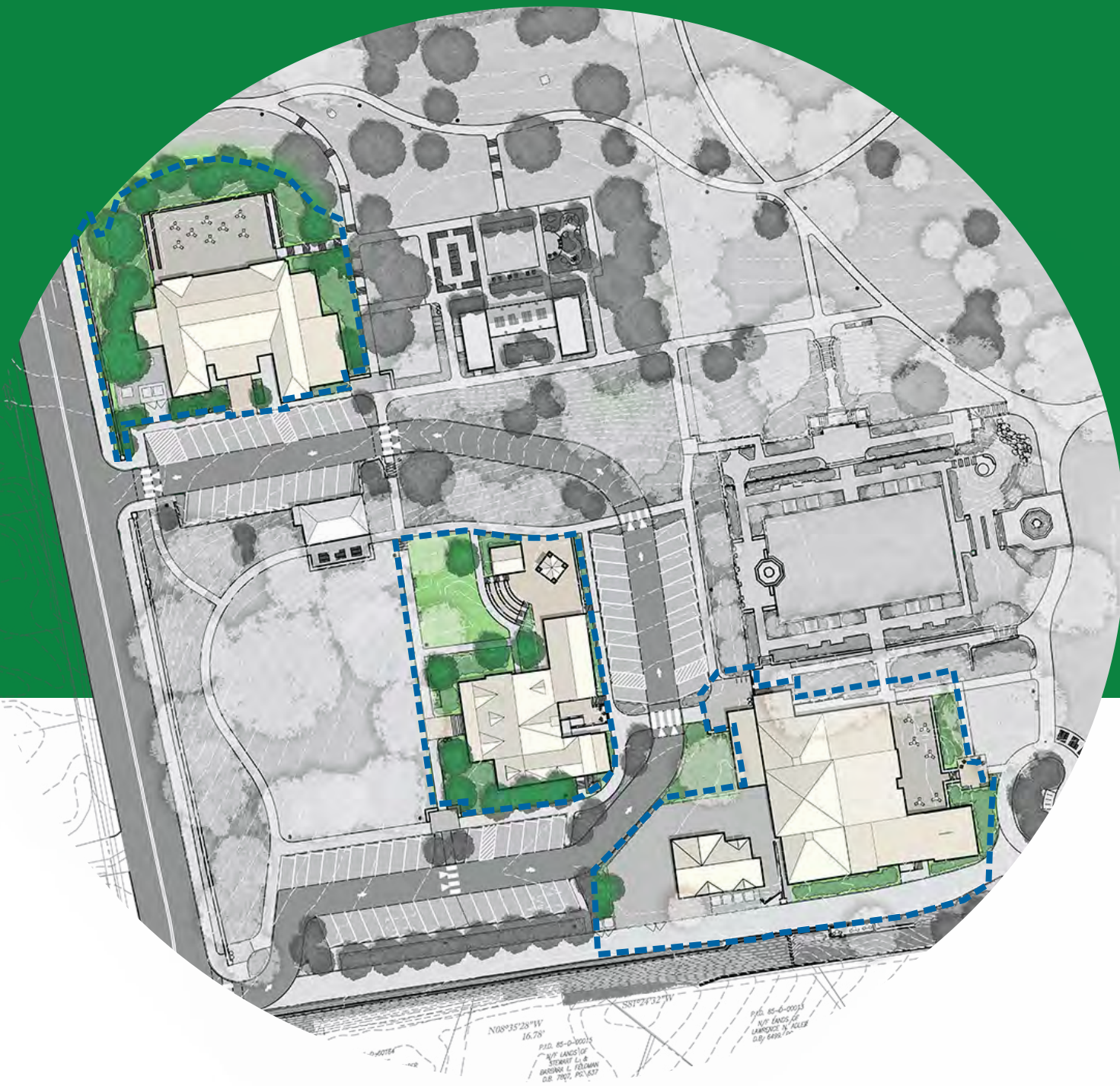
TIER 4

PRIORITY PROJECTS



- P17 'Campus' Facility Upgrades
- P18 Pathway and Lighting Improvements
- P19 Historic Walls and Fence Restoration
- P20 Tree Planting
- P21 Lawn Conversion
- P22 Site Amenity Upgrades

P17 TIER 4 PRIORITY PROJECT
CAMPUS FACILITIES UPGRADES



Guiding Concepts

The improvements to the campus facilities are intended to enhance existing spaces and better integrate the buildings and their uses into the fabric of the park. Due to obligations and responsibilities defined by lease agreements, these improvements would likely require coordination and cooperation between the city and current lease holders to implement. All building repairs and upgrades should be sensitive to the historic character and integrity of the architecture.

Improvements to the Scaife Garage (currently used by DPW as a maintenance facility) include shifting the access gate and dumpster storage to the cobble service drive. The reconfiguration of the parking area will accommodate a slight expansion of the existing maintenance yard.

Improvements to the Garden Center (currently occupied by Phipps) should include a reorganization of the building entrances and exterior spaces. A new main entrance should be constructed on the west face of the building, providing a clear, intuitive, parking lot adjacent point of entry. The current main entrance,

located adjacent to the cobble drive, should be converted to the loading and receiving area for the building. The existing loading area should be removed or converted into an emergency exit, and the terrace should be expanded. Exterior landscape treatments and seating areas should also be enhanced.

Improvements to the Scaife House (currently occupied by Pittsburgh Center for the Arts and Media(PCAM)) include enhancing existing entrances and outdoor spaces. Consideration should be given to creating a formalized outdoor classroom space for use by PCAM and other programs. Pathways, plantings, and entrances should be upgraded to clarify building access.

Improvements to the Marshall Building (currently occupied by Citiparks) should include reorganization and screening of dumpsters and mechanical equipment, entry plaza upgrades, and planting enhancement. Movable furniture should be considered for the rear terrace space to allow informal public use when events or programs are not occupying the space.

OTHER CONSIDERATIONS

The recommendations provided are intended to improve connectivity and functionality between park and building use only.

Community feedback identified opportunities for greater collaboration between the various lease holders and the programs they offer. Additional consideration, planning, and coordination should be undertaken to improve broader community access to programs, classes, and other services offered in these buildings.

RECOMMENDED CONSULTANT TEAM

- Landscape Architect
- Architect
- Preservation Landscape Architect/ Historian
- Civil Engineer
- Structural/Geotechnical Engineer
- MEP Engineer
- Artist
- Arborist

P18 TIER 4 PRIORITY PROJECT PATHWAY & LIGHTING IMPROVEMENTS

Guiding Concepts

The Action Plan attempted to group pathway and lighting improvements with larger capital investment projects. However, a number of existing pathways will remain in place that fall outside of the scope of work for future improvement projects. Many of these pathways require reconstruction, repair, and maintenance.

Existing pathways should be evaluated for proper treatment options, including but not limited to; full-depth reconstruction, milling and resurfacing, targeted spot repairs, or temporary patching. This evaluation should also consider reductions in width and changes in drainage structure as appropriate to help advance stormwater management goals.

The evaluation should also establish a paving maintenance plan, outlining a multi-year, ongoing improvement plan aimed at making incremental repairs and upgrades to keep park pathways accessible and usable. The maintenance plan should prioritize sections of pathway that are in an advanced state of deterioration. In

addition, temporary repairs should be identified for deteriorated pathways slated for removal or realignment, until such a time as the proposed work can take place.

The maintenance plan should identify a timeline and budgets for ongoing pathway repair and maintenance, including both existing and new pathways.

Pathway lighting upgrades should be considered in conjunction with pathway repair and maintenance work. At a minimum, empty conduit and pull boxes should be installed as part of the pathway improvements to accommodate future lighting installations while protecting recent pathway investments.

Due to the presence of several mature canopy trees in the immediate vicinity, it is imperative that an arborist be consulted to identify potential tree impacts and develop plans and specifications to protect existing trees.

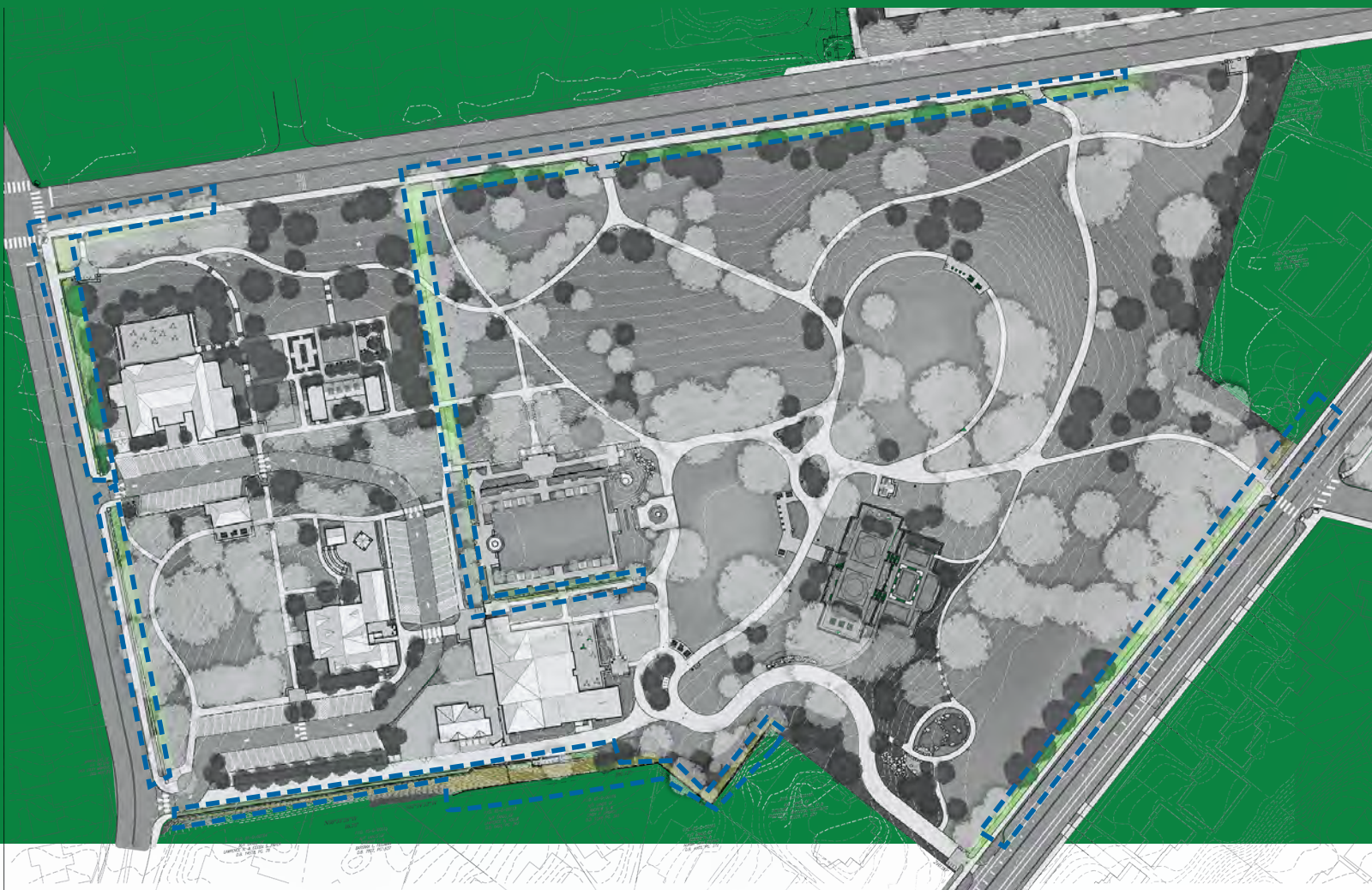
OTHER CONSIDERATIONS

If budget allows, pathway and lighting improvements can be grouped together into larger capital projects. Accessibility and safety are major community priorities, and if a pathway and lighting capital project is formed, it should be considered a Tier 1 Priority project.



RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Civil Engineer
- Electrical Engineer
- Arborist



Guiding Concepts

Specific to the south side of there park, there a number of historic fences, piers, and walls that are in various conditions of deterioration. It is important that these historic assets receive proper repair, restoration, and preventative maintenance to preserve their integrity and ensure they do not degrade to unsafe condition that may necessitate a full replacement or removal.

Similar to the approach to pathways and lighting, an assessment of the existing historic fences, piers and walls should be conducted in order to identify appropriate treatments and prioritize improvements.

It is imperative that an architect or landscape architect who specialize in historic preservation be consulted to identify proper treatment options. Proposed improvements should adhere to the Secretary of Interior guidelines for historic preservation treatments.

A preservation and maintenance plan should be developed, identifying proposed treatments, budget allowances, and timelines for implementing the work. Structural deficiencies should take priority over superficial or aesthetic concerns. The preservation and maintenance plan should also layout guidelines and instructions for future preventative maintenance protocols to ensure recently repaired or restored assets do not fall into a similar states of disrepair due to deferred maintenance.

OTHER CONSIDERATIONS

While the nature of the work allows for an incremental implementation approach, it is possible to group the various improvements into a singular capital project. If budget allows this approach, the project should be considered a Tier 3 Priority project.

RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Architect
- Structural Engineer
- Preservation Landscape Architect/ Historian

P20 TIER 4 PRIORITY PROJECT TREE PLANTING

Guiding Concepts

Mellon Park’s status as a city arboretum is an important achievement that should be celebrated and protected. In addition to mitigating construction impacts from future improvements and preventative tree maintenance, a tree planting program must be established. The tree planting efforts will provide both an opportunity to enhance the existing collection of arboretum trees, and prevent canopy loss by proactively establishing new canopy trees.

A significant portion of proposed tree plantings are grouped with other capital project investments. However, there are a number of areas on both sides of the park that can accept new tree planting without risk of displacement or damage from future construction efforts.

The plan identifies ‘tree planting zones’ that should be a focus of incremental, ongoing tree planting efforts. It is recommended that the city continue partnerships with non-

profit organizations or community volunteer events to carry out the work.

When selecting tree species, considerations should be made to both identify and replace aging tree species, while also selecting specimen trees that add to the arboretum collection. Preference is given to native tree species, due to their capacity to provide habitat and improve biodiversity of native bird and insect species. However, given the park’s status as an arboretum, the selective use of non-native species should also be considered based on the unique merits or characteristics that the species can bring to the collection.

All species selection, planting, and maintenance efforts needs to be carefully coordinated with and under the direct supervision or permission of the city’s forestry department.

OTHER CONSIDERATIONS

In certain areas, there may be opportunities to coordinate tree planting efforts with proposed lawn conversion. If funding sources allow, this work could be conducted simultaneously. It should be noted that establishment of new trees and shade could help prepare future sites for lawn conversion, as existing lawn spaces thin out in shaded conditions.



RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Arborist
- Preservation Landscape Architect/ Historian

P21 TIER 4 PRIORITY PROJECT LAWN CONVERSION

Guiding Concepts

Turf lawn presents maintenance challenges, lacks biodiversity, and does not provide effective stormwater mitigation benefits. Consideration should be given to reducing turf lawn in areas where steep grades, persistent wet or soggy soil conditions, or proximity to busy traffic or private residences render lawn unusable or undesirable spaces for park users. Unused lawn areas should be converted into more suitable ground covers that reduce maintenance load, promote habitat and biodiversity, and slow and infiltrate stormwater run off.

'Green Verge' spaces should be located where park edges abut the public right-of-way. The intent is for these spaces to maintain open views and the green, pastoral park aesthetic that is appropriate for both sides of the park. Establishment of a 'no-mow' fescue, with the possible incorporation of forbs and wildflowers, is the

recommended groundcover for these highly visible locations.

In areas where the park abuts private property, or where a sense of enclosure or low-maintenance, biodiverse planting is desirable, 'Naturalized Planting' areas should be established. These planting areas could consist of native wildflower meadows or restored woodland areas, as appropriate to the context in which they are located.

It is recommended that trial plots of each type of ground cover be established early. These trial plots will be critical to understanding and fine tuning the installation and establishment approach, as well as ongoing maintenance requirements. A maintenance plan should be developed to guide future establishment and long term care of these spaces.

OTHER CONSIDERATIONS

While lawn conversion will reduce maintenance load on city staff in the long term, these areas will require maintenance and care in the short term until successfully established. Consideration should be given to partnering with non-profit organizations or community volunteer groups for planting, establishing, and maintaining converted lawn areas to reduce maintenance load on city crews.



RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)
- Horticulturalist/ecologist
- Arborist

P22 TIER 4 PRIORITY PROJECT SITE AMENITY UPGRADES

Guiding Concepts

During the public engagement process, the community identified upgraded and additional site furnishings and amenities as a priority. The Action Plan aims to better distribute site amenities throughout the park to provide more opportunities for seating, gathering, and enhanced park user experience. While some amenities cannot be installed until larger capital investments are made, there are several locations where site furnishings and amenities can be upgraded and enhanced without risk of displacement.

Across both sides of the park, site furnishings vary in material, design, age and condition. It is recommended that standard benches, picnic tables, movable cafe seating, bike racks, trash receptacles, drinking fountains, and other site furnishings be identified and established to provide cohesion and unity. It is important that site furnishings be appropriate for historic and contemporary settings,

and meet ADA compliance to the greatest extent possible. City standard site furnishings should be used where appropriate. However, in the event that a standard does not exist, or where city standard furnishings may be inappropriate in a historic context or lacking in ADA compliance, new standard furnishings should be considered. Any new furnishing standard needs to be properly vetted with city maintenance staff to ensure it is maintainable and affordable.

New site furnishings and amenities should be installed as required along existing pathways and park spaces to remain, in order to enhance park user experience. Upgrades to existing site furnishings should also be considered. As site furnishings are easily removed and relocated, it is not necessary to wait until capital projects are implemented to begin site-wide upgrades.

OTHER CONSIDERATIONS

Providing consistent style and materials for all site furnishings will help provide continuity and unity for the park. Given the park’s designation as a signature community park, consideration should be given to adopting furnishing standards unique to Mellon Park. However, this approach needs to be vetted and approved by all relevant city staff and agencies.

RECOMMENDED CONSULTANT TEAM

- Landscape Architect (Prime)





APPENDICES

APPENDICES

History of Mellon Park - Forthcoming

Stormwater Technical Memo

Traffic Technical Memo

Community Engagement Presentations are available on the EngagePGH website:

engage.pittsburghpa.gov/mellon-park-action-plan



MEMO

From: Cesar Simon
To: Brandon Riley
Date: May 3, 2022
Ref.: PPC Mellon Park Stormwater Plan

Background

The Pittsburgh Parks Conservancy is partnering with the City of Pittsburgh to develop an Action Plan for Mellon Park. The Action Plan aims to create a unified vision for Mellon Park driven by community input through a thorough engagement process with residents, park users, city partners, and other stakeholders and agencies. The Action Plan will guide all future planning, development, and improvement opportunities in and around Mellon Park to ensure its status as one of Pittsburgh’s signature parks and open spaces.

Situated at the top of the Negley Run Watershed, the Conservancy recognizes that Mellon Park has the potential to provide significant stormwater, green infrastructure, and ecological improvements to the surrounding community. The Action Plan will seek to ascertain Mellon Park’s potential to improve stormwater management for the Negley Run Watershed and identify green infrastructure strategies that meet stormwater management goals while balancing the preservation of critical historic and cultural assets, ecological enhancements, and programming needs. A successful project will identify realistic and appropriate stormwater and green infrastructure improvement projects that respond to community feedback while respecting the historic and cultural significance of the Park, including protections afforded to the Park through its new designation as a historic site.

The PWSA Green First Plan identified a city-wide strategy to implement GSI to meet ALCOSAN & PWSA CSO regulatory requirements while improving the service provided by existing infrastructure. The A-42 Sewershed is in the City of Pittsburgh and includes parts of the neighborhoods of Homewood, Larimer, Point Breeze, Highland Park, Lincoln-Lemington-Belmar, East Liberty, and Squirrel Hill. The sewershed is served by a combined sewer system. The A-42 combined system overflow (CSO) is estimated to contribute the most overflow volume in the PWSA system, approximately 1,442 million gallons in a typical year. Thus, PWSA has identified A-42 as a priority area for green stormwater infrastructure (GSI) to reduce combined system overflows at a sewershed scale and improve local system conditions, including areas that experience surface and basement sewage flooding.

In a past experience, Cosmos was tasked with developing a GIS modeling process as a screening method for Green Stormwater Infrastructure (GSI) opportunity within the A-42 sewershed. The process involved implementing various GIS analytical steps to define buffer areas around potential constraints resulting in zones of potential opportunity for the installation of GSI in the public rights-of-way and within private vacant parcels. These GSI opportunity areas were further screened based on stormwater management potential by defining each area’s loading ratio hydrologic factor attribute. Cosmos then ranked various options for consideration. This experience serves us to understand the stormwater requirement of the Area around Mellon Park and follow an engineering process that will address stormwater impact in the overall A-42 Sewershed.

Stormwater Analysis Approach

To assess the present Mellon Park stormwater runoff conditions, we completed an initial project SWMM model and identified opportunities for GSI implementation. When establishing potential GSI locations, a key consideration is leveraging the existing drainage infrastructure to route stormwater runoff to and from these collection/storage areas.

A project SWMM model was constructed using the calibrated ALCOSAN A-42 model as the basis. The A-42 Sewershed Area is around 2,862 acres. As the ALCOSAN interceptor systems are located in the lower reaches of the A-42 sewershed, the modeled sewer network only partially extends upslope through the sewershed. As such, the A-42 model does not currently include the sewer network in the vicinity of Mellon Park. To allow for a more localized and nuanced assessment of the existing sewer system’s response to proposed GSI installations, the SWMM model was extended upslope through the Mellon Park parcels. Missing portions of the existing pipe network from the present ALCOSAN modeled terminus at Negley Run Boulevard through the upper subcatchments immediately above Mellon Park were reestablished using available geographic information systems (GIS) data and historical drawings.

The stormwater analysis steps outlined below were developed as a structured approach for the sizing and location of the proposed Mellon Park GSI improvements. The intent was to develop a framework that initially defines the scale of the proposed stormwater runoff capture and then refines the distribution and size of the proposed GSI improvements within Mellon Park to best balance implementation cost with local flooding and combined sewer overflow reduction benefits.

1. Establish Mellon Park Basin Characteristics:

We defined the available sewershed and associated runoff tributary to Mellon Park. Preliminary runoff volumes and peak runoff rates were generated for the 1.5-inch, 24-hour (SCS Type II storm event), representing the 95th percentile rainfall event for Mellon Park and its Basin Subcatchment. Those results indicate that Mellon Park parcels contribute approximately 0.5 Million Gallons (MG) (~66,840 cubic feet) of stormwater runoff (for the 1.5-inch, 24-hour storm event) to the Mellon Park Basin Subcatchment and the larger A-42 sewershed. In detail, the northern section of the Park contributes 0.26 MG and the south section with 0.24 MG.

The Park has the potential to manage 100% of this equivalent runoff volume within the park boundary through a combination of onsite capture and routing of offsite runoff into the Park using selective drainage infrastructure enhancements. Following ALCOSAN’s Green Revitalization of Our Waterways (GROW) funding program, we implemented a conservative analysis of the GSI features, not increasing the infiltration or evaporation areas to maintain the calibrated sewershed hydrology balance.

Figure 1 below presents the initial estimation of the Mellon Park basin. The tributary Sewershed Area to Mellon Park is around 220 acres (7.7% of the A-42 Sewershed area).

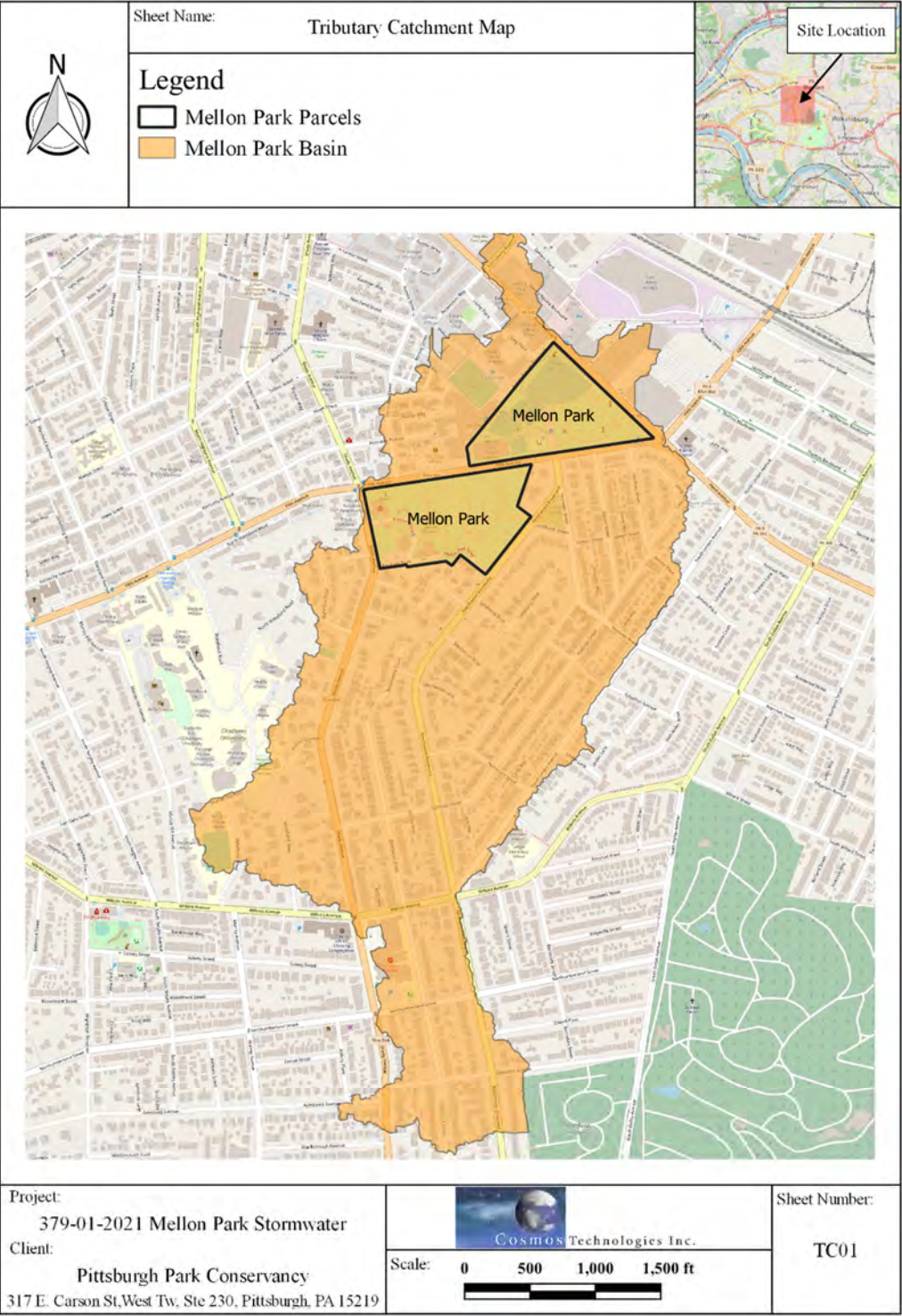


Figure 1. Tributary Catchment Map

2. Develop Enhanced SWMM Model:

We improved the ALCOSAN model resolution presented above to include the Mellon Park tributary subcatchments by the following steps:

1. We extended the geographic limits of the available SWMM sewer model nodes and conveyance links to include the Mellon Park stormwater system recorded in as-built drawings.
2. We separated the large tributary catchment area into tributary subcatchments to the various SWMM collection nodes. The resultant Enhanced SWMM model will be considered the baseline condition for comparison purposes.
3. Do we build on top of the baseline? A second model of a proposed condition establishing generic storage nodes in the Enhanced SWMM model at the topographic low point of the Mellon Park parcels to assess the A42 sewer system response to various generic storage volumes. For the initial analysis, the corresponding storage node will be inserted “in-line” on an existing combined sewer pipe immediately downstream of the Park at a location where all upslope Mellon Park Basin subcatchments are tributary.

The insertion of an “in-line” storage node is intended to provide a simplified high-level approach to screening potential storage options. However, this connection method does not represent a viable real-world GSI installation method in combined sewer areas. Therefore, as the analysis progressed and specific GSI locations were established, we moved the storage nodes “off-line,” capturing surface runoff only, with overflow connections back into the existing combined sewer (see next steps below).

3. Perform SWMM Model Sensitivity Analysis:

With the enhanced SWMM models, we performed a sensitivity analysis for various levels of tributary runoff capture, from 0% to 100% capture in 10% storage volume increments. The 0% storage scenario is the baseline condition with no provisions for storage. The 100% capture scenario provides the tributary 95th percentile rainfall event storage.

As the specific goal of GSI projects in combined sewer areas is to attenuate combined sewer overflows to rivers and mitigate local flooding, specific modeling output values will be referenced to characterize the SWMM model’s response to various levels of storage. These sensitivity analysis output metrics for the typical year of rainfall in the A42 sewershed will include:

1. Outfall Loading, MH122E001-OF (To River), which equates to the annual A42 CSO to River
2. Flooding Loss, Volume that represents the annual A42 surface flooding volume

A cost-benefit analysis was performed to select the most efficient alternative.

From PWSA “GI Scoring Ranking 10-11-19 DRAFT” spreadsheet provided for the A41 and A42 sewershed planning analysis, the GSI solutions range from \$1 to \$10 per gallon of storage, with an average of \$6.40. A typical R-tank project of 1,000 gallons is presented by ACF environmental in his “R-Tank-Design-Tool-v3.0-March-2018” spreadsheet with a cost of \$6.15 per gallon. We assumed a GSI project cost of \$6.14 per storage gallon based on the above values. An additional cost is considered as the rate ALCOSAN incurred to treat the additional volume sent to the plant due to the improvement project. We used the charge reported on the ALCOSAN website (<https://www.alcosan.org/our-customers/understanding-your-bill>) of \$9.10 per 1,000 gallons.

For the benefits that ALCOSAN can see, we used the results from the last GROW cycle. In the last GROW cycle, the minimum payment in a funded project was \$0.23 per gallon of CSO reduction, and the

minimum match was 15.53%. Therefore, we assume a conservative value of \$0.20 per gallon of CSO reduction and a minimum match of 15% from the above results. Additionally, flooding can damage roads and infrastructure with depths as low as 1”. We considered a replacement cost of \$15 per yard, with an additional 10% cost for additional damage. The cost per gallon of the flood was computed at \$1.47. Therefore, we used a value of \$1.5 per gallon of flood reduced.

For the benefits that PWSA can see, we used the “GI Scoring Ranking 10-11-19 DRAFT” spreadsheet; a project with a capital cost of \$150,000 per impervious acre managed is scored with the maximum points, making it possible more likely to be funded. Therefore, the above ratio corresponds to \$3.68 per gallon of the volume from the impervious area managed.

Applying the above cost and benefit costs, the highest storage that overpassed a threshold cost-benefit of 1 was the option with the 20% capture volume. The associated 20% capture of the 95th percentile rainfall-runoff (from the Mellon Park Basin) was approximately 1.765 MG (235,910 cf) – this correlates to an SWMM storage node volume of 229,779 cf.

The following is a summary of the selected alternative results:

- 1. Annual Reduction in Surface Flooding = 0.905 MG (derived from Flooding Loss)
- 2. Annual Reduction in CSO to River = 18.102 MG
- 3. Annual Increase to ALCOSAN WWTP = 17.605 MG

Table 1. Input comparison for the storage scenarios on the sensitivity analysis.

MODEL INPUT	BASELINE	STORAGE SCENARIOS									
Model Simulations	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Cumulative Storage Volume Provided (Feet^3)	0	117955	235910	353865	471820	589775	707730	825685	943640	1061595	1179550
Cumulative Storage Volume Provided (10^6 gal)	0	0.882	1.765	2.647	3.529	4.412	5.294	6.177	7.059	7.941	8.824
Dry Weather Inflow Volume(10^6 gal)	0	0	0	0	0	0	0	0	0	0	0
Wet Weather Inflow, Volume(10^6 gal)	1581.357	1581.337	1581.339	1581.335	1581.344	1581.338	1581.34	1581.342	1581.342	1581.341	1581.343
Groundwater Inflow, Volume(10^6 gal)	0	0	0	0	0	0	0	0	0	0	0
RDIJ Inflow, Volume(10^6 gal)	310.081	310.08	310.08	310.08	310.08	310.08	310.08	310.08	310.08	310.08	310.08
External Inflow, Volume(10^6 gal)	3811.75	3811.749	3811.749	3811.75	3811.75	3811.75	3811.75	3811.75	3811.75	3811.75	3811.75
U/S Impervios Area (acre)	92.825	92.825	92.825	92.825	92.825	92.825	92.825	92.825	92.825	92.825	92.825
Min. Tributary Impervious Area to Fill Storage (acres)	0	9.271764	18.543528	27.815292	37.087056	46.35882	55.630584	64.902348	74.174112	83.445876	92.71764
Min. Tributary Sewershed to Fill Storage (acres)	0	21.663	43.326	64.989	86.652	108.315	129.978	151.641	173.304	194.967	216.63

The selected scenario provided management of 20% of the 95th percentile rainfall runoff volume. The corresponding annual reduction in surface flood volume and combined sewer overflow were **0.905 MG** and **18.102 MG**, respectively. These results are preliminary and will be further refined when the storge is distributed to the various GSI locations and the storage nodes moved “off-line” from the existing combined sewer piping.

Table 2. Output comparison for the storage scenarios on the sensitivity analysis

MODEL OUTPUT	BASELINE	STORAGE SCENARIOS									
Model Simulations	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Flooding Loss, Volume (10^6 gal)	34.744	34.55	33.839	33.863	33.878	33.918	33.984	33.991	34.026	34.095	34.087
Outfall Loading, A-41-DT-SD (To Treatment Plant), Volume (10^6 gal)	4332.017	4345.054	4349.622	4350.244	4350.733	4350.392	4350.505	4352.528	4353.376	4351.918	4353.9
Outfall Loading, MH122E001-OF (To River), Volume (10^6 gal)	1441.882	1428.19	1423.78	1417.727	1416.388	1416.546	1414.005	1412.884	1413.792	1410.996	1413.091
Total Outfall Loading, Flow (10^6 gal)	5808.643	5807.794	5807.241	5801.834	5800.999	5800.856	5798.494	5799.403	5801.194	5797.009	5801.078
Full Both Ends (Conduits U/S, Hour)	4683.97	6387.04	5235.28	4794.91	4600.6	4516.86	4464.65	4427.82	4414.93	4413.02	4423.47
Above Full Normal (Conduits U/S, Hour)	1471.65	1704.08	1720.18	1721.84	1721.65	1720.42	1717.78	1714.33	1711.73	1708.55	1706.67
Full Both Ends (Conduits D/S, Hour)	6429.68	6423.66	6421.4	6414.59	6411.95	6402.15	6391.31	6399.82	6409.08	6398.67	6421.26
Above Full Normal (Conduits D/S, Hour)	1210.88	1274.89	1272.14	1261.08	1259.45	1245.82	1238.13	1242.13	1238.34	1230.74	1232.07
D/S Node (MH084M027), Total Inflow (MG)	57.70	57.12	57.91	57.94	57.94	57.89	57.85	57.80	57.76	57.71	57.68

Notes:

- Flooding Loss, Volume (10^6 gal) correlates to surface flooding
- Outfall Loading, MH122E001-OF (To River), volume (10^6 gal) correlates to CSO volume

4. Delineate Anticipated Capture Area

We computed the sewershed capture area that correlates to the optimized GSI storage volume obtained during the sensitivity analysis. The area was delineated from the closest upstream drainage area to Mellon Park. The Managed Subcatchments area to GSI was around 63 acres.

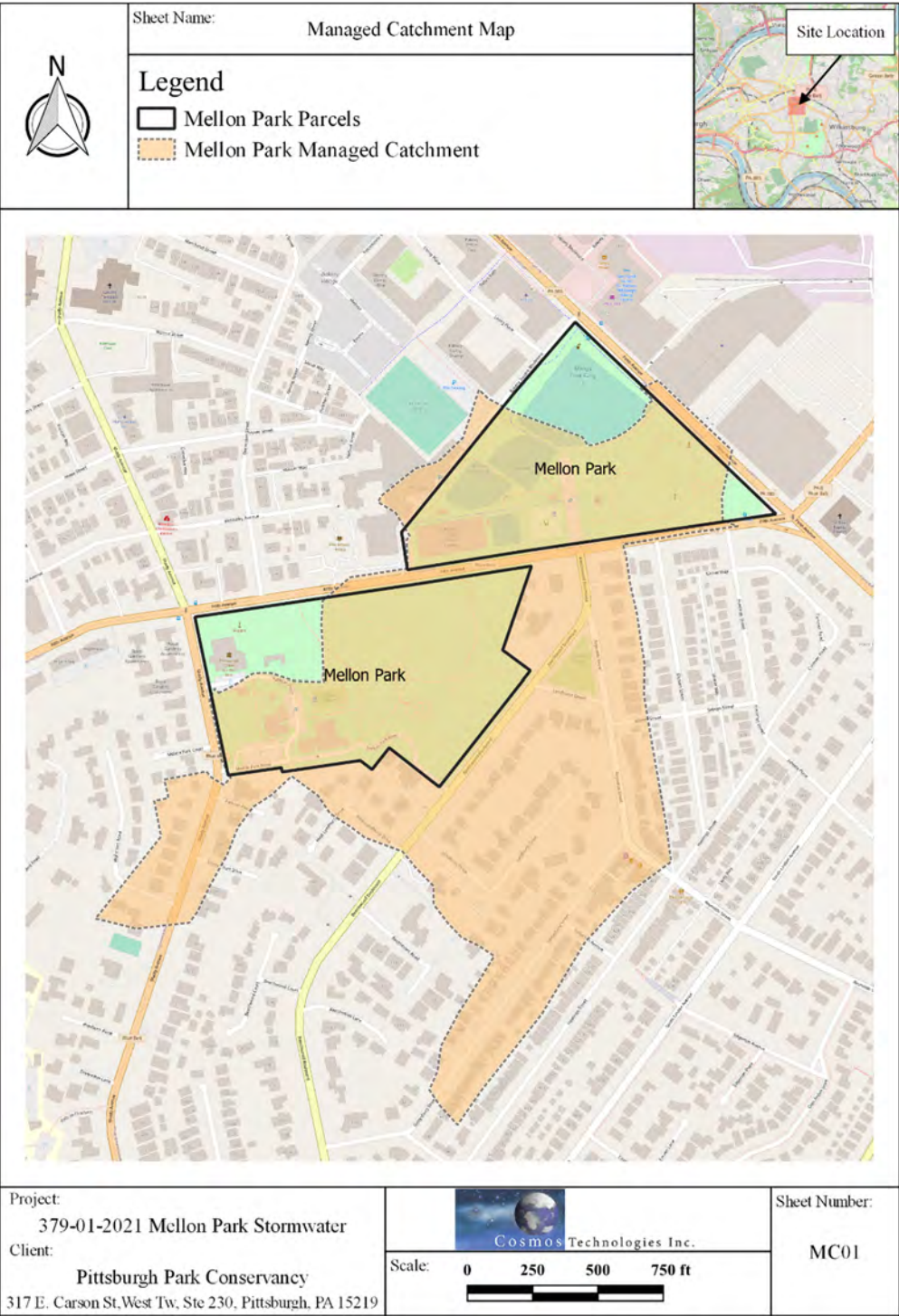


Figure 2. Managed Catchment Map.

5. Distribute GSI Storage Volumes:

For further refinement of the selected alternative, we distributed the footprint area of Proposed GSI Storage in nine (9) locations around Mellon park. The proposed distribution in GSI features is presented in the table below:

Table 3. Storage area distribution.

Node	Storage Area, 50% Void Space (sf)	Storage Volume (gallons)	Estimated Construction Cost	Location
SU1	37,264.58	696,894.17	\$4,278,930.20	Field 1 outfield
SU2	11,116.93	207,900.45	\$1,276,508.74	North Side Parking Lot
SU3	6,882.86	128,718.07	\$790,328.96	Rectangular Field
SU4	14,560.02	272,290.62	\$1,671,864.42	Community Green and Basketball courts
SU5	5,969.22	111,631.79	\$685,419.16	South Side - upper parking area (garden center)
SU6	3,251.60	60,808.91	\$373,366.70	South side – middle parking area (walled garden)
SU7	4,050.90	75,756.81	\$465,146.83	South Side – lower parking area (Marshall Mansion)
SU8	6,244.53	116,780.51	\$717,032.32	Olmstead Pond
SU9	5,023.38	93,943.43	\$576,812.67	Beechwood Blvd
TOTALS	94,364.00	1,764,724.76	\$10,835,410.00	

6. Refine SWMM Model with Distributed/Optimized GSI Storage:

The refined SWMM model was run and compared against the baseline with the distributed storage nodes.

A summary of the baseline results is shown below:

- Existing runoff volume (wet weather flow) originating from the tributary area to Mellon Park (SWMM typical year, all subcatchmnets observed upstream of MH084M027, includes system surcharging/surface flooding) = 90.35 MG
- Existing runoff volume (wet weather flow) from the tributary area to Mellon Park captured/conveyed by the combined sewer (SWMM typical year, observed at MH084M027) = 57.7 MG
- Existing peak flow rate from the Mellon Park tributary sewershed as conveyed by the combined sewer (SWMM typical year, observed downstream of MH084M027) = 30.653 MGD
- Estimate of existing runoff volume originating from Mellon Park limits:
 - For the 95th Percentile Rainfall Event (Total Area = 32.37 acres, Impervious = 6.90 acres, 95th percentile rainfall = 1.66-inch, SSHM) = $((6.90 \text{ ac} \times 0.99) + (25.47 \text{ ac} \times 0.24)) \times (43560 \text{ sf/ac}) \times 1.66 \text{ in} \times (1 \text{ ft}/12\text{in}) = 77,997 \text{ cf} \text{ (583,456 gal)}$
 - For the Typical Year (Total Area = 32.37 acres, Impervious = 6.90 acres, Annual rainfall depth = 37.55 inches, SSHM) = $((6.90 \text{ ac} \times 0.99) + (25.47 \text{ ac} \times 0.24)) \times (43560 \text{ sf/ac}) \times 37.55 \text{ in} \times (1 \text{ ft}/12\text{in}) = 1,764,324 \text{ cf} \text{ (13.20 MG)}$

A summary of the results with the distributed GSIs is shown below:

- 1. Proposed runoff volume (wet weather flow) originating from the tributary area to Mellon Park (SWMM typical year, all subcatchments observed upstream of MH084M027, includes system surcharging/surface flooding) = 90.35 MG
- 2. Proposed runoff volume (wet weather flow) from the tributary area to Mellon Park captured/conveyed by the combined sewer (SWMM typical year, observed at MH084M027) = 62.8 MG
- 3. Proposed peak flow rate from the Mellon Park tributary sewershed as conveyed by the combined sewer (SWMM typical year, observed downstream of MH084M027) = 23.513 MGD
- 4. Total Available GSI Stormwater Storage Volume in the Park (calculated from the total area in Table 3 multiplied by an average of 5 feet depth and 50% void volume) = 235,910 cf (1.765 MG)

A summary of benefits obtained with the distributed GSI is shown below:

- 1. The reduction in runoff volume for the tributary area to Mellon Park (SWMM typical year, observed at MH084M027, no modeled GSI infiltration) was 0.00 MG. This is because the model assumes no infiltration and no evaporation. This conservative approach to the model is consistent with the ALCOSAN’s modeling protocols for the GROW grant program when no infiltration data is provided. However, it can not be proved that no adverse infiltration effects will occur downstream.
- 2. Reduction in peak flow rate from the Mellon Park tributary sewershed as conveyed by the combined sewer (SWMM typical year, observed downstream of MH084M027) = 7.14 MGD
- 3. Annual Reduction in Surface Flooding = 5.15 MG
- 4. Annual Reduction in CSO to River = 8.33 MG
- 5. Annual Increase to ALCOSAN WWTP = 8.86 MG

Figure 3 shows a snapshot of the SWMM model for the proposed stormwater management project.

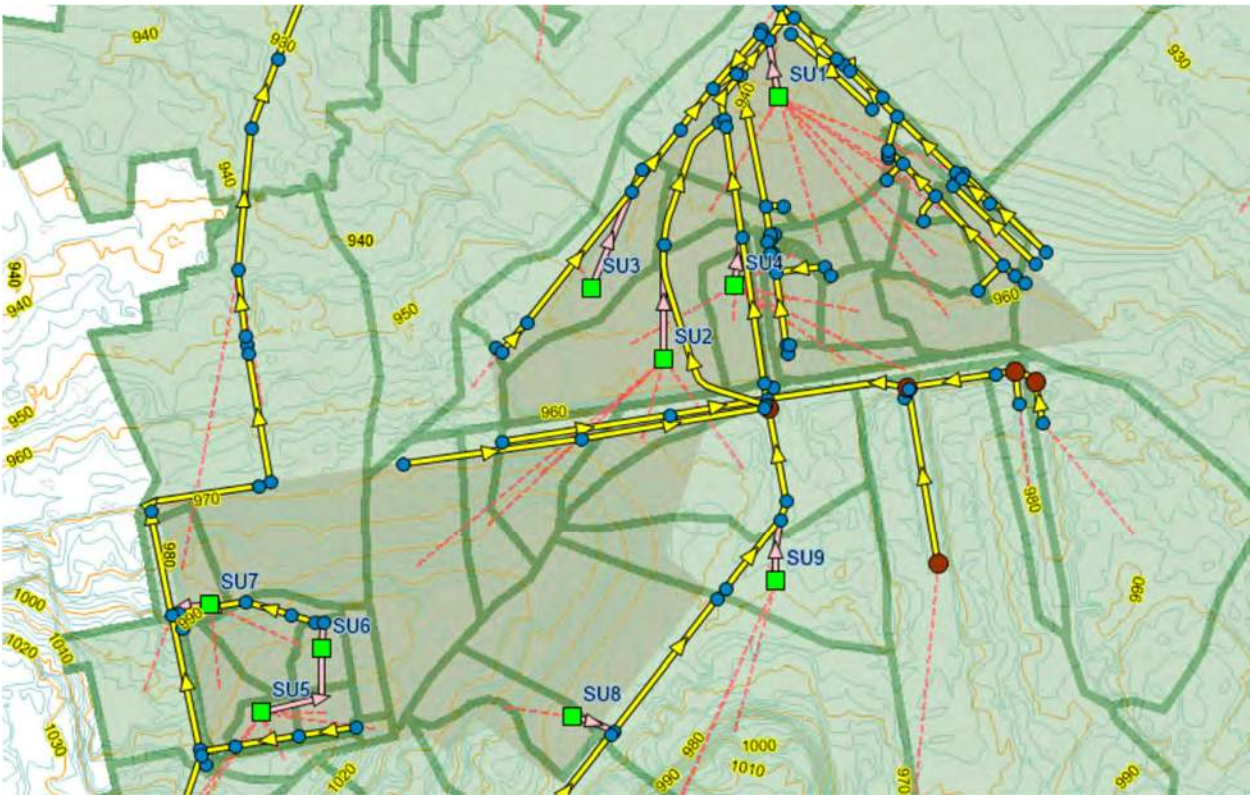


Figure 3. Proposed model snapshot.

7. Assess GSI Funding Methodology

We performed a GSI cost/performance analysis to assess potential funding opportunities. The costing was based on available data. Acknowledging that this analysis is a rough estimate, we assumed a conservative approach to the values provided (see Table 4).

As explained in Point 3, the capital cost of the GSIs was estimated at \$6.14 per storage gallon. Therefore, the recommended storage yields a total construction cost of \$10,835,402.19. Based on an analysis of the benefits provided by the project and the impervious acres managed, we believe that the cost-sharing by ALCOSAN and PWSA could contribute up to \$9,305,374 and \$2,781,523, respectively, to the capital costs.

Looking at the benefits of the projects, we used an annual CSO flooding reduction value of \$0.20 per gallon and an annual flooding reduction benefit of \$1.5 per gallon. In addition, by managing more stormwater on the Mellon Park parcels, we will also be sending more water to the treatment plan, which costs \$9.10 per 1,000 gallons treated. Using these numbers, we calculate a net benefit of the project of \$9,305,374.00 per year (or \$5.27 per gallon of storage each year):

Annual Flooding Reduction (5.15 MG x \$1.5 per gallons) =	\$7,719,000
Annual Treatment Cost Increase (8.86 MG x \$9.10/1,000 gallons) =	\$(80,626)
Annual CSO Reduction (8.33 MG x \$0.20/gallon)+	\$1,667,000
Net Benefit of Storage Proposed	\$9,305,374

Given the regional benefit that will result from the proposed level of storage, cost-sharing by ALCOSAN and PWSA should be pursued.

Typically GROW grant funding only accounts for the benefit of CSO reduction and not flood relief. However, if ALCOSAN were to fund in an amount equal to both benefits, their contribution could be as high as \$9,305,374, with a funding benefit factor of 86%. If, however, they were to follow past practice and only calculate a benefit based on CSO reduction, a cost-sharing of \$1,586,374 would be anticipated (Value of CSO reduction – additional treatment costs). The latter approach would only yield a funding factor of 15% (below the ALCOSAN threshold).

The project will also benefit PWSA, so PWSA funding may be available to complement possible ALCOSAN funding. Using that rate to value the benefits of the projects, PWSA could contribute \$2,781,523, covering the remaining cost of the project.

Suppose ALCOSAN pays only for CSO reductions, as happens in most projects presented to the GROW program. In that case, the benefit factor will reduce to 15%, making it unlikely that the GROW program would fund the project. Although we can still request PWSA support, the project will need extra funding of around \$8,053,879.

Table 4. Cost/performance analysis.

	With Flooding Benefits	Without Flooding Benefits
ALCOSAN Funding		
Flooding Reduction Credit (A)	\$7,719,000.00	\$0
Treatment Cost (B)	\$(80,626.00)	\$(80,626.00)
CSO Reduction Credit (C)	\$1,667,000.00	\$1,667,000.00
Total Credit (A+B+C)	\$9,305,374.00	\$1,586,374
Benefit per gallon (\$ Capital/Gallon)	\$5.27	\$0.90
Construction Cost of GSI (Storage Volume)	\$10,835,402.19	\$10,835,402.19
ALCOSAN Funding Factor (\$ Credit/\$ Const.)	0.86	0.15
Supplemental Funding Required	\$1,530,028.19	\$9,249,028.19
PWSA Funding		
PWSA Credit, \$ per Gallon (Equivalent Impervious Managed) (1.76 MG x \$3.68/ gallon)	\$2,781,522.79	\$2,781,522.79
PWSA Funding Available/Funding Required	1.82	0.30

Project Name: Mellon Park Action Plan – Traffic Engineering Services**Project Number:** C-41354**Prepared By:** Michael J. Haberman, P.E.Introduction

The Gateway Engineers, Inc. (Gateway) was retained by the Pittsburgh Park Conservancy (PPC) to perform traffic engineering services and analyses in and around Mellon Park, which is located along Fifth Avenue and Beechwood Boulevard in the Shadyside neighborhood of the City of Pittsburgh. Tasks performed included intersection review and analyses, concept development, and preferred plan development. The following sections of this memo summarize work performed for each of these tasks.

Intersection Review and Analyses

On-site observations were conducted at the intersections of Penn Avenue & Bakery Square Boulevard; Penn Avenue & Fifth Avenue; Fifth Avenue & Beechwood Boulevard / Mellon Park Drive; and Fifth Avenue & Shady Avenue. In addition to observing traffic operations at these intersections, data was collected at the intersection of Fifth Avenue & Beechwood Boulevard / Mellon Park Drive during a weekday evening peak period and on a Saturday midday peak period. The data was collected using MioVision cameras which provided a breakdown of pedestrians, bicycles, and vehicles at the intersection. Lastly, Gateway performed general field measurements (lane widths, approach grades, signage, etc.) were also performed throughout the study area.

The site observations, field measurements, and traffic data were utilized to analyses the study area and to develop existing conditions base mapping of the traffic infrastructure adjacent to Mellon Park. The study area was then modeled using Synchro Software and analyzed to identify potential modifications to the roadway system, lane configurations, traffic control, signage, and other infrastructure features to improve safety for pedestrians and bicyclists while also not significantly impacting vehicle operations.

Several options were considered and analyses with relation to the study area. Analyses included evaluating reducing Fifth Avenue from a 4-lane section to a 3-lane section with bike lanes; however, the model revealed that the existing vehicular traffic during the peak times could not be accommodated with the removal of a through lane in each direction on Fifth Avenue. The analyses show that the intersections would drop to Level-of-Service F with significant delays and queues during peak times.

In addition to evaluating the potential reduction of lanes on Fifth Avenue, Beechwood Boulevard was evaluated to determine if the auxiliary right turn lane could be eliminated from the approach to Fifth Avenue. As was the case with the evaluation of Fifth Avenue, the removal of this auxiliary turn lane would result in excessive delays and queues on Beechwood Boulevard during peak times.

Upon determining that reducing the number of vehicular lanes at critical intersections and along Fifth Avenue was not a feasible alternative, Gateway's focus turned to identifying traffic calming and infrastructure improvements throughout the study area that could be implemented to reduce conflicts between pedestrians, bicycles, and vehicles as well as reduce speeds and improve safety throughout the study area. Several concepts were developed and vetted between Gateway, PPC, DOMI, and other stakeholders in order to develop a final preferred plan for future traffic improvements.

Concept Development

Existing base mapping was developed from the field measurements and aerial photography. The base mapping was utilized to develop a series of traffic calming improvements and upgrades to pedestrian and bicycle infrastructure throughout the study area. In order to determine feasible traffic calming improvements, PennDOT Publication 383, *Pennsylvania's Traffic Calming Handbook* was reviewed and evaluated. From this review and evaluation of existing conditions, several traffic calming measures and treatments were developed and were recommended for inclusion in the Mellon Park Action Plan. Concepts were developed for the following improvements, which were recommended for inclusion in the final Action Plan:

- Realign and reconstruct the access to the north side of Mellon Park opposite Beechwood Boulevard.
- Install a new traffic signal with an exclusive pedestrian phase at the intersection of Fifth Avenue and Beechwood Boulevard, including new ADA ramps on each corner.
- Install bulb-outs, new curbing, new pedestrian crossings, bike lanes, and other traffic calming features on Beechwood Boulevard between Fifth Avenue and West Lyndhurst Drive. Bulb-outs to incorporate stormwater management features and pervious areas (grass, plantings, rain gardens, etc.).
- Install speed humps and raised crosswalks along Beechwood Boulevard at locations between Reynolds Street and West Lyndhurst Drive. Install associated pavement markings and signage at each speed hump / raised crosswalk location.
- Realign and narrow the Reynolds Street approach to Beechwood Boulevard, including the construction of new sidewalks, curbing, ADA ramps, pavement markings, signage, and defined travel lanes and parking.
- Install updated pedestrian signal equipment (walk/don't walk with countdown timers, push buttons, etc.) at the signalized intersection of Fifth Avenue and Shady Avenue as well as at the intersection of Penn Avenue and Fifth Avenue.

Preferred Plan / Costs

The improvements outlined above and depicted on the concepts included in the final Mellon Park Action Plan are recommended for future consideration as funding becomes available and as the remainder of the plan for the north and south sides of Mellon Park are pursued. Gateway developed detailed cost estimates for the improvements depicted on the concept plans and outlined above. The following is a breakdown of the costs associated with these traffic improvements:

- Construction costs: \$865,000
- Contingency (20%): \$175,000
- Survey / Design / Permitting: \$100,000
- **TOTAL: \$1,140,000**