Credit: Flickr // Arlanravan

APPENDICES A - E

Appendix A: Educational Materials

COMMUNITY GREENING PLAN

Capital Region Water is completing a **Community Greening Plan** (Green Stormwater Infrastructure) for Harrisburg. We're working with the community to find opportunities in neighborhoods throughout Harrisburg for green projects to reduce street flooding, sewer backups, and combined sewer overflows while beautifying our surroundings and cleaning up our water! The GSI fact sheets provide a glimpse into some of the types of green stormwater infrastructure that can be employed in Harrisburg neighborhoods.

TYPES OF GSI (GREEN STORMWATER INFRASTRUCTURE)

- **Stormwater Planter** - an area with soil and plants surrounded by a curb, typically located at the edge of a sidewalk where it meets a street.
- **Stormwater Bumpout** - an area with soil and plants that extends out from the existing curb into the street, with a new curb at the street edge.
- **Stormwater Tree** - a street tree planted within soil that is lower than street level to capture stormwater from roads and sidewalks.
- **Stormwater Tree Trench** - an underground storage system that connects multiple street trees, typically located at the edge of a sidewalk where it meets a street or under the edge of the street where it meets a sidewalk.
- **Pervious Paving** - a special type of paving that allows stormwater to pass through it instead of running off of it.
- **Green Gutter** - continuous, narrow areas with soil and plants that are put along the edge of a street where it meets a sidewalk, with a new curb at the street edge.
- **Green Roof** - roof that is either partially or fully covered by a system of plants.
- **Blue Roof** - roof that is either partially or fully covered by a system of stone storage trays.
- **Rain Garden** - an area with soil and plants that is not surrounded by a curb.
- **Stormwater Wetland** - constructed area with soil, plants, and marshy water.
- **Stormwater Basin** - a sunken, usually grassy area that is designed to collect and store stormwater.
- **Bioswale** - a long, shallow depression designed to slow the flow of stormwater and allow it to drain into the soil.
- **Flow-Through Planter** - a box with soil and plants that sits on the ground, typically located next to a building.
- **Rain Barrel** - enclosed, typically plastic or metal structures that sit on the ground, typically located next to a building.
- **Cistern** - large, enclosed structures that can sit on the ground or be buried below ground.

City Beautiful H_2O

STORMWATER PLANTER

Image Credit: Flickr/Center for Neighborhood Technology

Image Credit: Flickr/Chris Hamby

A stormwater planter is an area with soil and plants surrounded by a curb, typically located at the edge of a sidewalk where it meets a street. The soil and plants are lower than street level to capture stormwater from roads and sidewalks. Stormwater planters can vary in size and materials.

med

MAINTENANCE

(ease of cleaning/using the GSI)

BENEFITS

- Reduces and filters runoff.
- Flexible design and sizing.
- Enhances surrounding landscape/streetscape/ beautification.
- Works well in urban environments.
- Improves pedestrian safety.

TYPICAL APPLICATIONS

- Streets
- Sidewalks
- Parking Lots

low-med

COST

(typical cost of designing and building GSI)

LIMITATIONS

- Initial maintenance can be time-consuming until vegetation is established, afterwards maintenance is relatively low.
- Requires careful selection of native, water-tolerant plants.
- Requires control structures (domed risers) to provide for overflow.
- Variable cost based on soil/site conditions and size.
- Infiltration testing required.

low-med

SIZE/VOLUME

(typical size required/ volume managed by GSI)

STORMWATER BUMPOUT

Image Credit: Flickr/Center for Neighborhood Technology

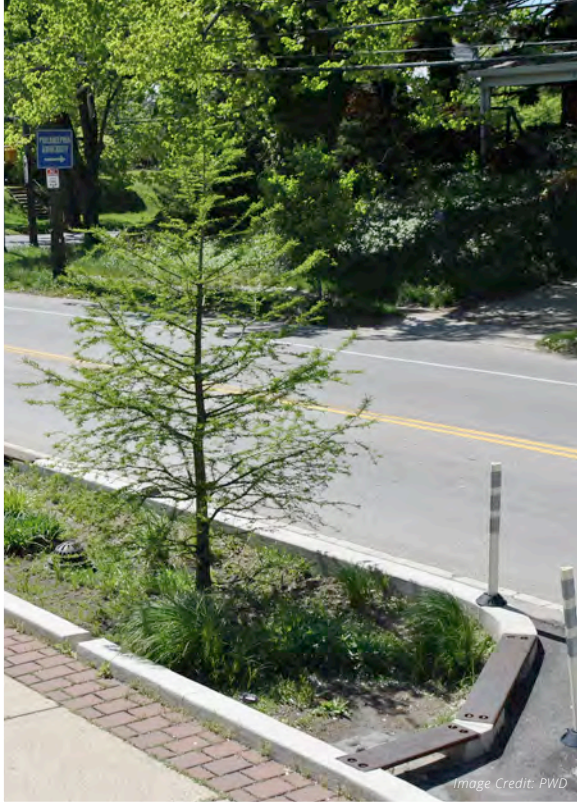


Image Credit: PWD

A stormwater bumpout is an area with soil and plants that extends out from the existing curb into the street, with a new curb at the street edge. They can be put at the corner of a block, in the middle of a block, or along the entire length of a block. The soil and plants are lower than street level to capture stormwater from roads and sidewalks. Stormwater bumpouts can vary in size and materials.

MAINTENANCE

(ease of cleaning/using the GSI)

BENEFITS

- Reduces and filters runoff.
- Flexible design.
- Enhances surrounding landscape/streetscape.
- Works well in urban environments.
- Improves pedestrian safety and calms traffic.
- Relatively inexpensive to retrofit.

TYPICAL APPLICATIONS

- Streets
- Sidewalks

COST

(typical cost of designing and building GSI)

LIMITATIONS

- Initial maintenance can be time-consuming until vegetation is established, afterwards maintenance is relatively low.
- Requires careful selection of native, water-tolerant plants.
- Requires control structures (domed risers) to provide for overflow.
- Variable cost based on soil/site conditions and size.
- Infiltration testing required.

SIZE/VOLUME

(typical size required/ volume managed by GSI)

STORMWATER TREE

Image Credit: Flickr/Chris Hamby

Image Credit: Flickr/DeepRoot

A stormwater tree is a street tree planted within soil that is lower than street level to capture stormwater from roads and sidewalks. The tree absorbs stormwater through its roots. Some stormwater tree pits have metal grates above them. Others have inlets that direct stormwater to the trees.

MAINTENANCE

(ease of cleaning/using the GSI)

BENEFITS

- Reduces and filters runoff.
- Flexible design.
- Enhances surrounding landscape/streetscape.
- Works well in urban environments.
- Increases tree canopy (increased air quality).

TYPICAL APPLICATIONS

- Streets
- Sidewalks
- Parking Lots

COST

(typical cost of designing and building GSI)

LIMITATIONS

- Requires careful selection of native, water-tolerant trees.
- Variable cost based on soil/site conditions and size.
- Limited stormwater capacity.
- Long-term maintenance of trees.

SIZE/VOLUME

(typical size required/ volume managed by GSI)

STORMWATER TREE TRENCH

Image Credit: Flickr/DeepRoot

Image Credit: Flickr/DeepRoot

A stormwater tree trench is an underground storage system that connects multiple street trees, typically located at the edge of a sidewalk where it meets a street or under the edge of the street where it meets a sidewalk. The trees absorb some of the stormwater through their roots, while excess water drains down into an underground storage area made of stone, plastic crates, or other materials.

med-high

MAINTENANCE

(ease of cleaning/using the GSI)

BENEFITS

- Reduces and filters runoff.
- Flexible design.
- Enhances surrounding landscape/streetscape.
- Works well in urban environments.
- Increases tree canopy (increased air quality).
- Can manage a large volume of stormwater.

TYPICAL APPLICATIONS

- Streets
- Sidewalks
- Parking Lots

med-high

COST

(typical cost of designing and building GSI)

LIMITATIONS

- Requires careful selection of native, water-tolerant trees.
- Requires control structures (domed risers) to provide for overflow.
- Variable cost based on soil/site conditions and size.
- Infiltration testing required.
- Long-term maintenance of trees.

med-high

SIZE/VOLUME

(typical size required/ volume managed by GSI)

PERVIOUS PAVING

Image Credit: Flickr/Jarrett M.

Image Credit: Flickr/Mike Boucher

Pervious, or porous/permeable, paving is a special type of paving that allows stormwater to pass through it instead of running off of it. Pervious paving can be used in many places where traditional paving is used, particularly areas that do not have a lot of traffic, such as walkways and parking areas. An underground storage system usually sits below the pavement to store the stormwater.

MAINTENANCE

(ease of cleaning/using the GSI)

BENEFITS

- Reduces runoff from streets and parking lots.
- Wide application.
- Works well in urban environments.
- Can manage a large volume of stormwater.
- Manages stormwater without reducing hardscaped areas.

TYPICAL APPLICATIONS

- Streets
- Sidewalks
- Parking Lots

COST

(typical cost of designing and building GSI)

LIMITATIONS

- Variable cost based on soil/site conditions and size.
- May not be suitable for all locations where traditional pavement is used.
- Not recommended for areas with steep slopes.
- Infiltration testing required.

SIZE/VOLUME

(typical size required/ volume managed by GSI)

GREEN GUTTER

Green gutters are continuous, narrow areas with soil and plants that are put along the edge of a street where it meets a sidewalk, with a new curb at the street edge. The soil and plants are lower than street level to capture stormwater from roads and sidewalks. Green gutters can vary in size and materials.

MAINTENANCE

(ease of cleaning/using the GSI)

BENEFITS

- Reduces and filters runoff.
- Flexible design.
- Enhances surrounding landscape/streetscape/ beautification.
- Works well in urban environments.
- Minimal space requirements.
- Relatively inexpensive to retrofit.

TYPICAL APPLICATIONS

- Streets
- Sidewalks
- Parking Lots

COST

(typical cost of designing and building GSI)

LIMITATIONS

- Initial maintenance can be time-consuming until vegetation is established, afterwards maintenance is relatively low.
- Requires careful selection of native, water-tolerant plants.
- Requires control structures (domed risers) to provide for overflow.
- Variable cost based on soil/site conditions and size.
- Infiltration testing required.

SIZE/VOLUME

(typical size required/ volume managed by GSI)

GREEN ROOF

Image Credit: Flickr/Chesapeake Bay Program

Image Credit: Flickr/Chesapeake Bay Program

A green roof (or vegetated roof) is a roof that is either partially or fully covered by a system of plants. The plants are put on top of soil or a water storage system. Green roofs vary in size and depth depending on the weight the existing roof can handle.

MAINTENANCE

(ease of cleaning/using the GSI)

BENEFITS

- Reduces energy costs (heating and cooling).
- Provides aesthetic value (when visible/accessible).
- Captures roof runoff.

TYPICAL APPLICATIONS

- Residential (limited)
- Commercial
- Public Facilities
- Institutions
- Industrial

COST

(typical cost of designing and building GSI)

LIMITATIONS

- Can only manage the rooftop runoff.
- High maintenance until vegetation is established.
- Not all roof structures can handle the load needed for a green roof system.

SIZE/VOLUME

(typical size required/ volume managed by GSI)

BLUE ROOF

Image Credit: HazenandSawyer.com

Image Credit: NYC.gov

A blue roof is a roof that is either partially or fully covered by a system of stone storage trays. The storage trays capture rainwater until it evaporates. Blue roofs vary in size and can be used alongside green roofs.

MAINTENANCE

(ease of cleaning/using the GSI)

BENEFITS

- Reduces energy costs (heating and cooling).
- Provides aesthetic value (when visible/accessible).
- Captures roof runoff.

TYPICAL APPLICATIONS

- Residential (limited)
- Commercial
- Public Facilities
- Institutions
- Industrial

COST

(typical cost of designing and building GSI)

LIMITATIONS

- Can only manage the rooftop runoff.
- Not all roof structures can handle the load needed for a blue roof system.

SIZE/VOLUME

(typical size required/ volume managed by GSI)

RAIN GARDEN

Image Credit: Andrew Dobshinsky

Image Credit: Flickr/PWD

A rain garden is an area with soil and plants that is not surrounded by a curb. Rain gardens are typically located in grassy areas. The soil and plants are lower than surrounding areas to capture stormwater. The stormwater collects in the rain garden, creating a small, shallow pond until the water drains down through the soil. Some rain gardens have an underground storage system beneath them to hold more stormwater. Rain gardens can vary in size and materials.

MAINTENANCE

(ease of cleaning/using the GSI)

BENEFITS

- Reduces and filters runoff.
- Flexible design and installation.
- Enhances surrounding landscape/beautification.
- Can manage a large volume of stormwater.

TYPICAL APPLICATIONS

- Residential
- Commercial
- Public Facilities
- Institutions
- Vacant Lots
- Parks/Recreation

COST

(typical cost of designing and building GSI)

LIMITATIONS

- Initial maintenance can be time-consuming until vegetation is established, afterwards maintenance is relatively low.
- Requires careful selection of native, water-tolerant plants.
- Requires control structures (domed risers) to provide for overflow.
- Variable cost based on soil/site conditions and size.
- Infiltration testing required.

SIZE/VOLUME

(typical size required/ volume managed by GSI)

City Beautiful H_2O

STORMWATER WETLAND

Image Credit: Flickr/PWD

Image Credit: Flickr/Seuss

A stormwater wetland is a constructed area with soil, plants, and marshy water. Stormwater wetlands typically include a small pool that filters some pollutants out of the stormwater and then a larger area of with marshland vegetation that treats and filters the water similar to a natural wetland. Stormwater wetlands can serve as habitat for wildlife.

MAINTENANCE

(ease of cleaning/using the GSI)

BENEFITS

- Reduces and filters runoff.
- Enhances surrounding landscape/beautification.
- Provides a habitat for wildlife.
- Can manage a large volume of stormwater.

TYPICAL APPLICATIONS

- Public Facilities
- Institutions
- Vacant Lots
- Parks/Recreation

COST

(typical cost of designing and building GSI)

LIMITATIONS

- Initial maintenance can be time-consuming until vegetation is established, afterwards maintenance is relatively low.
- Requires careful selection of native, water-tolerant plants.
- Requires control structures (domed risers) to provide for overflow.
- Variable cost based on soil/site conditions and size.
- Infiltration testing required.

SIZE/VOLUME

(typical size required/ volume managed by GSI)

STORMWATER BASIN

Image Credit: Flickr/Aaron Volkening

Image Credit: PHS

A stormwater basin (detention/retention pond) is a sunken, usually grassy area that is designed to collect and store stormwater. Stormwater basins vary in size and can either slow the stormwater until it is treated elsewhere, or allow it to drain into the soil. Vegetation improves filtering, water quality, and the aesthetics of the basin.

MAINTENANCE

(ease of cleaning/using the GSI)

BENEFITS

- Reduces and filters runoff.
- Enhances surrounding landscape/beautification.
- Can manage a large volume of stormwater.

TYPICAL APPLICATIONS

- Public Facilities
- Institutions
- Vacant Lots
- Parks/Recreation

COST

(typical cost of designing and building GSI)

LIMITATIONS

- Initial maintenance can be time-consuming until vegetation is established, afterwards maintenance is relatively low.
- Requires careful selection of native, water-tolerant plants.
- Requires control structures (domed risers) to provide for overflow.
- Variable cost based on soil/site conditions and size.
- Infiltration testing required.

SIZE/VOLUME

(typical size required/ volume managed by GSI)

BIOSWALE

Image Credit: Flickr/Montgomery County Planning

Image Credit: Flickr/Aaron Volkening

A bioswale is a long, shallow depression designed to slow the flow of stormwater and allow it to drain into the soil. Swales can be used as an alternative to traditional ditches or as a way to slow stormwater before it gets to other GSI.

BENEFITS

- Reduces and filters runoff.
- Flexible design and installation.
- Enhances surrounding landscape/beautification.
- Can manage a large volume of stormwater (if designed for infiltration).
- Can replace traditional ditches/ gutter systems.
- Works well in sloped areas.

TYPICAL APPLICATIONS

- Residential
- Commercial
- Public Facilities
- Institutions
- Vacant Lots
- Parks/Recreation

LIMITATIONS

- Initial maintenance can be time-consuming until vegetation is established, afterwards maintenance is relatively low.
- Requires careful selection of native, water-tolerant plants.
- Variable cost based on soil/site conditions and size.
- Infiltration testing required.
- Requires a medium to large amount of space.

MAINTENANCE

(ease of cleaning/using the GSI)

COST

(typical cost of designing and building GSI)

SIZE/VOLUME

(typical size required/ volume managed by GSI)

FLOW-THROUGH PLANTER

Image Credit: Flickr/Melbourne Water

Image Credit: PWD

A flow-through planter is a box with soil and plants that sits on the ground, typically located next to a building. The stormwater from the building's roof is directed to the stormwater planter through a downspout. Stormwater filters through the soil in the box.

MAINTENANCE

(ease of cleaning/using the GSI)

BENEFITS

- Reduces runoff from rooftops.
- Flexible design.
- Enhances surrounding landscape/streetscape/ beautification.
- Works well in urban environments.
- Minimal soil/site consideration.

TYPICAL APPLICATIONS

- Residential
- Commercial
- Public Facilities
- Institutions

COST

(typical cost of designing and building GSI)

LIMITATIONS

- Initial maintenance can be time-consuming until vegetation is established, afterwards maintenance is relatively low.
- Requires careful selection of native, water-tolerant plants.
- Requires control structures (domed risers) to provide for overflow.
- Variable cost based on soil/site conditions and size.
- Can only manage rooftop runoff.

SIZE/VOLUME

(typical size required/ volume managed by GSI)

RAIN BARREL

Image Credit: PWD

Image Credit: Flickr/Center for Neighborhood Technology

Rain barrels are enclosed, typically plastic or metal structures that sit on the ground, typically located next to a building. The stormwater from the building's roof is directed to the rain barrel through a downspout. Stormwater is stored in the rain barrel until it is needed for another use. The collected water is often used for things that do not require drinking water, like watering plants or washing cars.

MAINTENANCE

(ease of cleaning/using the GSI)

BENEFITS

- Reduces runoff from rooftops.
- Provides additional water for irrigation and other needs.
- Saves money by reducing the amount of water needed for irrigation.
- Easy implementation and maintenance.
- No soil infiltration.
- Minimal soil/site consideration.

TYPICAL APPLICATIONS

- Residential
- Commercial
- Public Facilities
- Institutions

COST

(typical cost of designing and building GSI)

LIMITATIONS

- Can only manage rooftop runoff.
- Additional GSI options are often necessary to manage stormwater for the larger site.
- Requires a use for the stored water.

SIZE/VOLUME

(typical size required/ volume managed by GSI)

CISTERN

Image Credit: PWD

Image Credit: Flickr/Center for Neighborhood Technology

Cisterns are large, enclosed structures that can sit on the ground or be buried below ground. Stormwater is directed to cisterns through downspouts or pipes. Stormwater is stored in the cistern until it is needed for another use. The collected water is often used for things that do not require drinking water, like watering plants or washing cars.

MAINTENANCE

(ease of cleaning/using the GSI)

BENEFITS

- Reduces runoff.
- Provides additional water for irrigation and other needs.
- Saves money by reducing the amount of water needed for irrigation.
- Easy implementation and maintenance.
- No soil infiltration.
- Minimal soil/site consideration.

TYPICAL APPLICATIONS

- Residential
- Commercial
- Industrial
- Public Facilities
- Institutions

COST

(typical cost of designing and building GSI)

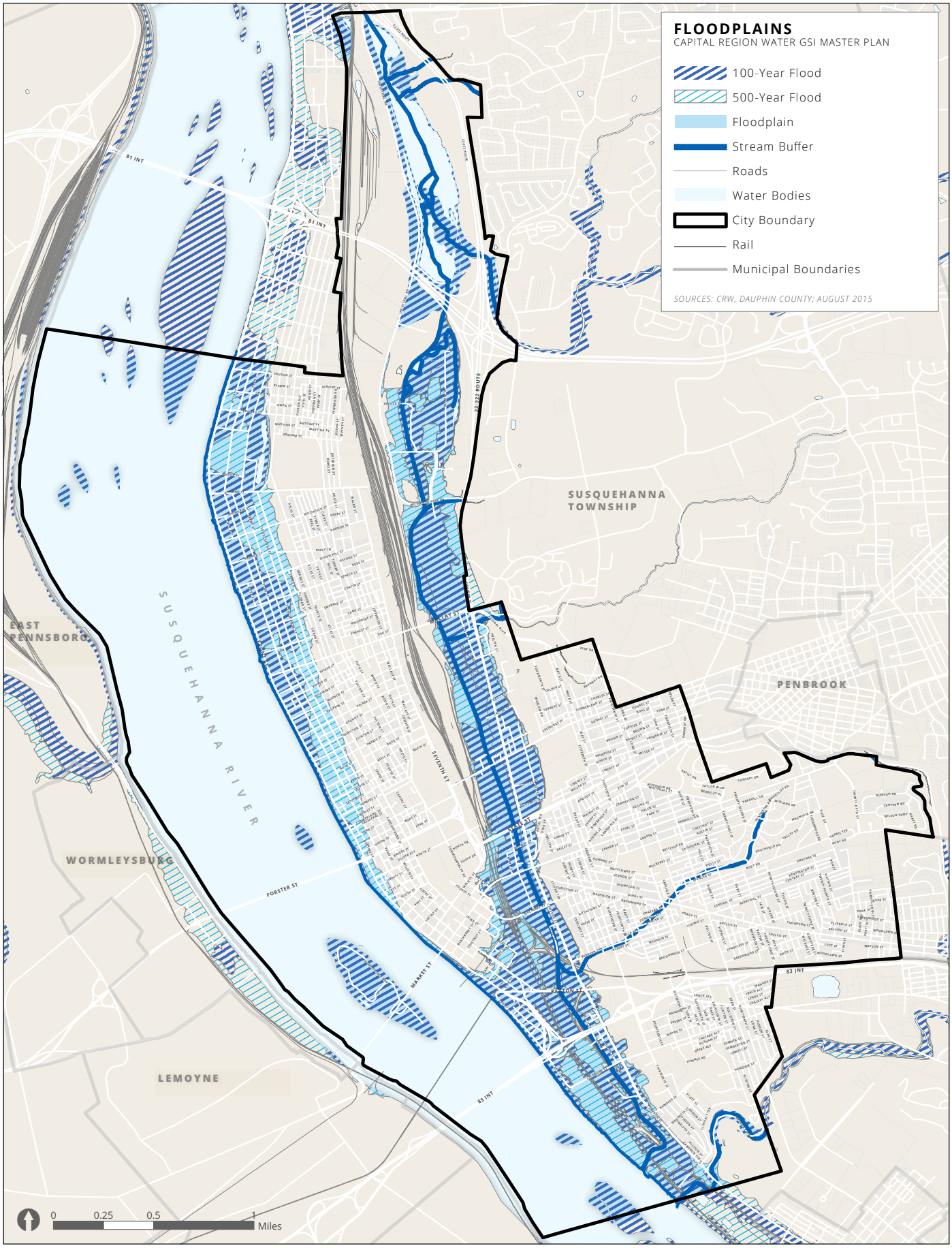
LIMITATIONS

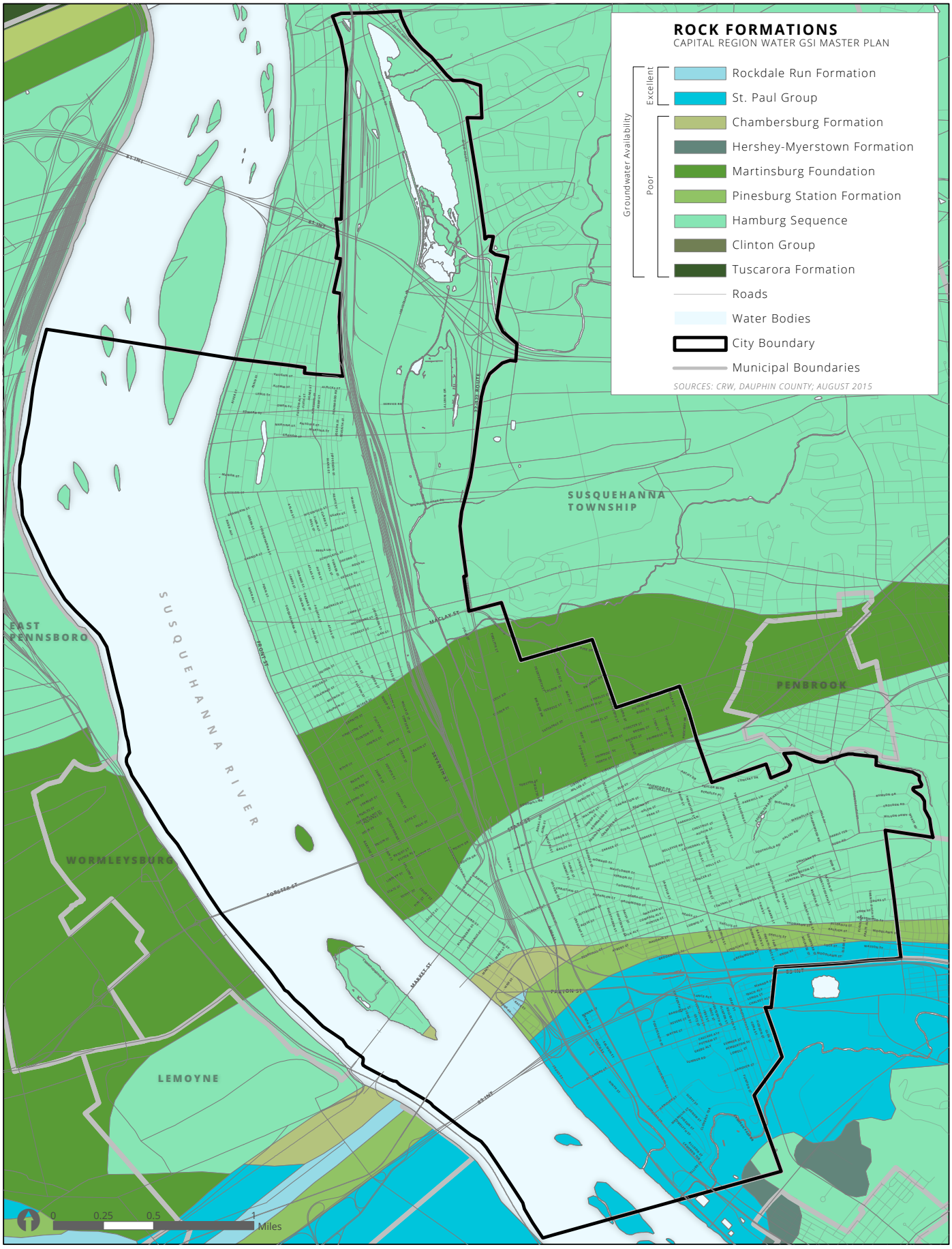
- Additional GSI options are often necessary to manage stormwater for the larger site.
- Requires a use for the stored water.

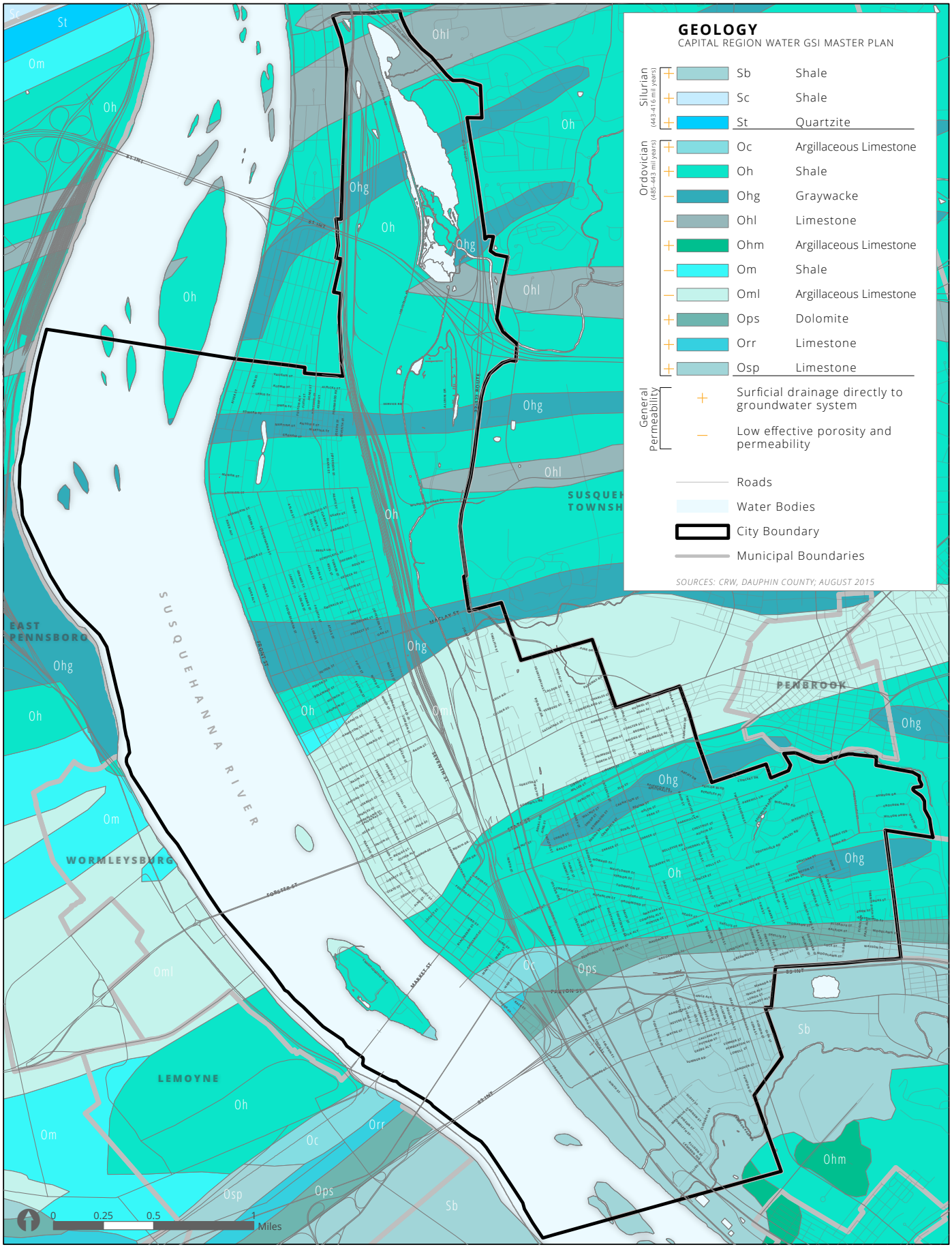
SIZE/VOLUME

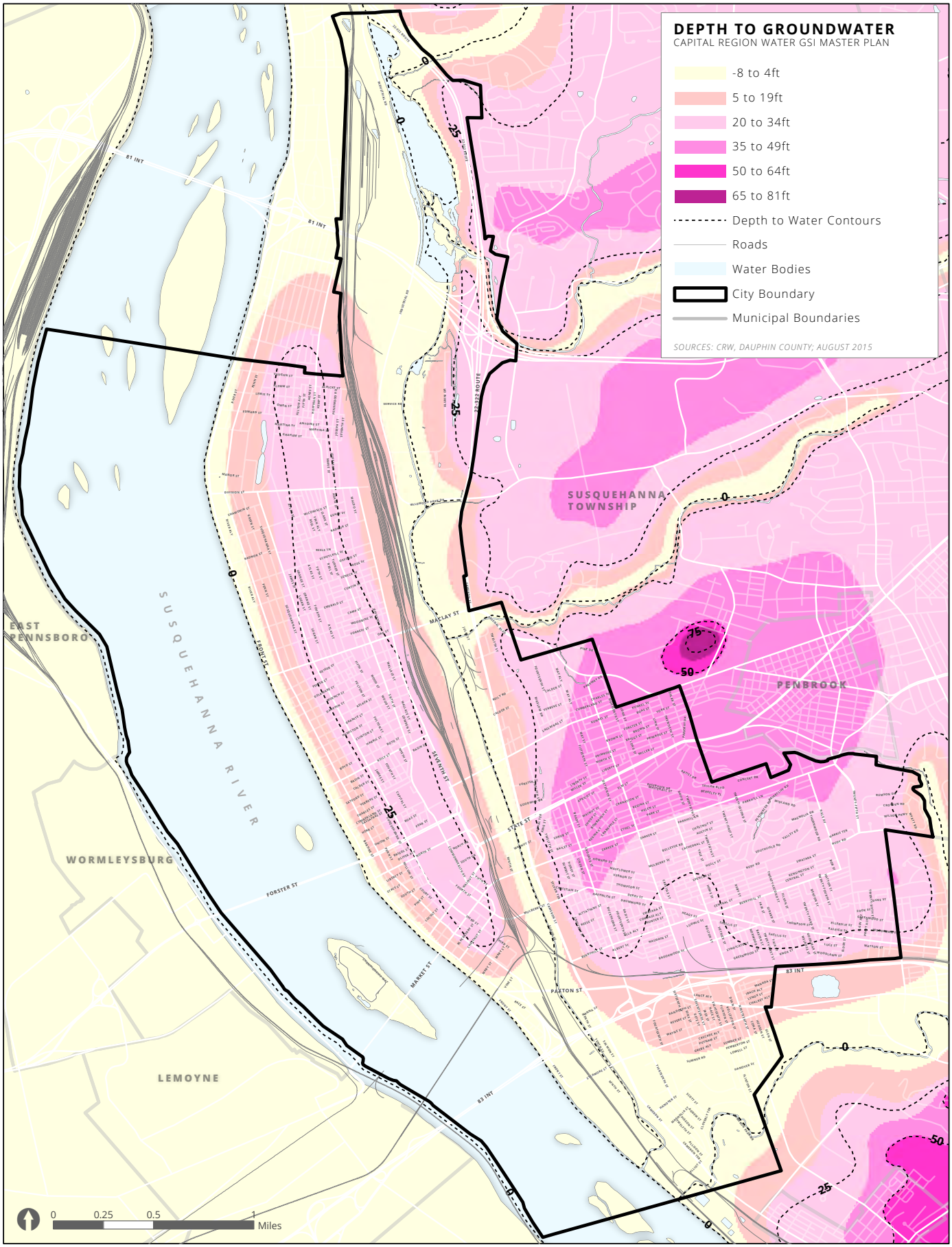
(typical size required/ volume managed by GSI)

Appendix B: Analysis Maps

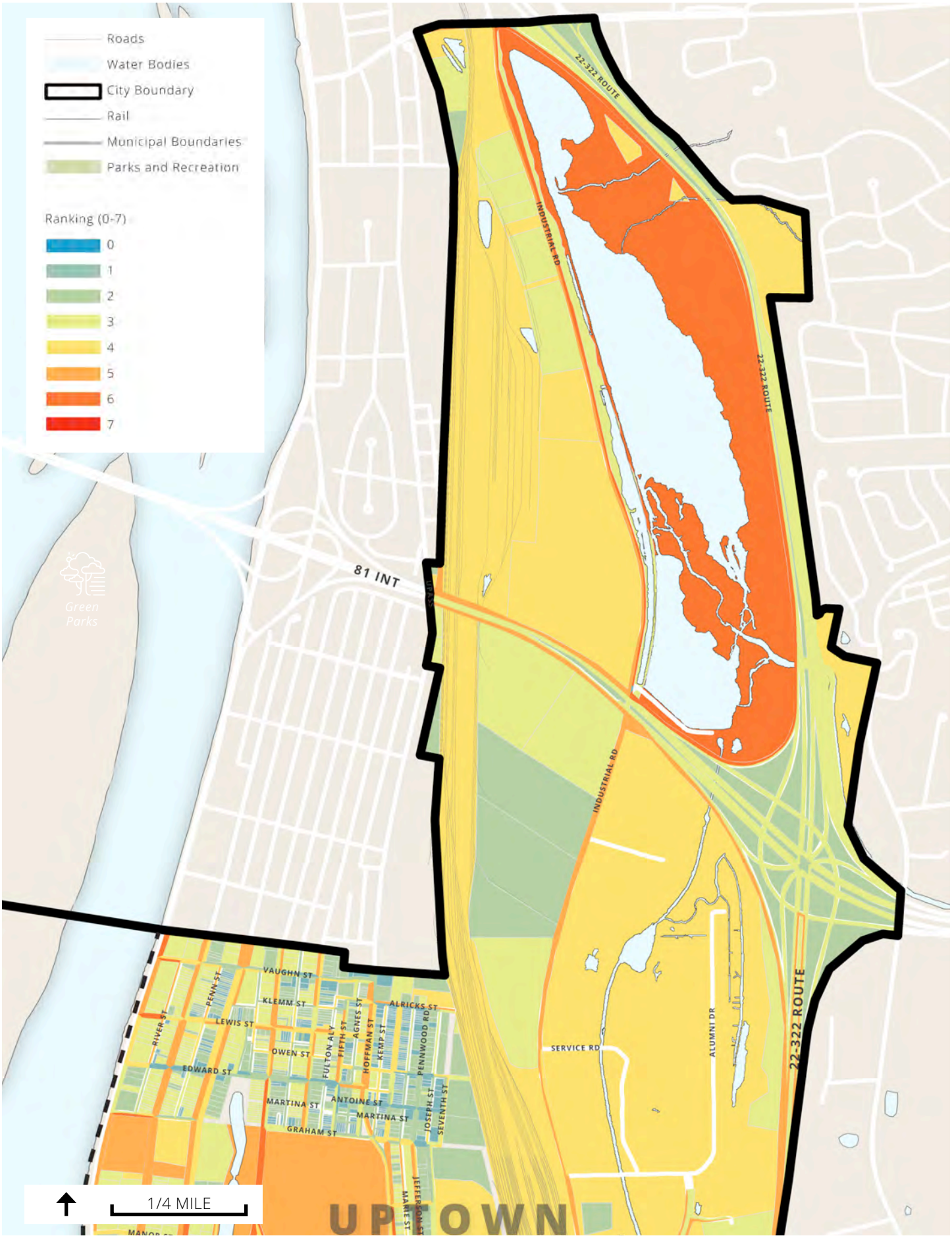

FLOODPLAINS
CAPITAL REGION WATER GSI MASTER PLAN
100-Year Flood
500-Year Flood
Floodplain
Stream Buffer
Roads
Water Bodies
City Boundary
Rail
Municipal Boundaries
SOURCES: CRW, DAUPHIN COUNTY; AUGUST 2015
SUSQUEHANNA TOWNSHIP
PENBROOK
EAST PENNSBORO
WORMLEYSBURG
LEMOYNE
SUSQUEHANNA RIVER
81 INT
83 INT
22-322 ROUTE
SEVENTH ST
FORSTER ST
MARKET ST
0
0.25
0.5
1
Miles

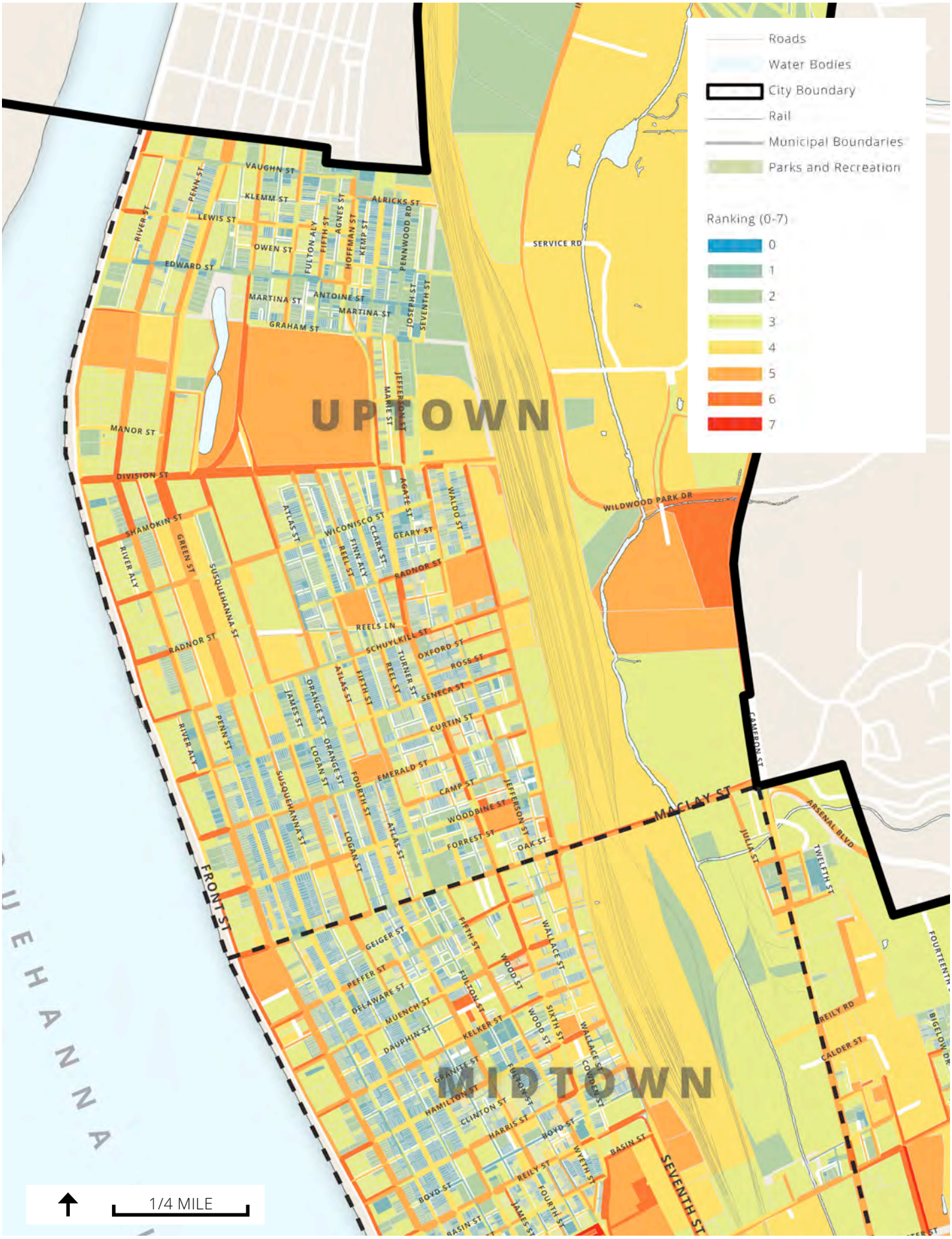

ROCK FORMATIONS
CAPITAL REGION WATER GSI MASTER PLAN
Groundwater Availability
Excellent
Poor
Rockdale Run Formation
St. Paul Group
Chambersburg Formation
Hershey-Myerstown Formation
Martinsburg Foundation
Pinesburg Station Formation
Hamburg Sequence
Clinton Group
Tuscarora Formation
Roads
Water Bodies
City Boundary
Municipal Boundaries
SOURCES: CRW, DAUPHIN COUNTY; AUGUST 2015
SUSQUEHANNA TOWNSHIP
EAST PENNSBORO
SUSQUEHANNA RIVER
PENBROOK
WORMLEYSBURG
LEMOYNE
MACLAY ST
FORSTER ST
MARKET ST
PAXTON ST
0
0.25
0.5
1
Miles

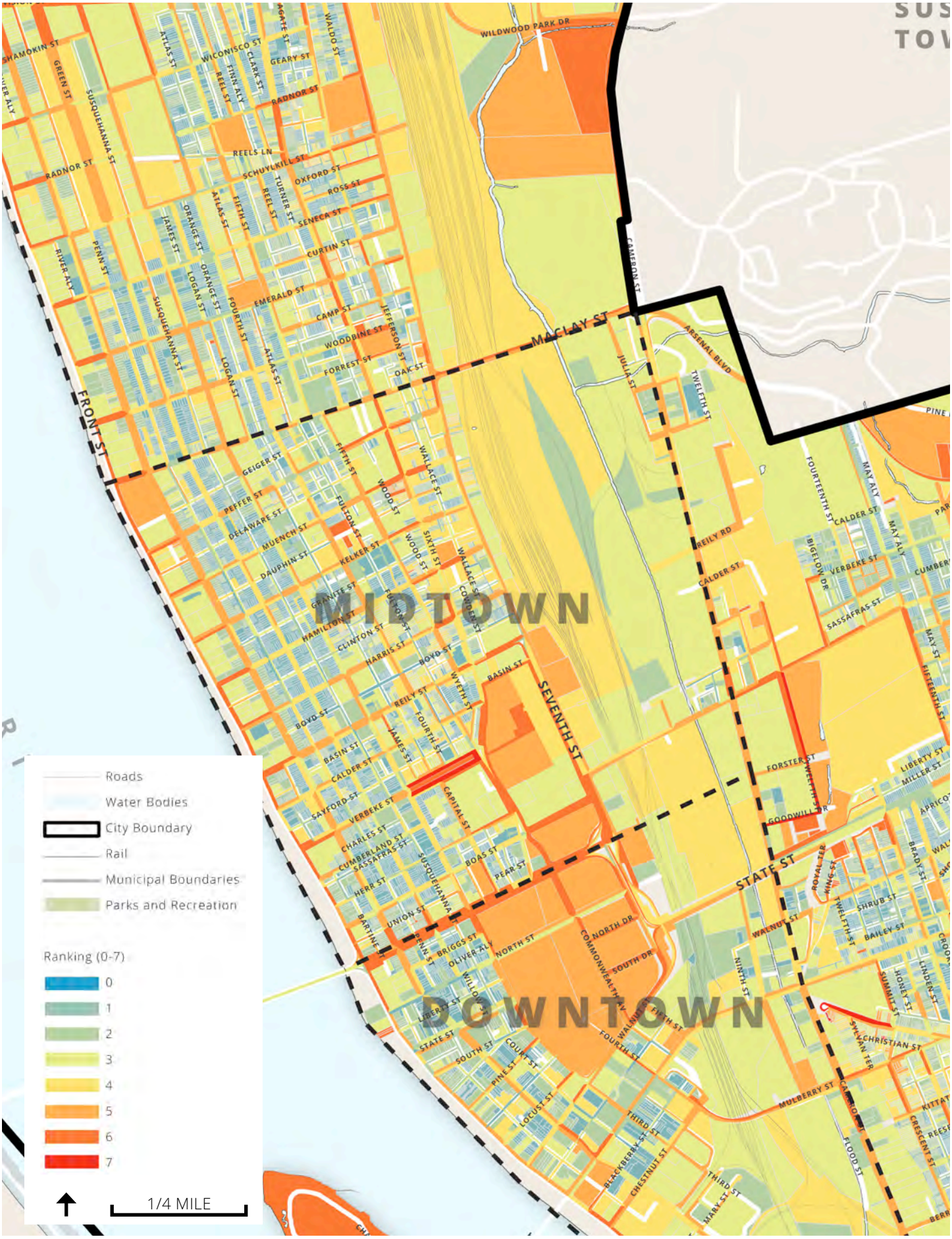

GEOLOGY
CAPITAL REGION WATER GSI MASTER PLAN
Silurian (443-416 mil years)
Sb Shale
Sc Shale
St Quartzite
Ordovician (485-443 mil years)
Oc Argillaceous Limestone
Oh Shale
Ohg Graywacke
Ohl Limestone
Ohm Argillaceous Limestone
Om Shale
Oml Argillaceous Limestone
Ops Dolomite
Orr Limestone
Osp Limestone
General Permeability
Surficial drainage directly to groundwater system
Low effective porosity and permeability
Roads
Water Bodies
City Boundary
Municipal Boundaries
SOURCES: CRW, DAUPHIN COUNTY; AUGUST 2015
SUSQUEHANNA RIVER
EAST PENNSBORO
WORMLEYSBURG
LEMOYNE
PENBROOK
0 0.25 0.5 1 Miles

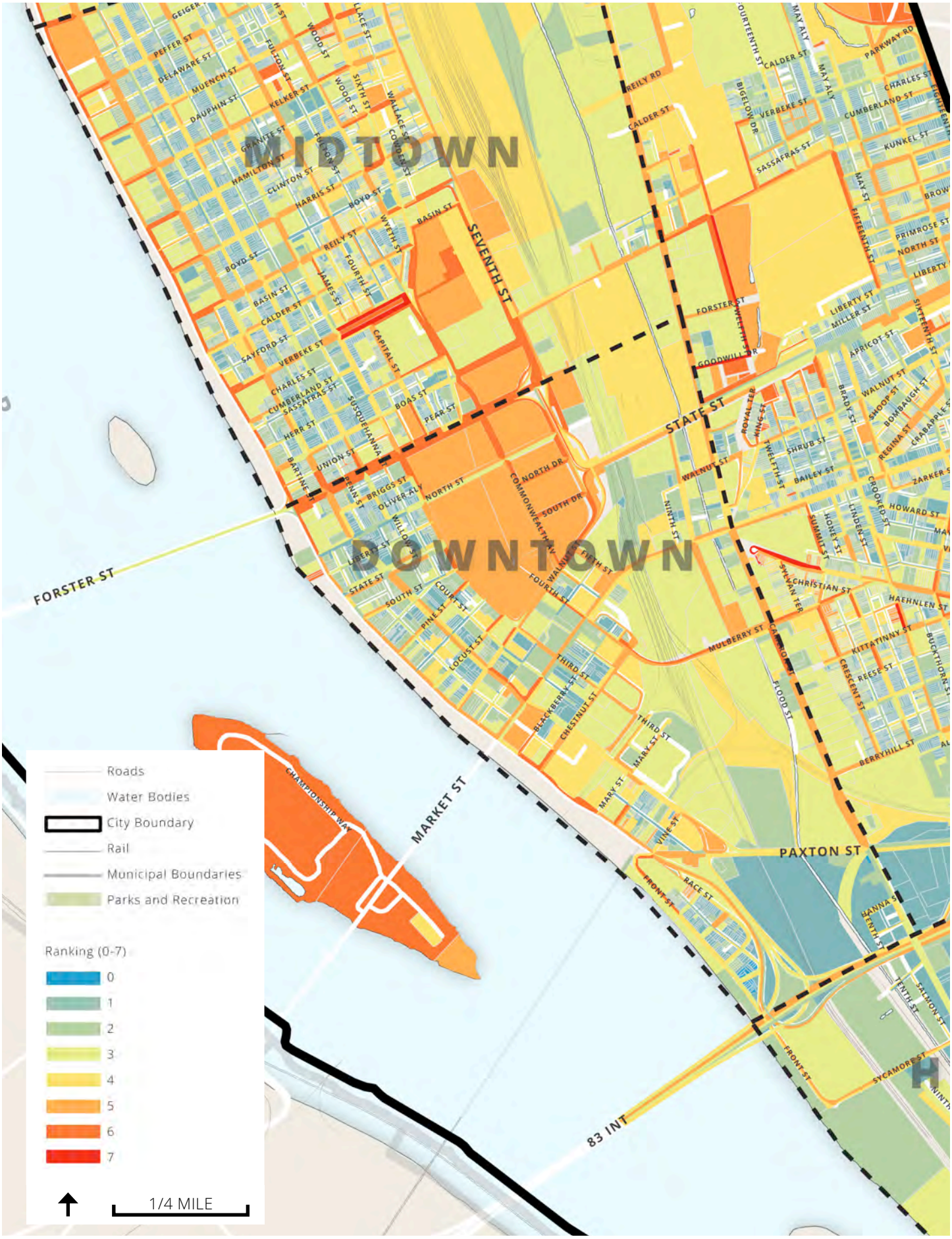

DEPTH TO GROUNDWATER
CAPITAL REGION WATER GSI MASTER PLAN
-8 to 4ft
5 to 19ft
20 to 34ft
35 to 49ft
50 to 64ft
65 to 81ft
Depth to Water Contours
Roads
Water Bodies
City Boundary
Municipal Boundaries
SOURCES: CRW, DAUPHIN COUNTY; AUGUST 2015
SUSQUEHANNA TOWNSHIP
EAST PENNSBORO
WORMLEYSBURG
LEMOYNE
PENBROOK
SUSQUEHANNA RIVER
81 INT
83 INT
MACLAY ST
FORSTER ST
MARKET ST
PAXTON ST
STATE ST
SEVENTH ST
0
25
50
75
0 0.25 0.5 1 Miles

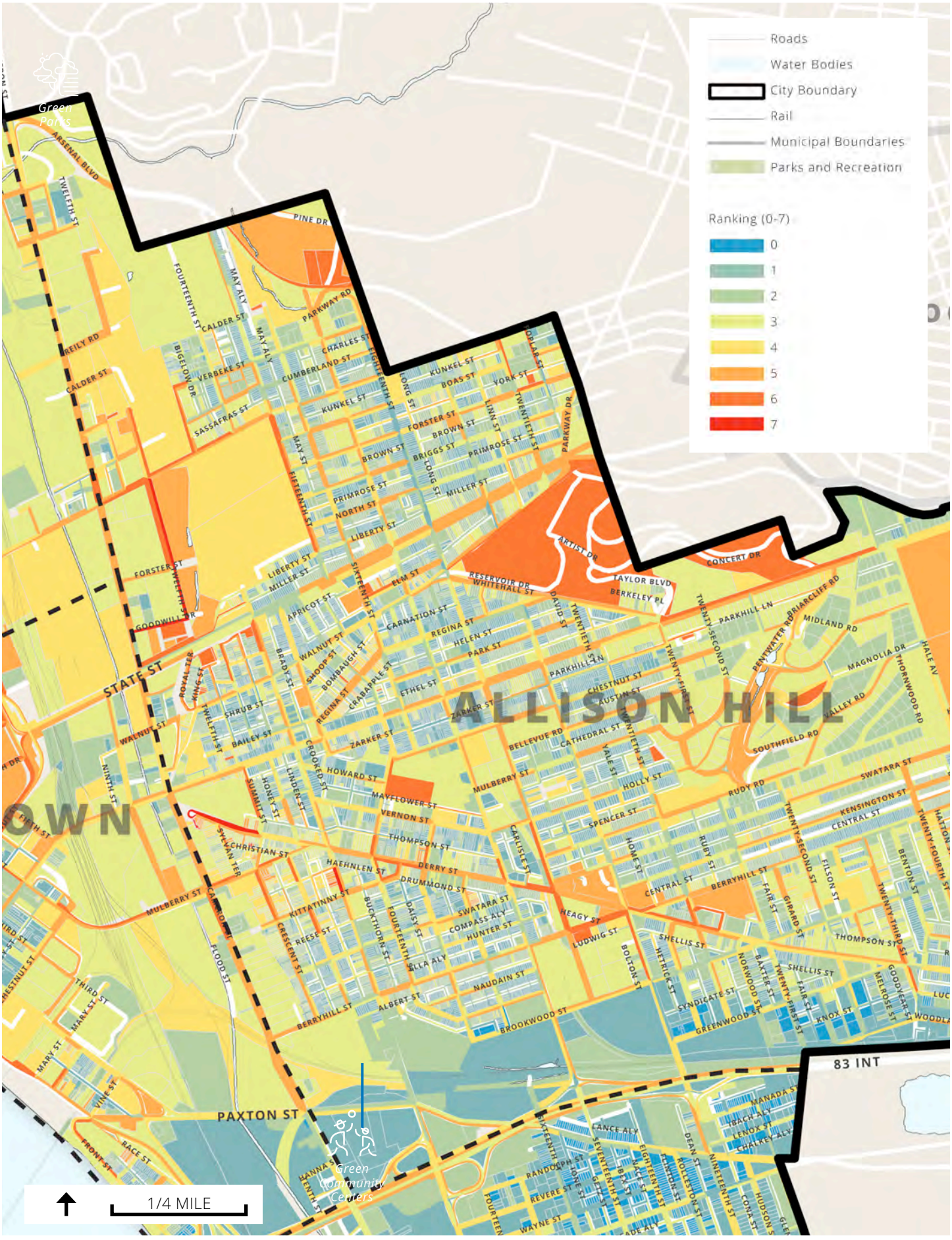
Appendix C: Parcel & Street Opportunities Maps (by District)

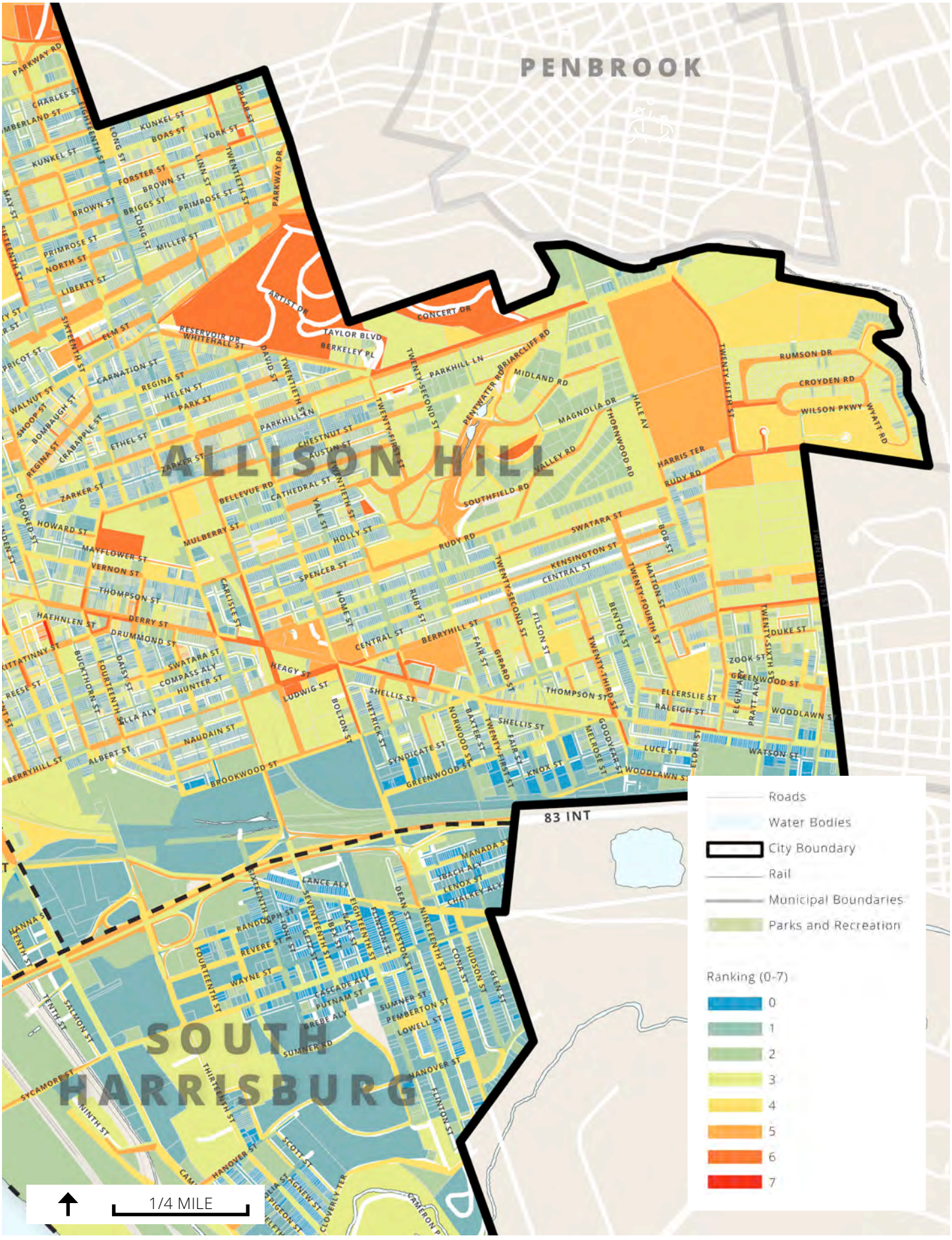

Roads
Water Bodies
City Boundary
Rail
Municipal Boundaries
Parks and Recreation
Ranking (0-7)
0
1
2
3
4
5
6
7
Green Parks
81 INT
22-322 ROUTE
INDUSTRIAL RD
SERVICE RD
ALUMNI DR
PENNWOOD RD
VAUGHN ST
KLEMM ST
LEWIS ST
OWEN ST
EDWARD ST
MARTINA ST
ANTOINE ST
GRAHAM ST
ALRICKS ST
PENN ST
RIVER ST
FULTON ALY
FIFTH ST
AGNES ST
HOFFMAN ST
KEMP ST
JOSEPH ST
SEVENTH ST
1/4 MILE
UPTOWN

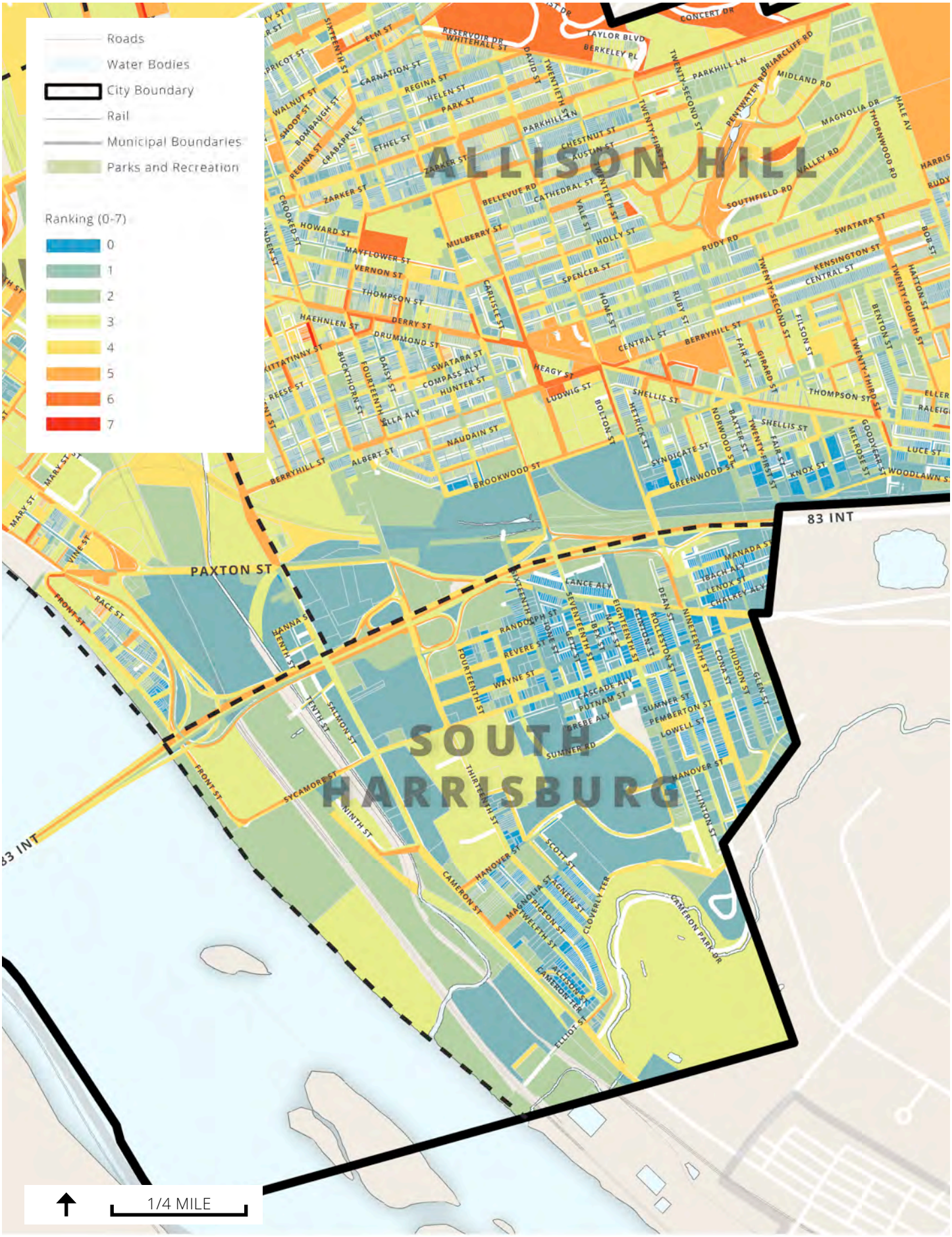

Roads
Water Bodies
City Boundary
Rail
Municipal Boundaries
Parks and Recreation
Ranking (0-7)
0
1
2
3
4
5
6
7
UPTOWN
MIDTOWN
SUSQUEHANNA
SERVICE RD
WILDWOOD PARK DR
MACLAY ST
FRONT ST
SEVENTH ST
VAUGHN ST
KLEMM ST
LEWIS ST
OWEN ST
EDWARD ST
MARTINA ST
ANTOINE ST
GRAHAM ST
ALRICKS ST
MANOR ST
DIVISION ST
SHAMOKIN ST
RADNOR ST
REELS LN
SCHUYLKILL ST
OXFORD ST
ROSS ST
SENECA ST
CURTIN ST
EMERALD ST
CAMP ST
WOODBINE ST
FORREST ST
OAK ST
GEIGER ST
PEFFER ST
DELAWARE ST
MUENCH ST
DAUPHIN ST
KELKER ST
GRANITE ST
HAMILTON ST
CLINTON ST
HARRIS ST
BOYD ST
REILY ST
BASIN ST
WYETH ST
CALDER ST
REILY RD
ARSENAL BLVD
TWELFTH ST
FOURTEENTH ST
1/4 MILE


MIDTOWN
DOWNTOWN
FRONT ST
MACLAY ST
SEVENTH ST
STATE ST
Roads
Water Bodies
City Boundary
Rail
Municipal Boundaries
Parks and Recreation
Ranking (0-7)
0
1
2
3
4
5
6
7
1/4 MILE

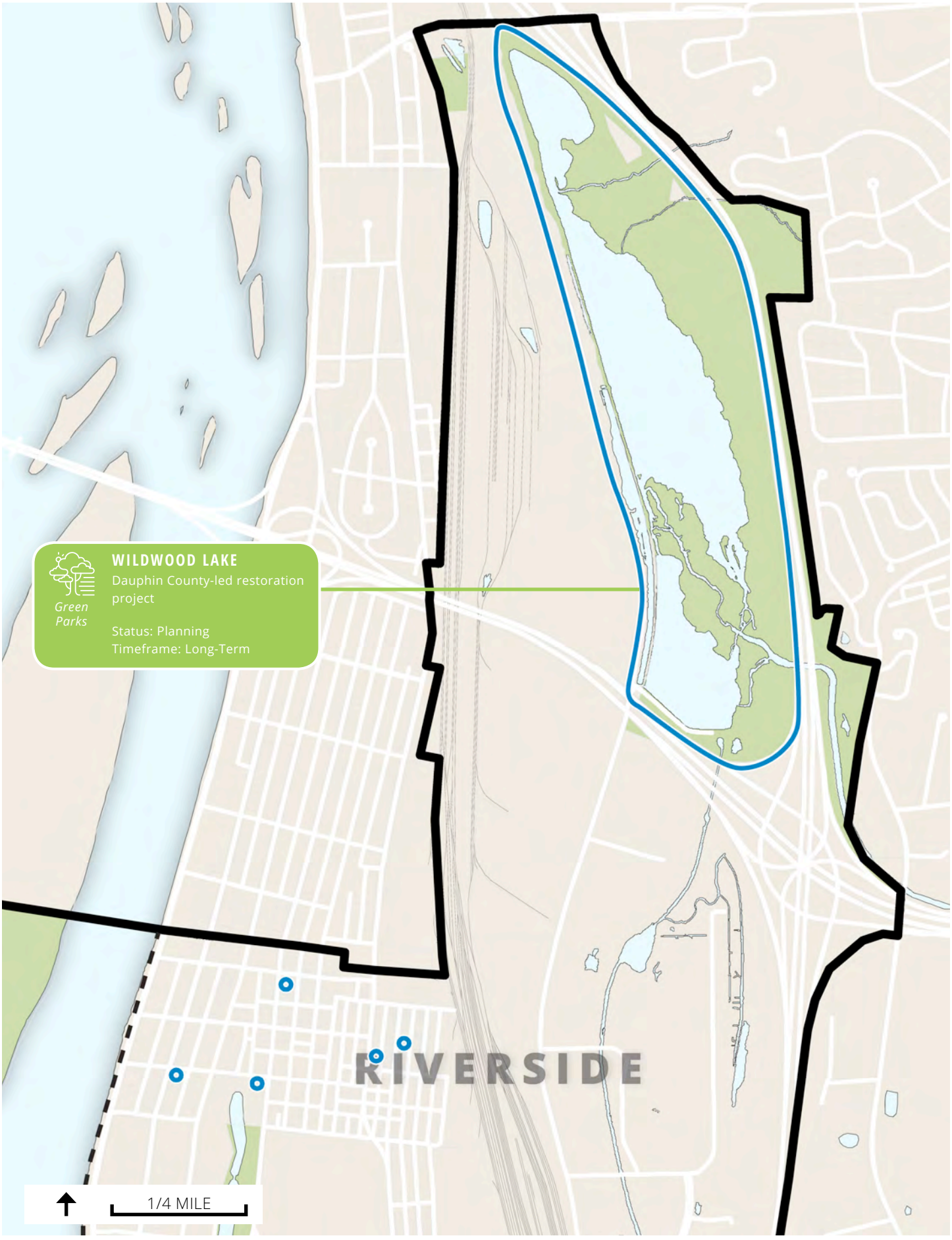

MIDTOWN
DOWNTOWN
SEVENTH ST
STATE ST
FORSTER ST
MARKET ST
PAXTON ST
83 INT
Roads
Water Bodies
City Boundary
Rail
Municipal Boundaries
Parks and Recreation
Ranking (0-7)
0
1
2
3
4
5
6
7
1/4 MILE

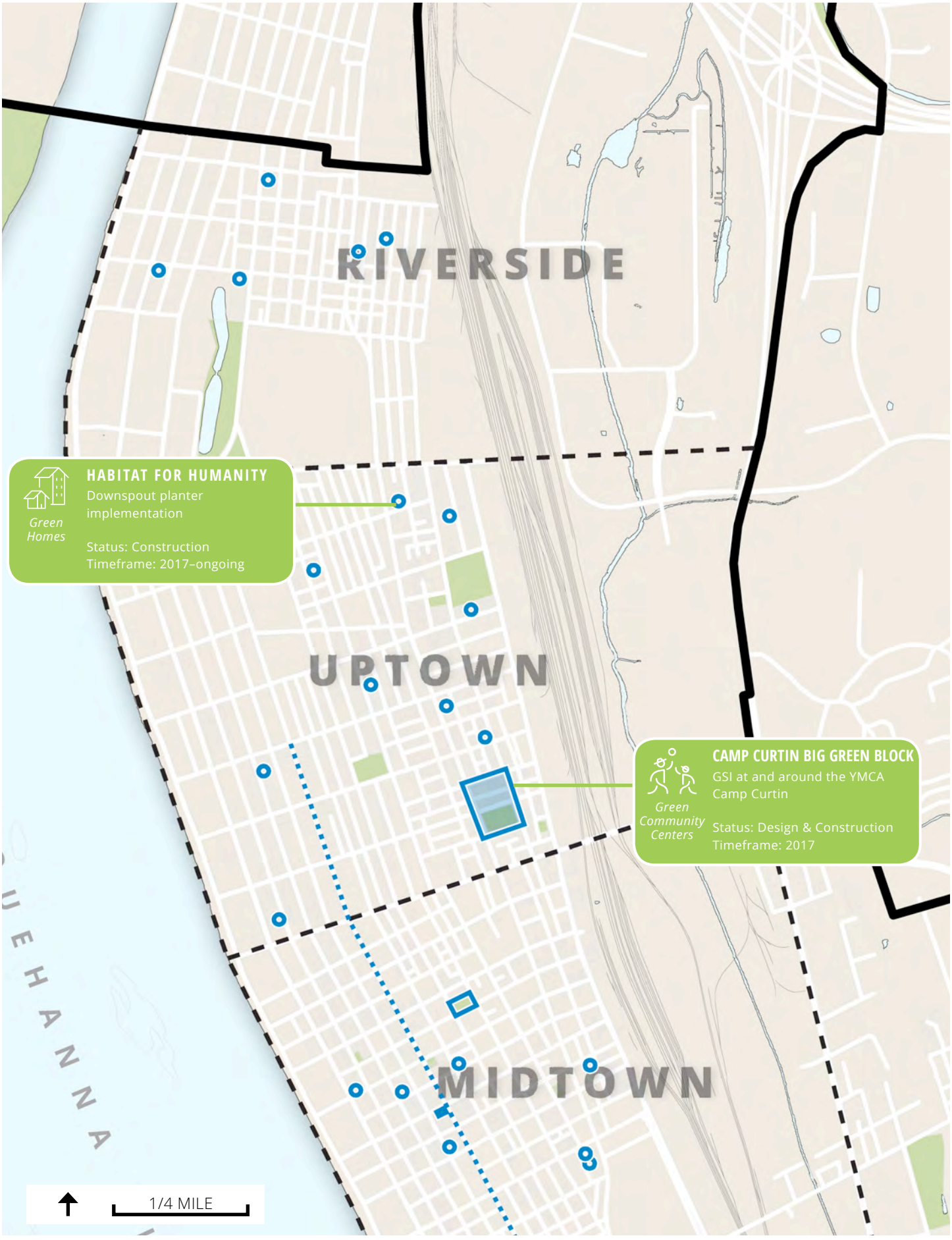

Roads
Water Bodies
City Boundary
Rail
Municipal Boundaries
Parks and Recreation
Ranking (0-7)
0
1
2
3
4
5
6
7
Green Parks
Green Community Centers
ALLISON HILL
STATE ST
PAXTON ST
83 INT
1/4 MILE

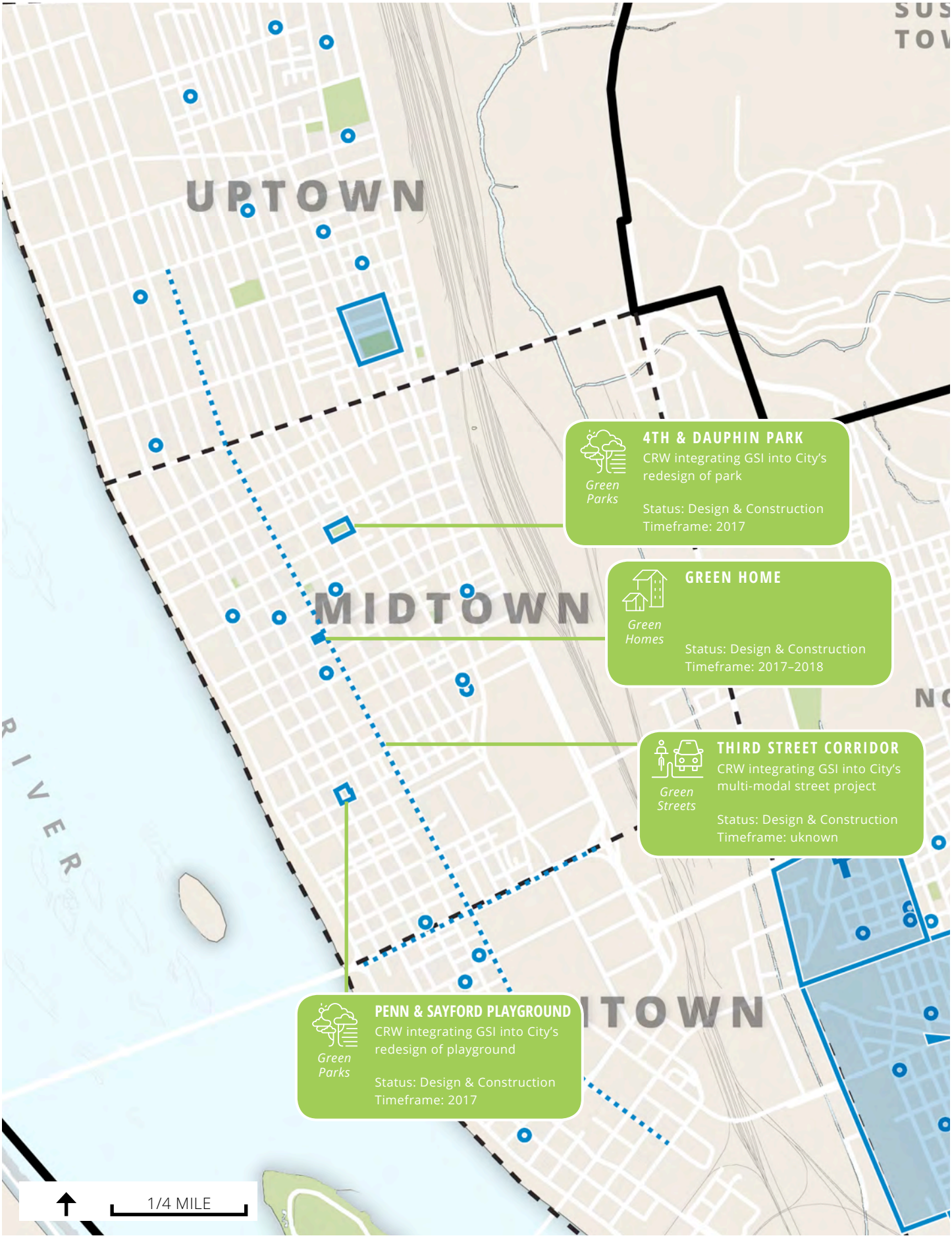

PENBROOK
ALLISON HILL
SOUTH HARRISBURG
83 INT
1/4 MILE
Roads
Water Bodies
City Boundary
Rail
Municipal Boundaries
Parks and Recreation
Ranking (0-7)
0
1
2
3
4
5
6
7

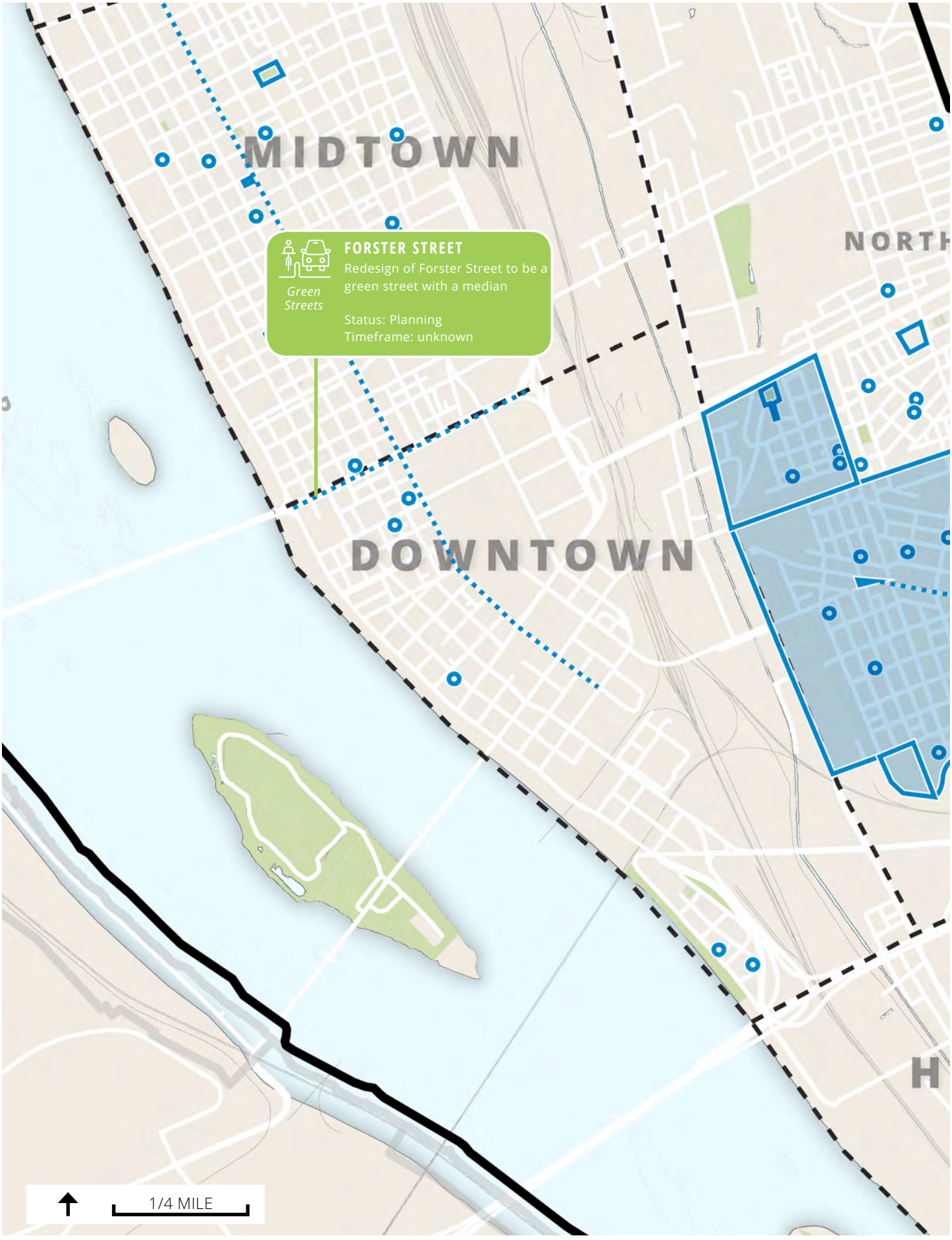

Roads
Water Bodies
City Boundary
Rail
Municipal Boundaries
Parks and Recreation
Ranking (0-7)
0
1
2
3
4
5
6
7
ALLISON HILL
SOUTH HARRISBURG
PAXTON ST
83 INT
1/4 MILE

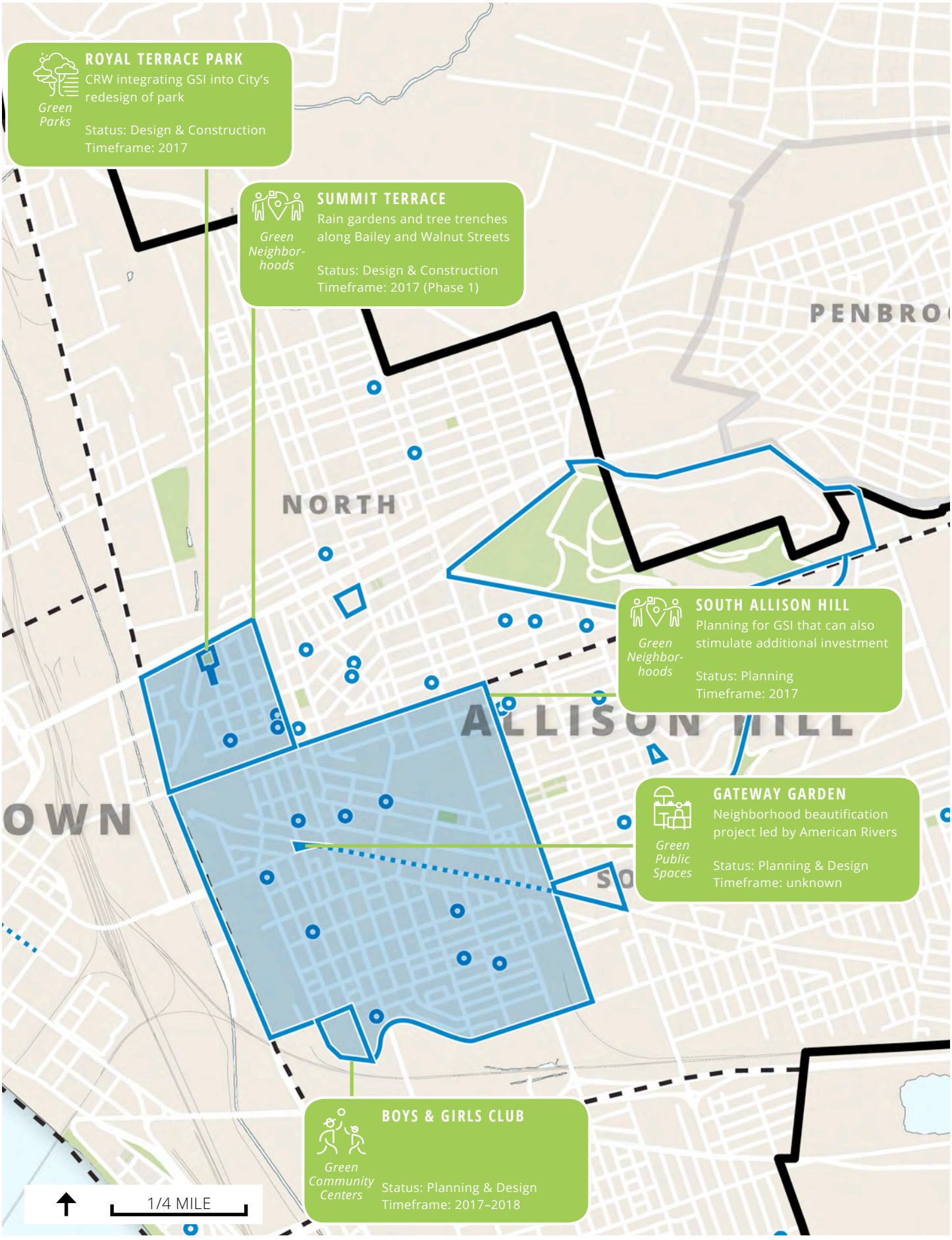
Appendix D: Planned Projects by District

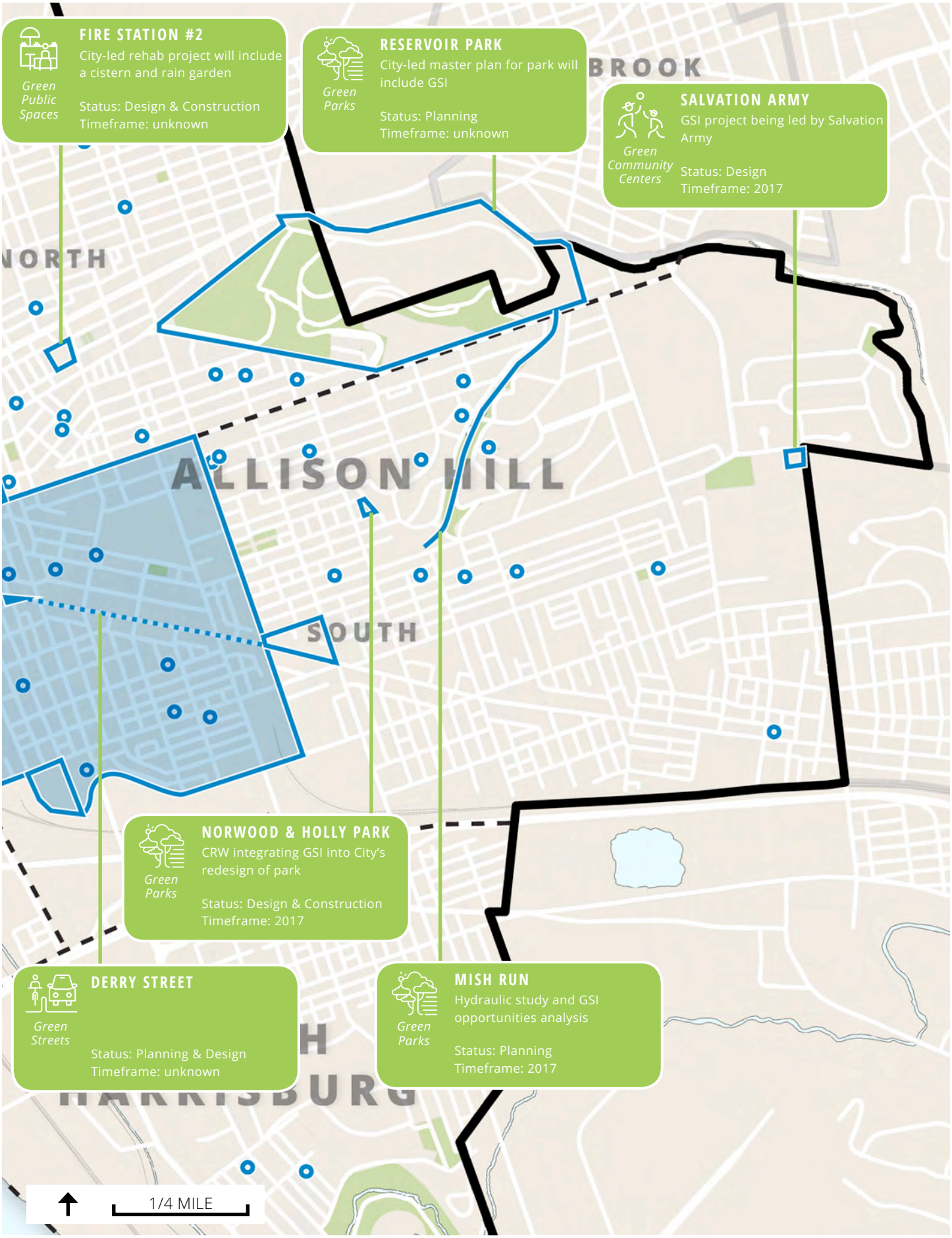

WILDWOOD LAKE
Dauphin County-led restoration project
Status: Planning
Timeframe: Long-Term
Green Parks
RIVERSIDE
1/4 MILE

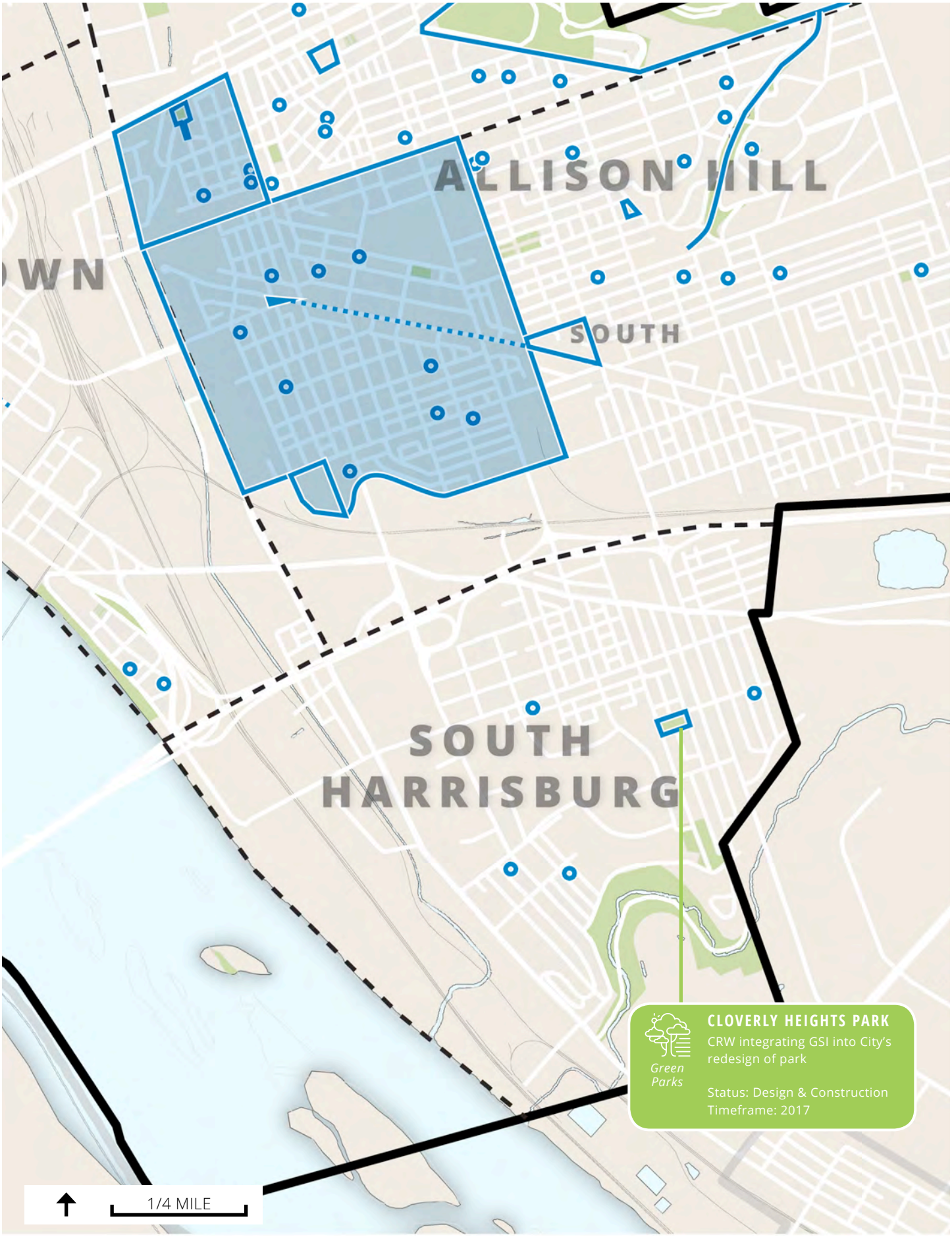

RIVERSIDE
UPTOWN
MIDTOWN
HABITAT FOR HUMANITY
Downspout planter implementation
Status: Construction
Timeframe: 2017–ongoing
Green Homes
CAMP CURTIN BIG GREEN BLOCK
GSI at and around the YMCA Camp Curtin
Status: Design & Construction
Timeframe: 2017
Green Community Centers
1/4 MILE


UPTOWN
MIDTOWN
RIVER
Green Parks
4TH & DAUPHIN PARK
CRW integrating GSI into City's redesign of park
Status: Design & Construction
Timeframe: 2017
Green Homes
GREEN HOME
Status: Design & Construction
Timeframe: 2017–2018
Green Streets
THIRD STREET CORRIDOR
CRW integrating GSI into City's multi-modal street project
Status: Design & Construction
Timeframe: uknown
Green Parks
PENN & SAYFORD PLAYGROUND
CRW integrating GSI into City's redesign of playground
Status: Design & Construction
Timeframe: 2017
1/4 MILE


MIDTOWN
NORTH
DOWNTOWN
H
Green Streets
FORSTER STREET
Redesign of Forster Street to be a green street with a median
Status: Planning
Timeframe: unknown
1/4 MILE


ROYAL TERRACE PARK
CRW integrating GSI into City's redesign of park
Status: Design & Construction
Timeframe: 2017
Green Parks
SUMMIT TERRACE
Rain gardens and tree trenches along Bailey and Walnut Streets
Status: Design & Construction
Timeframe: 2017 (Phase 1)
Green Neighbor-hoods
SOUTH ALLISON HILL
Planning for GSI that can also stimulate additional investment
Status: Planning
Timeframe: 2017
Green Neighbor-hoods
GATEWAY GARDEN
Neighborhood beautification project led by American Rivers
Status: Planning & Design
Timeframe: unknown
Green Public Spaces
BOYS & GIRLS CLUB
Status: Planning & Design
Timeframe: 2017–2018
Green Community Centers
PENBRO
NORTH
ALLISON HILL
OWN
1/4 MILE


FIRE STATION #2
City-led rehab project will include a cistern and rain garden
Status: Design & Construction
Timeframe: unknown
Green Public Spaces
RESERVOIR PARK
City-led master plan for park will include GSI
Status: Planning
Timeframe: unknown
Green Parks
SALVATION ARMY
GSI project being led by Salvation Army
Status: Design
Timeframe: 2017
Green Community Centers
BROOK
NORTH
ALLISON HILL
SOUTH
NORWOOD & HOLLY PARK
CRW integrating GSI into City's redesign of park
Status: Design & Construction
Timeframe: 2017
Green Parks
DERRY STREET
Status: Planning & Design
Timeframe: unknown
Green Streets
MISH RUN
Hydraulic study and GSI opportunities analysis
Status: Planning
Timeframe: 2017
Green Parks
1/4 MILE

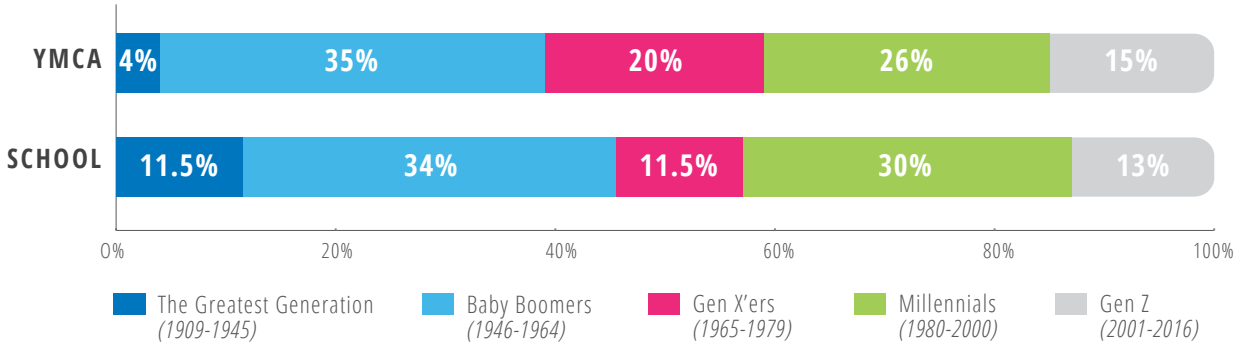

ALLISON HILL
SOUTH
SOUTH HARRISBURG
Green Parks
CLOVERLY HEIGHTS PARK
CRW integrating GSI into City's redesign of park
Status: Design & Construction
Timeframe: 2017
1/4 MILE

Appendix E: Meeting Results

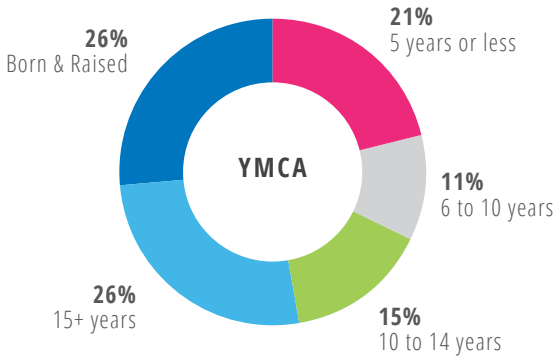
PUBLIC INPUT EVENT 1 RESULTS

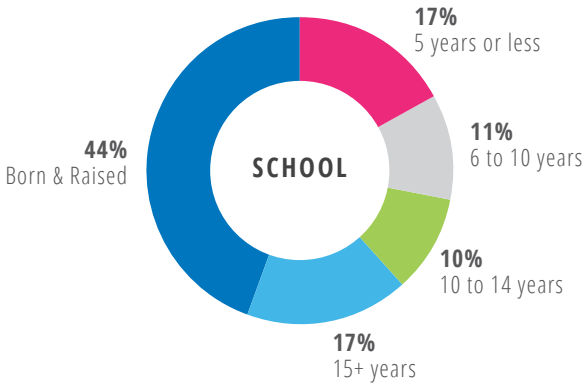
WHO ATTENDED?

GENERATION/AGE

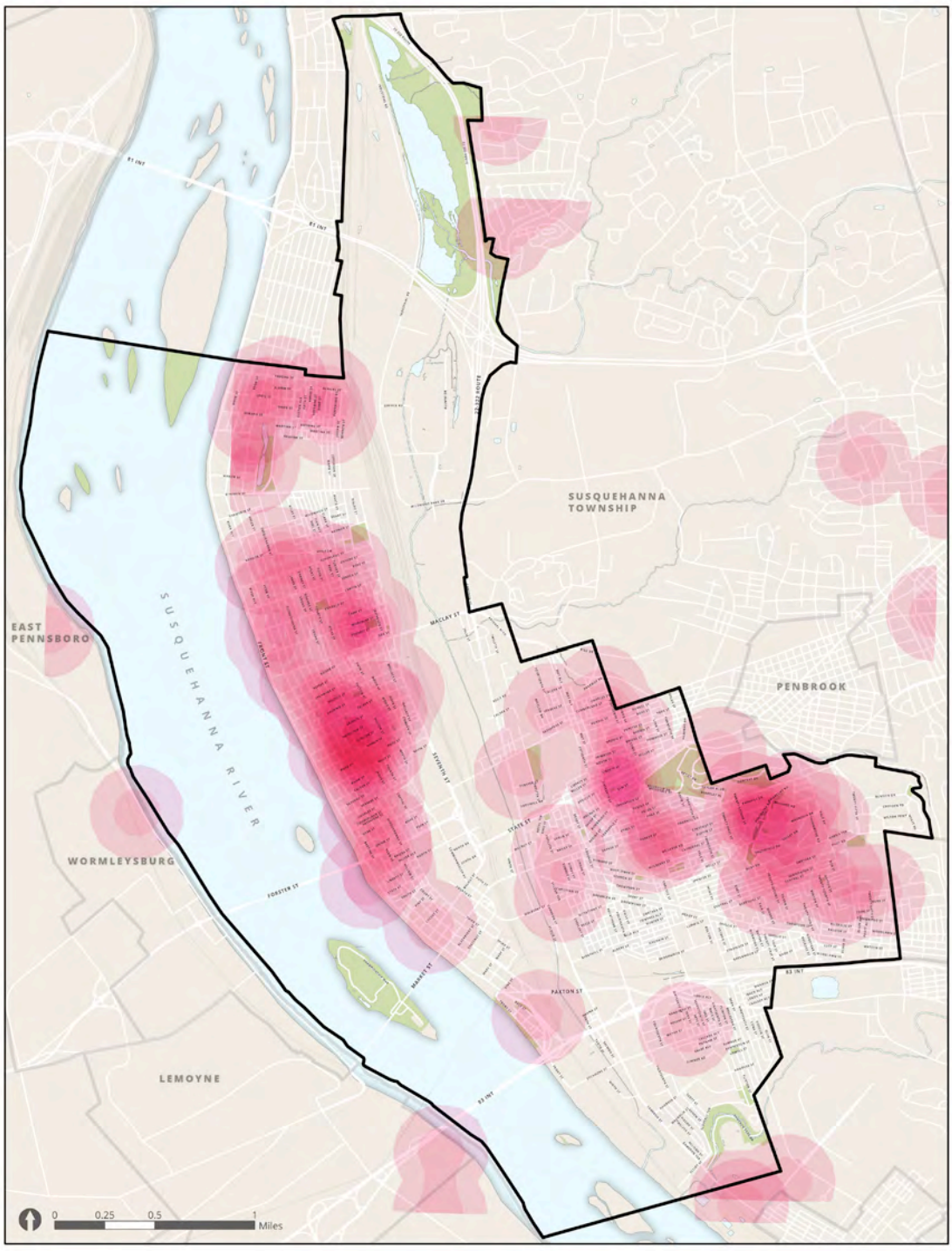


NUMBER OF YEARS LIVING IN HARRISBURG



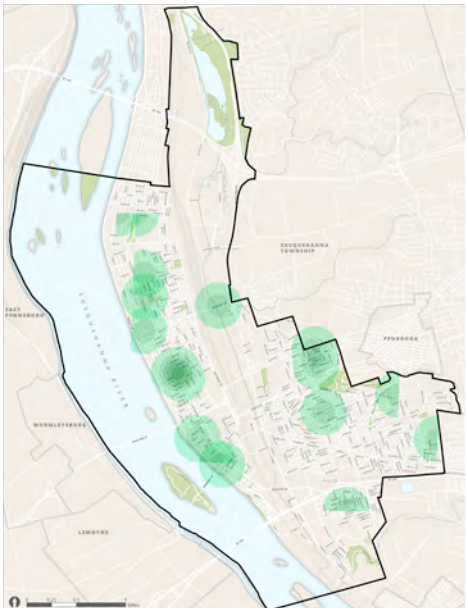


WHERE DID PEOPLE COME FROM?

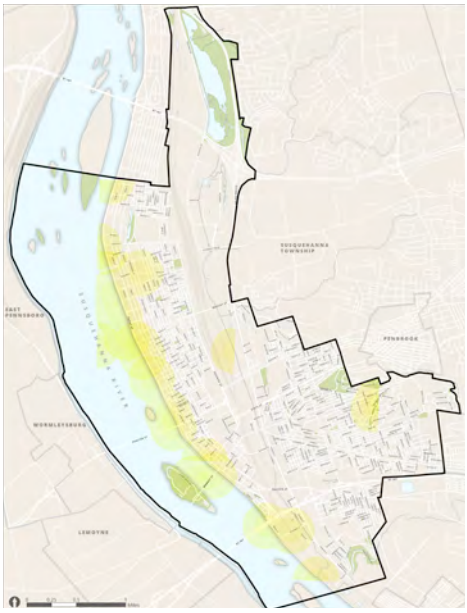


54 @ YMCA
70 @ LINCOLN SCHOOL

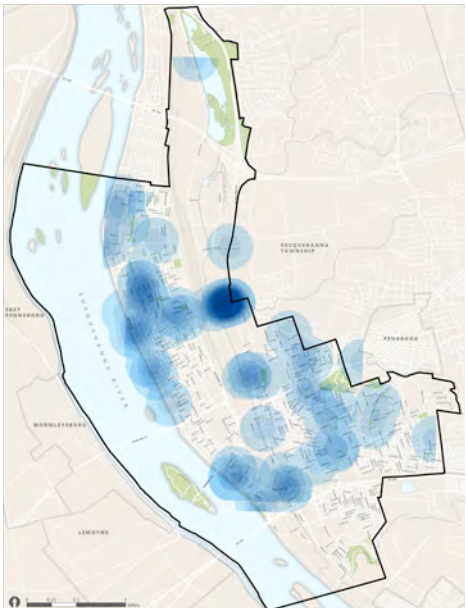
WHAT ISSUES WERE IDENTIFIED?



SEWER BACKUPS



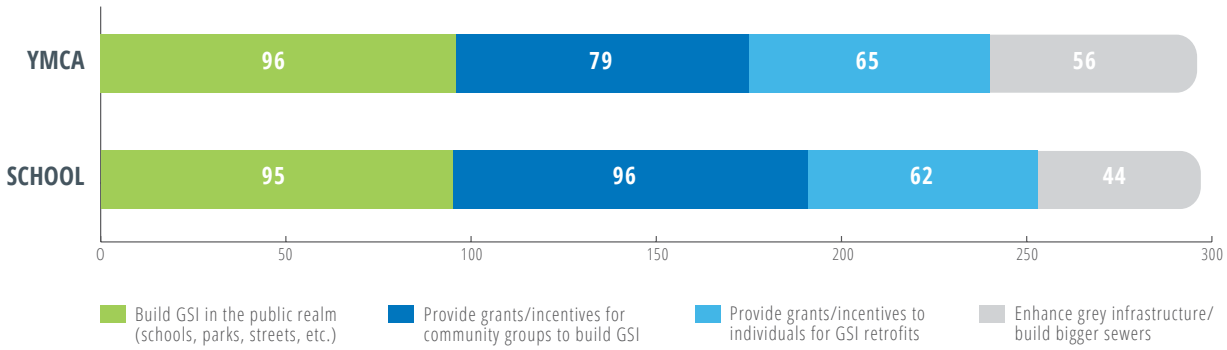
FLOATABLES/POLLUTION IN THE RIVER



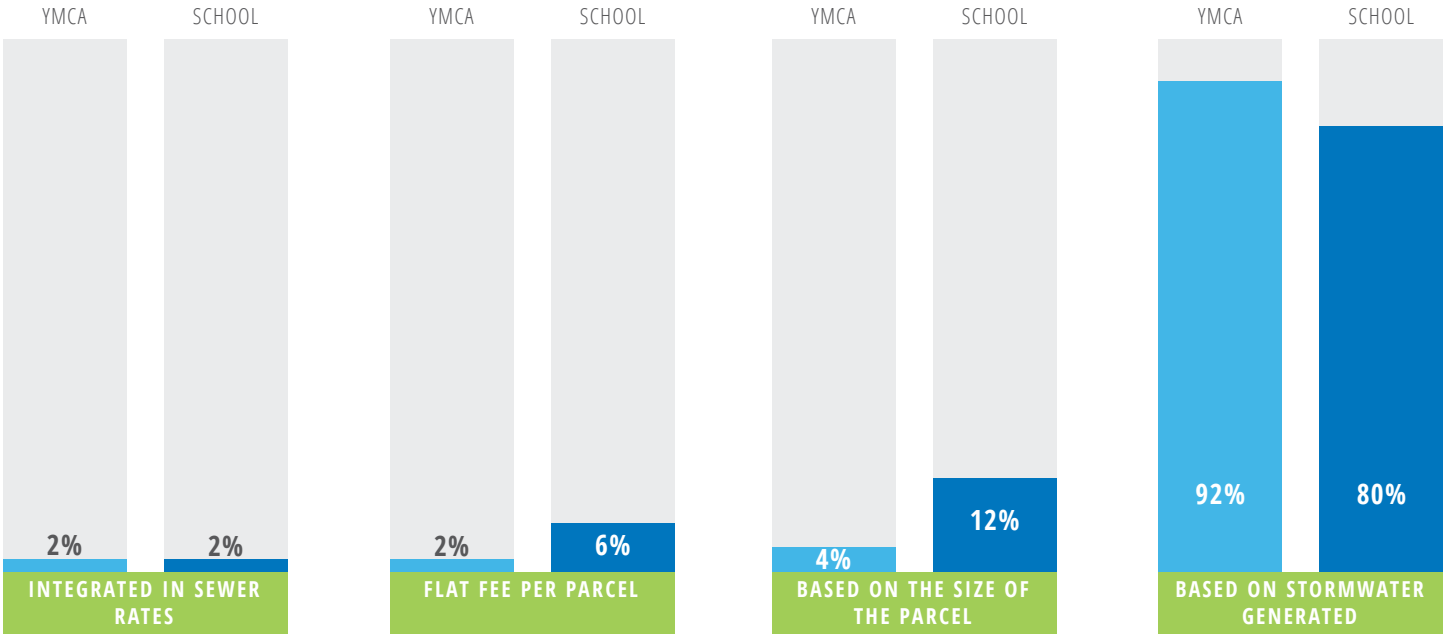
FLOODING INCIDENTS

WHAT WERE THE PRIORITIES?

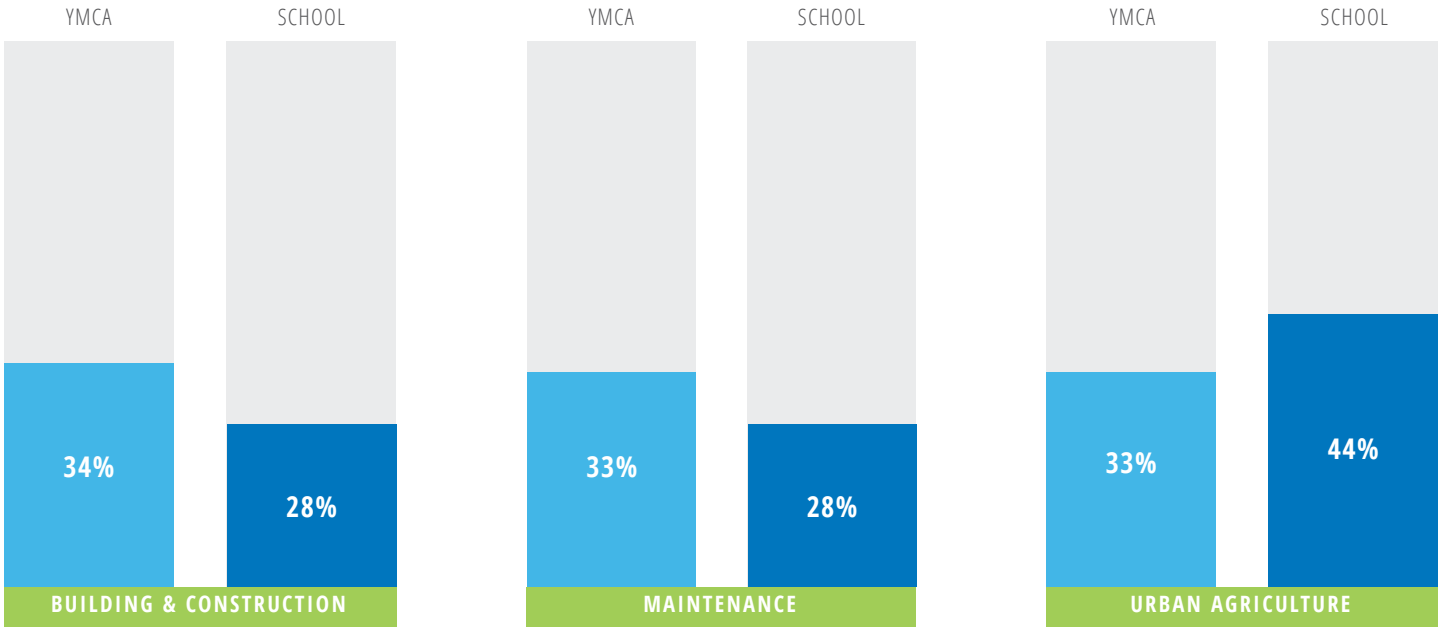
WHERE SHOULD WE INVEST? IF YOU HAD $500 TO SOLVE OUR PROBLEM:



WHICH MODEL DID PEOPLE PREFER?



WHAT OPPORTUNITIES WERE PEOPLE INTERESTED IN?



WHERE DID PEOPLE WANT TO SEE COMMUNITY GREENING?

WHERE DID PEOPLE WANT TO SEE ADDITIONAL INVESTMENT?

WHERE DID PEOPLE WANT TO SEE COMMUNITY GREENING?

- Rain garden on Brookwood behind Brookwood Market and Bath
- 5th and Hamilton
- Will commonwealth owned properties be exempt?
- Greenbelt and Stream restoration
- 16th and Carnation, right and left sides
- Better parks / clean, sustainable neighborhoods / better ways to recycle trash
- In lieu of payments available?
- Paxton Creek overflow needs to be fixed
- Mish Run / Spring Creek / Paxton Creek
- South Allison Hill
- 13th and Berryhill / Hall Manor
- External CRW to pay SW fees? Other CRW customers and communities to pay?
- City needs enforcement officers that make sure property absentee landlords/owners take care of their property.
- City-wide!!
- Parking Garages
- Storm drain at Race and Nagle Streets needs to have a larger pipe and needs to drain to the river. The water starts spouting up from the drain and Paxton Creek floods.
- Community greening
- Cameron Street / Allison Hill
- Cameron / Allison Hill / Paxton
- Bellevue Park restoration of Mish run and ponds
- Bellevue Park restoration to ponds
- Clean up Green Belt
- 3rd Street Corridor / 6th or 7th Street
- Allison Hill and Uptown
- South HBG
- Reservoir Park, Harrisburg, PA
- Restoration of Bellevue Ponds
- Massive amounts of stormwater is generated by Susquehanna Twp., especially along Elmerton. This water all rolls downhill into Cameron Street. This is a BIG problem.
- Landmark N.O. (uptown)
- 15th and Derry Streets to 15th and Naudain Streets
- Plant more trees!
- Bellevue Park pond restoration / stormwater management
- Restoration of Bellevue Ponds
- Flooding at 18th and Derry Streets
- Greening of Rooftops
- 3rd Street
- Allison Hill
- Help the whole city! Spread money around
- Allison Hill / Mulberry and Derry Streets
- Bellevue Park / Restoration of Mish Run and Bellevue Park Ponds
- Trees in Brookwood Street / 2600 block / Pervious pavement
- Cameron Street / Corridor greening
- Along Cameron Street
- Bellevue Park pond area
- Green roofs on warehouses
- Plant trees
- More trees to replace those lost in storms
- Inner City (i.e., Hill / Uptown)
- 2nd Street
- Harrisburg / 17th Street
- Cameron and Front streets
- Bellevue Park Ponds
- Rooftops: Start with city/public buildings (i.e., garages, city hall)
- 2nd Street (visible)
- 3rd Street
- Greenspace near 17th and Market Streets
- Restoration of Bellevue Ponds
- Boulevards and Main avenues
- Green Roofs / Green borders / More trees – all downtown where the most stormwater is generated (impervious structures)
- Permeable parking lots / Integration of rain gardens
- Pervious and green alleys like Granite Street / Shipoke area alleys
- All City parks
- 6th and Division Streets/ Camp curtain
- All neighborhoods
- Flooding on Cameron Street

- Riverfront
- State Street Corridor
- City (HBG) HBGSD
- Harrisburg State Hospital / Paxton Creek
- Parks
- Row Home Areas
- River / Streams\
- South Allison Hill / Downtown
- Allison Hill Section
- Uptown
- Allison Hill / Eco / impoverished / ?????
- Green the area around Scott and Rowland Schools!!
- Everywhere
- Uptown / Allison Hill
- Paxton Creek
- On the large wide streets that are all pavement today
- City Owned lots
- Education
- Vacant Lots
- Midtown
- Call Pat Stringer for ideas / 418-1702
- Uptown
- Demonstration in each neighborhood and Education demonstration in Riverfront and Reservoir Parks
- Midtown! / Midtown! / Midtown!
- Schools
- More green spaces / gardens / rain gardens
- Schools
- Downtown near Cameron
- Container Greening downtown
- Uptown / 6th & 7th
- 4th Street
- Schools and around the Harrisburg Area
- Parks
- Education
- Schools
- Streets / Parks / Vacant Lots
- City Schools
- Paxton Creek
- Allison Hill
- Commercial Buildings / Greenroofs / Vacant Lots
- At the Park
- Midtown
- South Harrisburg
- Vacant lots
- Trash Riverfront
- School
- Vacant Lots
- Demonstration in each neighborhood
- A Garden in my backyard
- 3rd Street
- Street trees / Parks / Streams and Floodplains
- Green up vacant lots – Allison Hill / Market Street

WHERE DID PEOPLE WANT TO SEE ADDITIONAL INVESTMENT?

- Streambank restoration / Floodplain reconnection
- Schools / Homes / Parks
- Parks
- When City paves streets, pay attention so grades don't change – pay attention to stormwater inlet
- Separating sewer and rainwater drainage
- Residential / Schools / Parks
- Bellevue Park / Streambank and Pond Banks restoration
- Flood overflow
- Garden / Saucany to Emerald Street
- Job Training
- Green walkway over Forster Street
- City needs enforcement officers for absentee landlords that do not take care of their property. Market Street /19th to Cameron Streets / Market is one of the gateways into our City and it is always dirty and run down.
- Rainwater to use for gardening
- Schools / Parks / Community organizations
- Bellevue Ponds and Park area
- Street trees / Bump-outs
- More Street lights
- Pervious parking lots
- 15th Street / Homes / Parks / Derry to Naudain
- Street Trees
- Streetscapes
- City / N. 18th (1004-1006)
- CSO Separation / Paxton Interceptor
- Churches / Houses
- Parks
- Plant more trees
- Schools / Susquehanna River / Lakes / Homes abandoned / Streets (potholes)
- Paxton Creek Restoration / Area Revitalization
- Green infrastructure
- Streambank and Pond bank Restoration
- Bump-outs on Market / Traffic calming
- Aging pipe / holding tanks
- Street Greening: Boulevards, more green in sidewalks
- Streets
- Community Courtyard
- Bellevue Park / Pond / Streambank Restoration
- Street Trees
- Whole City!!
- Improve sewer lines
- Plant more trees
- More green space and trees
- Aging pipe infrastructure
- Rain Gardens
- Youth projects: grow and eat
- Trees
- Restoration of Bellevue Park Ponds
- Removal of Blighted property
- More green space / less paved
- Would like to see more Community Gardens in area
- Streambank Restoration
- Previous alleys / parking lots / Parks: BB courts, playgrounds
- Streets / Parking
- Teaching residents what they can do to improve water
- Susquehanna River clean up
- Ending pollution
- Rain gardens
- Green Roof / Bulk trash removal / weekend education about environment for children
- Environmental education early
- Illegal dumping enforcement
- Roof top gardens / more fresh veggies and fruits
- Trees
- Upgrade community gardens
- Parklet / Community courtyard
- Sidewalks that are designed with SW storage
- More people to partake in making the world a better place
- Neighborhood park with chess and trees
- Trees
- Innovative high capacity residential rainwater capture for row homes
- A better reason to live other than make money
- Education / trees
- LOVE
- Community rain gardens

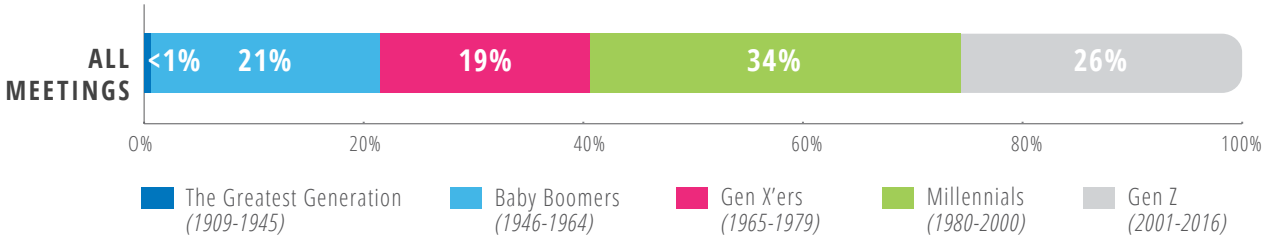
- Removing litter
- Collapsing sewer pipe
- More animals in the river and not...
- Green space / rooftop gardens / tree lined walk only streets
- More trees
- Greens, trees, bushes, etc.
- More trees
- Reducing hardscape
- LOVE
- Trees
- Rain swells / Street trees
- Rooftop parks on large buildings / old railroads
- Streams / Street trees
- Trees
- Rain gardens in public parks
- Rain gardens / Litter clean-up
- Education
- Arboretum park
- Large trees
- Green roofs / Rain gardens
- Vacant lots put to use
- Trees / Trees / Trees
- Even just giving street trees more room to grow would be great!
- Eradicating litter
- Abandoned buildings torn down
- Streets
- Education
- More greenery
- More schools
- Keeping litter our of streets and gutters / Education
- Education and children
- Education
- Playgrounds / trees / education
- Public education
- Street trees
- Trees
- Educate residents
- Playgrounds / More trees
- Playgrounds / Parks /Fruit Trees / Vegetable Plants
- Clean streams and rivers
- Existing / Green, Open spaces

COMMUNITY GREENING PARTY RESULTS

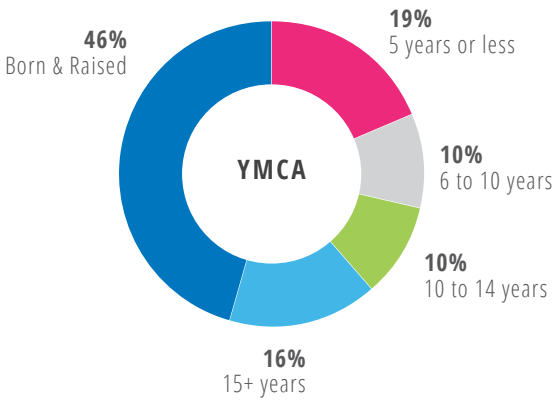
The following summarizes three Community Greening Parties and an online survey held in the Summer of 2016. Community Greening Parties were held in Uptown, South Harrisburg, and South Allison Hill.

WHO ATTENDED?

GENERATION/AGE



NUMBER OF YEARS LIVING IN HARRISBURG



HOW SHOULD WE ENGAGE WITH YOU AND YOUR COMMUNITY?

PUBLIC MEETINGS/EVENTS	51	12%
SOCIAL MEDIA	69	17%
ONLINE SURVEYS	15	4%
EDUCATIONAL SEMINARS	20	5%
SCHOOL OUTREACH	48	12%
DOOR-TO-DOOR	48	12%
CRW ATTENDING PUBLIC MEETINGS/EVENTS	10	2%
WATER BILL INSERTS	32	8%
FLYERS	31	7%
COMMUNITY AMBASSADORS/ NEIGHBORHOOD LEADERS	12	3%
EMAIL	29	7%
LOCAL TV/NEWSPAPERS	39	9%
OTHER	10	2%
	414	**100%**

ON WHAT STREETS WOULD YOU LIKE TO SEE GSI?

Full, map-based results are available in the Community Greening Concepts section of the plan.

- 6th St
- Broad Street Market
- S. 18th St
- Chestnut
- S 13th St
- Fulton St
- Reily St
- 2nd Street (restaurant row)
- Verbeke
- Market
- Derry
- 7th
- Cameron
- 100 and 200 block of Herr
- 3rd St
- Forester Street
- State street in Allison Hill
- 5th
- 6th and Maclay
- Emerald St
- State St Bridge
- Green St

IN WHAT PUBLIC SPACES WOULD YOU LIKE TO SEE GSI?

Full, map-based results are available in the Community Greening Concepts section of the plan.

- Parking lots
- HACC Midtown Parking Lots
- 13th & Derry
- Midtown Cinema
- Reily Street
- Fire Museum
- State Street
- Market (13th - 16th)
- 7th (Forester - Division)
- Uptown Plaza
- Cameron Street
- 15th and Derry
- Hall Manor
- Penn DOT
- Susquehanna Art Museum
- Verbeke St. Median
- State St. Median
- HACC Parking Lot
- 6th and Reiley,
- 4th Street vacant Lots
- William Penn Campus
- Italian Lake
- Governors Parking Lot
- Hospital by Farm Show
- Riley + 3rd HACC Midtown
- Broad St Market
- Resevoir Park
- 13th & Derryhill
- Capitol
- City Island
- Market Square

IN WHAT ALLEYS WOULD YOU LIKE TO SEE GSI?

Full, map-based results are available in the Community Greening Concepts section of the plan.

- Verbeke btw Cumberland and 17th
- Orange St
- Logan St, Basin St
- Atlas St
- Rhoads Alley
- Myers Alley
- Dauphin St
- Fulton St
- Wherever the public won't have a problem accessing their property
- Jefferson St
- Green St
- Susquehanna St
- Alley off of 4th
- Agate St
- Behind Fulton St
- Fourth St
- Penn St
- Behind Hamilton
- Derry
- Downtown YMCA
- Front & Miller
- Front St
- Behind Vernon St
- New Hamilton Health
- Hamble & Crescent
- Evergreen
- 13th and Derry

AT WHAT BUSINESSES WOULD YOU LIKE TO SEE GSI?

Full, map-based results are available in the Community Greening Concepts section of the plan.

- Café 1500
- Strawberry Square
- Midtown Scholar
- Sayford Market
- RHEAA, Jackson Lick
- 3rd Street
- Bus Station
- Division St. Market area
- Mt. Pleasant
- Dollar Tree
- Uptown Plaza
- Uptown Harrisburg Mall
- Mc Donalds
- Chans
- Rite Aid
- Gov. Square Building
- HACC
- Sayford Market
- Kline Plaza
- Plaza with TM Value 25th St
- Walmart
- Uptown Shopping Center Center
- Kline Village Shopping Center
- Broad Street Market
- Parks

IN WHAT NEIGHBORHOODS WOULD YOU LIKE TO SEE GSI?

Full, map-based results are available in the Community Greening Concepts section of the plan.

- All high density neighborhoods
- Allison Hill
- 13th St
- Derry
- Market
- Herr
- 17th St
- Allison Hill
- Downtown
- Riverside
- Capital Heights
- Calder St (towards 3rd)
- Derry St & 13th
- South Allison Hill
- 3rd St Uptown-Downtown
- Downtown
- Uptown Camp Curtain
- Market Place
- Calder (3rd - 6th)
- Fulton
- Midtown
- Olde Uptown
- 12th ward
- Strawberry Square
- Historic Midtown
- Allison Hill Market St (14th-15th)

AT WHAT COMMUNITY CENTERS WOULD YOU LIKE TO SEE GSI?

Full, map-based results are available in the Community Greening Concepts section of the plan.

- Lower income areas of the city
- Heinz Menecher
- 3rd Street Library
- 29th Street Library
- Camp Curtin YMCA
- 3rd & Kelker Neighborhood Center
- Boys & Girls Club
- Derry St Church
- Star City Zoo Crescent
- Walnut St
- Boys and Girl Club Allison Hill + S Hamilton
- South Harrisburg Church
- Susquehanna Market
- Mission Youth Center

ON WHAT VACANT LOTS WOULD YOU LIKE TO SEE GSI?

Full, map-based results are available in the Community Greening Concepts section of the plan.

- Susquehanna between Reily & Calder, 1400 block, 1700 Block
- Susquehanna and Hamilton
- Susquehanna and Granite
- 5th and Reily
- 2200 Block of Logan
- 6th Street between Divison and Reily, near Broad Street Market
- 4th and Kelker
- 5th and Kelker

- 6th Between Reily and Maclay
- 15th and Hunter
- Munech St
- 6th st
- 5th & Keuker
- 6th & Munech
- Emerald St Playground
- Penn & Susquehanna
- Front St Verbeke Sayford
- Next to Sayford Market- 3rd & Sayford
- South side playgrounds
- Evergreen & Chestnut
- AHCM Vernon St
- 1200 Block of Derry
- Market St
- William & Sayford
- Crescent St
- Pine Village Shopping Center
- 15th & Naudain St
- S. 14th St Sinkhole
- 14th St Near Market
- 18th St
- Chestnut St
- 13th & Hanover
- Derry St
- Cloverly Rd at 13th St
- 13th & Magnolia
- 17th and Hanover
- 13th and Vernon St
- 13th & Hanover

AT WHAT PARKS AND PLAYGROUNDS WOULD YOU LIKE TO SEE GSI?

Full, map-based results are available in the Community Greening Concepts section of the plan.

- Better Access to river; Radnor Access
- 19th and Boas St Playground
- 5th and Radnor (Steel School)
- Better Access
- All
- Green & Verbeke

AT WHAT SCHOOLS WOULD YOU LIKE TO SEE GSI?

Full, map-based results are available in the Community Greening Concepts section of the plan.

- All Schools
- Premier Art & Sciences