

Greenspace Presentation

School of Urban and Regional Planning



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Ben Curtis
Katie Gandhi
Parker Just



Downtown Partners
SIOUX CITY



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Sioux City Greenspace Plan

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*Katie Gandhi
Parker Just*

May 5, 2016



**Downtown
Partners**
SIOUX CITY

THE UNIVERSITY OF IOWA
IOWA INITIATIVE
FOR SUSTAINABLE COMMUNITIES

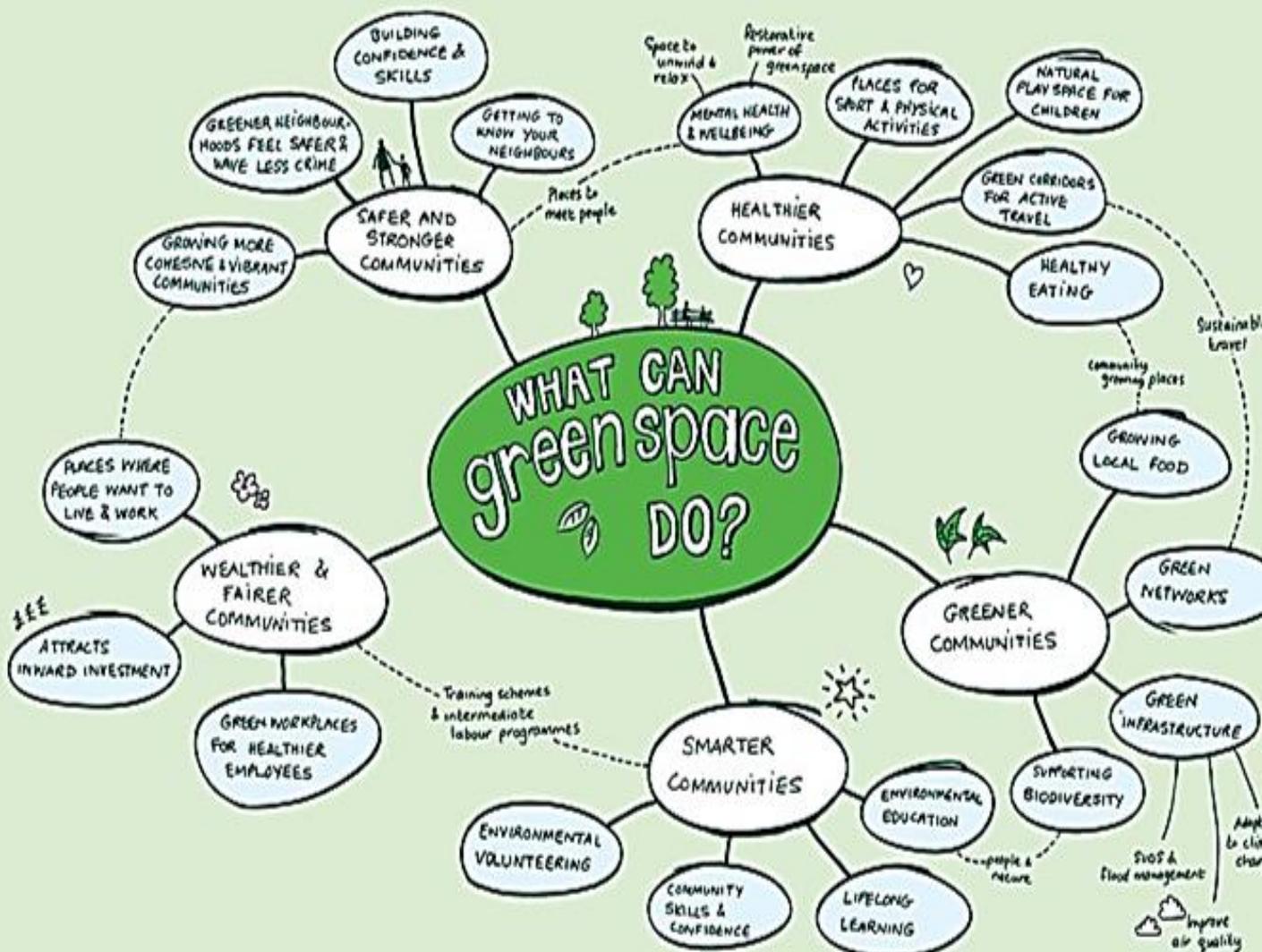
**SIOUX
CITY**

simpco IS ACTION!

SCHOOL OF
**Urban &
Regional
Planning**



GREENSPACE
SIOUX CITY



- Parks
- Riparian buffers
- Trees
- Bio swales
- Rain gardens
- Bio retention cells
- Streetscaping
- Landscaping
- Permeable paving
- Trailside vegetation
- Community gardens
- Prairie



Plan Vision

To transform downtown Sioux City, Iowa into a cohesive network of high quality greenspaces that supports and promotes quality of life and community health, provides ecosystem services, and fosters a vibrant downtown environment.

Goals and Objectives

Social

-  Increase public space
-  Increase opportunities for active recreation
-  Improve downtown aesthetics
-  Increase greenspace accessibility
-  Increase shading on sidewalks
-  Increase local foods availability
-  Improve environmental education

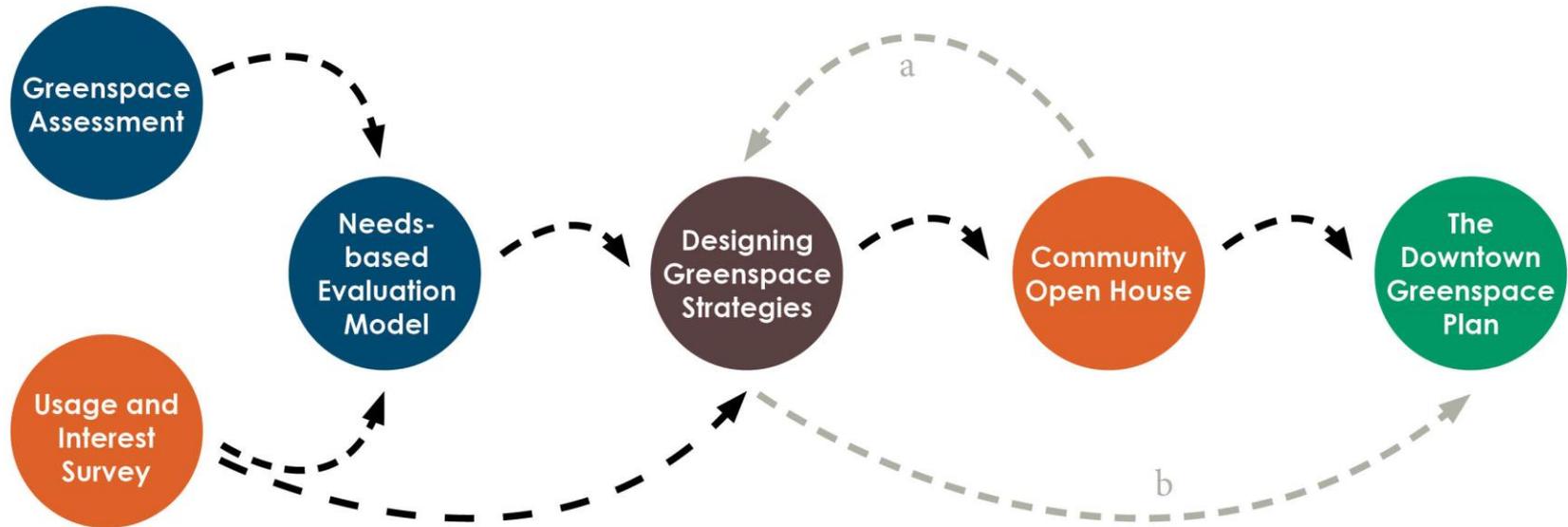
Environmental

-  Increase water infiltration and decrease impervious surface area
-  Improve stormwater management
-  Increase species diversity
-  Improve soil health

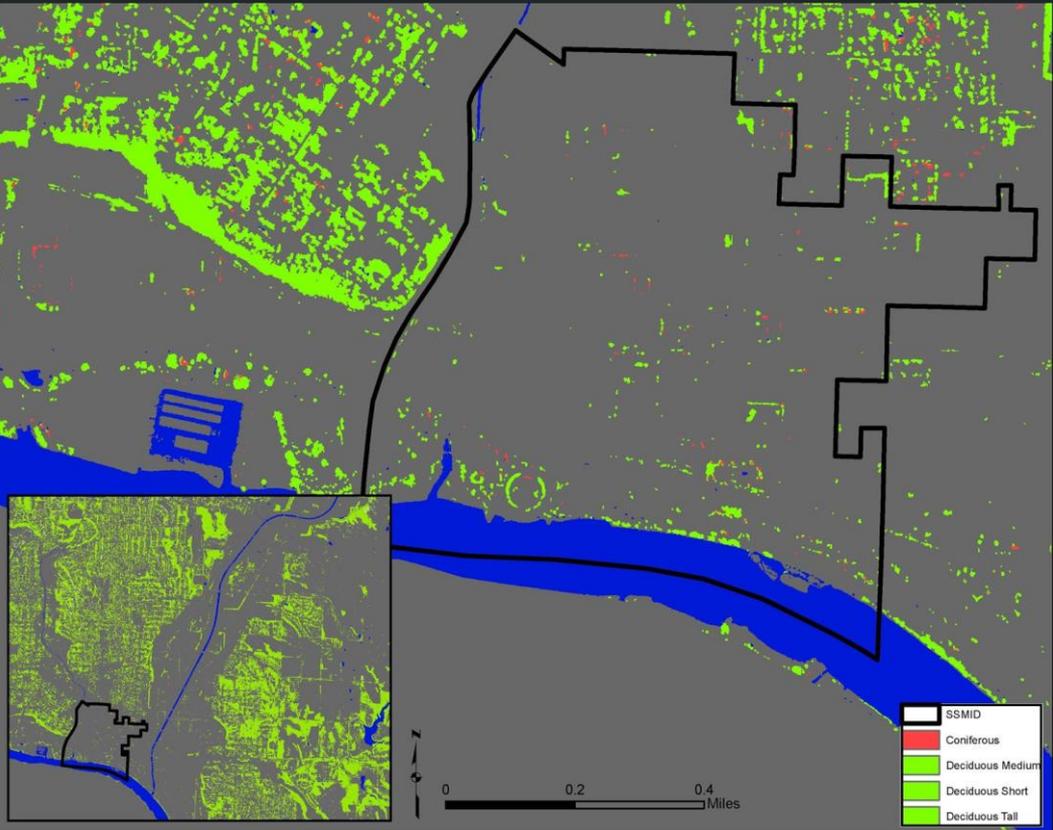
Economic

-  Attract visitors to downtown
-  Increase local spending
-  Increase time spent downtown
-  Improve livability for living and working downtown

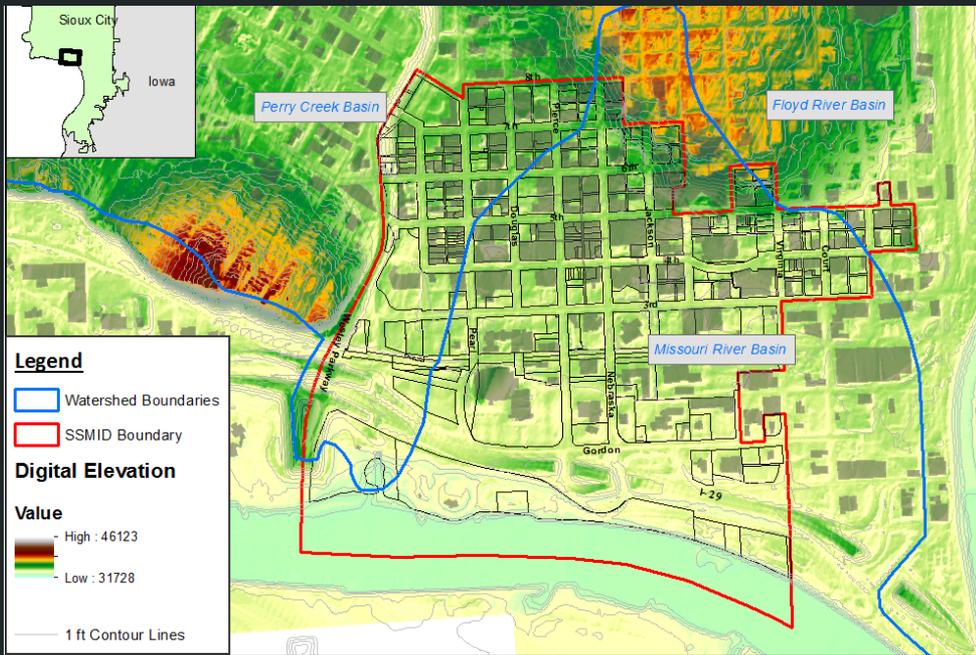
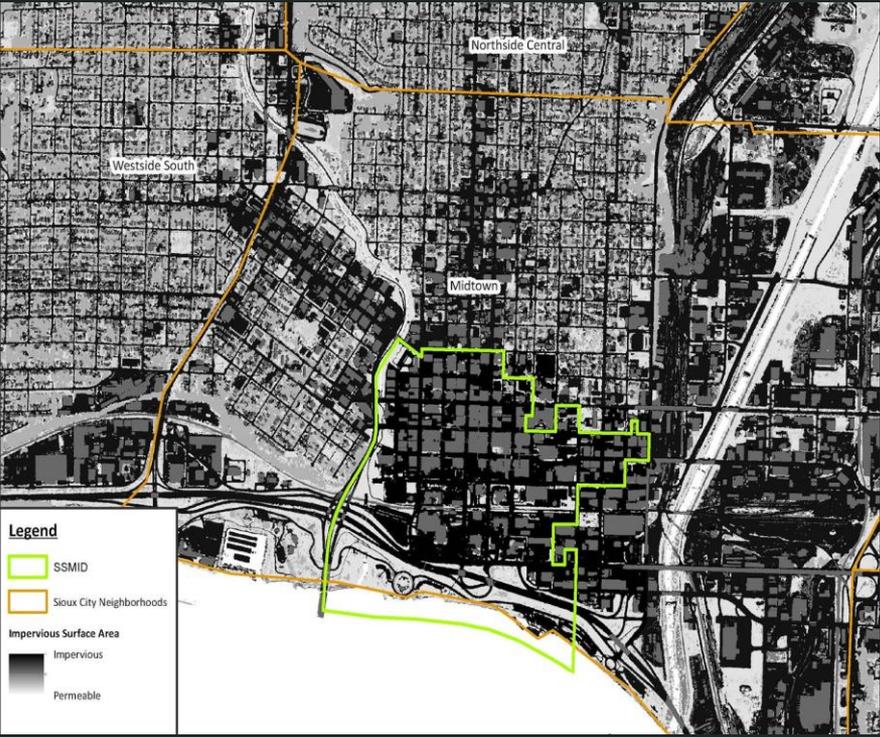
Creating the Plan



Stressed trees, ponding, paved slopes



High impermeability, steep slopes



8 degrees warmer, low resident access



Existing and Potential Spaces

Downtown District Sioux City, Iowa



- City/County Owned Land
- State Owned Land
- Self-Supporting Municipal Business District
- Downtown Partners Boundary
- Private Buildings
- Public Buildings
- Existing Green Space (Not Parking)
- Existing Landscaped Space (Parking Lot)
- Potential Green Space (Sioux City partners)
- All Other Spaces Parking Lots
- All Other Spaces Non-Parking

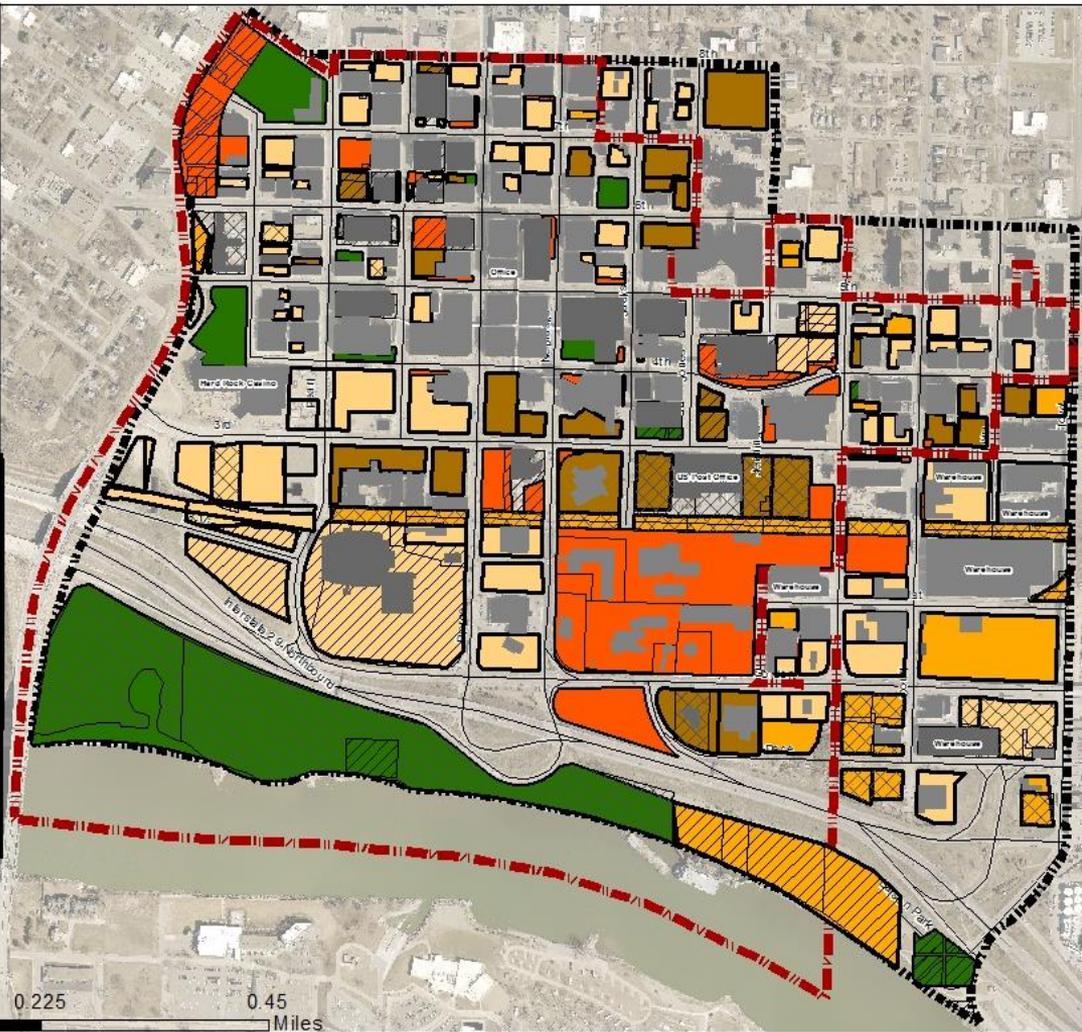


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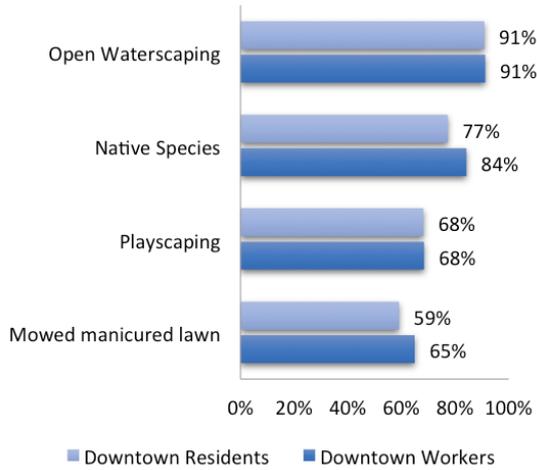
0.225

0.45

Miles



Design Preferences: Workers and Residents



Quality of Life and Experience

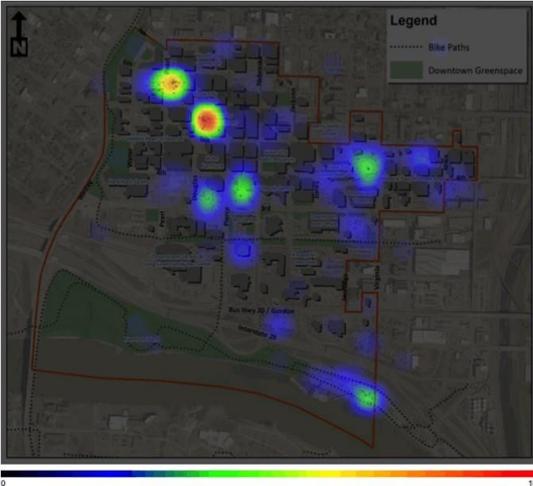


Public Concerns

- Lack of vegetation
- Stormwater infiltration
- Unattractive streetscapes
- Trees in poor health

Public Preferences

- Places to sit and relax
- Native prairie plants
- Community event space
- Walking and biking
- Cooling features
- Waterscaping



If There Were More Greenspaces Downtown...





Public Preferences

Green roof

Native prairie grasses

Amphitheater

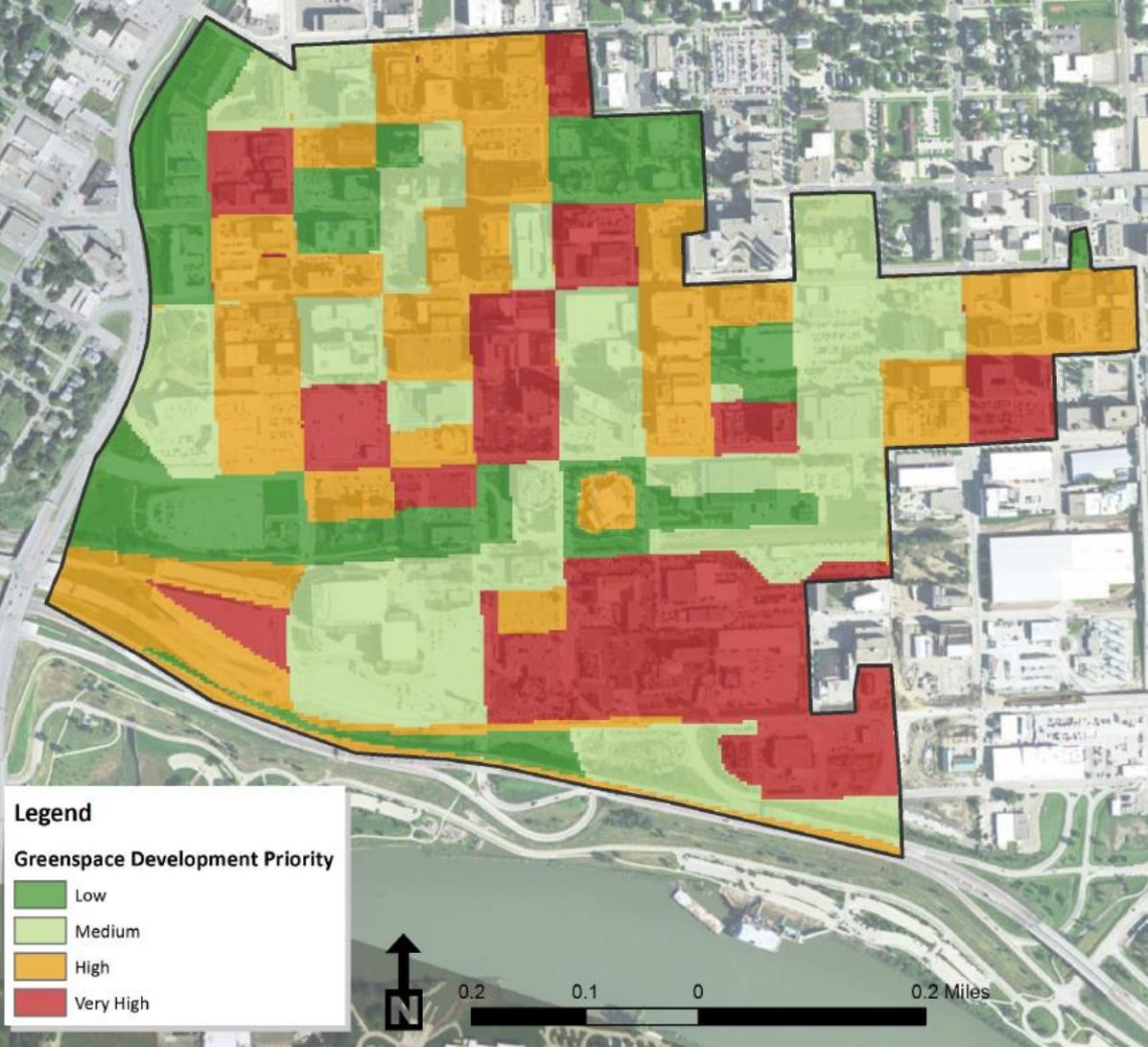
Pond with bridge

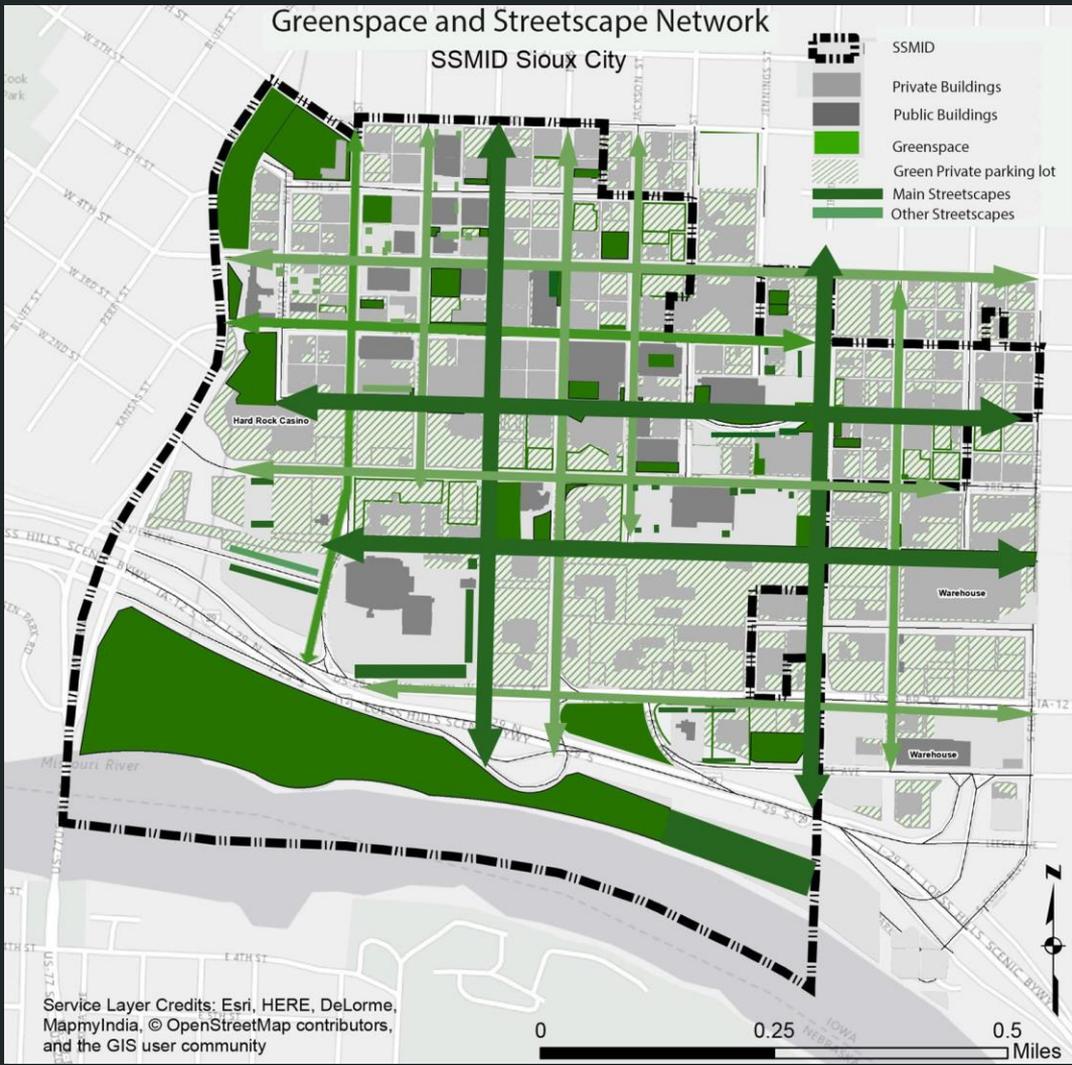
Trail greenspace

Public Art

“I think with the parking garages there is adequate parking allowing more space being dedicated to beautifying and adding value to Sioux City.”

Where
should
greenspaces
go?





Priority Projects

- Pearl Street park
- West edge of downtown
- Pocket parks
- Pierce Street
- Virginia Street
- Sixth and Nebraska
- Trails



Native Grass Strips

Increased Shade Trees



Flowered Strips

Permeable Concrete



Design Recommendations



Design Recommendations



Pergola

Trellis with Ivy

Benches

Bike Fixing Station



Native Landscaping

Picnic Table

Permeable Pavement

Design Recommendations



Tree Islands



Increased Seating

Public Art

Stormwater Retention

Permeable Pavers



Grass Striping

Parking Buffer

Design Recommendations

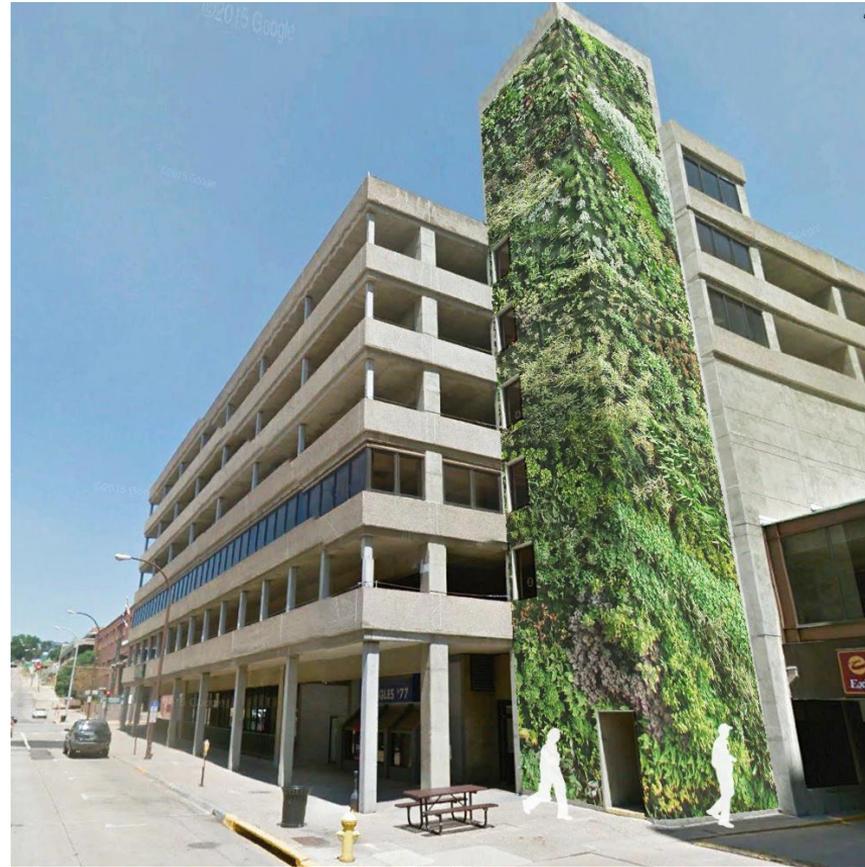


Connection Mercy Hospital

Public Seating Area



Native Plants



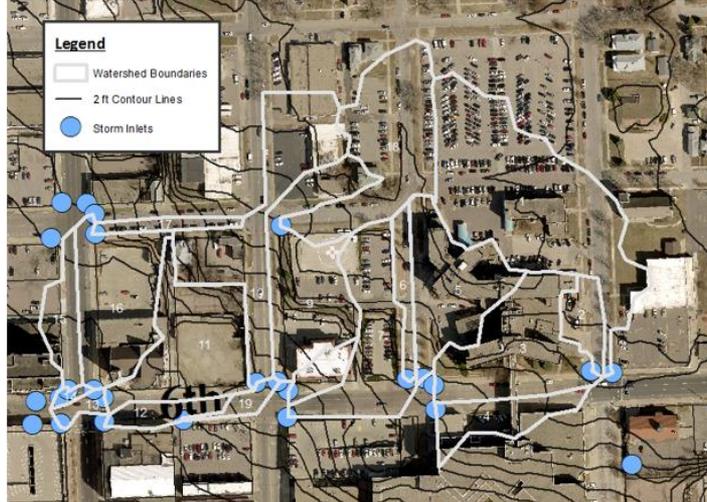
Design Recommendations



Design Recommendations



	Existing Conditions	With Bioswale	Percent Improvement
Catchment Area (acres)	0.26	0.26	
Curve Number	98	95	3.06%
Peak Flow (cfs)	1.84	1.68	8.97%
Depth of runoff (in)	2.78	2.53	8.97%



Legend

- Watershed Boundaries
- 2 ft Contour Lines
- Storm Inlets

Catchment	Total Area (ac)	Total area (mi ²)	Composite Area 1	CN1	Composite Area 2
12	0.257	0.000	0.012	48.000	0.245
	2-day 24hr depth	Depth of runoff (in)	la (abstraction)	la/P	Co
	3.010	2.529	0.090	0.030	2.553
	CN2	Composite Area 3	CN3	Composite CN	S
	98.000	0.000	0.000	95.684	0.451
	C1	C2	tc	qu	qp (cfs)
-0.615	-0.164	0.083	1652.475	1.678	



Variety of Forbs

Design Recommendations



Policy Recommendations

Greenspace

Incorporate greenspace during street reconstruction

Develop healthy, productive low-maintenance greenspaces

Clean and remediate greenspace soil

Enhance existing greenspace to provide increased services



Policy Recommendations

Biodiversity

Ensure a diverse vegetative
populations

No one tree species should make up
more than 10% of all trees

Establish networks of greenspace to
support biodiversity



Policy Recommendations

Access & Networks

Prioritize areas of high resident,
employee, and visitor densities

Create ADA-accessible greenspaces

Utilize riparian areas as natural
greenspaces



Policy Recommendations

Funding

Establish a greenspace fund

Reevaluate the current stormwater fee

Partner with private property owners

Incentivize greenspace implementation

Policy Recommendations

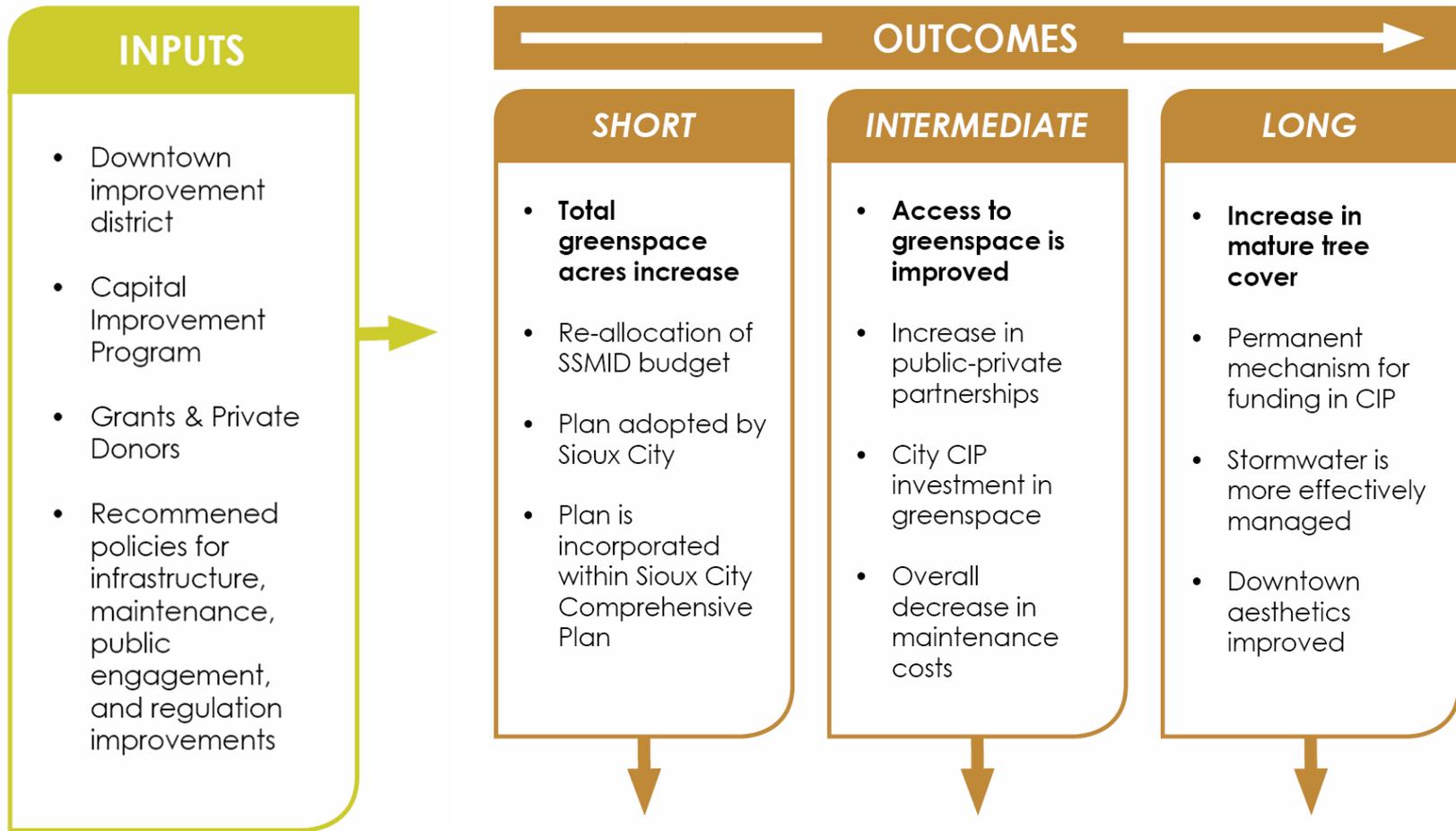
Education

Conduct tours, workshops, trainings, and grand openings

Install educational signage

Utilize media to educate





EVALUATION

Category	Description	Current Condition	Greenspace Targets		
			Short	Intermediate	Long
Trees	Trees added to streetscapes and pocket parks	1.43% of total downtown land cover	2.29% (+530 trees)	3.43% (+470 trees)	4.91% (+661 trees)
Greenspace	Pocket parks, bioswales, native landscaping	8 acres of total downtown space	25.4 acres	41 acres	57.75 acres
Access	Average distance to nearest greenspace	1.88 blocks	1.5 blocks	1 block	0.5 blocks

Implementation Plan

A photograph of a wooden bench with a thick, horizontal top rail and two vertical legs. The top rail is engraved with the text "KEEP COMING BACK" in a bold, serif font. The bench is situated outdoors on a bed of brown mulch. In the background, there are large, light-colored rocks and a green evergreen tree. The lighting is bright, suggesting a sunny day.

“KEEP COMING BACK”

Questions?

Acknowledgements

Lucie Laurian, School of Urban and Regional Planning, The University of Iowa

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Michelle Bostinelos, Executive Director, Siouxland Interstate Metropolitan Planning Council

Charlie Cowell, Planner, City of Sioux City

Matthew Salvatore, Parks and Recreation Director, City of Sioux City

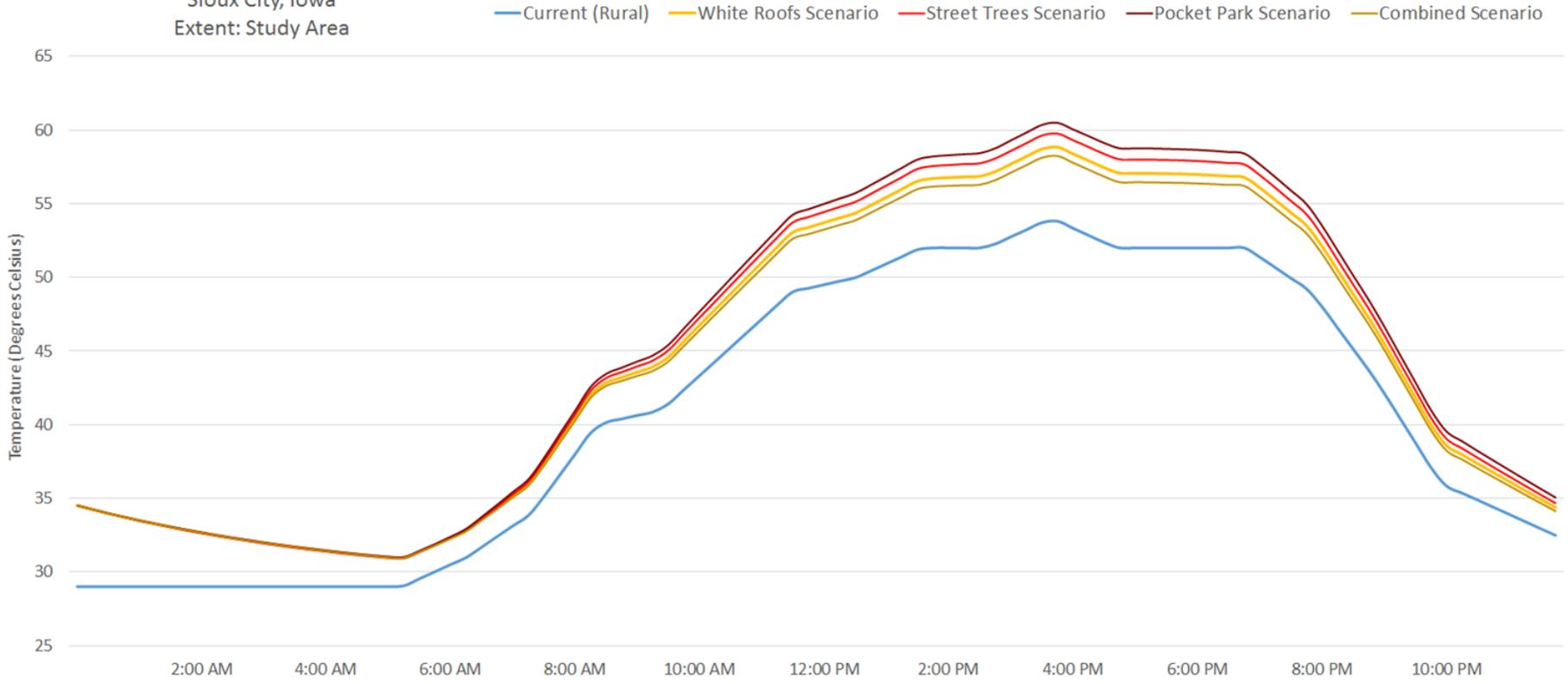
Kathryn Pfaffle, Transportation Modeler/GIS Specialist, Siouxland Interstate Metropolitan Planning Council

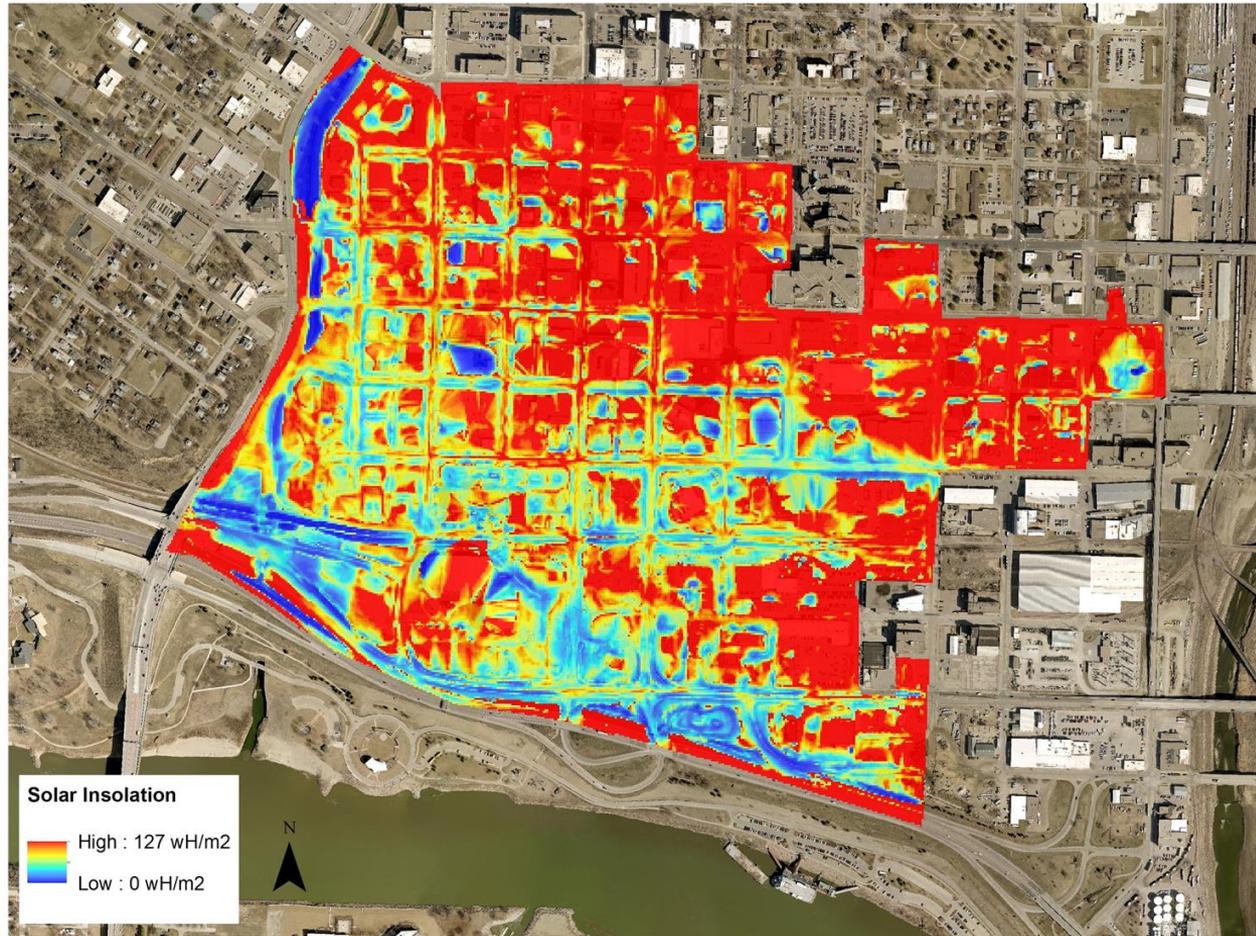
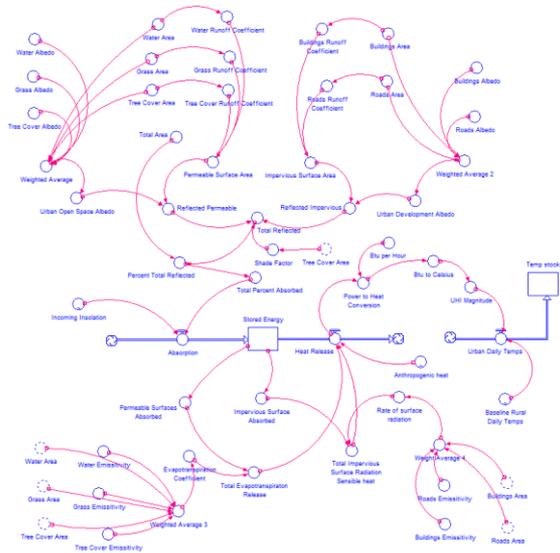
Christopher Stoakes, University of Iowa College of Engineering, The University of Iowa

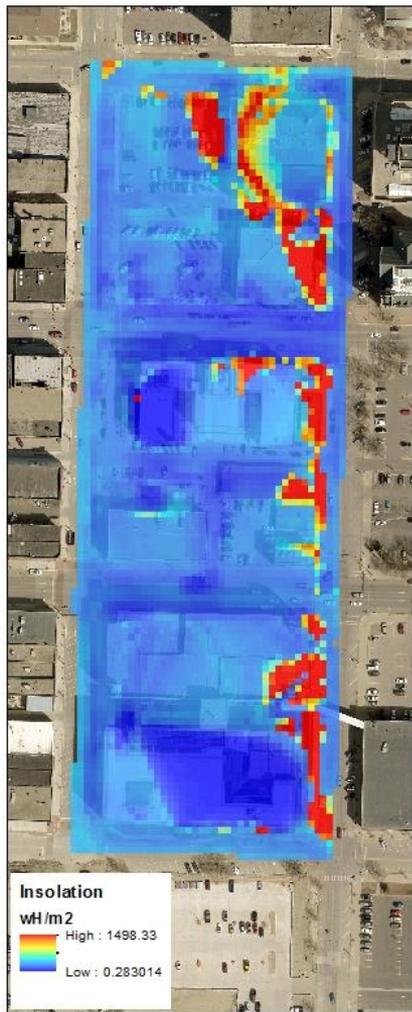
Sioux City Public Museum

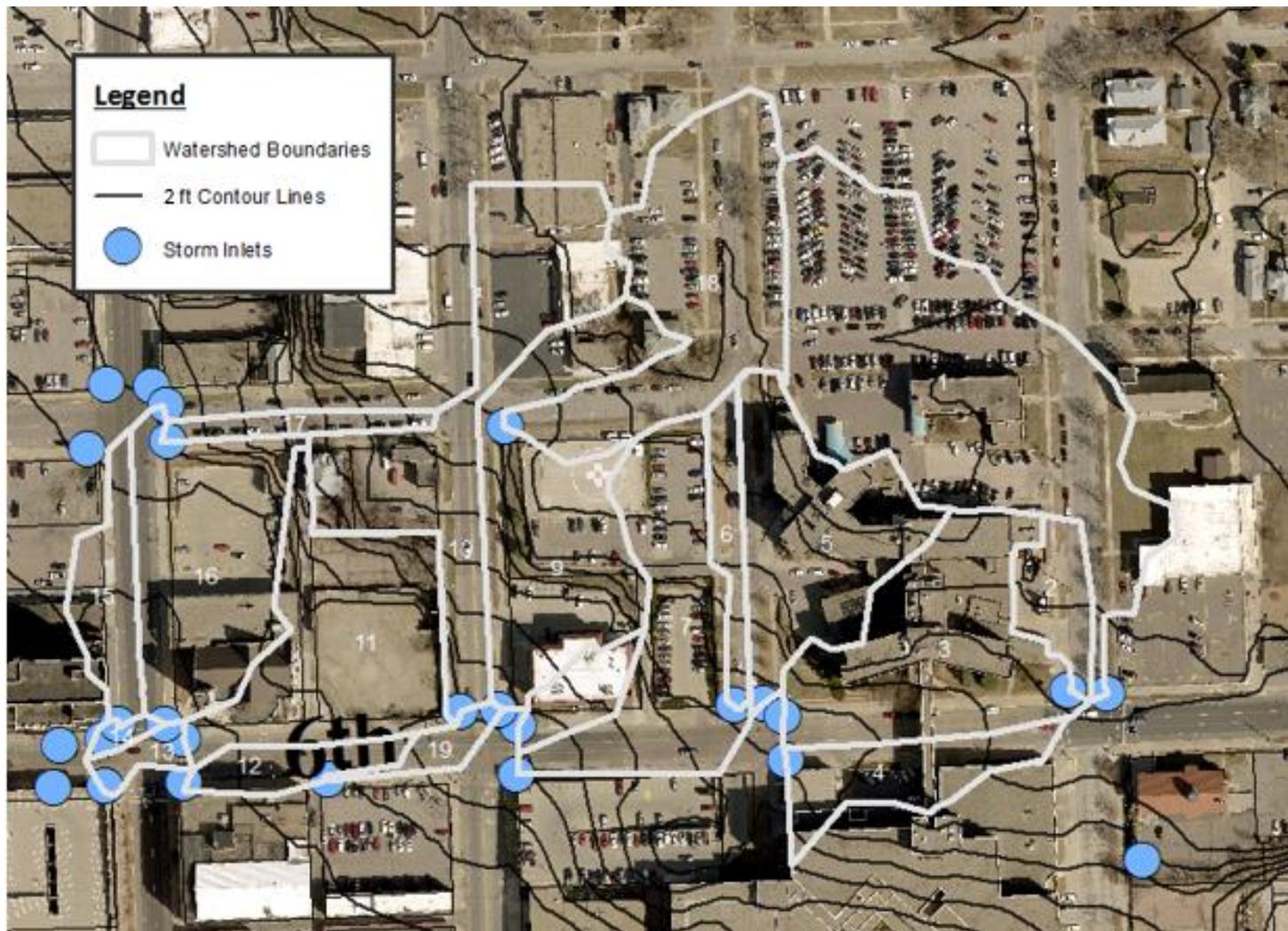
Urban Heat Island Mitigation Scenarios

Sioux City, Iowa
Extent: Study Area



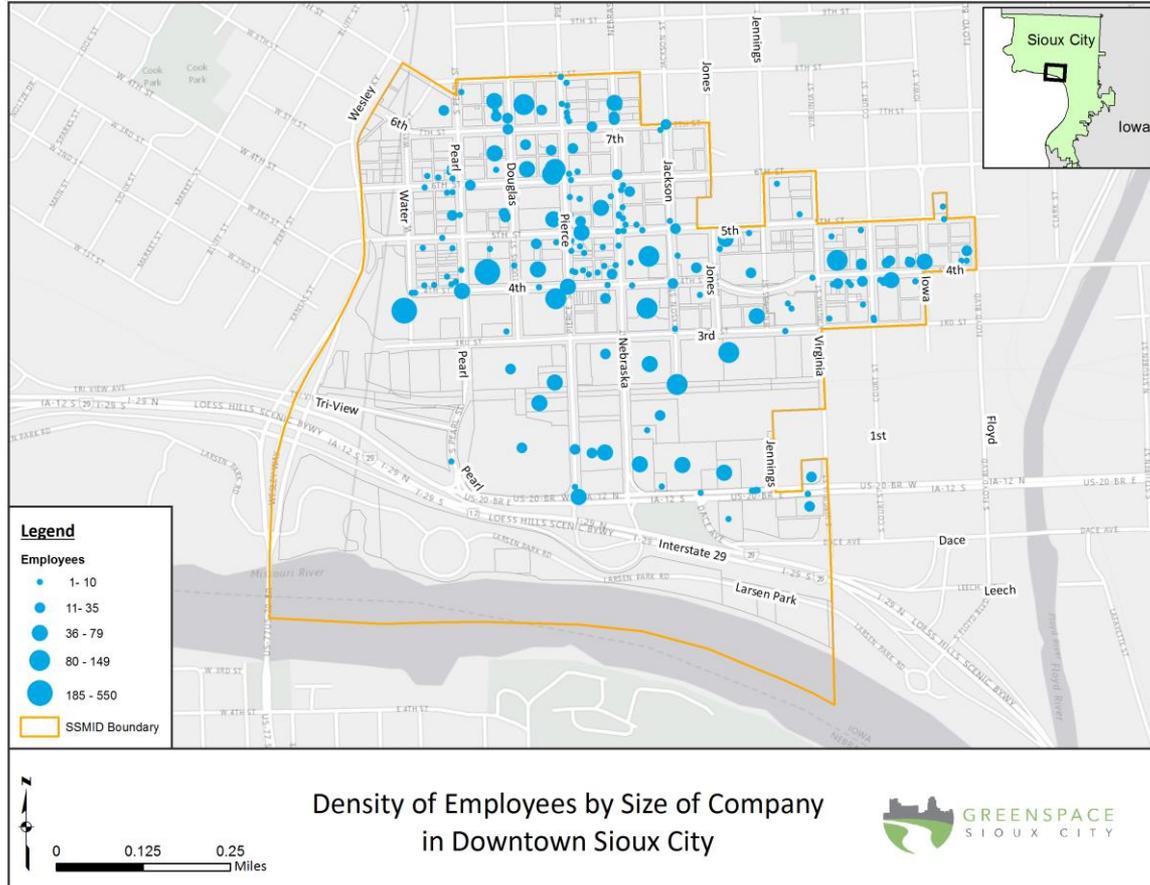






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	2-day 24hr depth	Depth of runoff (in)	<u>la</u> (abstraction)	<u>la/P</u>	Co
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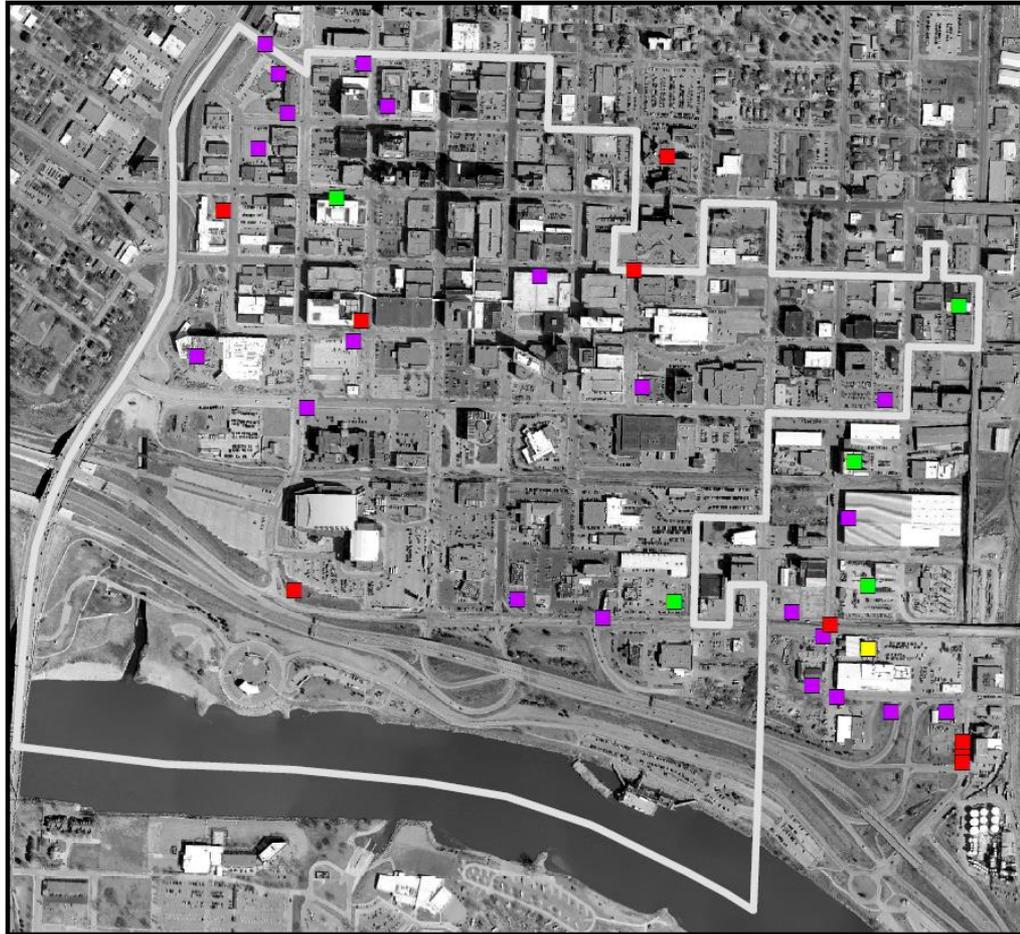


Potential Ground Contamination

Downtown
Sioux City, Iowa



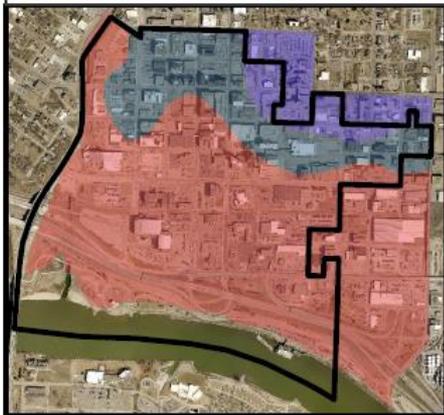
-  Hazardous Substance Spill Incident
-  Non-Final National Priority List Sites
-  Leaking Underground Storage Tank
-  Contaminated Sites
-  SSMID



0 0.25 0.5
Miles

0 0.125 0.25 0.5 Miles

Soil Properties in Downtown District Sioux City, Iowa



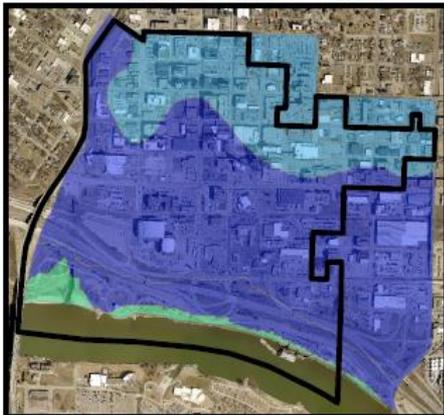
Erodibility
Moderate None Slight



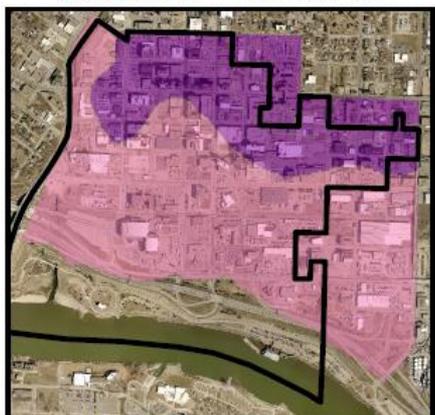
Depth to Water Table
0 1 to 3 3 to 5 > 6



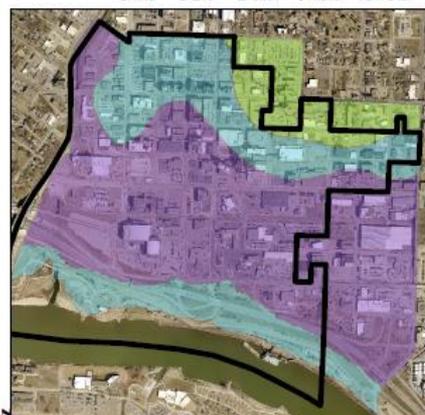
Slope
0-1% 0-2% 2-6% 6-10% 10-15%



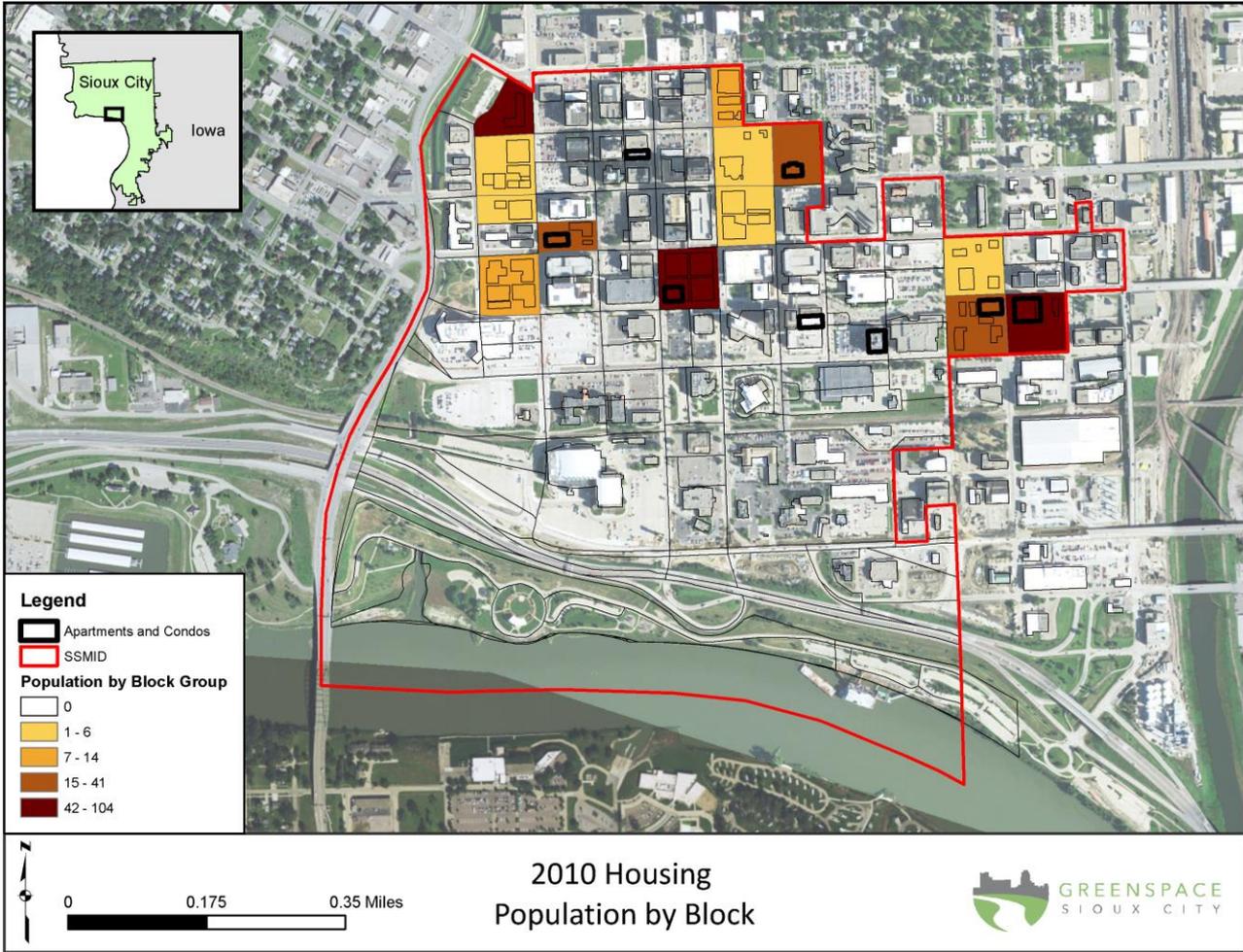
Average pH
0.0 - 5.5 5.6 - 6.5 6.6 - 8.2

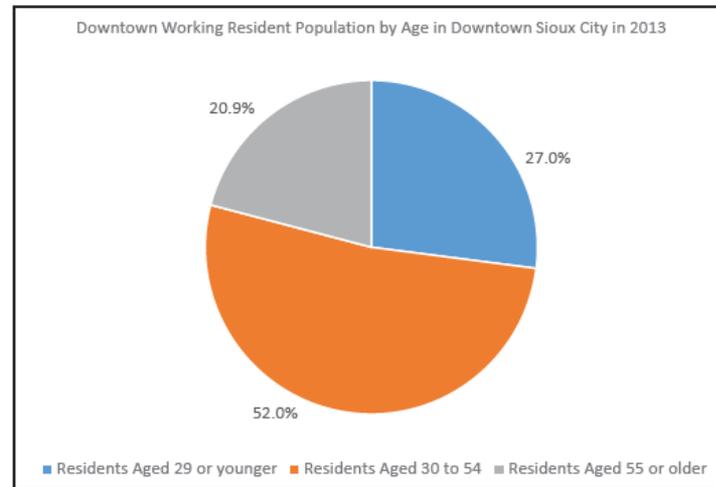
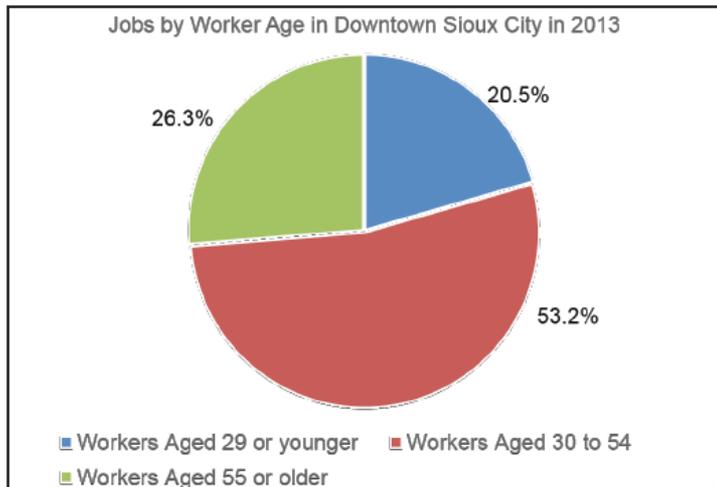
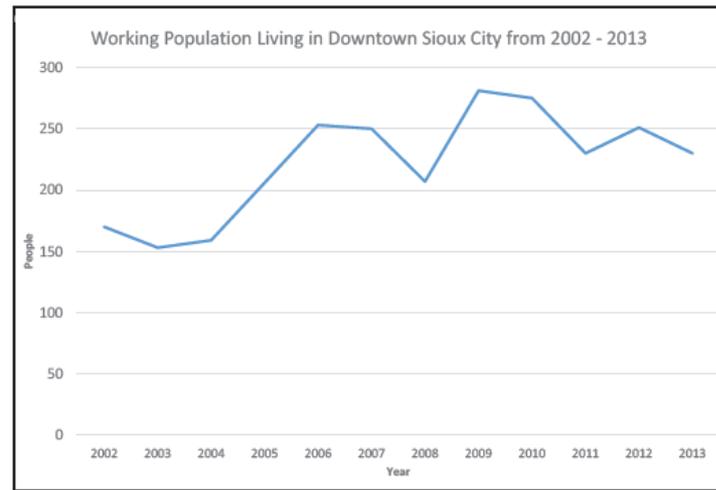
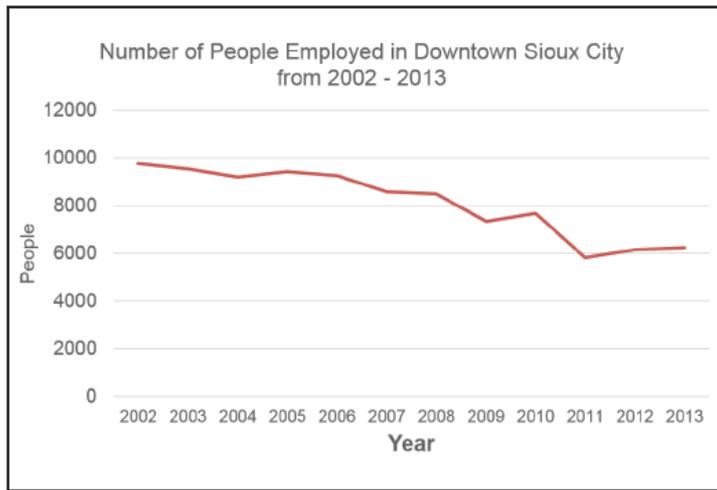


Hydrology
Moderate Well drainage [0.6-2.0 in/hr] Very slow drainage, high runoff potential [<0.08 in/hr]

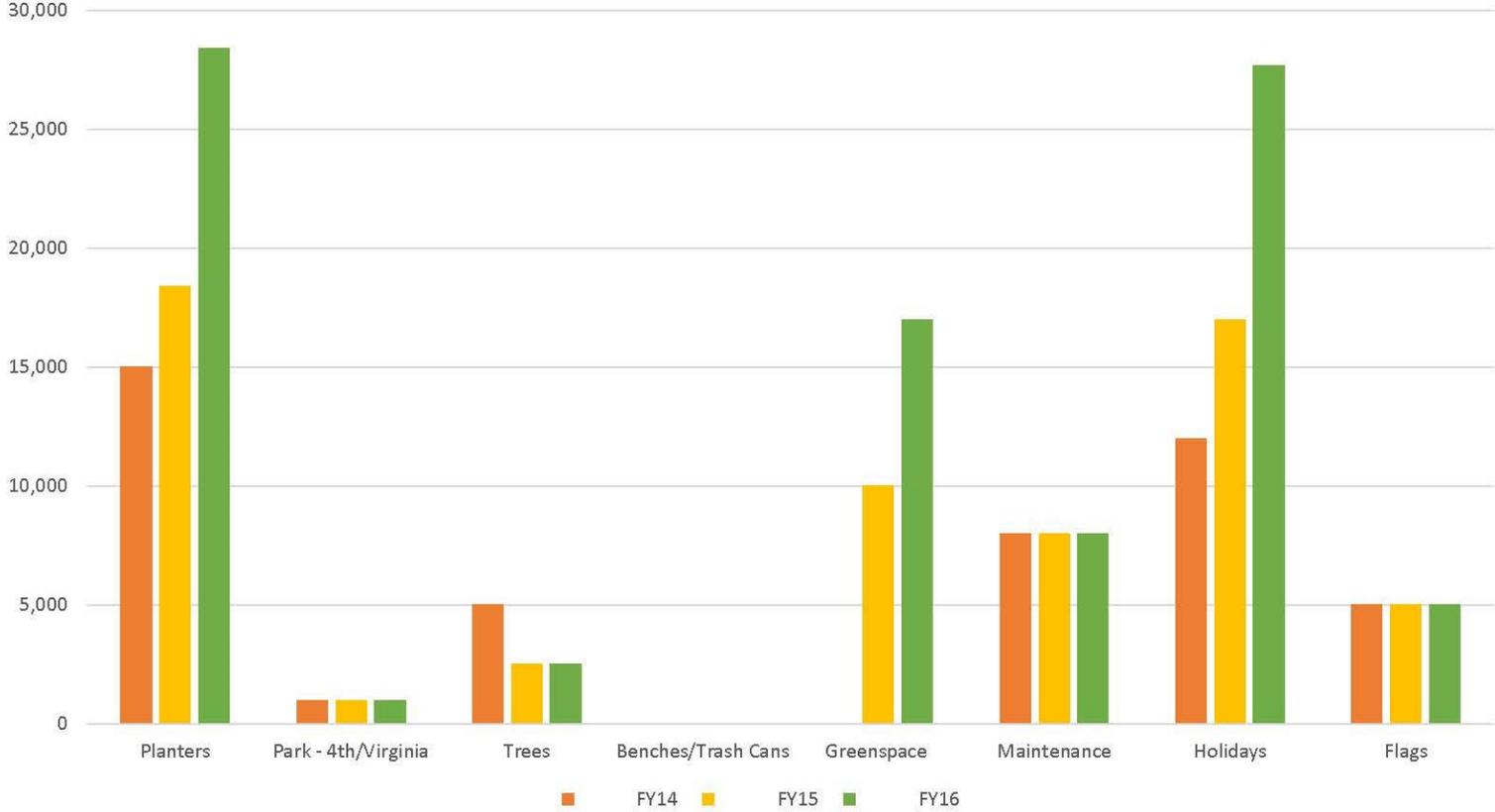


Parent Material
Alluvium Loess Missouri Bottom Calcium





Downtown Partners Streetscaping Expenditure Totals



% Somewhat or Very Important Amenities in Downtown Sioux City, IA (All)

