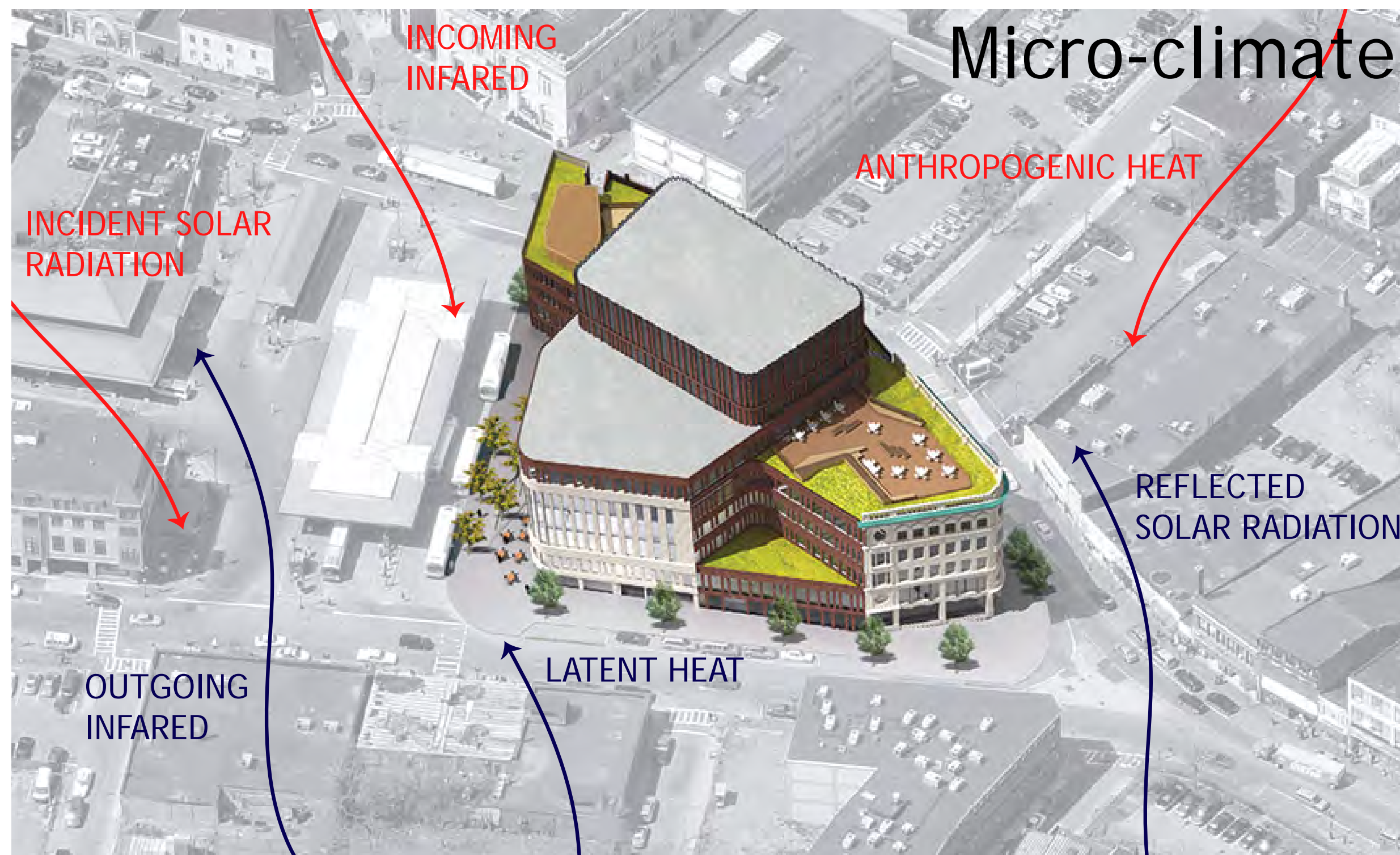


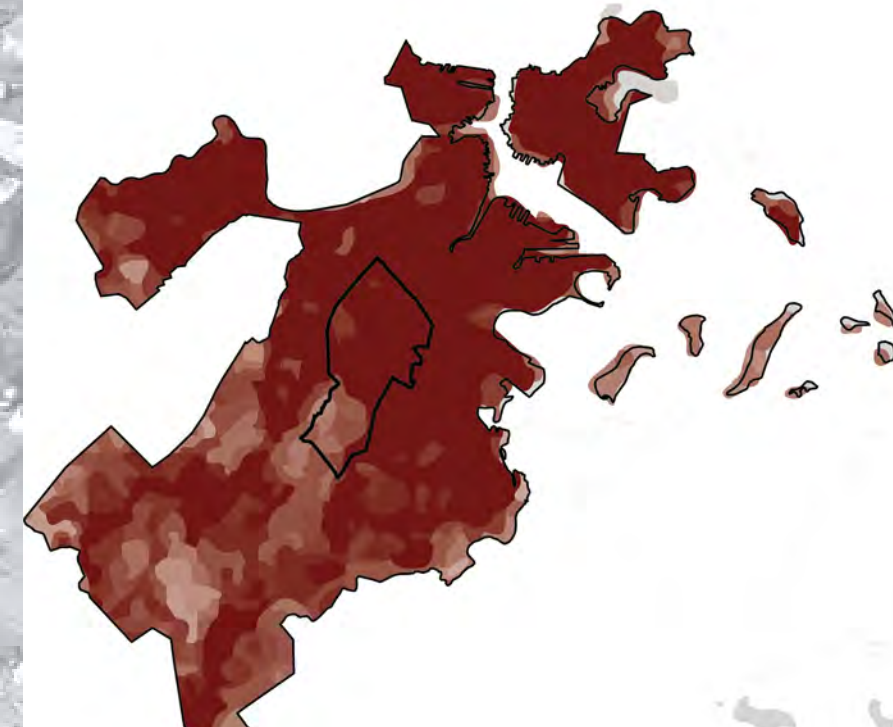
# Urban Climates BOSTON

## THE SCALE OF CLIMATE



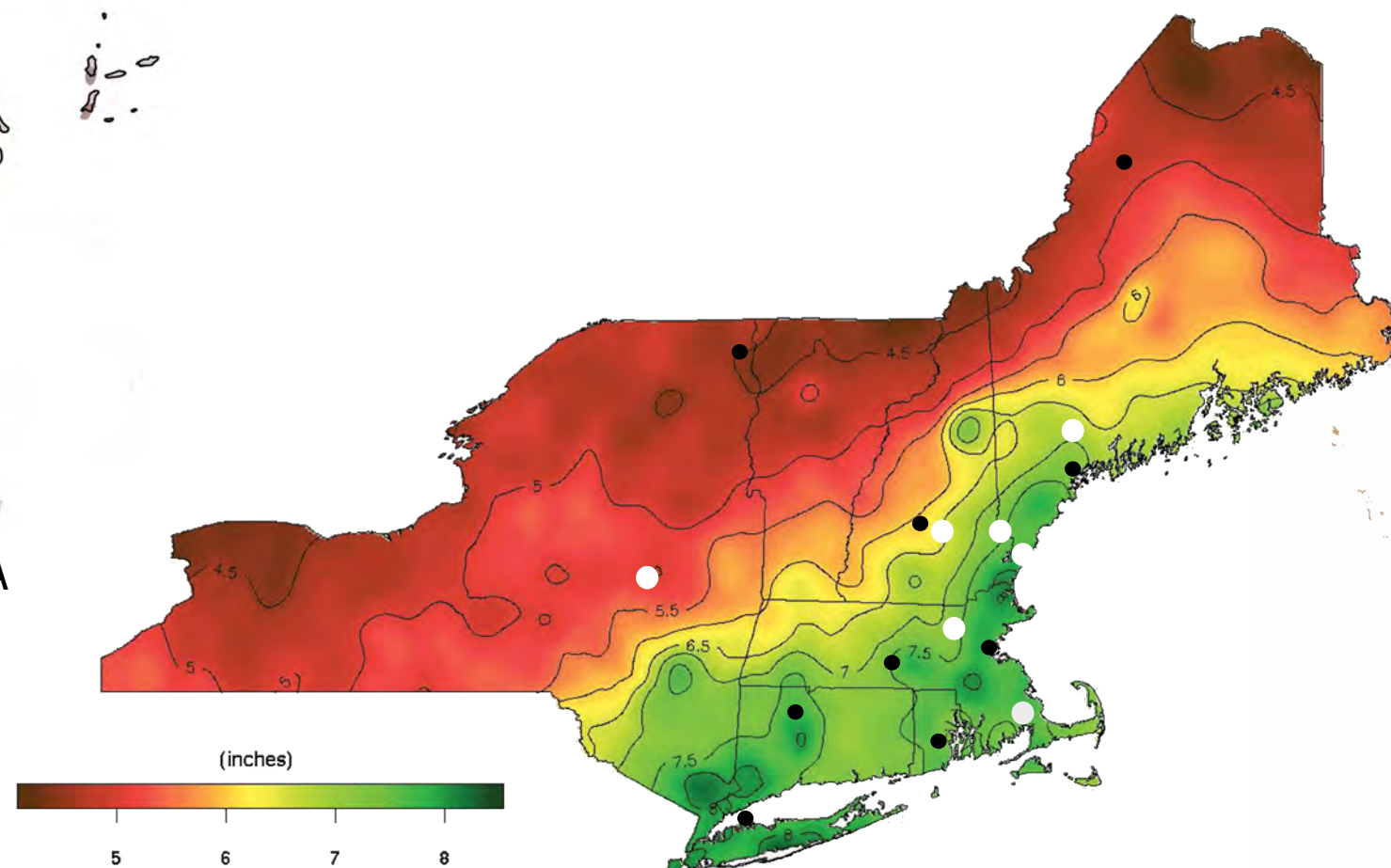
Micro-climate

Local Climate



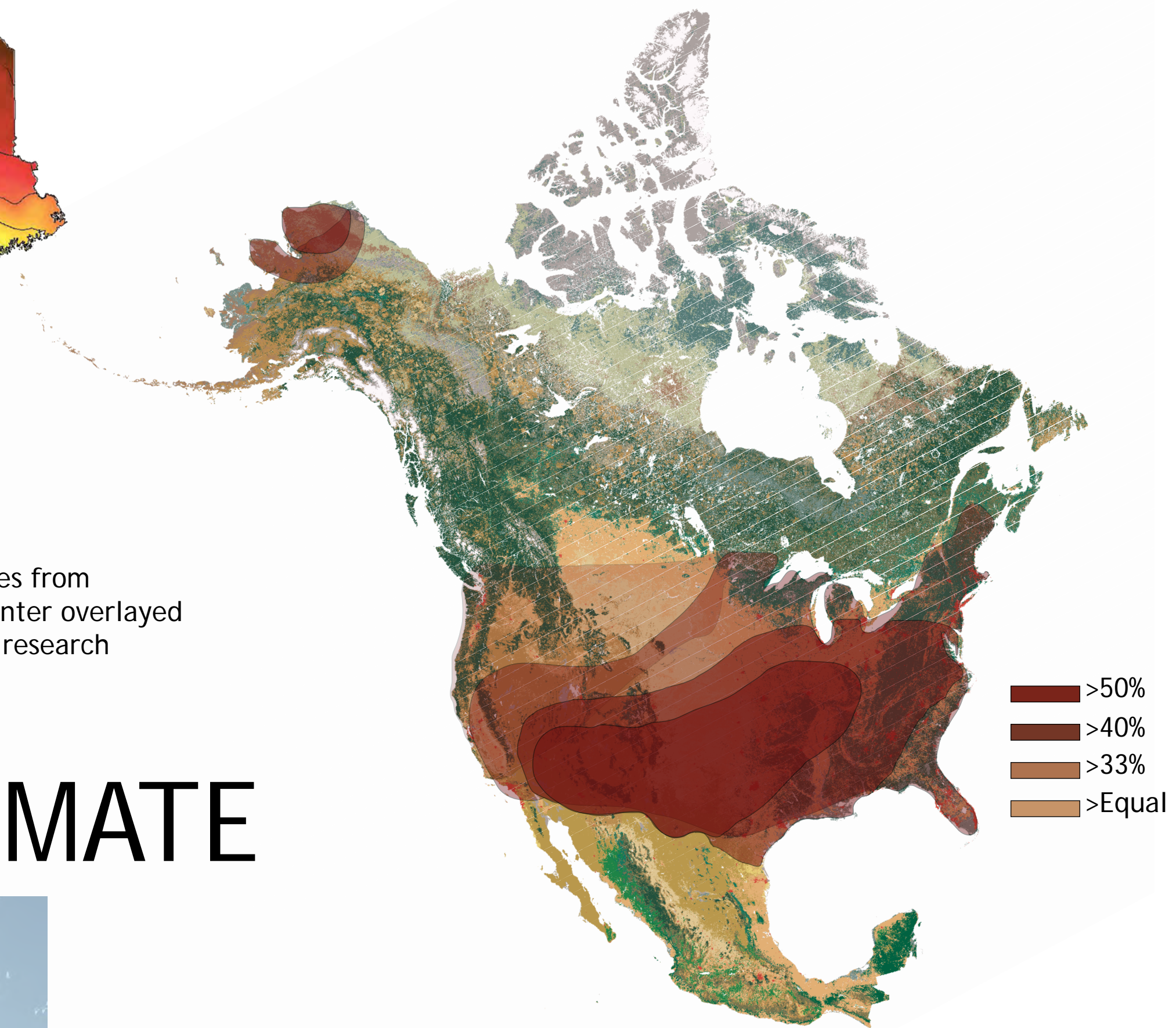
Region of Boston overlaid with NASA MODIS Land Surface Temperature and Emissivity Image

Regional Climate



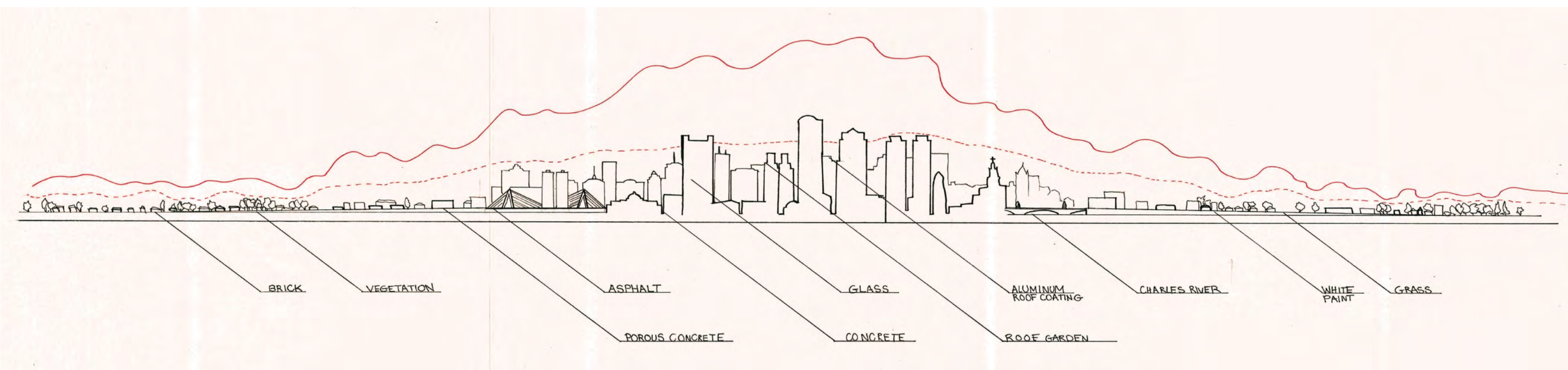
Extreme precipitation estimates from Northeast Regional Climate Center overlaid with location data for climate research stations.

Global Climate

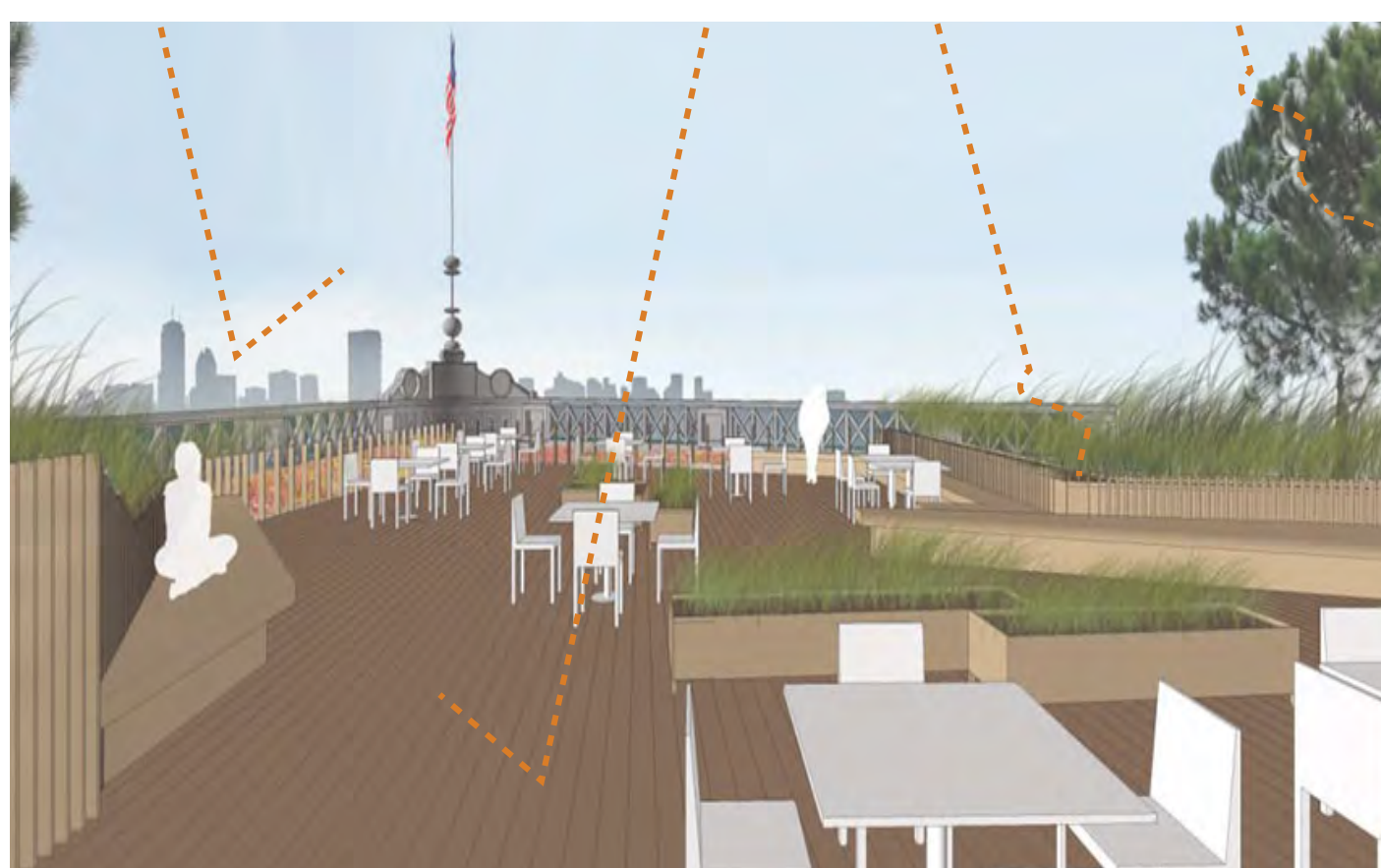


National Land cover dataset overlaid with NOAA's December 2007 to February 2008 temperature outlook estimates. Broken down to show areas that have a greater than 50% chance of getting warmer, greater than 40% chance, greater than 33% chance, and chances for remaining equal.

## URBAN HEAT ISLAND PROFILE



## IMPACTS OF SURFACE MATERIALS



Emittance of a material refers to its ability to release absorbed heat.



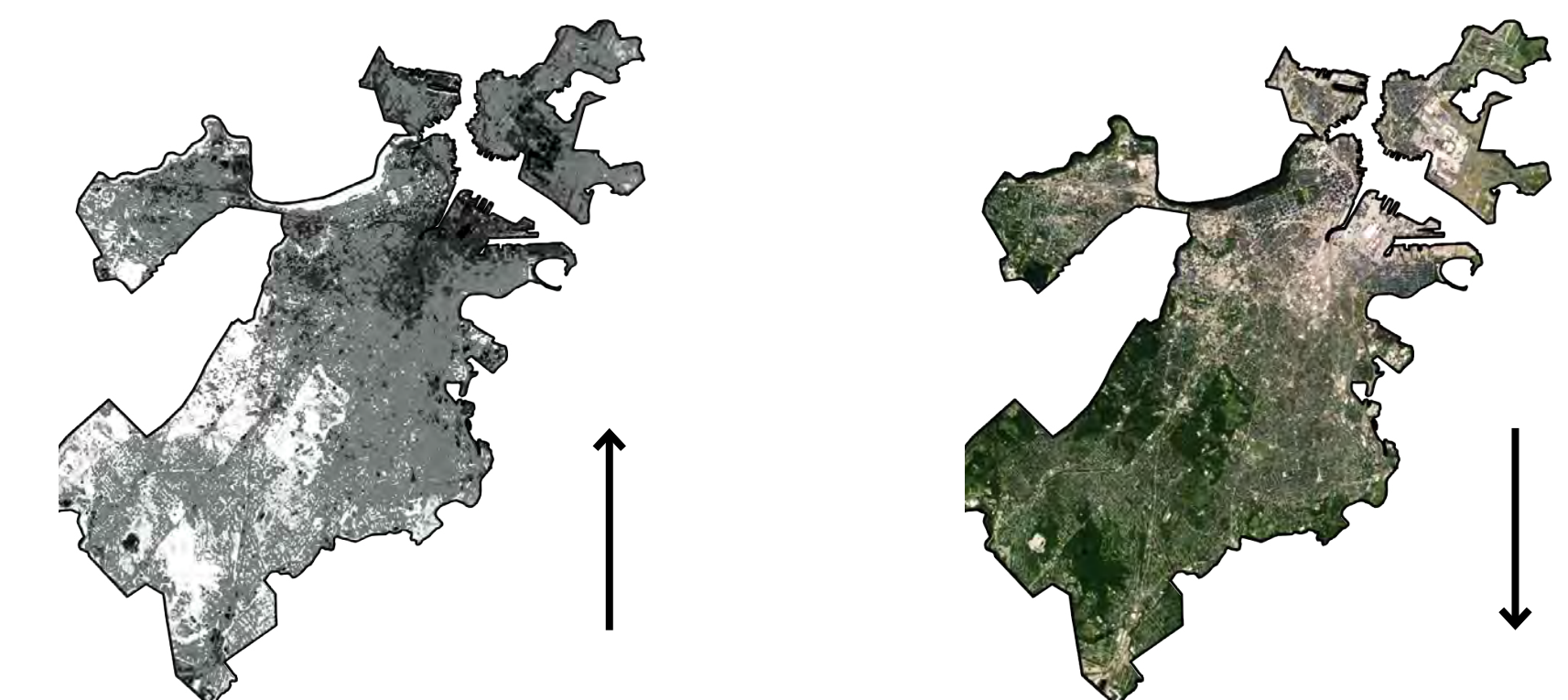
Albedo measures the percent of incoming solar radiation that is reflected.

## MEASURING CLIMATE



## COMMON CHARACTERISTICS

Human-built environments are replacing and impacting natural environments causing unintended outcomes.





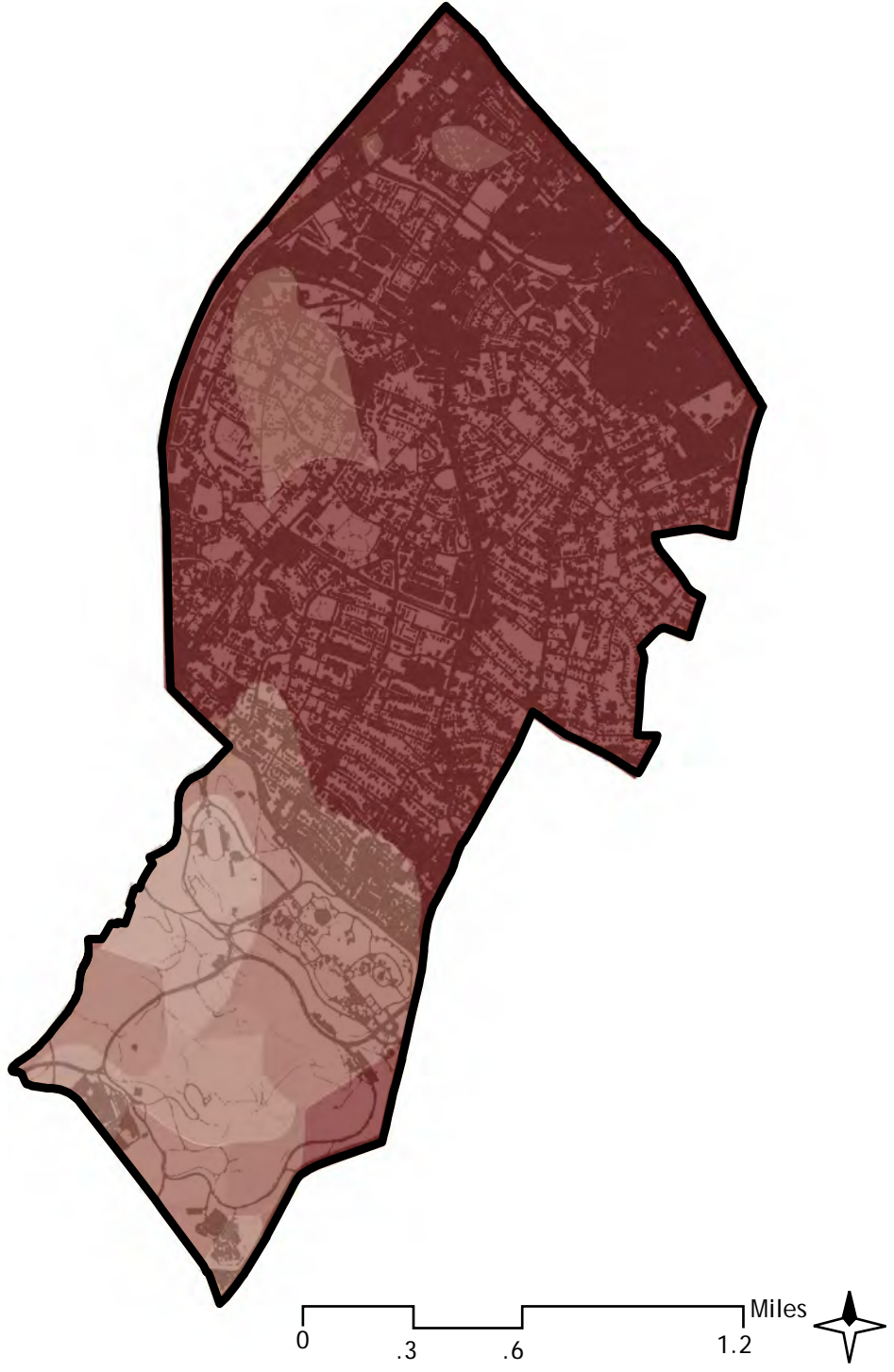
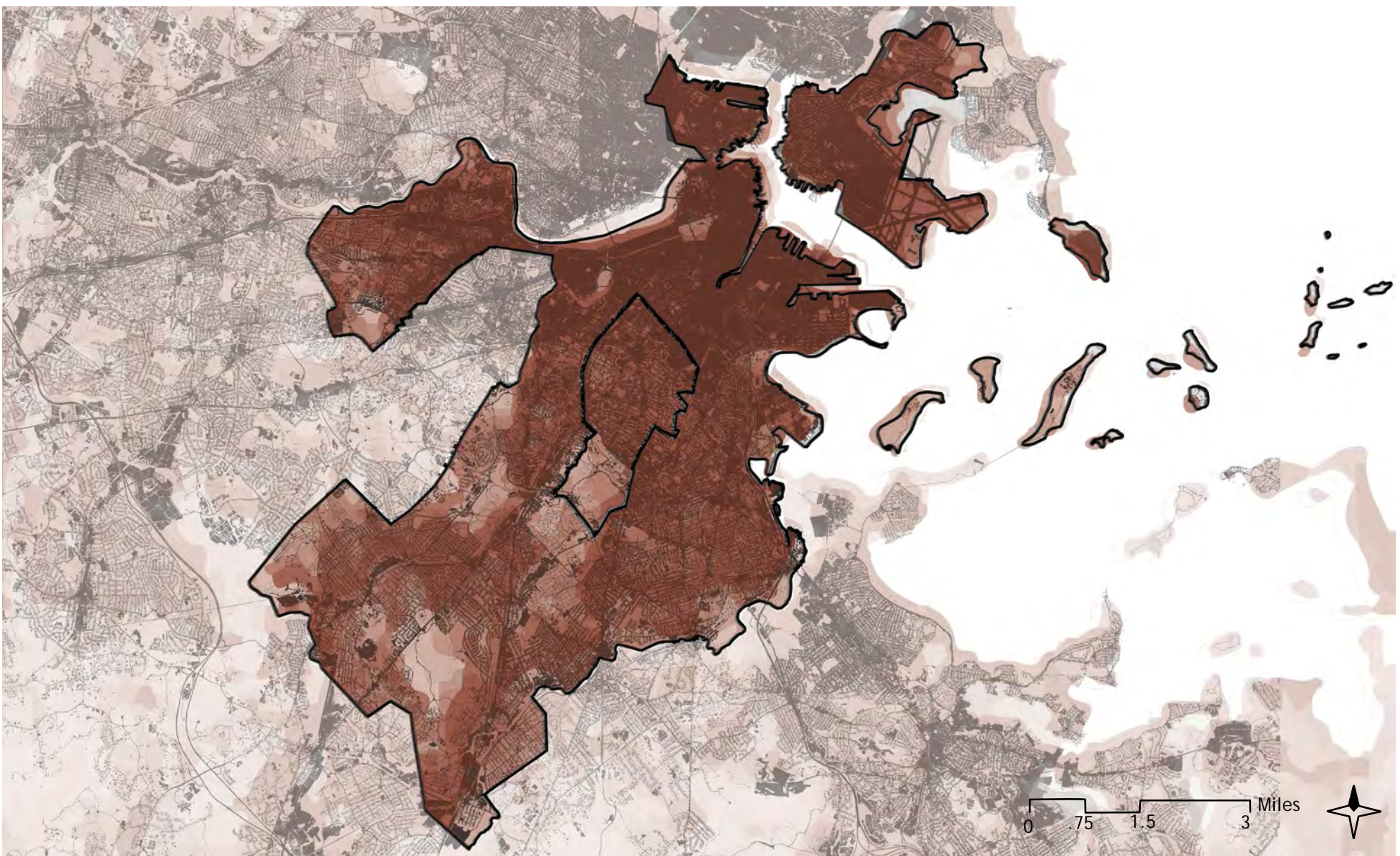
# Elements Influencing Boston and Roxbury Climate

BUILT

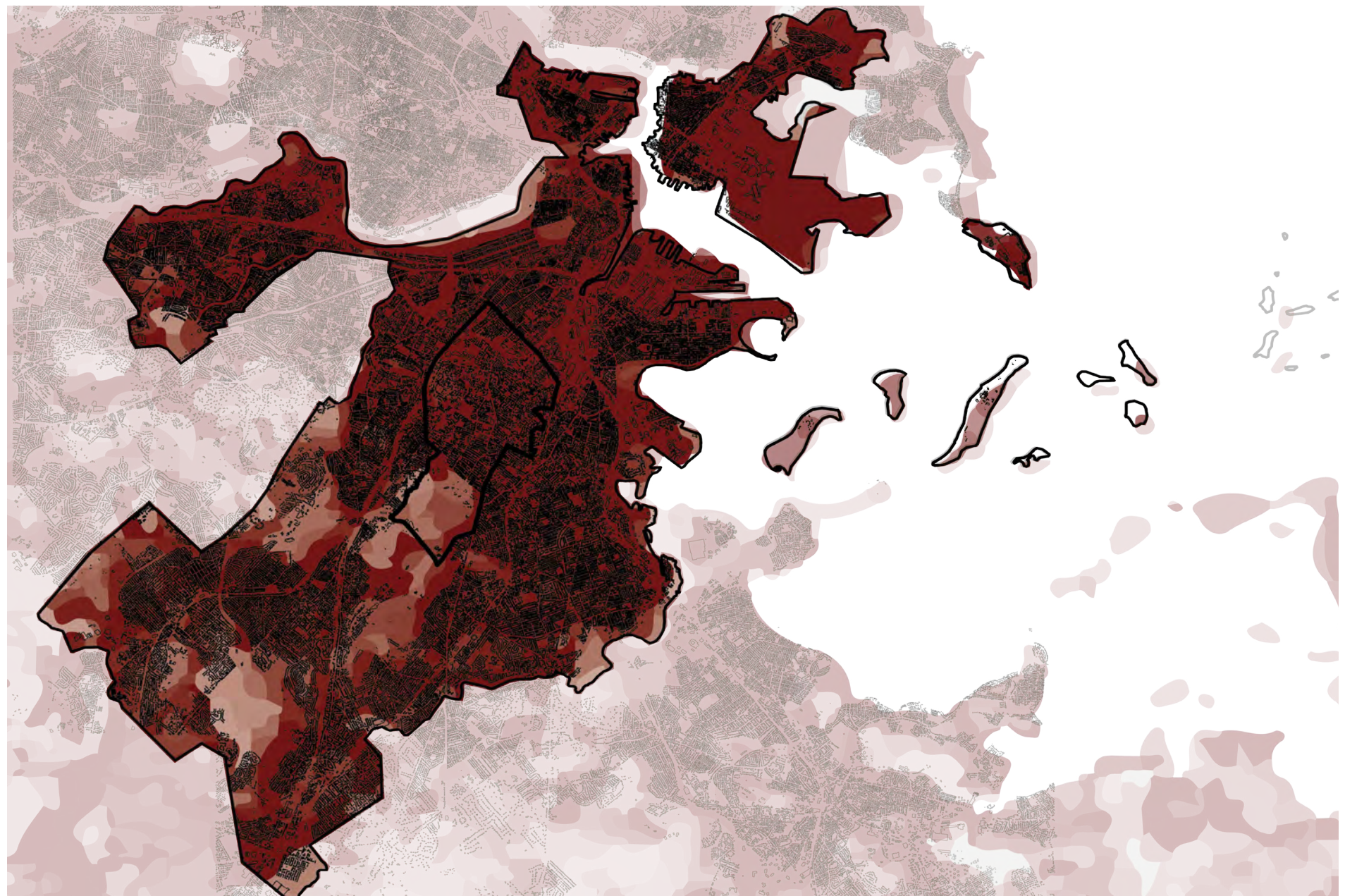


ENVIRONMENTS

Does impervious land cover have temperature implications?



What is the relationship between building footprint and climate?

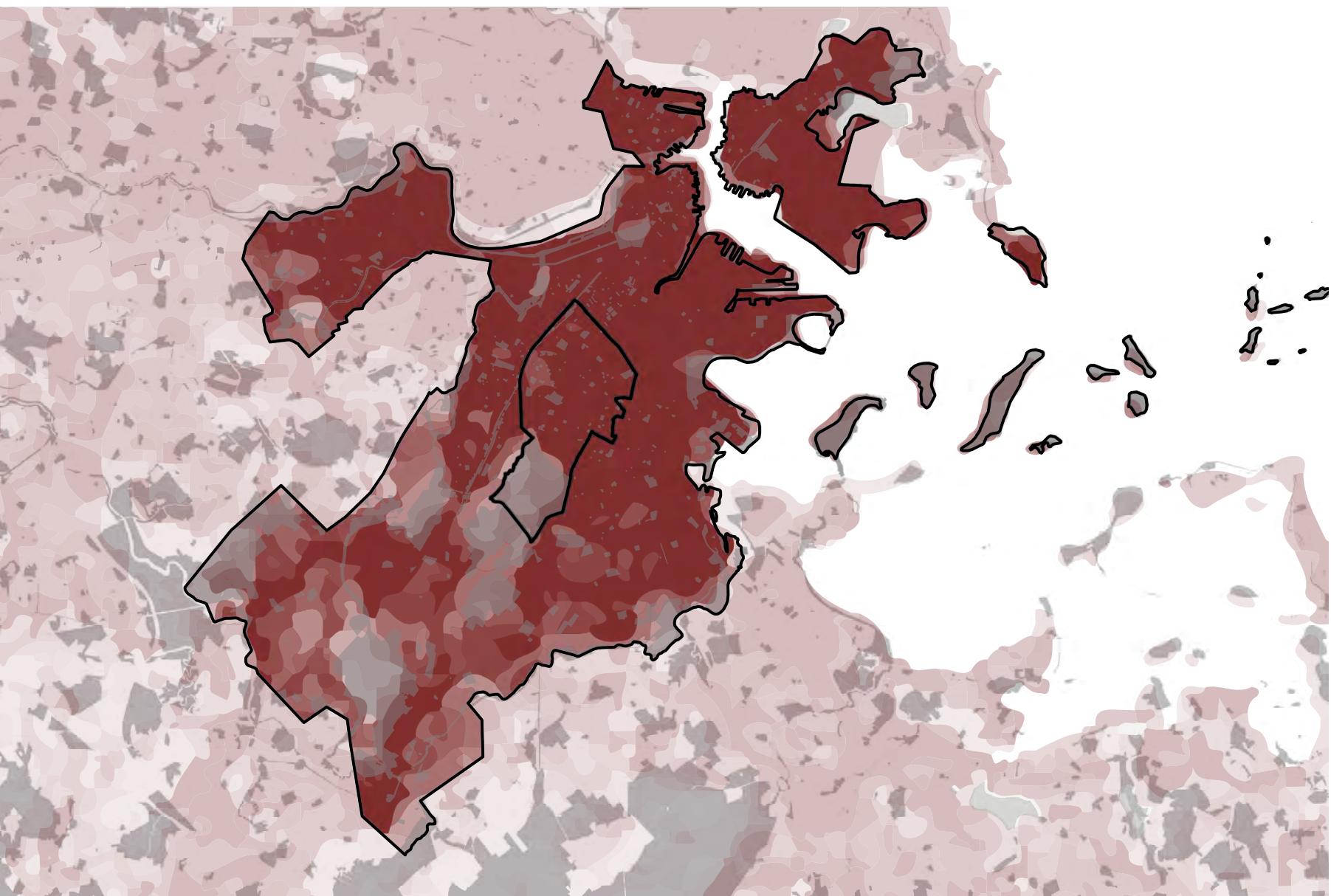


NATURAL

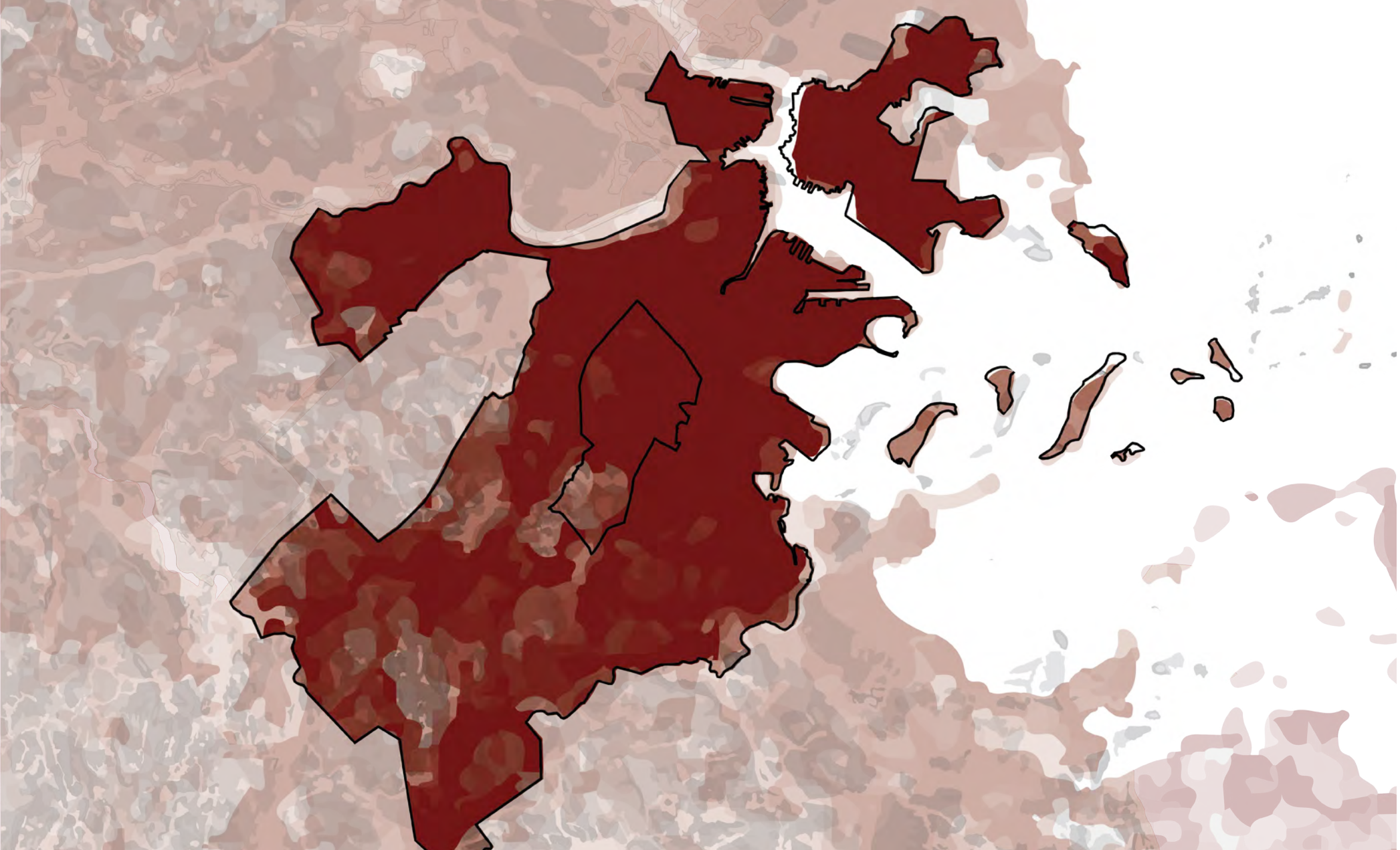


ENVIRONMENTS

Does open space in an urban fabric mitigate impacts of UHI?

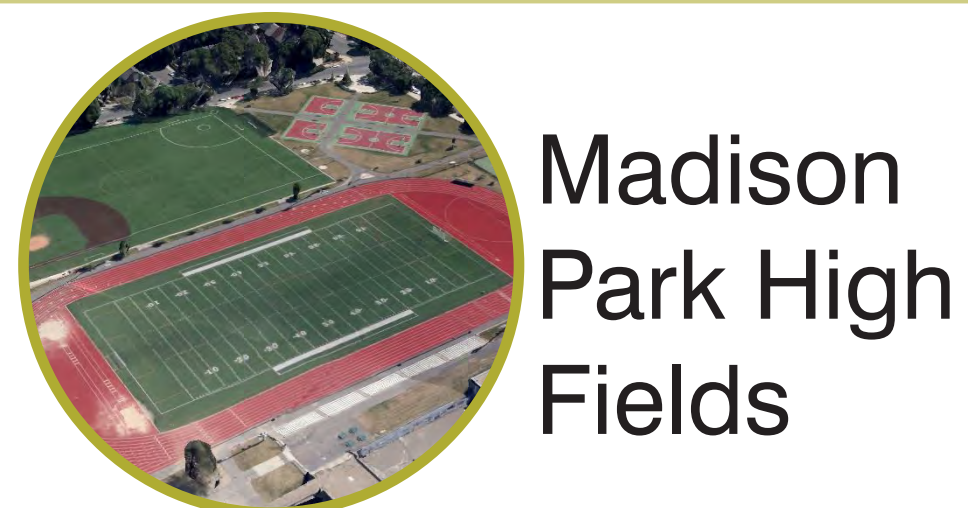


Is there a relationship between slope and climate?





# PUBLIC SPACE IN DUDLEY SQUARE



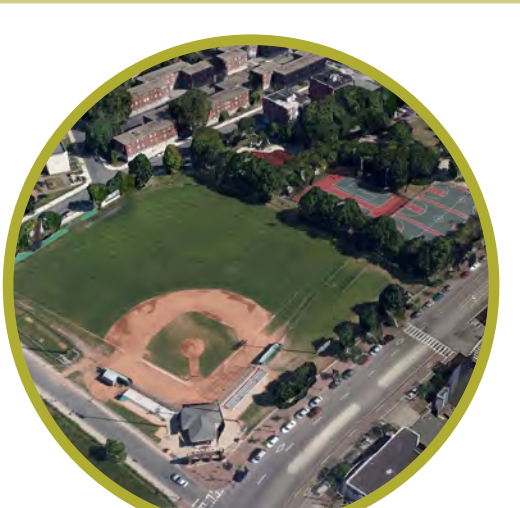
Madison Park High Fields



Madison Park Village



Bike Path



Ramsay Park



Roxbury Heritage State Park



Eliot Cemetery



Dewitt Drive Playground



Madison Park Rec Center



Jeep Jones Park



O'Bryant Schoolyard



Madison Park Community Garden



Post Office



Veterans Memorial Park



Orchard Gardens Schoolyard



Bynoe Park



Orchard Gardens Boys and Girls Club



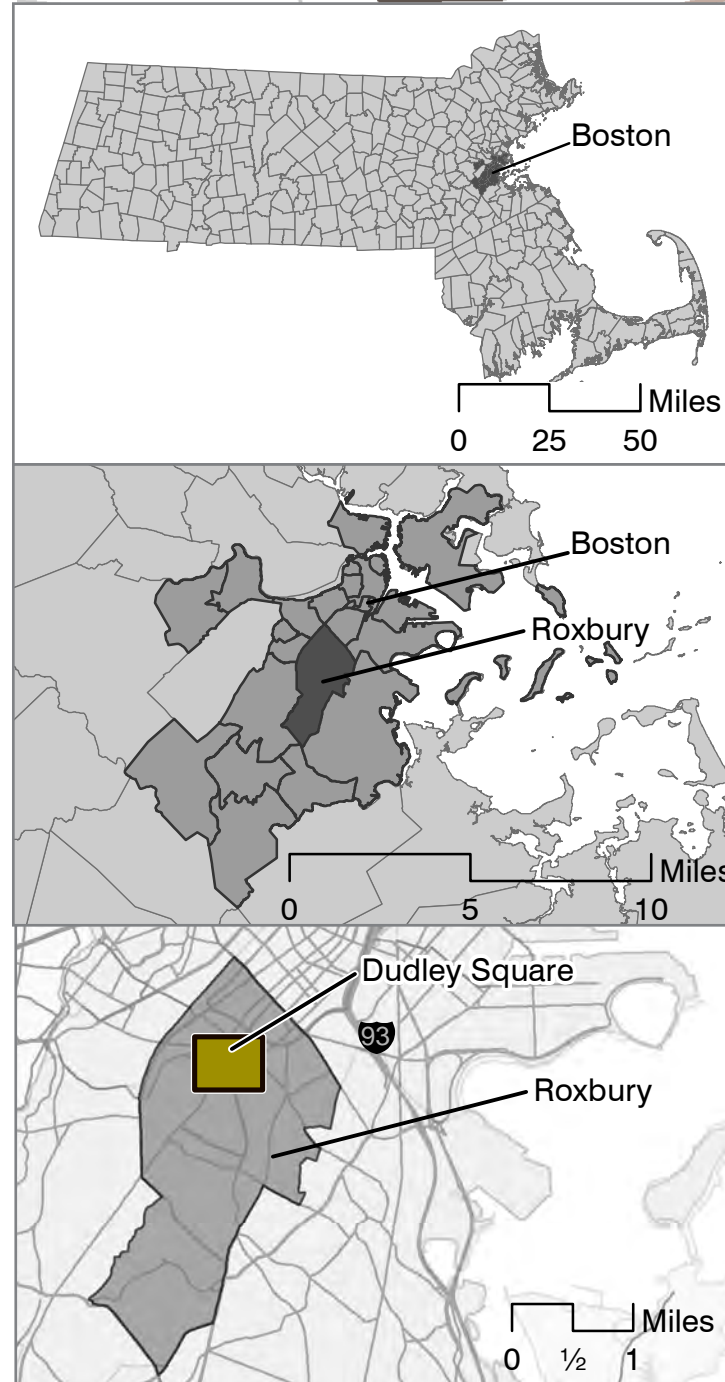
Dudley Square Public Library



Boston Evening Academy Schoolyard



Yawkey Boys and Girls Club



Dudley Square T Station



Forested Area



Sun Rays Community Garden



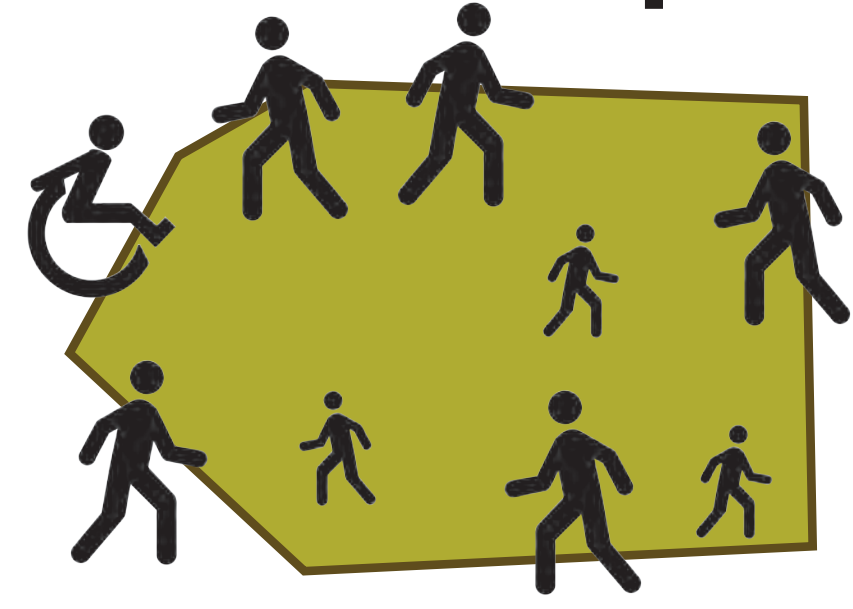
St. James Street Park

Erica Quigley  
5/13/14  
LAN2001: Ecological Analysis and Conceptual Frameworks: Assignment 3  
Sources:  
Open Space: MassGIS, 2014  
Transit: MassDOT Office of Transportation Planning, 2012  
Roads: MassDOT Office of Transportation Planning, 2012  
Elevation: USGS National Elevation Database, 2013  
Images: The Noun Project (Arts and Culture by Pete Fecteau, Basketball by Andrew Fortnum, Chair by Hayley Wells, Eye by Edward Boatman, Gardener by Erin Gillaspay, Grass by Tim Shedor, Handshake by Drue McCurdy, Lawn Mower by Sergi Delgado, Magnifying Glass by Karl Schaeffer, Picnic Table by Alex Fuller, Reading by Juan Pablo Bravo, Rock by John Maravelakis, Stairs by Brian Oppenlander, Stone Wall by Albert Vila, Tree by Nicolas Ramallo, Walking by Irene Hoffman); Google Earth, iamtonyang.com, Mass Paths, Design for Generation, Boys and Girls Club, Project for Public Spaces, Boston Public Library, Boston Police Department, Charles Apple, Flickr, New Jersey Urban Forest, Boston.com, HDBJ Landscapes, Celebrate Yonge, MVVA Inc., Wikimedia



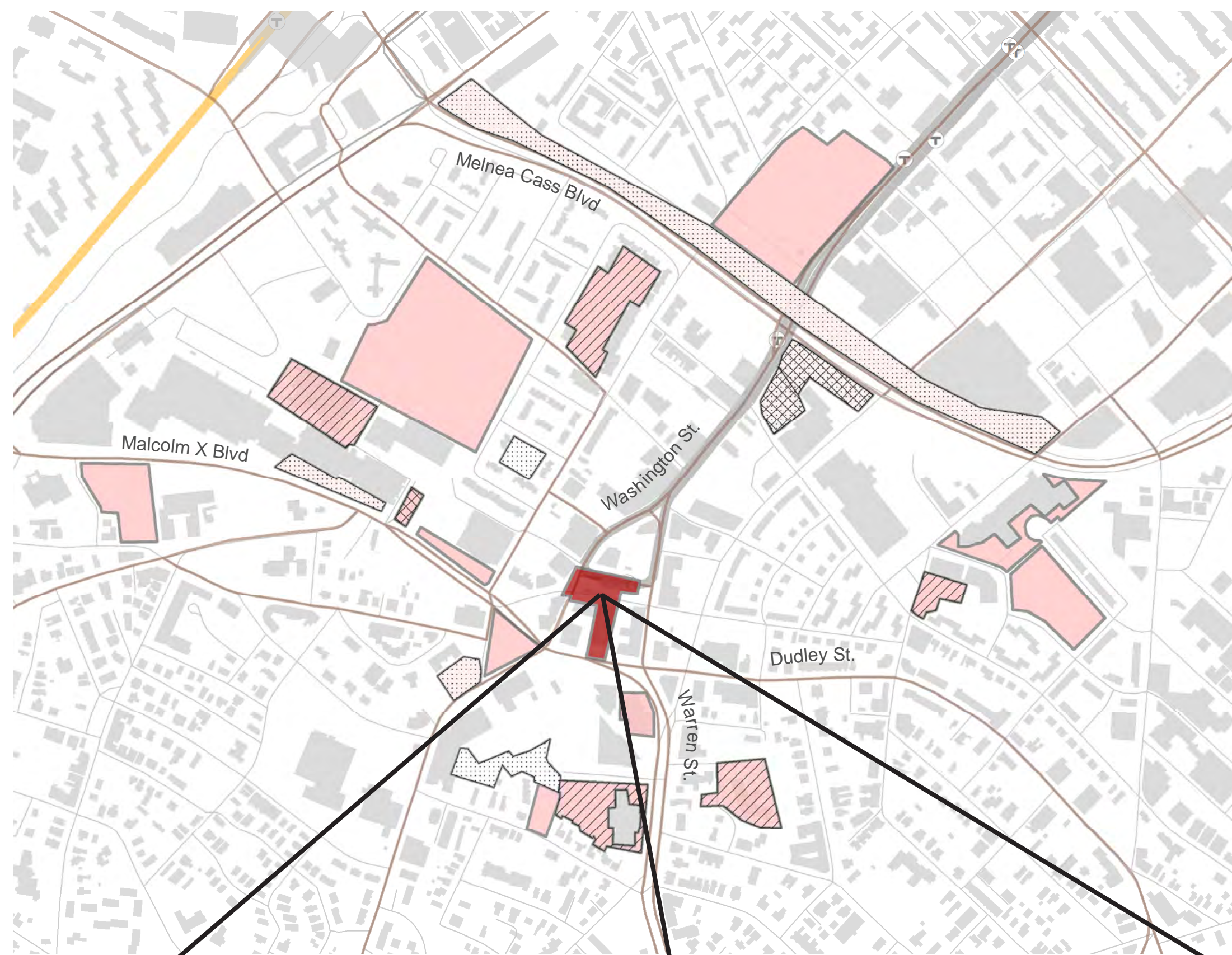
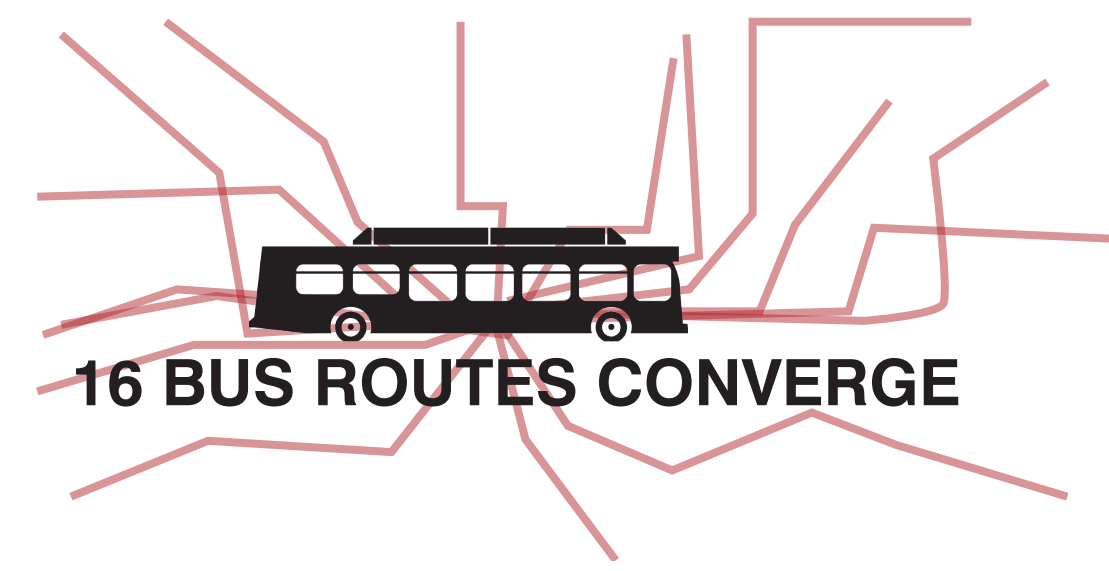
# NEIGHBORHOOD INVENTORY

## Successful public spaces are accessible and well-traveled



- OBJECTIVE**
- Pedestrian activity
  - Open to anyone
- SUBJECTIVE**
- Universally accessible

### Dudley Square T Station



Dudley Square T Station: High pedestrian activity

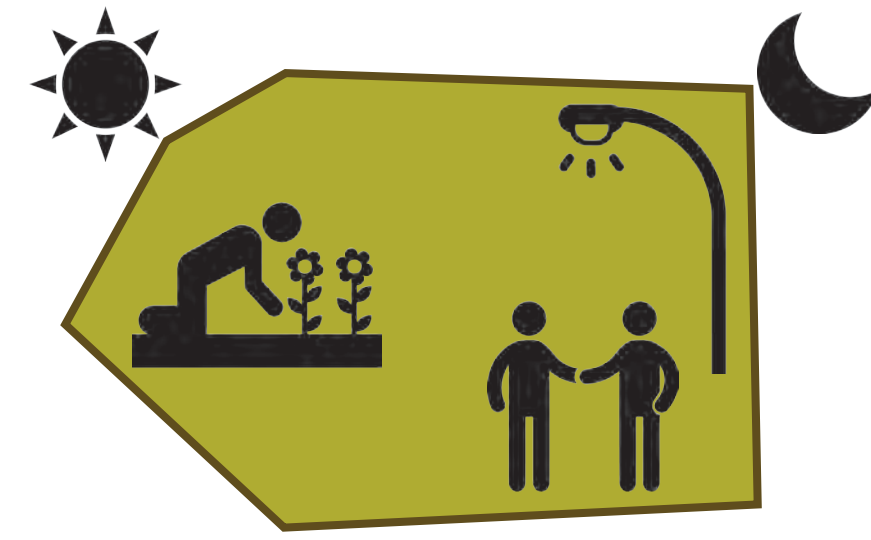


Dudley Square T Station: High pedestrian activity

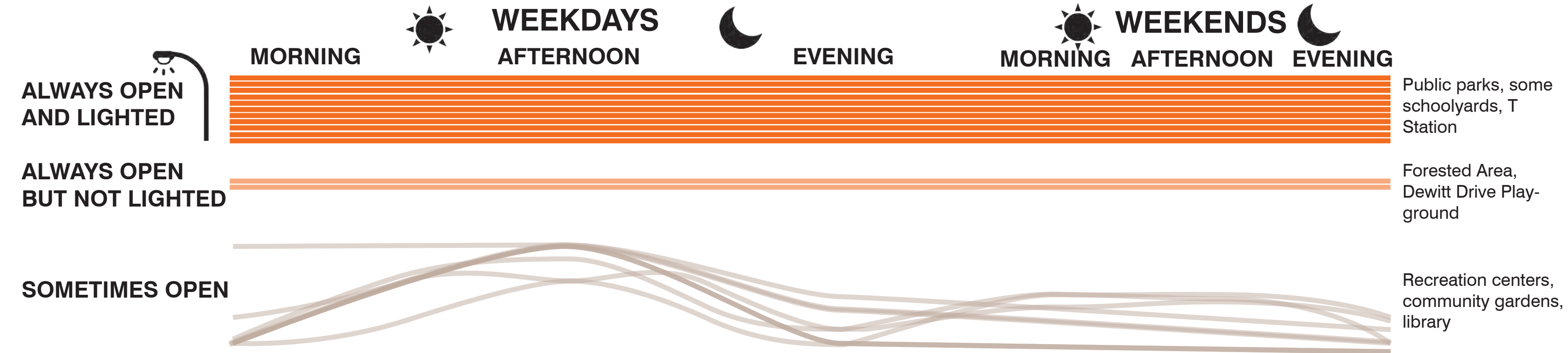


Dudley Square T Station: High pedestrian activity

## Successful public spaces promote sociability



- OBJECTIVE**
- Open at all times of day and lighted in the evening
  - Users steward space
- SUBJECTIVE**
- Feels welcoming/friendly



Jeep Jones Park: Welcoming entry



Sun Rays Community Garden: Users steward space



Sun Rays Community Garden: Users steward space



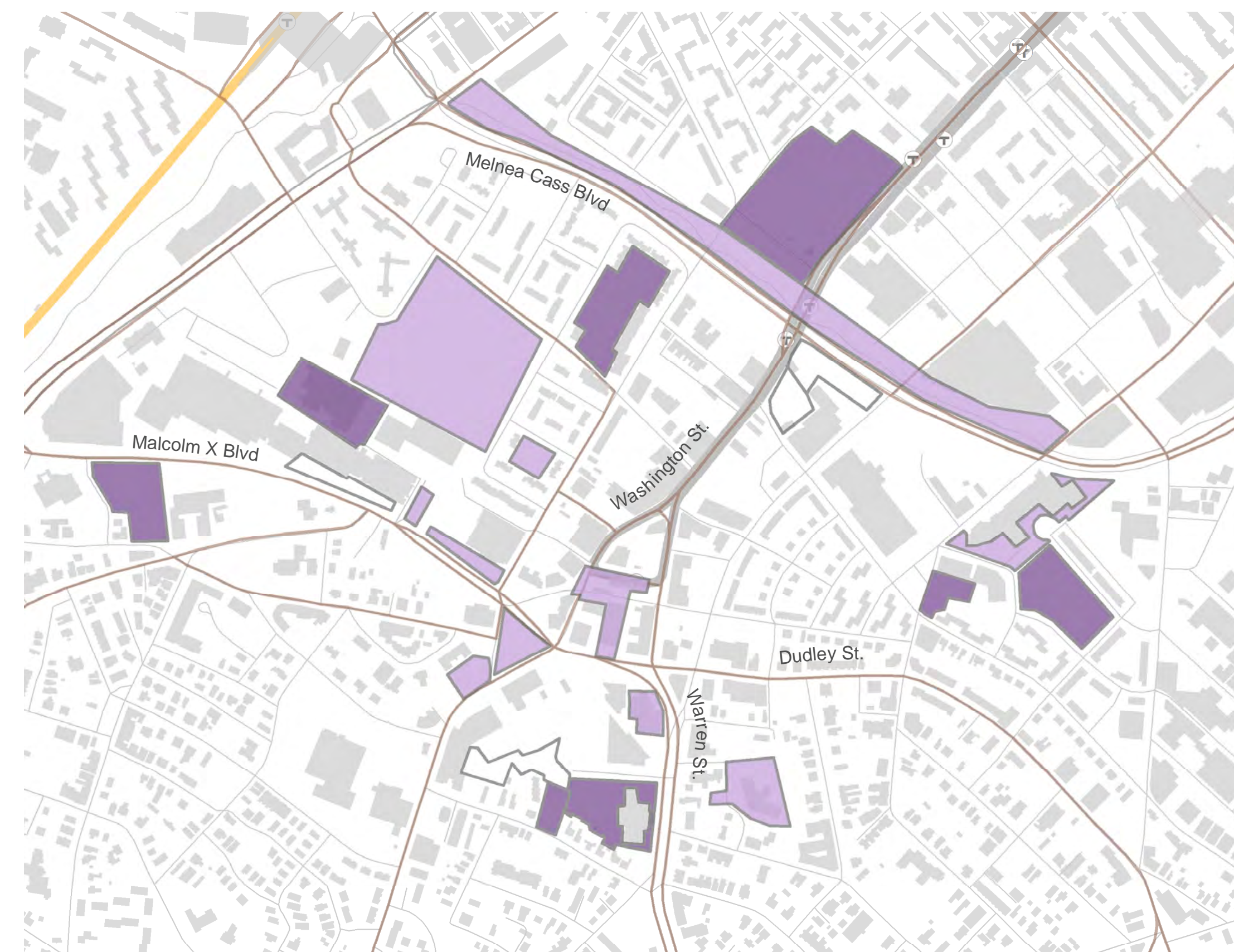
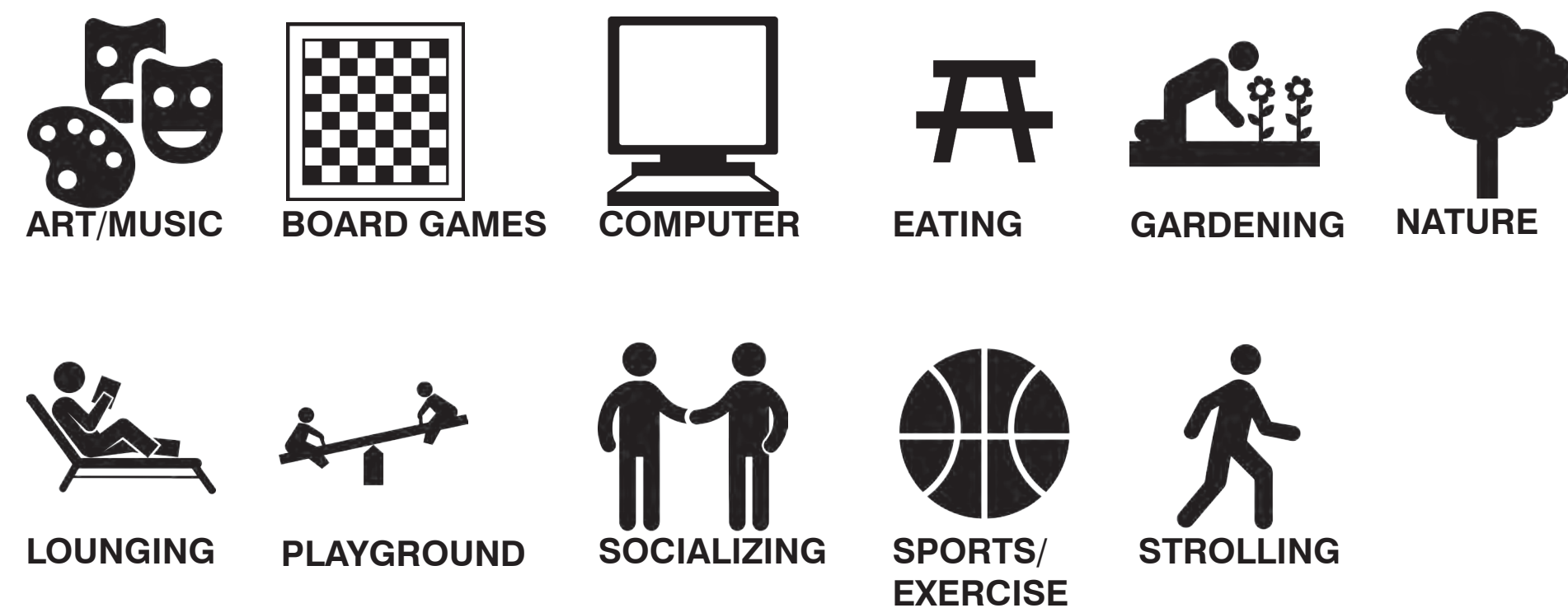
# NEIGHBORHOOD INVENTORY

## Successful public spaces have many uses and activities



**OBJECTIVE** • Uses and activities available

### Uses/Activities



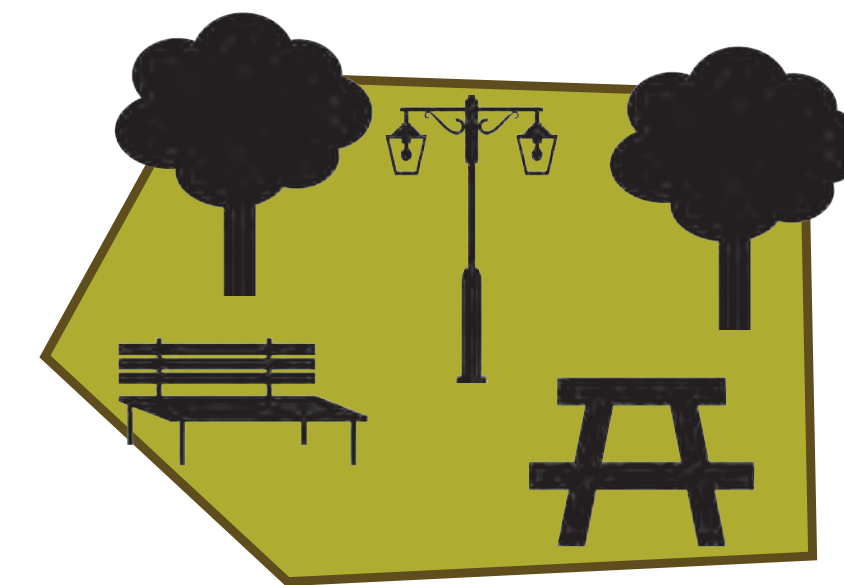
**NUMBER OF USES**  
 High (10 or more)  
 Medium (5-9)  
 Low (1-4)



Jeep Jones Park: Multiple uses and activities

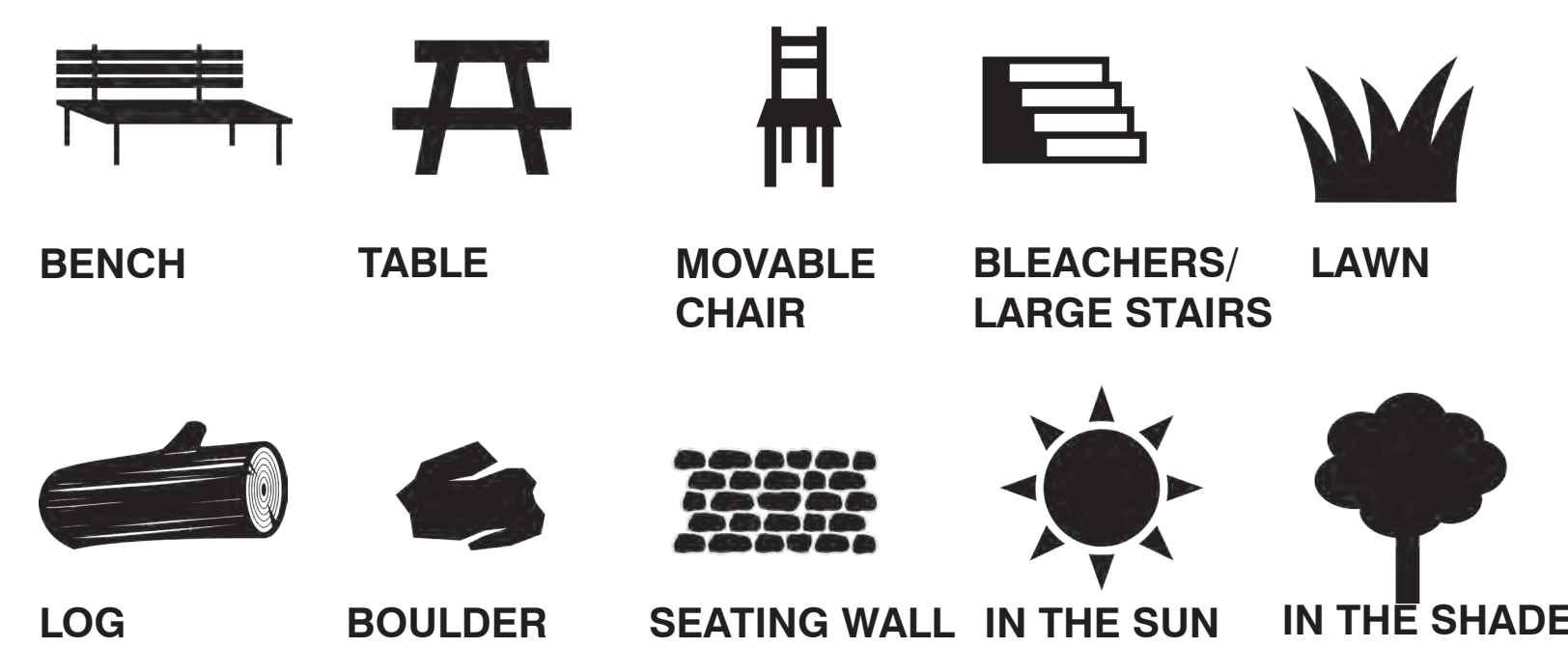
Yawkey Boys and Girls Club: Multiple uses and activities

## Successful public spaces are comfortable



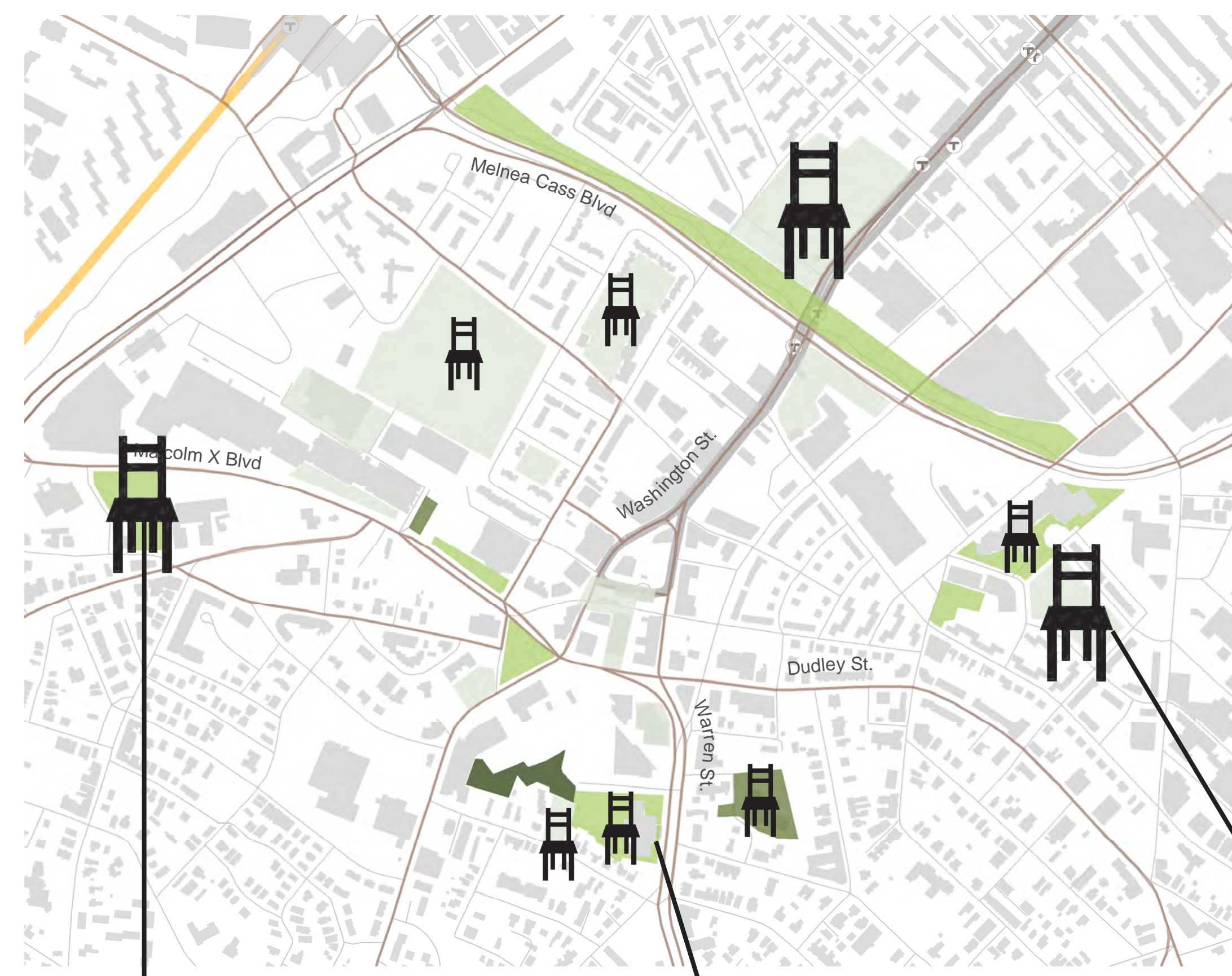
**SUBJECTIVE OBJECTIVE** • Choice of seating  
 • Trees  
 • Feels unique (views, natural features, historic)

### Seating types



*The importance of giving people the choice to sit where they want is generally underestimated.*

Project for Public Spaces



**SEATING CHOICE**  
 No seating choices  
 Some seating choices  
 Many seating choices

**TREES PER ACRE**  
 Very High (51-500)  
 High (41-50)  
 Medium (21-40)  
 Low (0-20)



Jeep Jones Park: Unique views and many seating choices

Yawkey Boys and Girls Club: Unique geology

Bynoe Park: Unique play features and many seating choices



# ANALYSIS

## NEIGHBORHOOD INVENTORY

## HIGH-PERFORMING SPACES

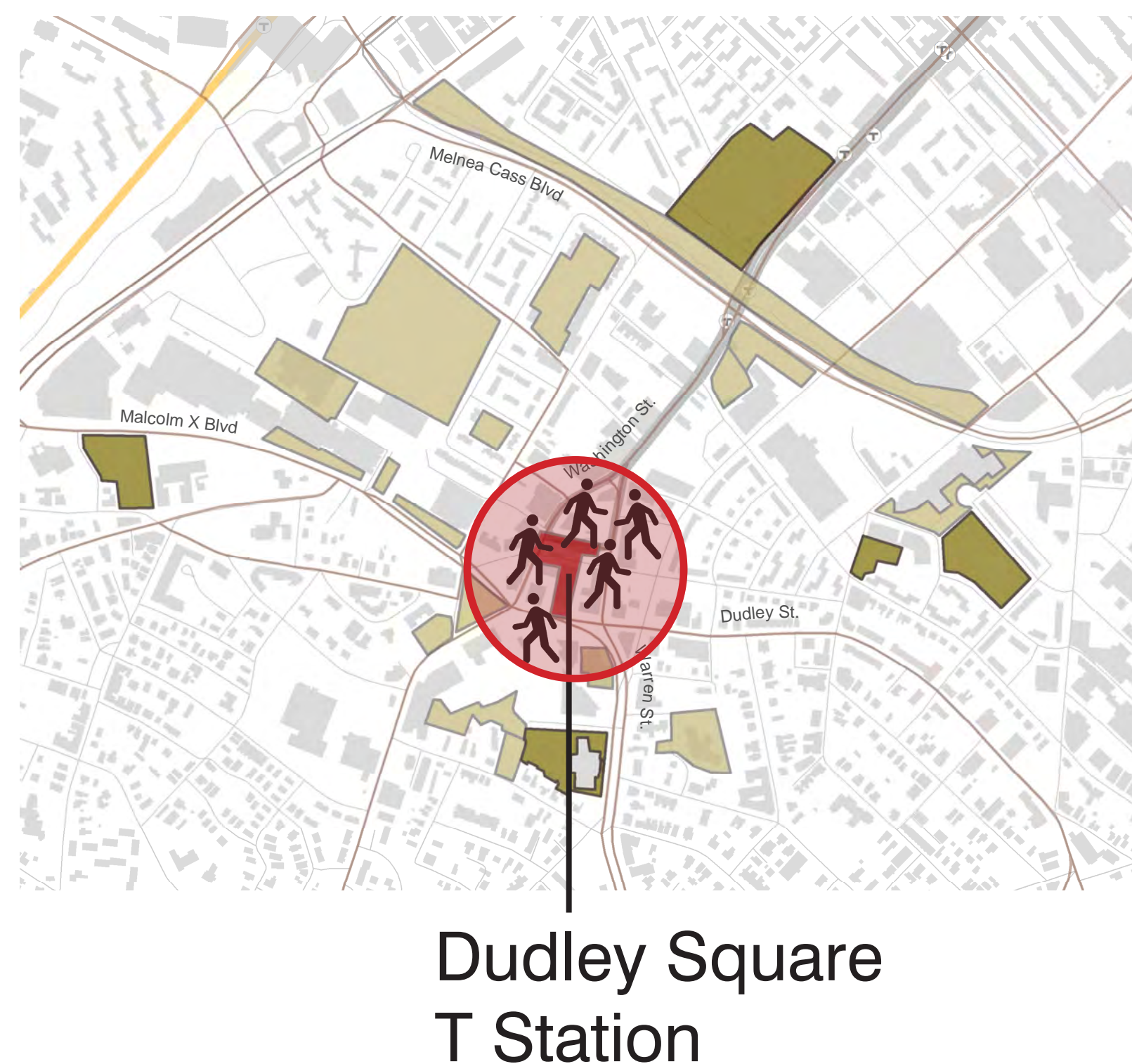
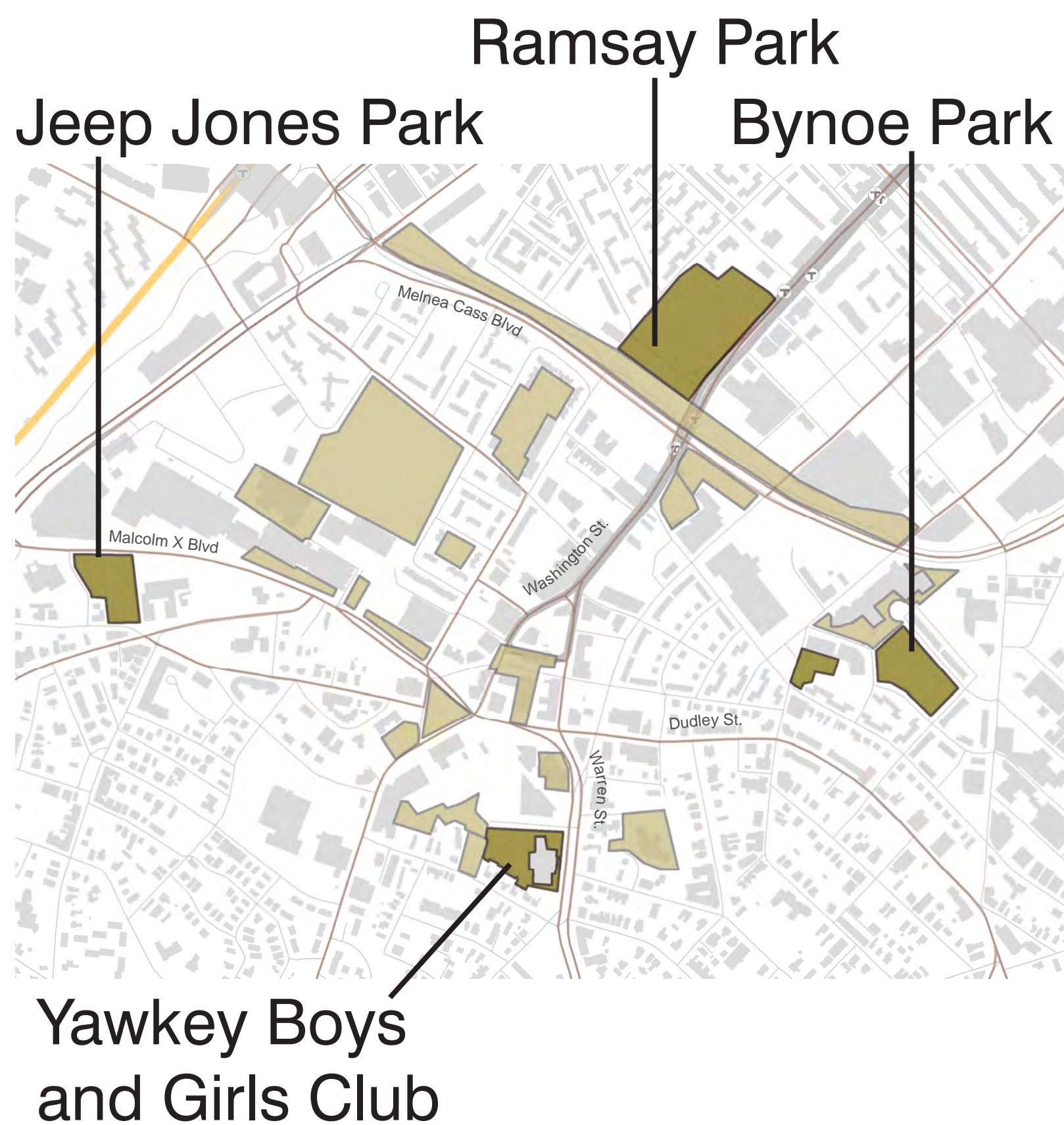
## SPACES ARE SEPARATED FROM PEDESTRIANS

## SOLUTION: BRING THE PUBLIC TO PUBLIC SPACES

**Methodology**

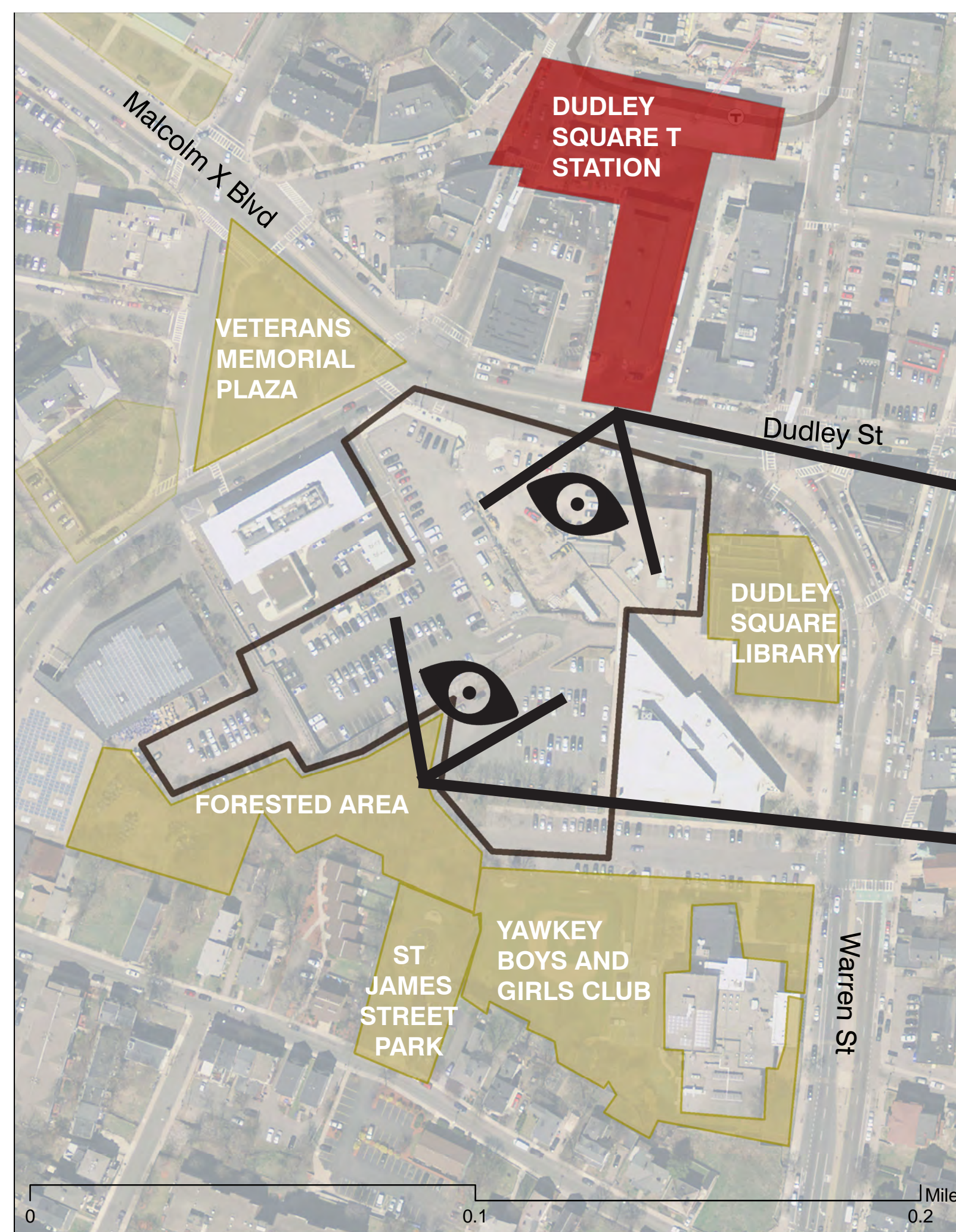
- Metrics derived from Project for Public Spaces
- Repeated site visits for three weeks
- Web research

**PROJECT FOR PUBLIC SPACES**



# CONCEPT

**A multi-use space that connects high pedestrian activity with existing spaces**



View of focus area from Dudley Square T Station

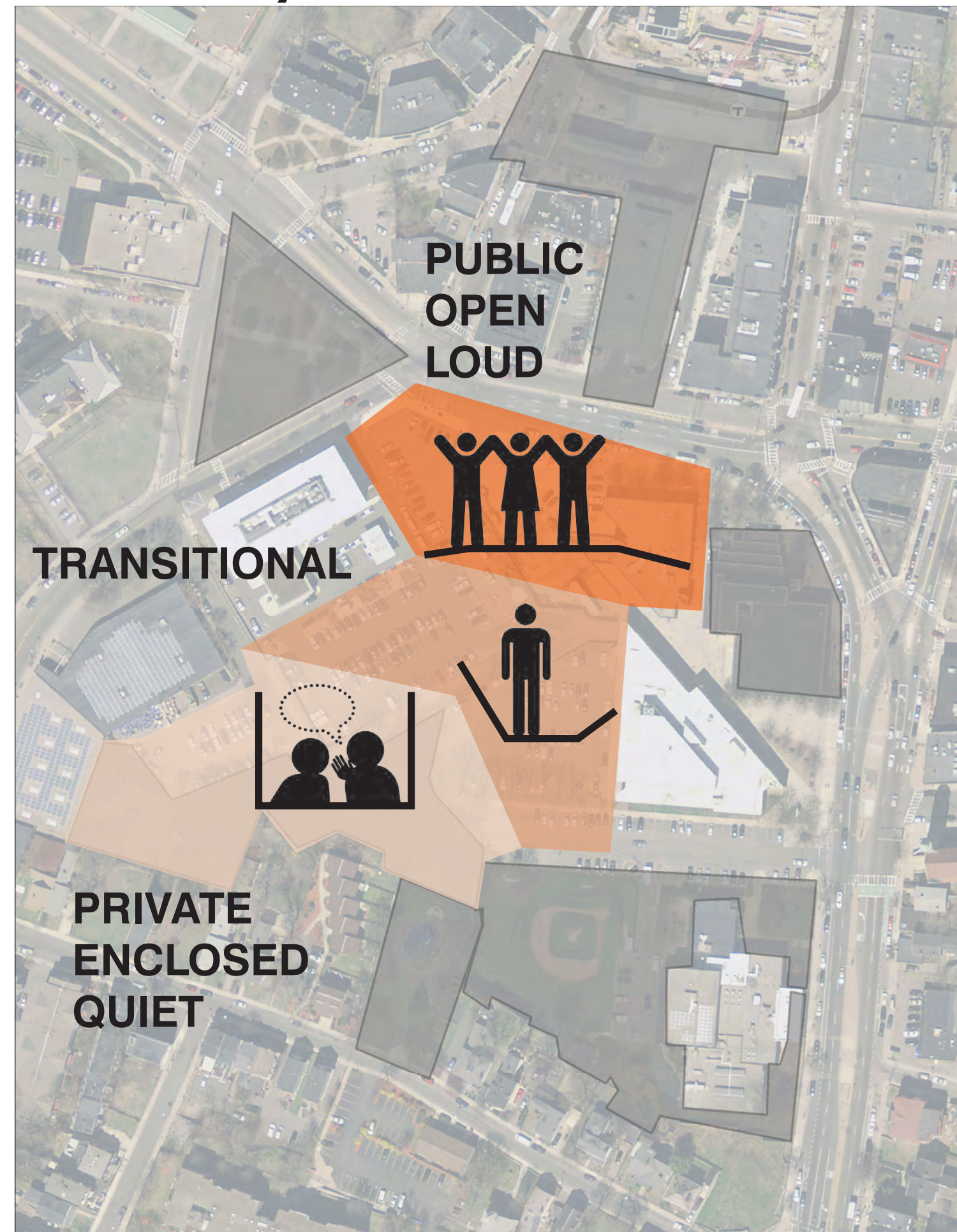


View of focus area from Forested Area

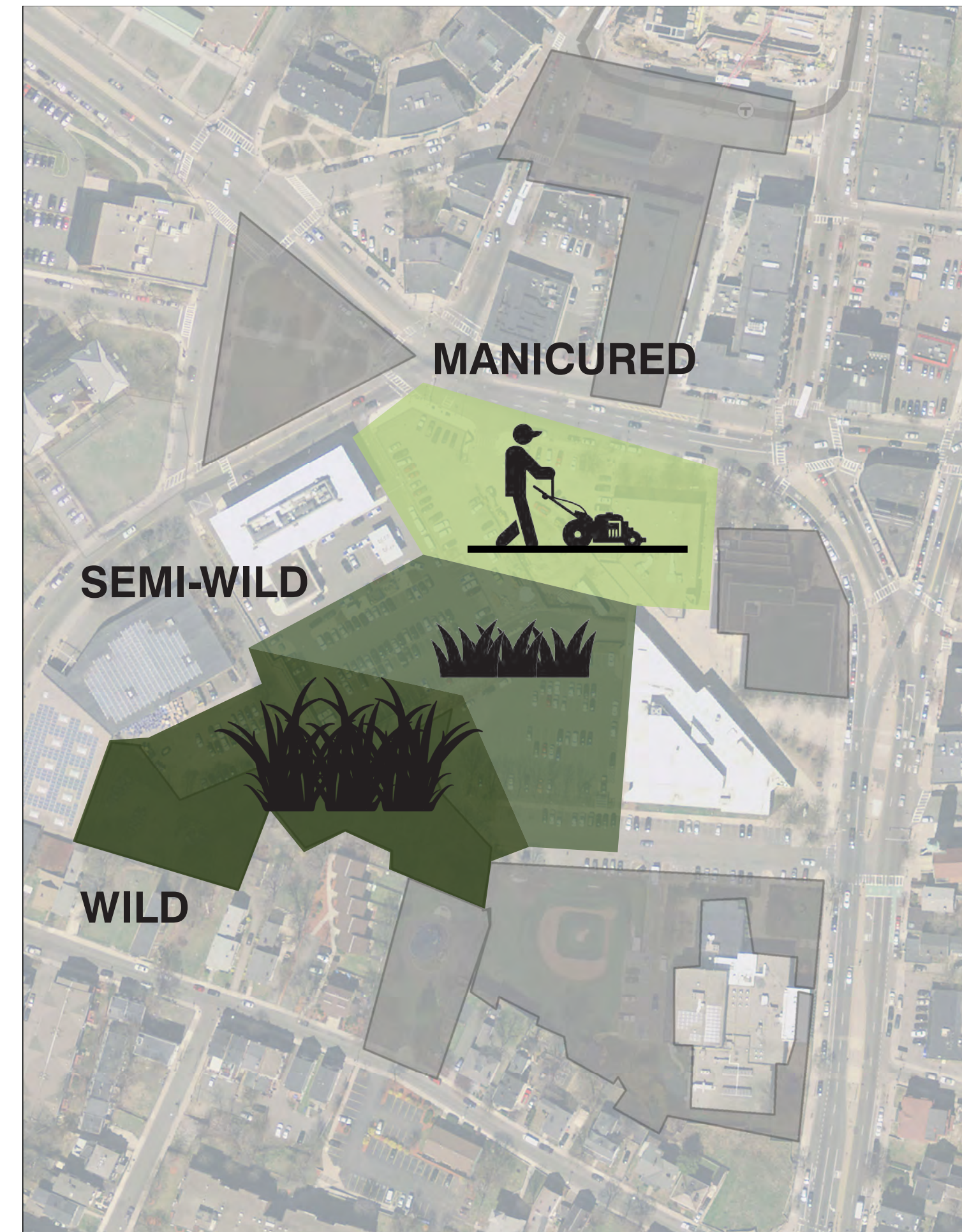


# CONNECTING WITH NEIGHBORS AND THE LANDSCAPE

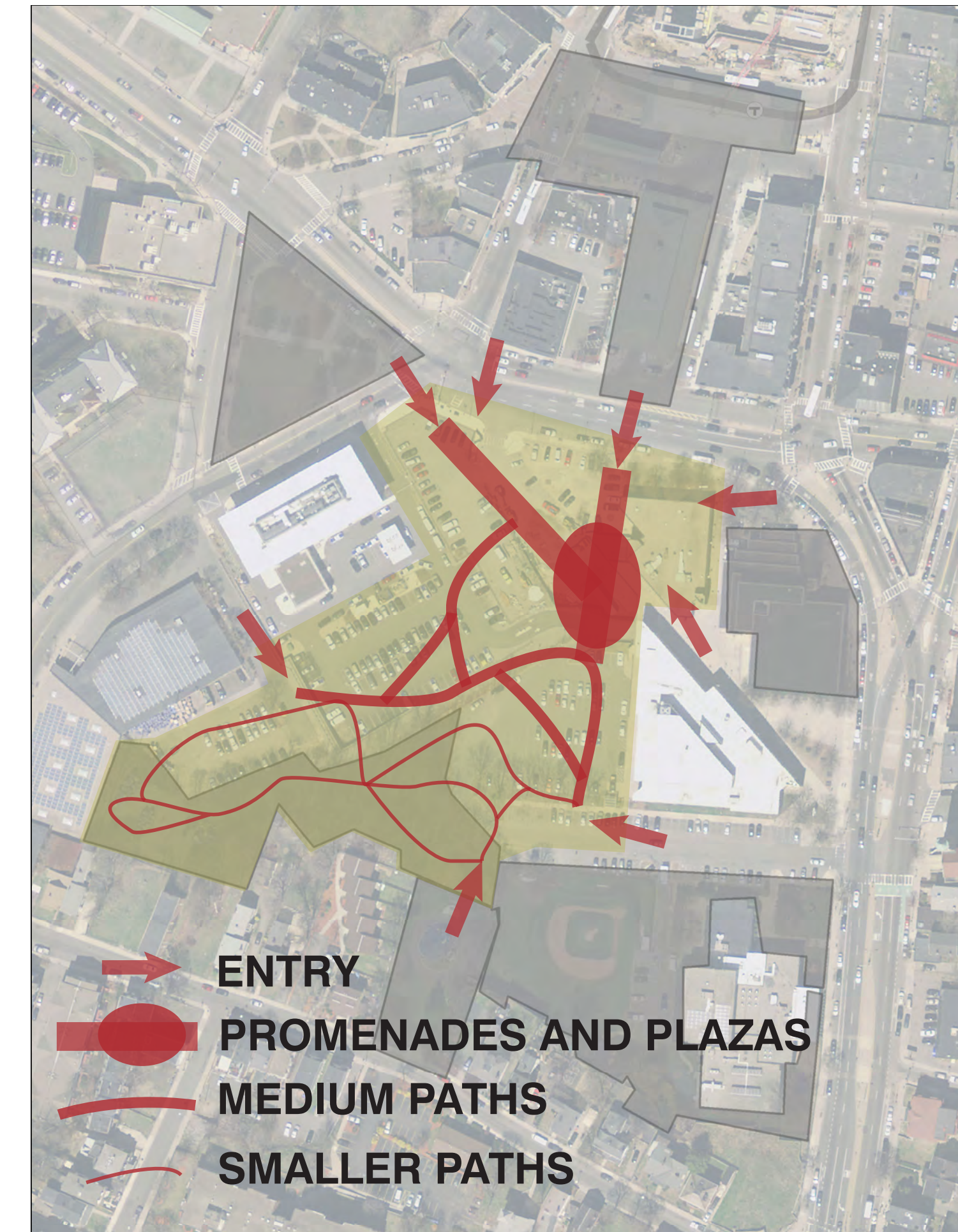
## PUBLIC/PRIVATE



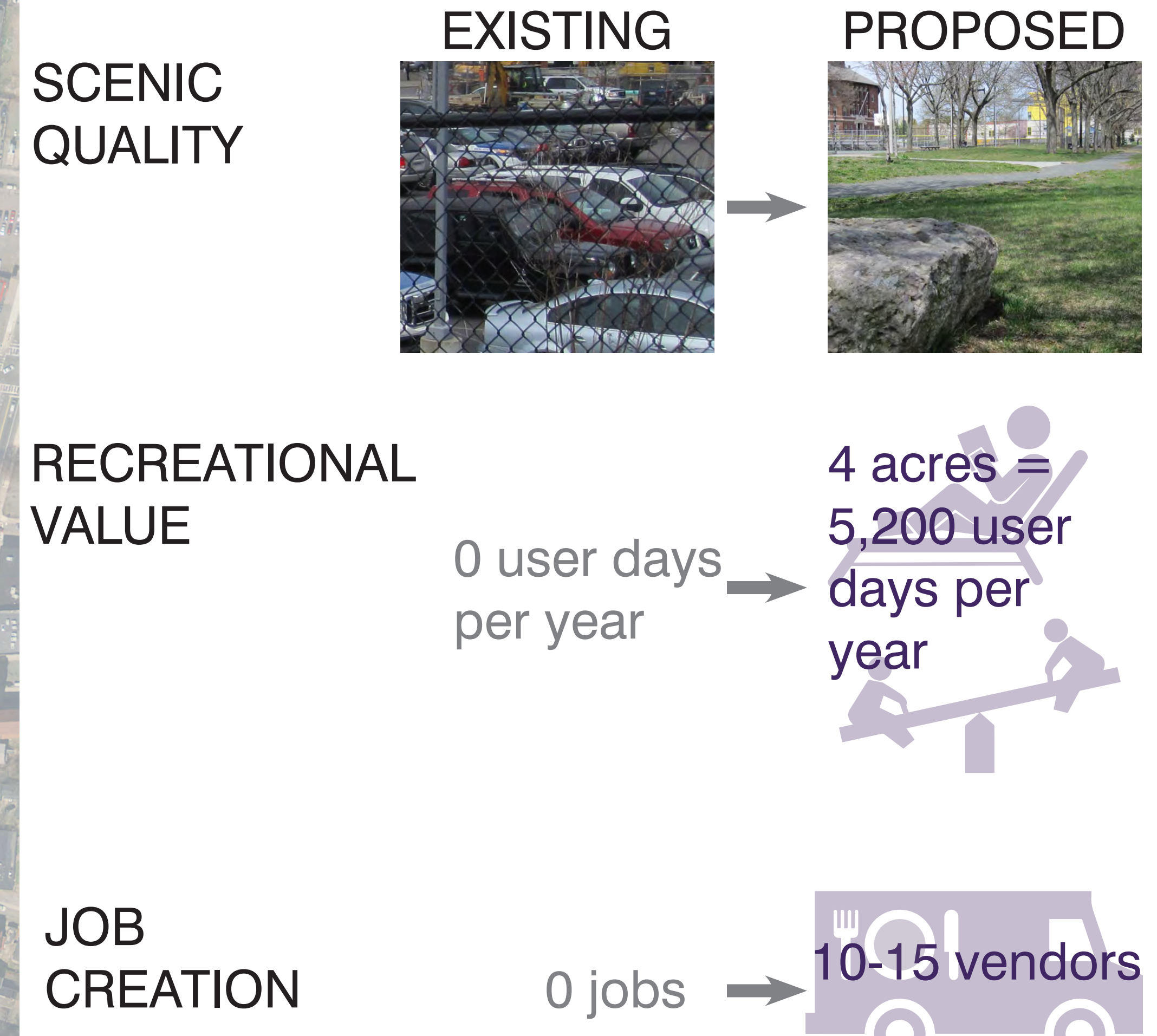
## WILDNESS



## ACCESS & CIRCULATION



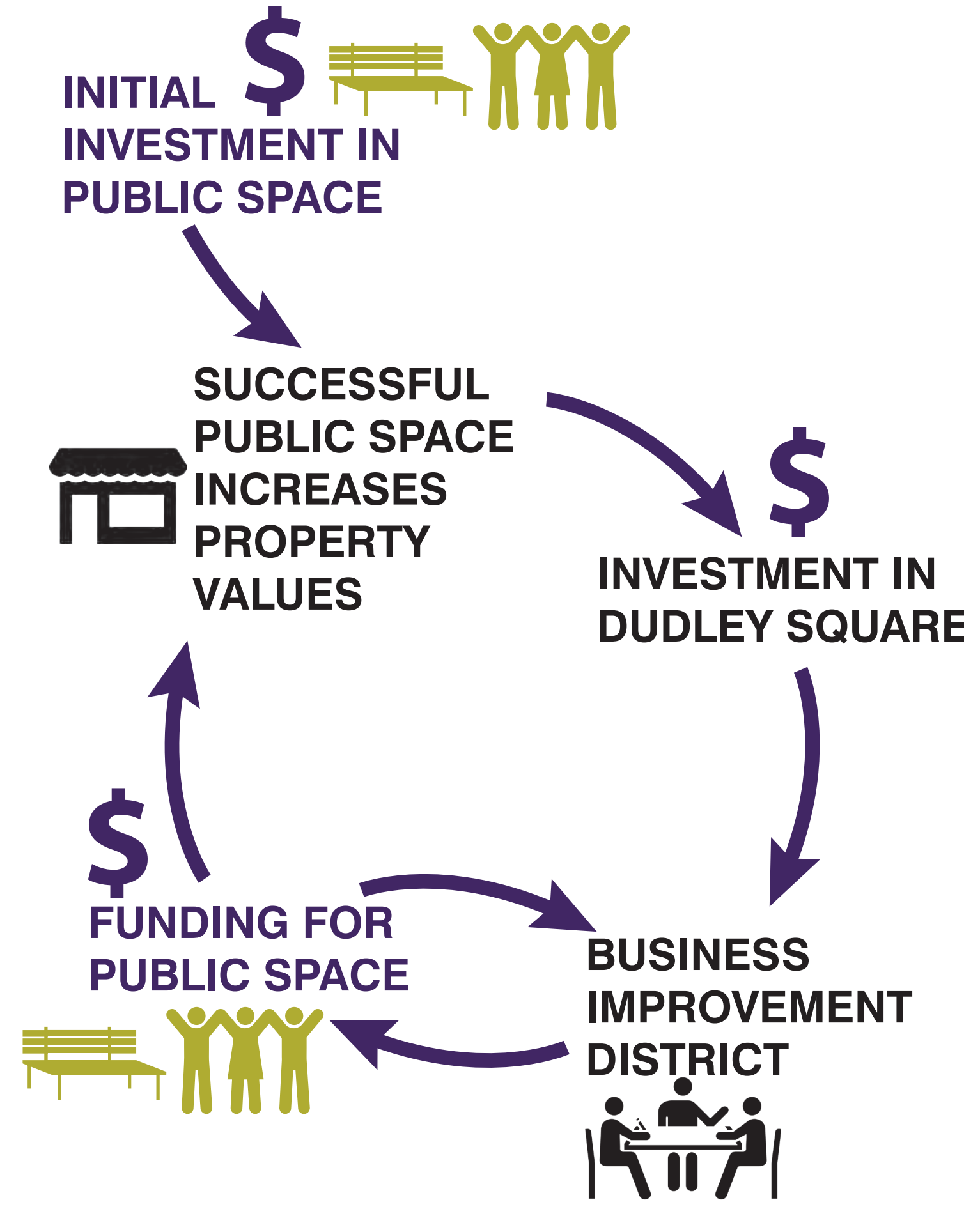
## PERFORMANCE BENEFITS



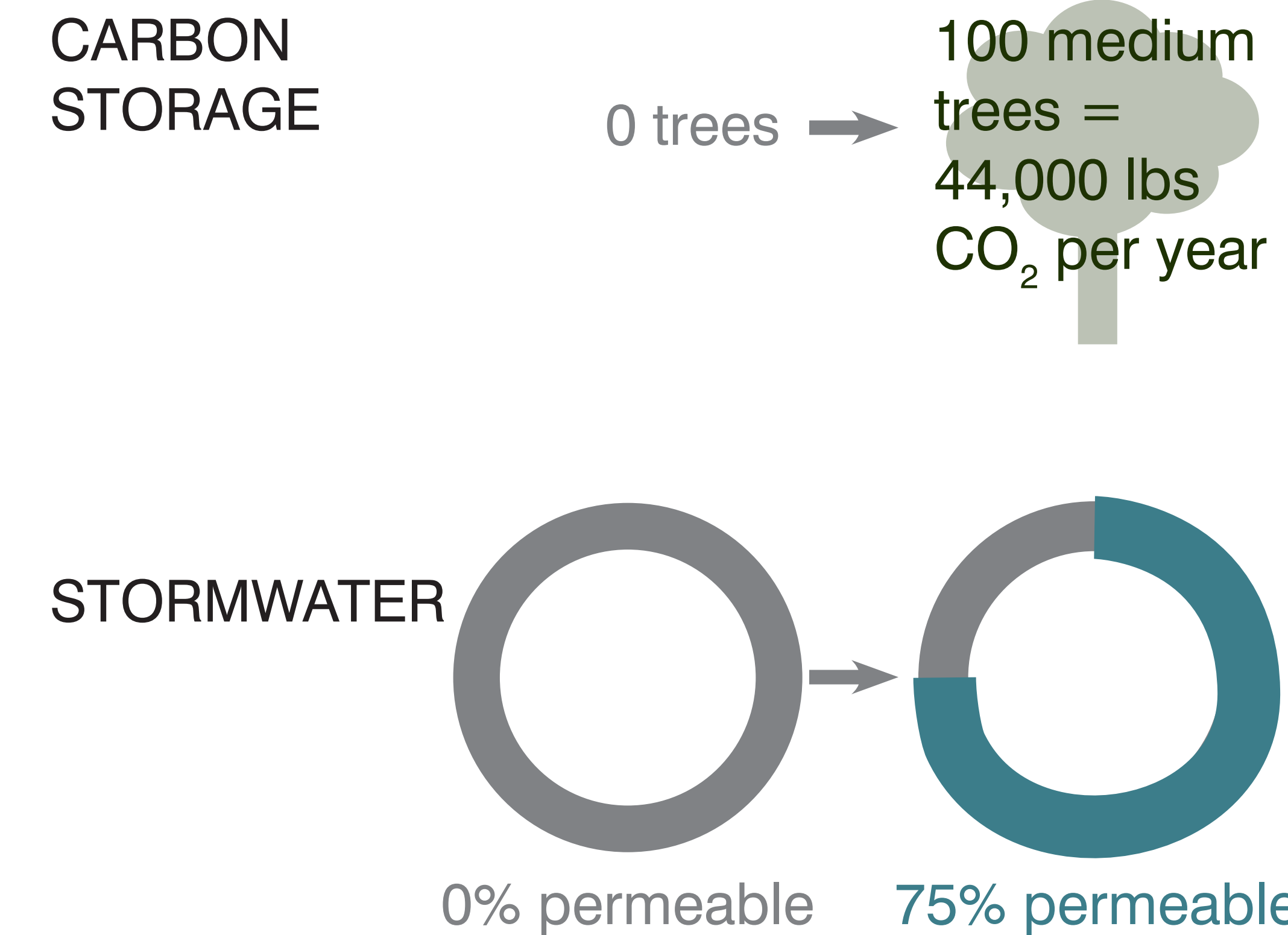
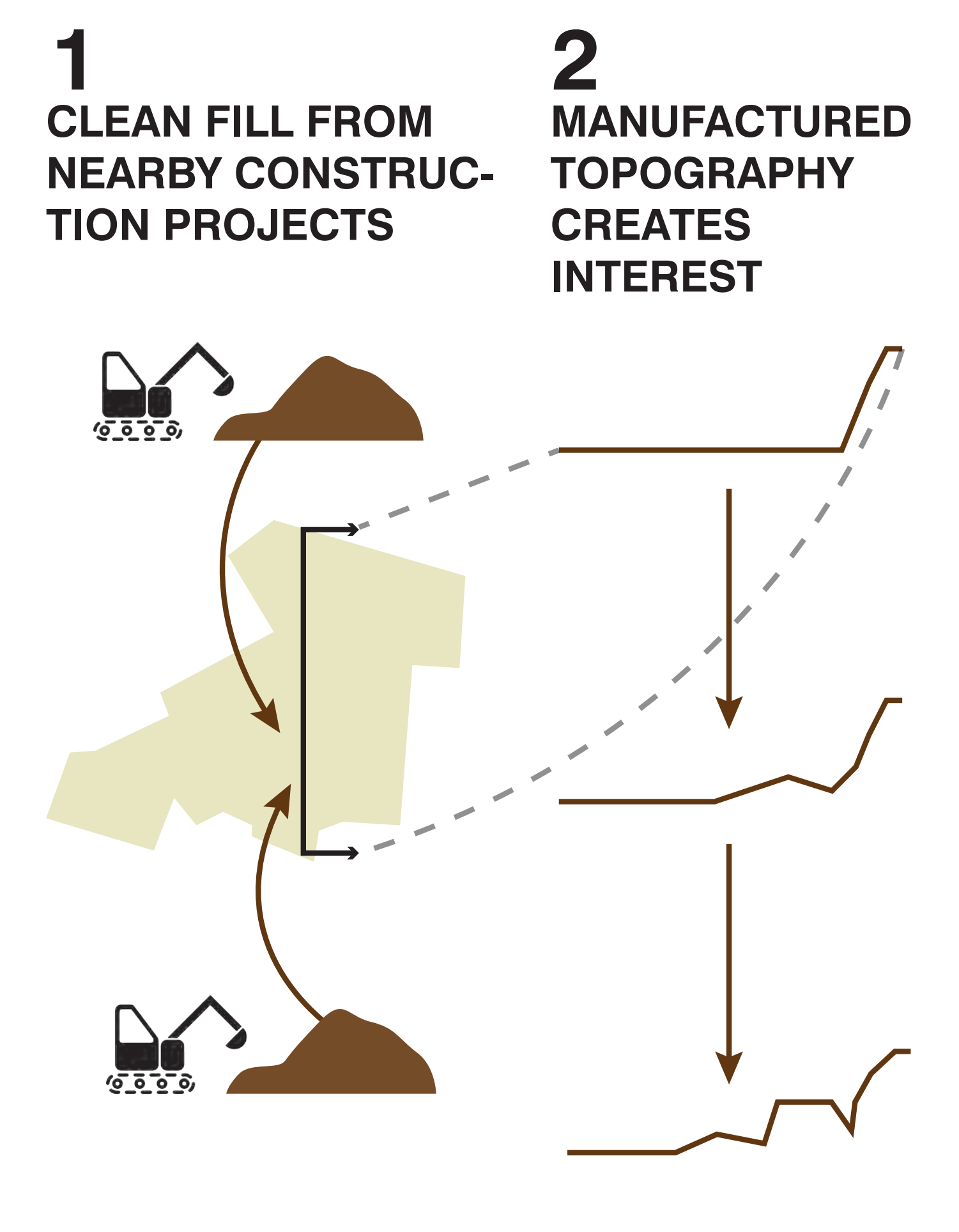
## RIPPLE EFFECT



## FUNDING



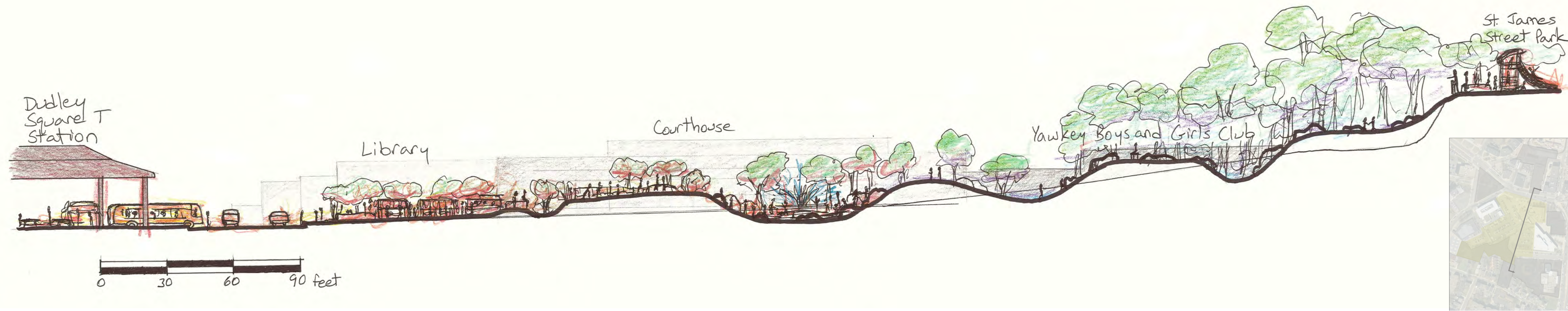
## EARTHWORK IN CONTEXT



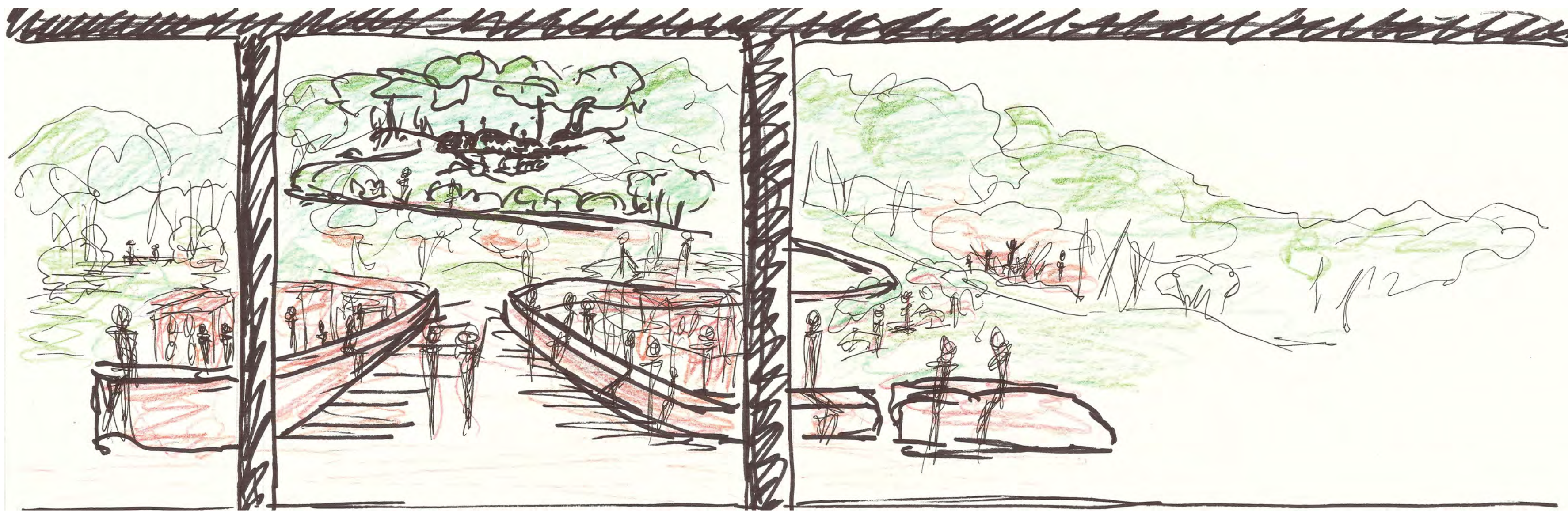


# CONNECTING WITH NEIGHBORS AND THE LANDSCAPE

## SITE TRANSECT LOOKING EAST



## SITE DETAIL: VIEW FROM DUDLEY SQUARE T STATION



## SITE DETAIL: VIEW FROM FORESTED AREA



Puddingstone: Art, nature, playscape, furniture, neighborhood symbol

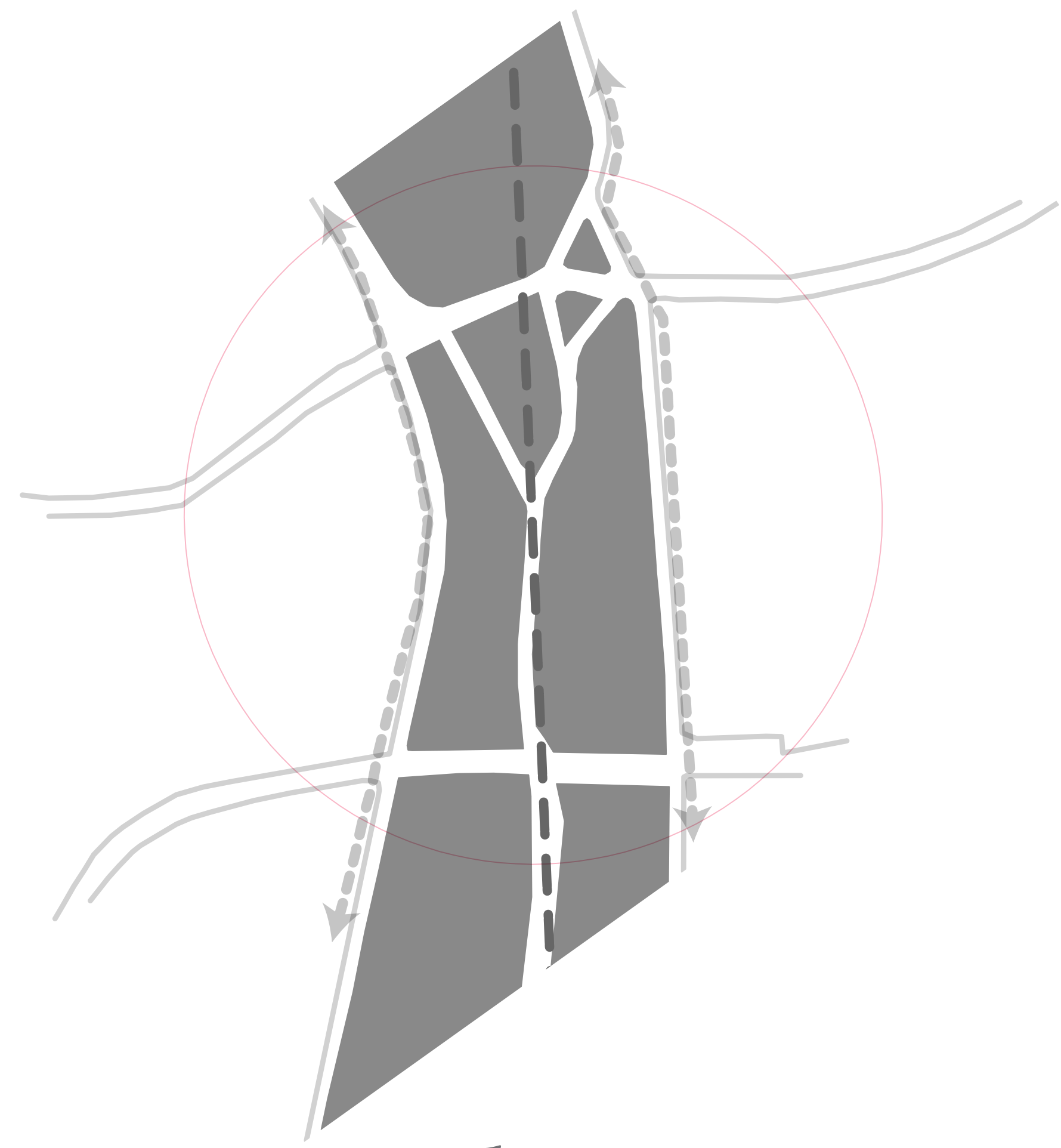




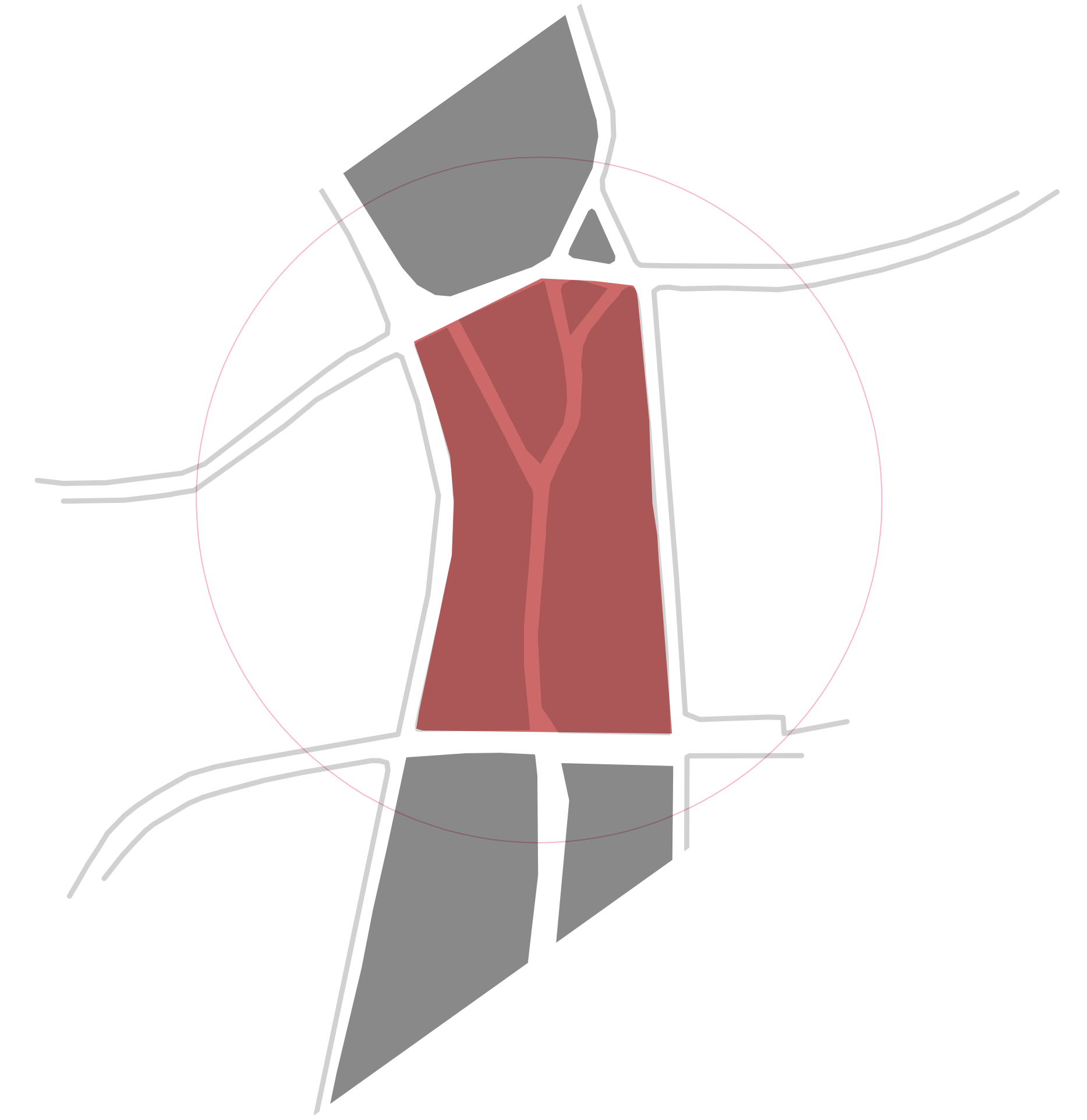
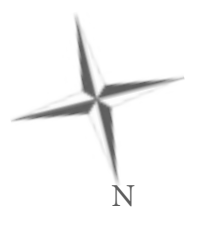




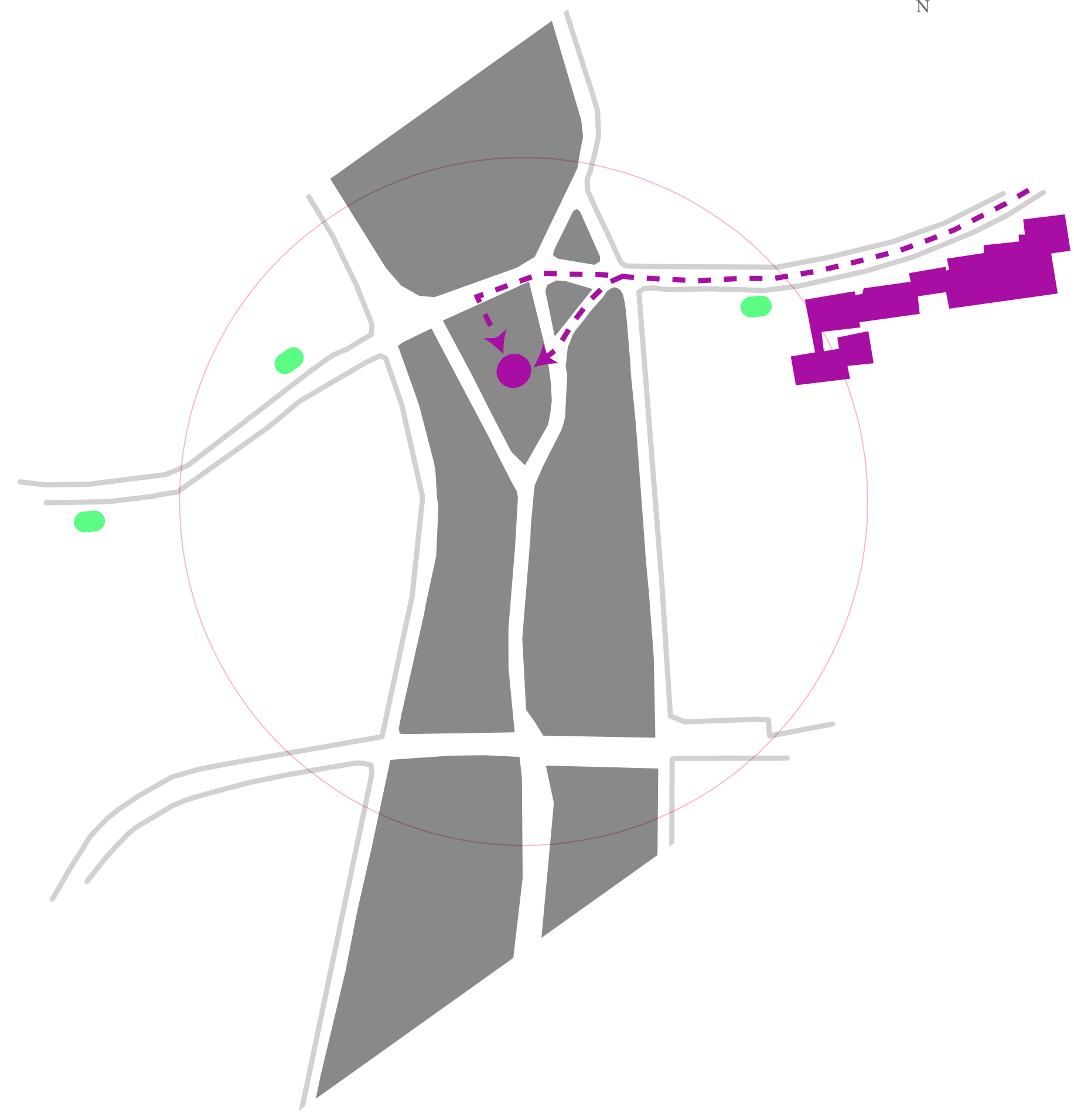
# SPATIAL ANALYSIS



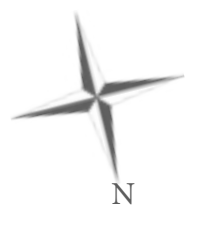
*main corridor*



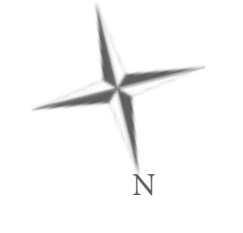
*active artery*



*educational access*



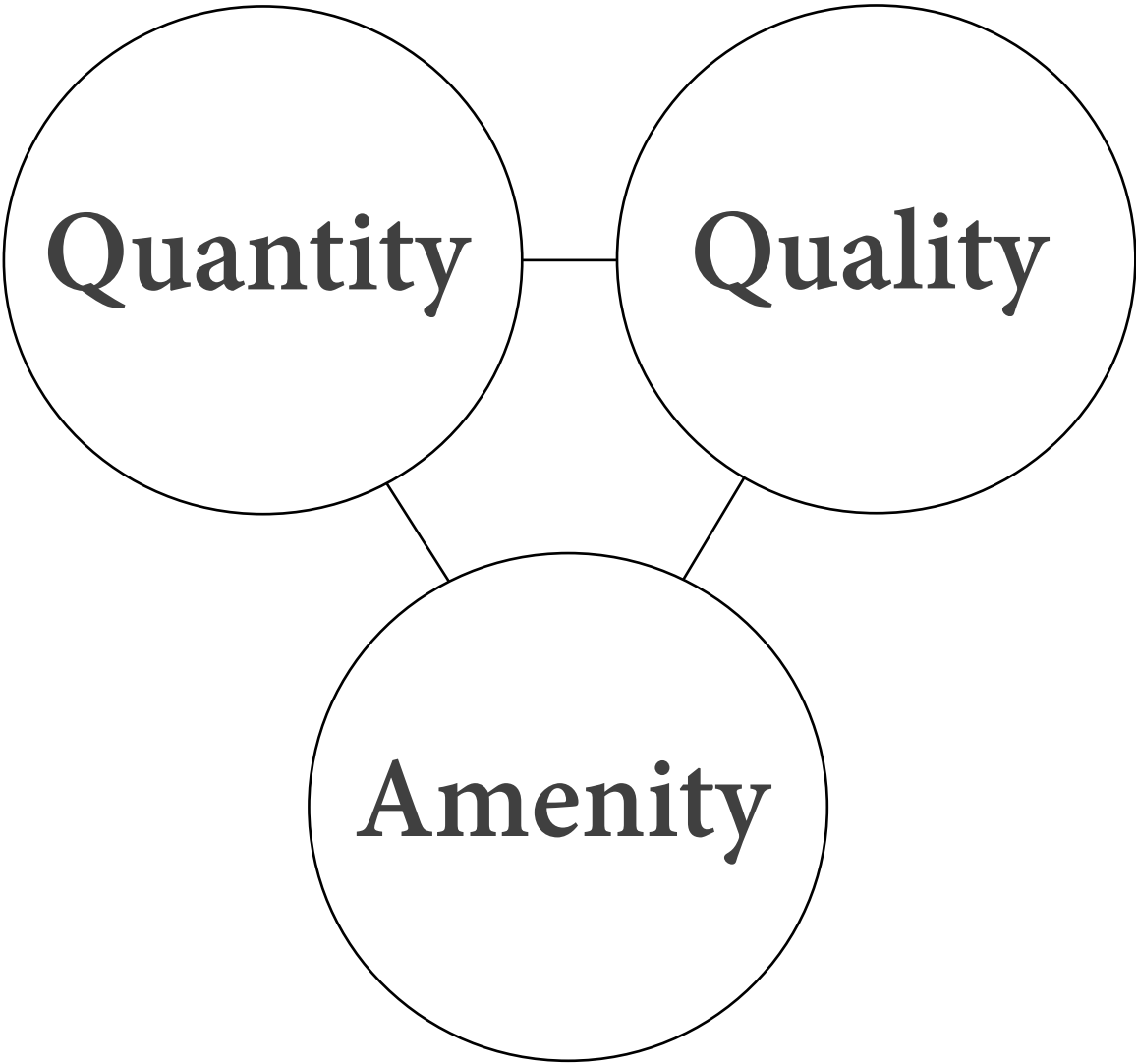
*community link*





# PERFORMANCE BENEFITS

*urban drainage triangle*

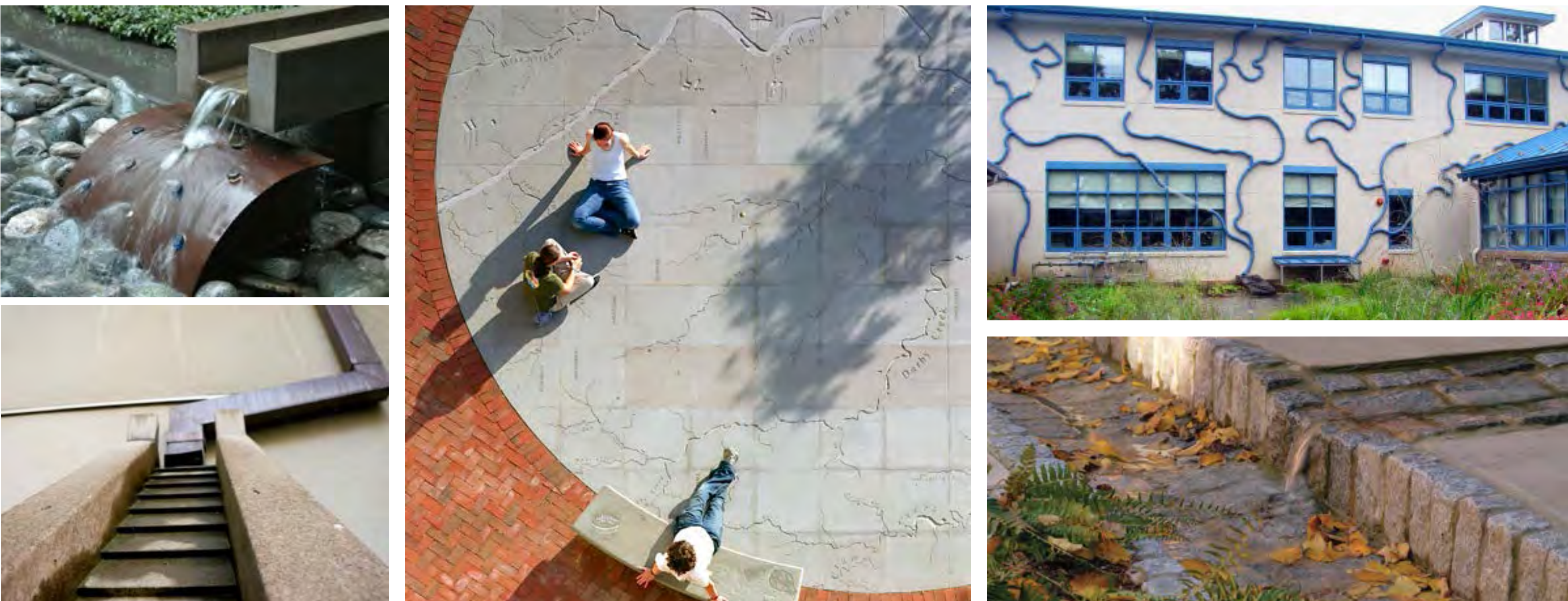


**UTILITY**  
hydrologic function as protection

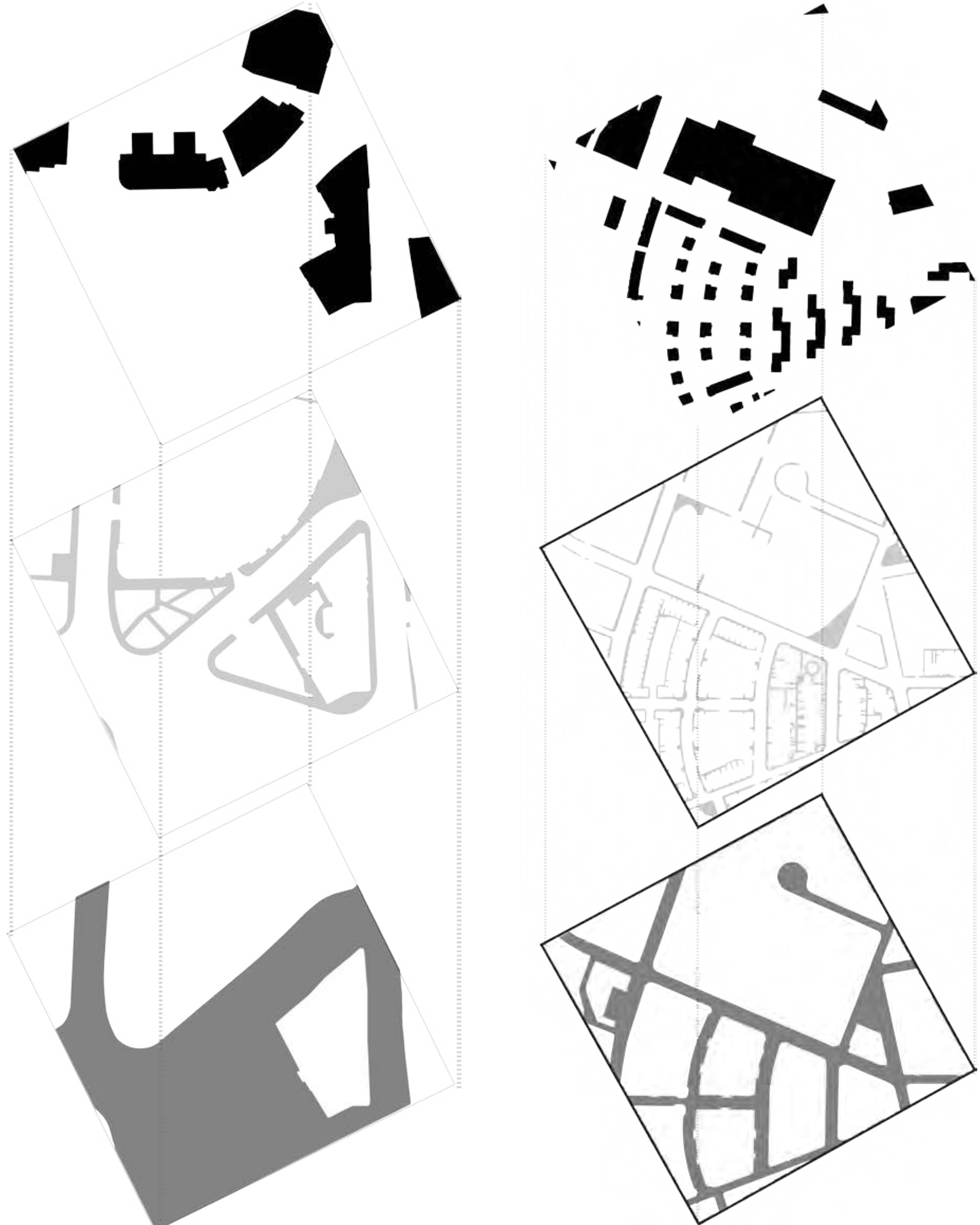
**EXPERIENTIAL**  
context for learning

**PUBLIC**  
statement of values in shared spaces

*inspiring precedent*



*surface relationships*



Gross % of Impermeable
<b>Cover</b>
ROOFS
ROADS
PARKING
SIDEWALKS

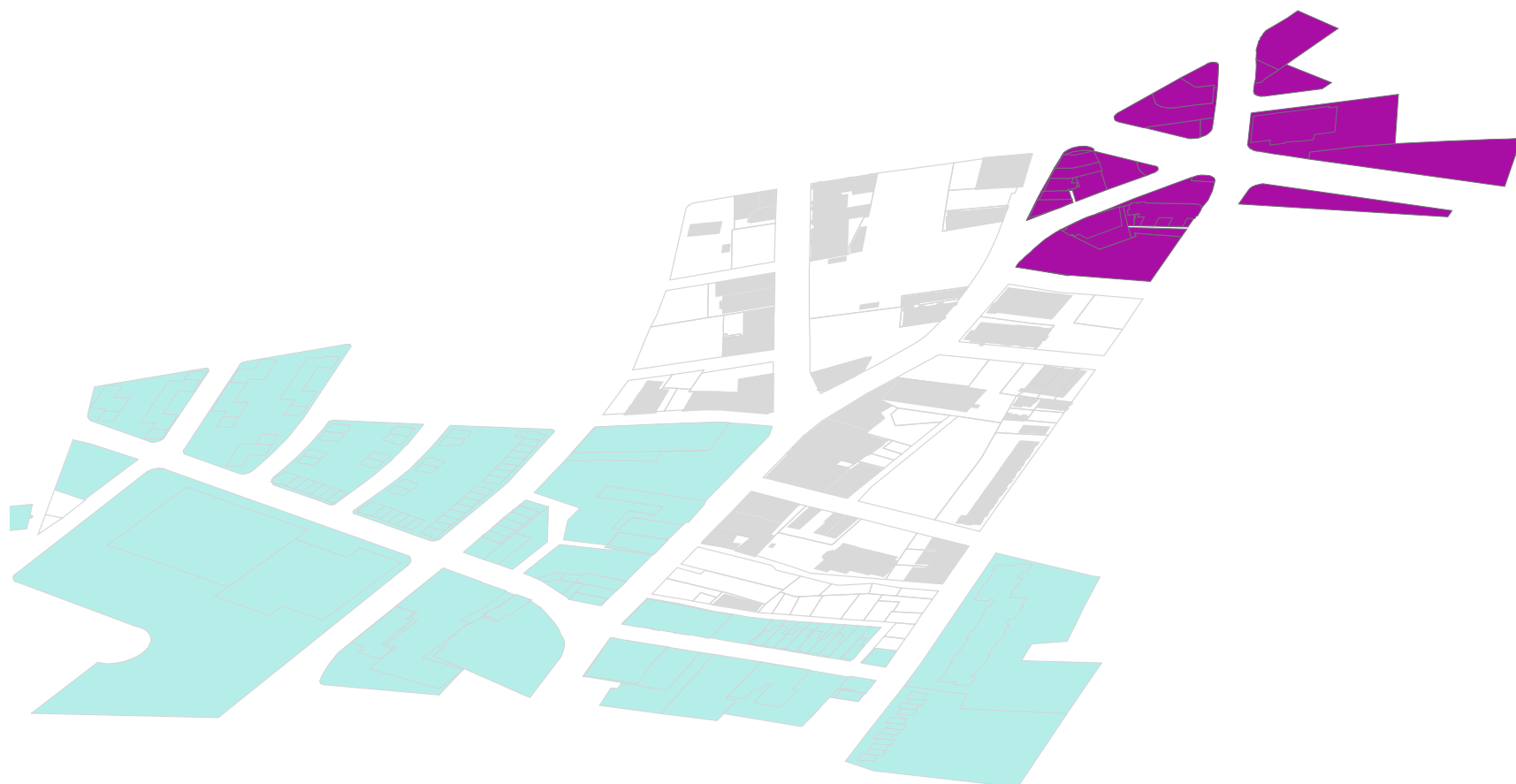
Gross % of Permeable
MOWED GRASS
ABANDONED GROWTH
STREET VEGETATION

Average User Characteristics
GROSS LOT SIZE
DENSITY PER GROSS ACRE
SEWAGE GENERATE GAL. PER DAY

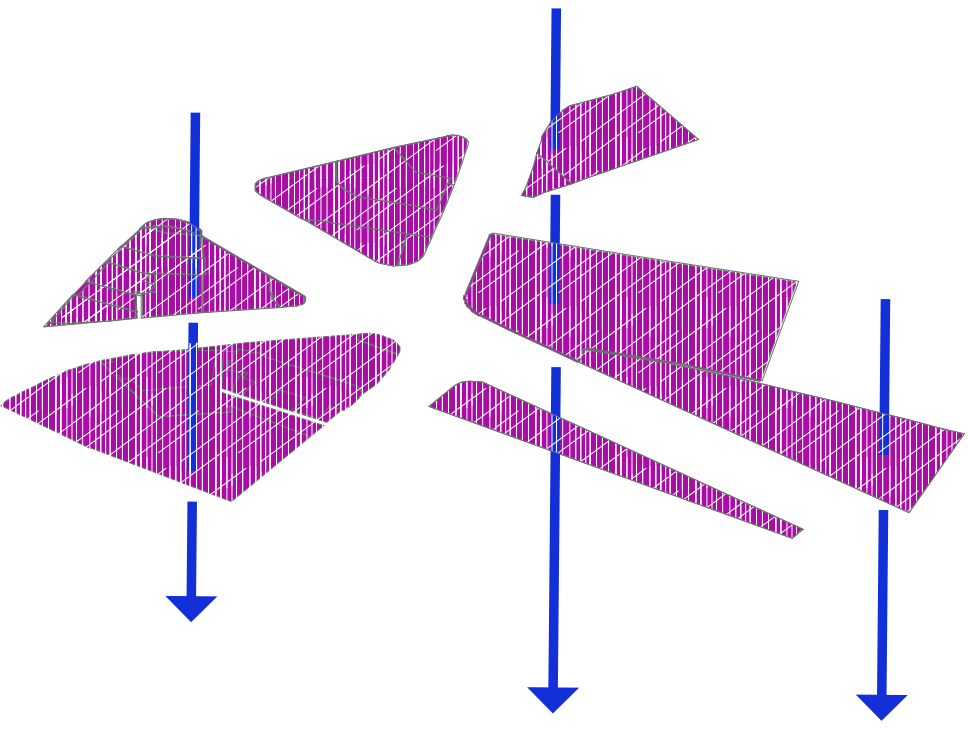


# CONCEPT

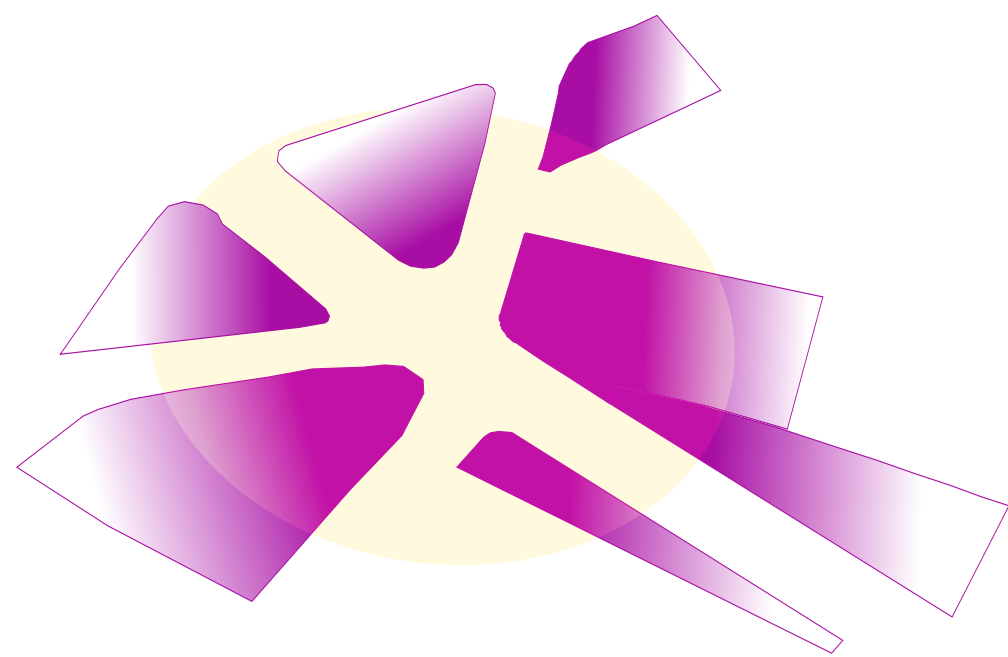
## *opportunity one*



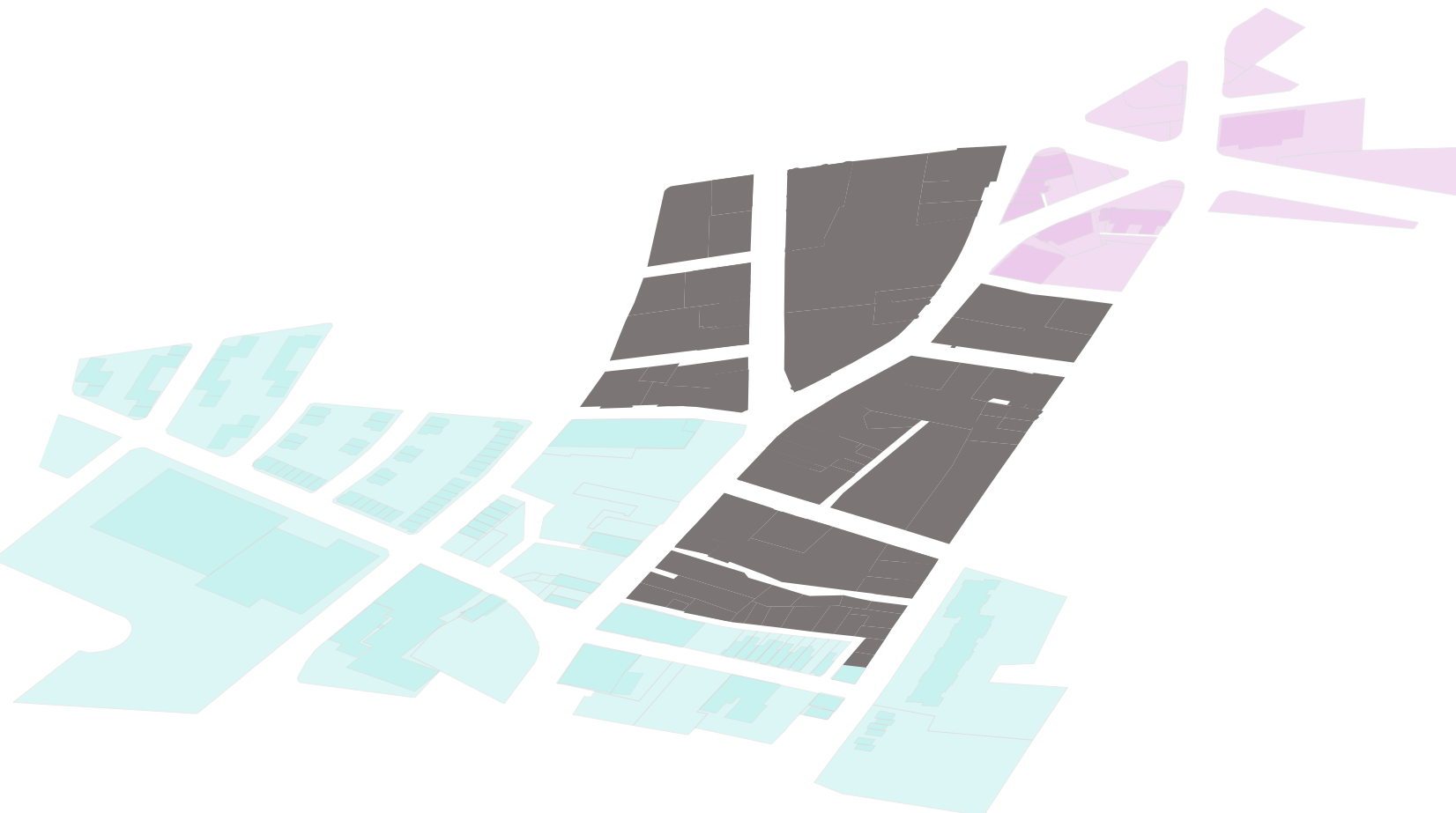
FILTRATION



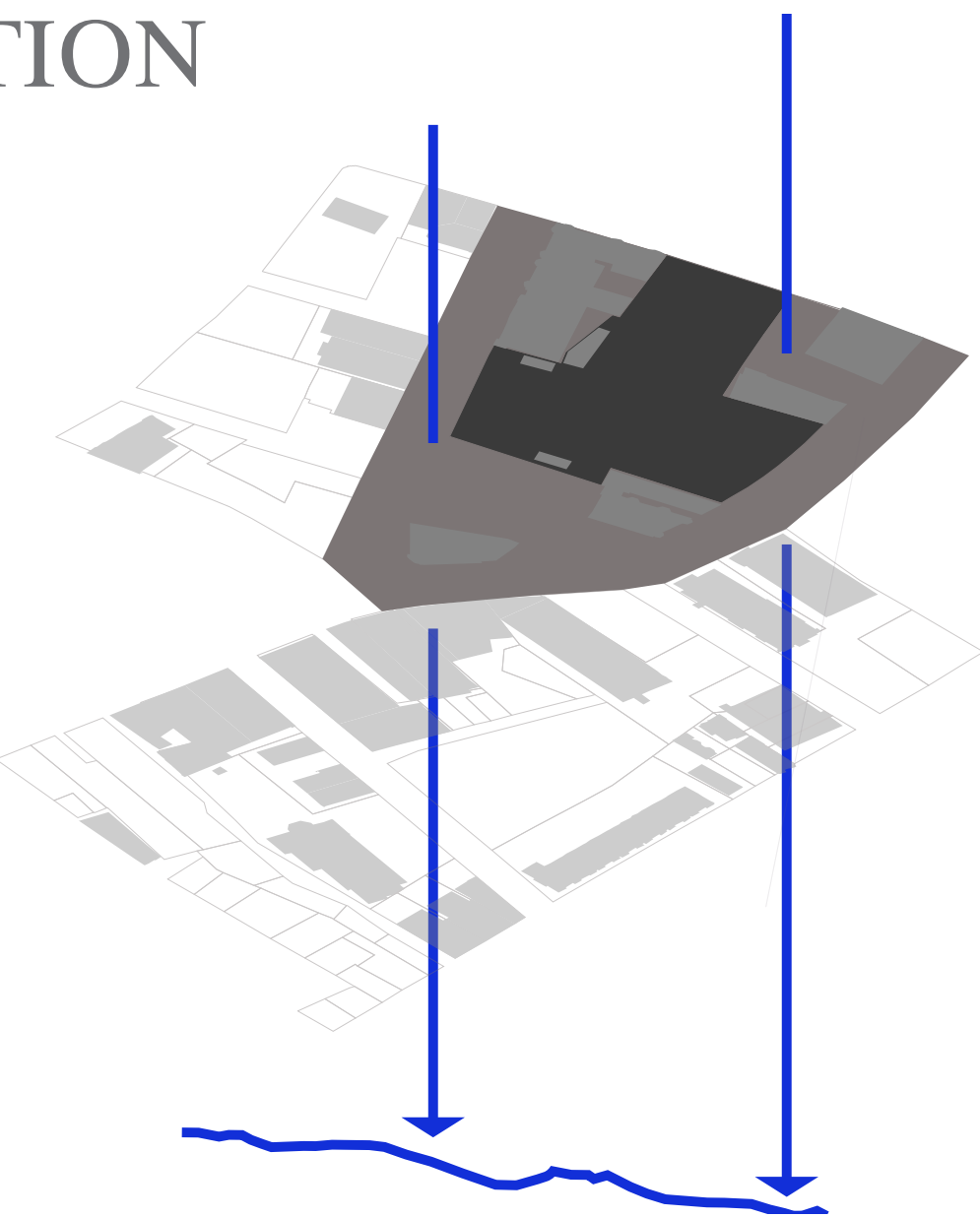
GATHERING



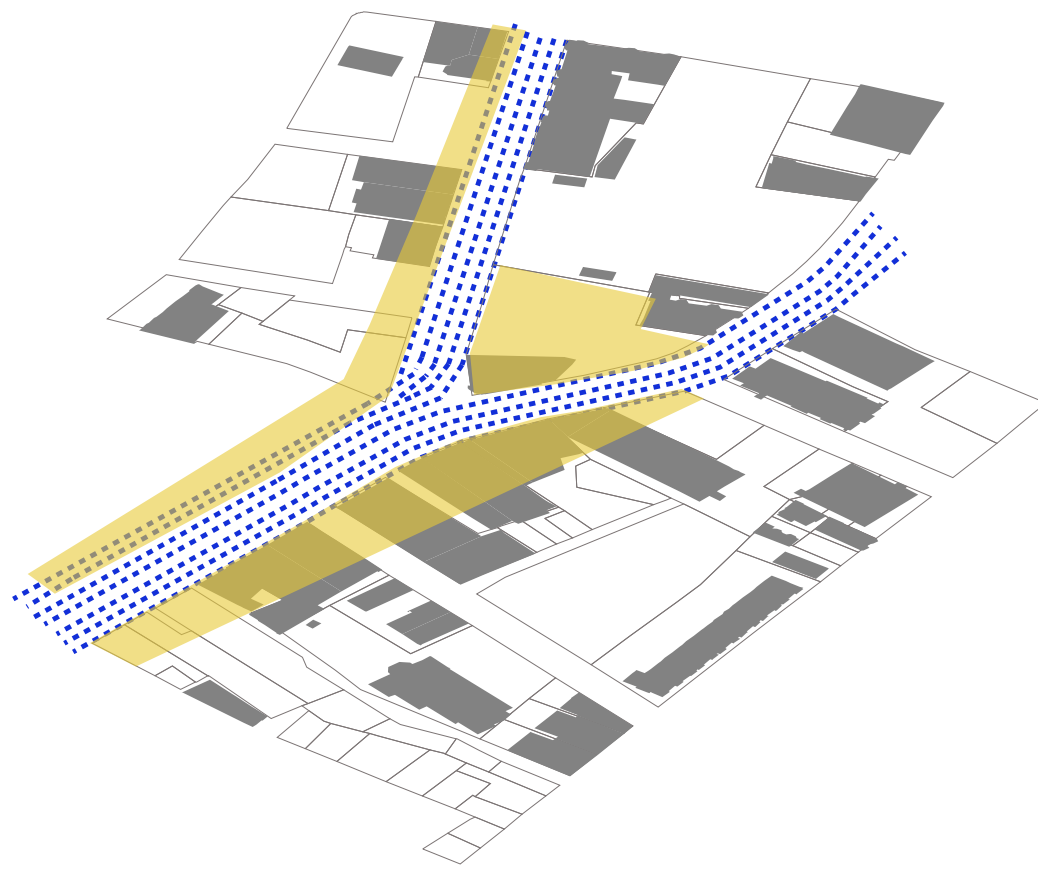
## *opportunity two*



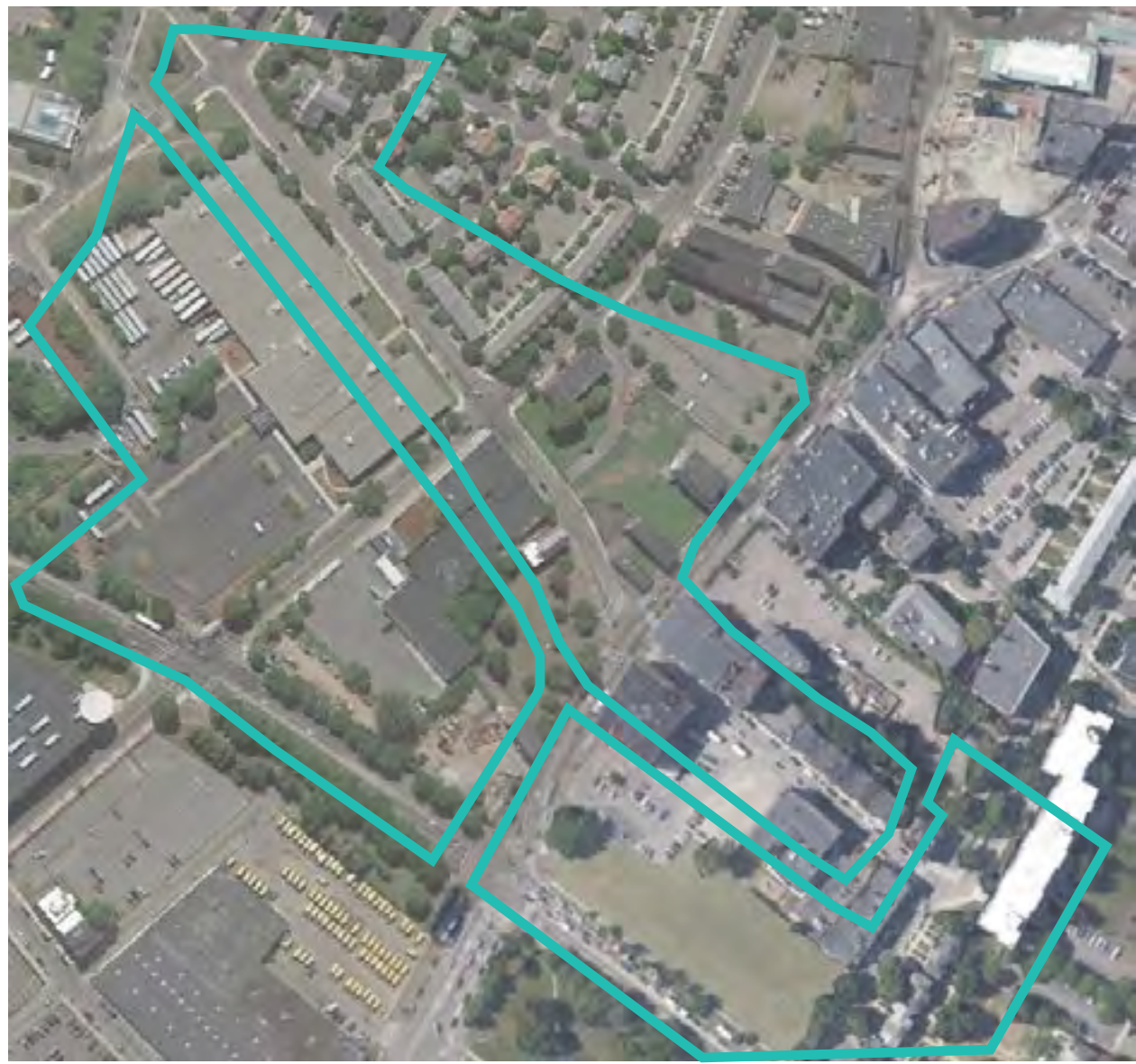
INFILTRATION



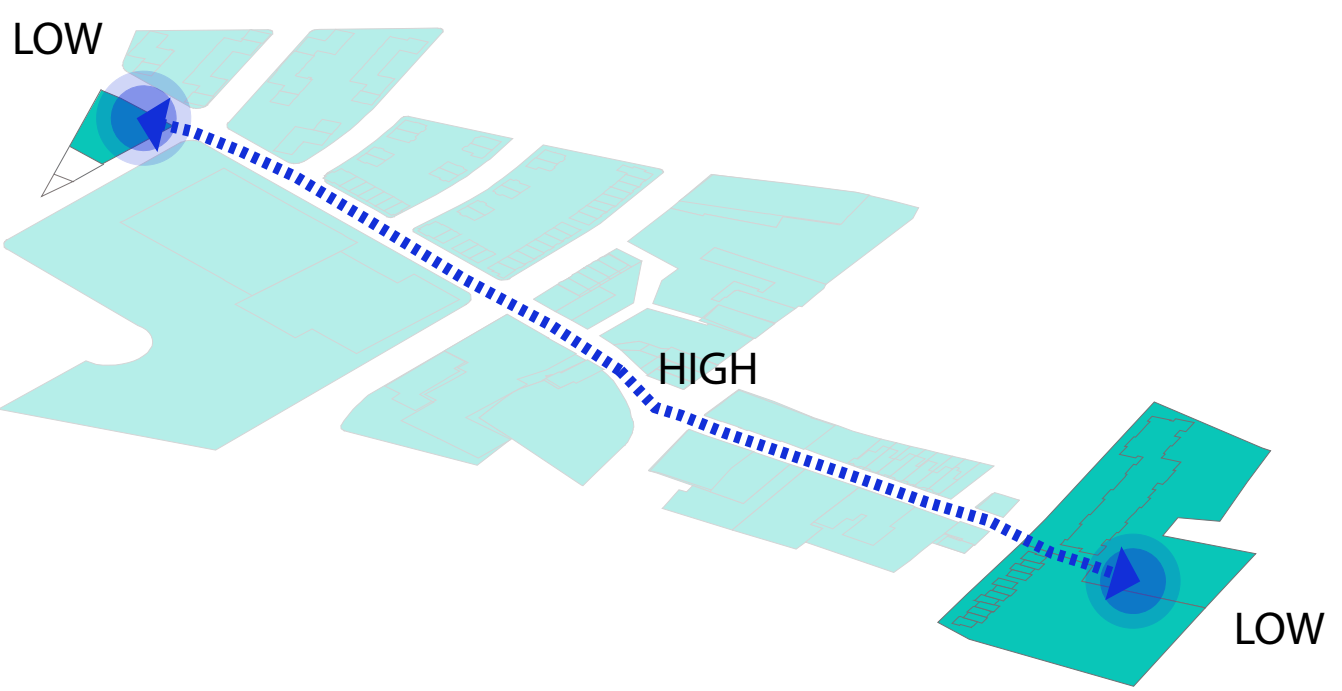
VISUAL CONVEYANCE



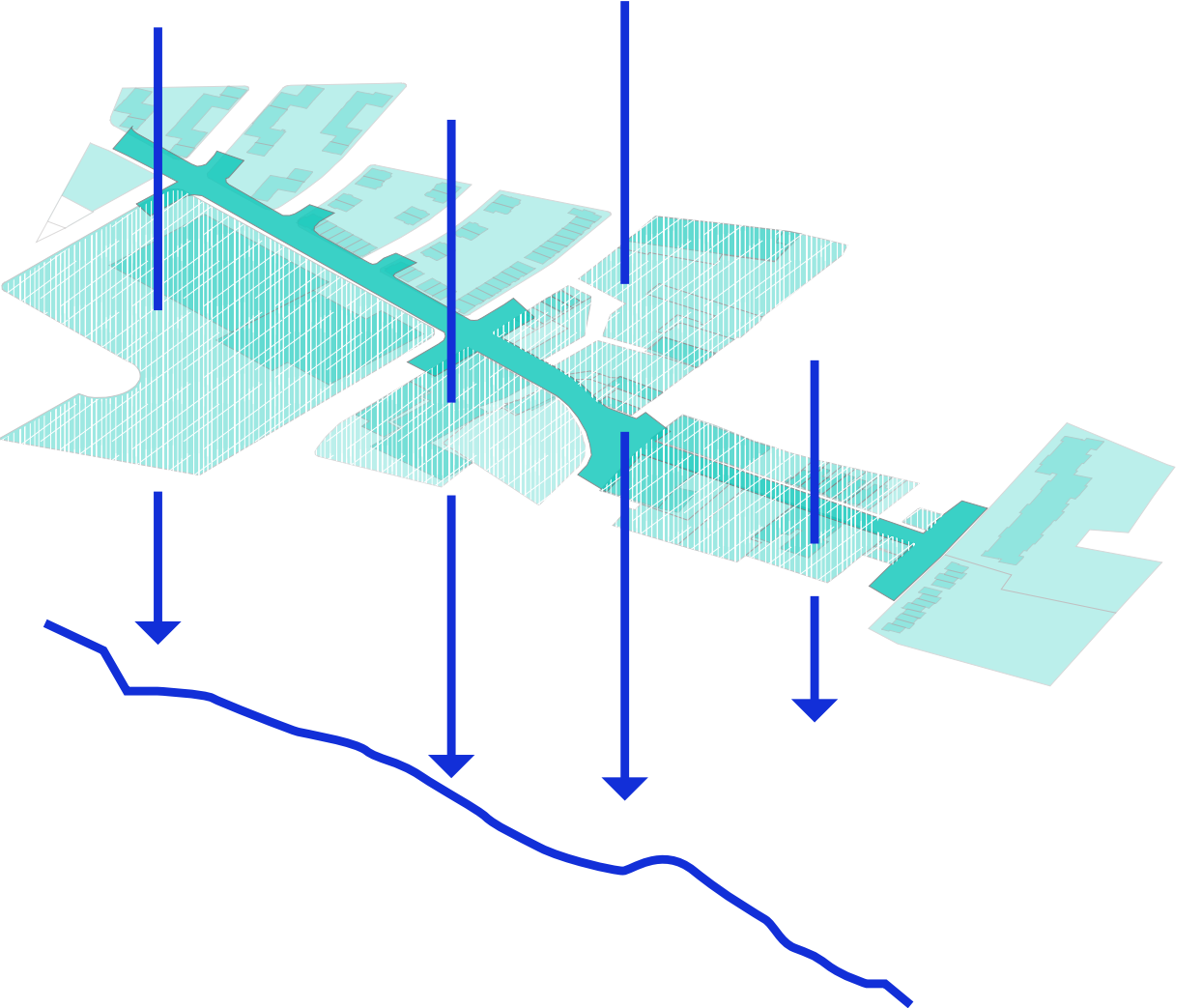
## *opportunity three*



CONVEYANCE TO RETENTION

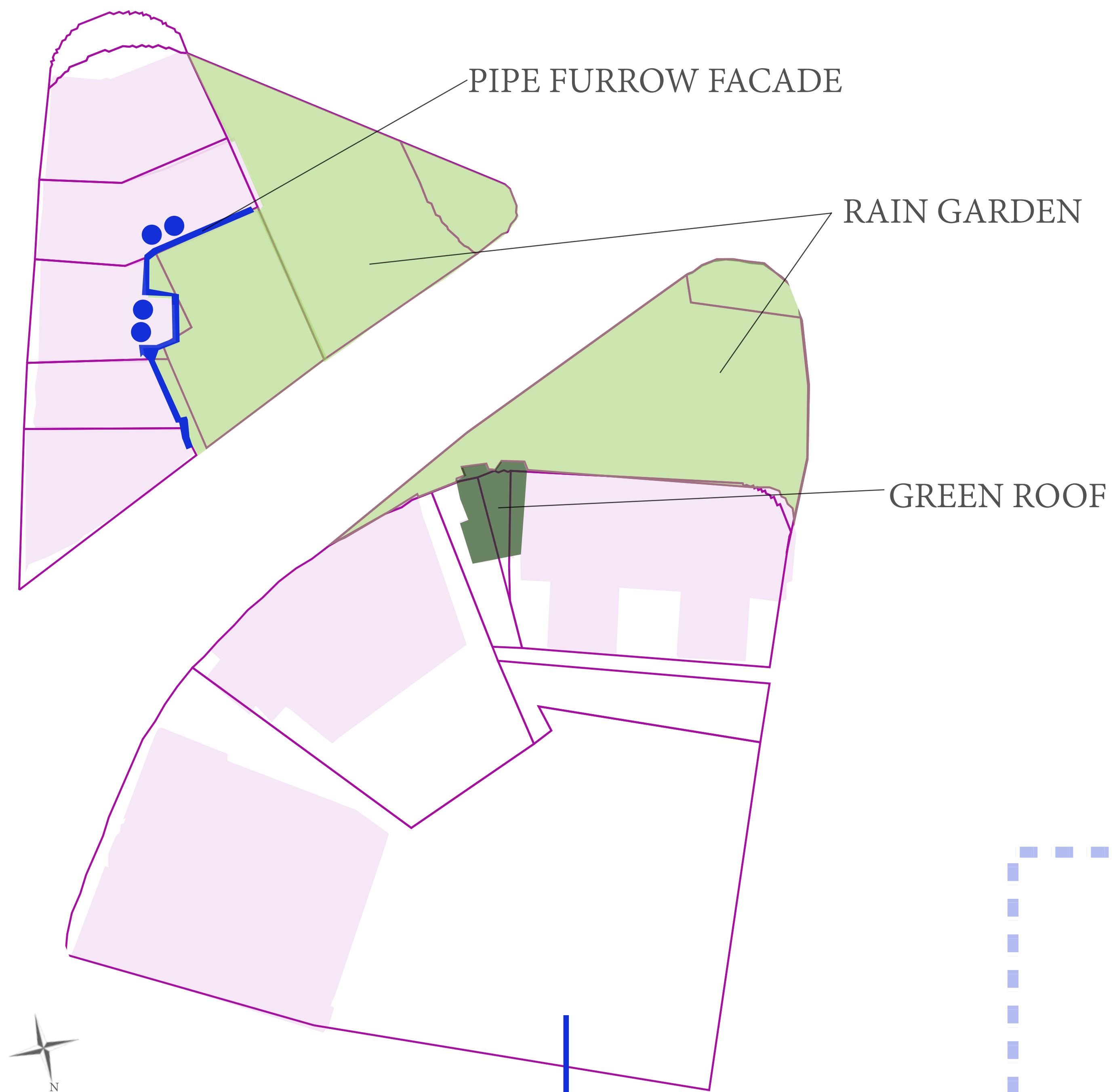


FILTRATION TO INFILTRATION





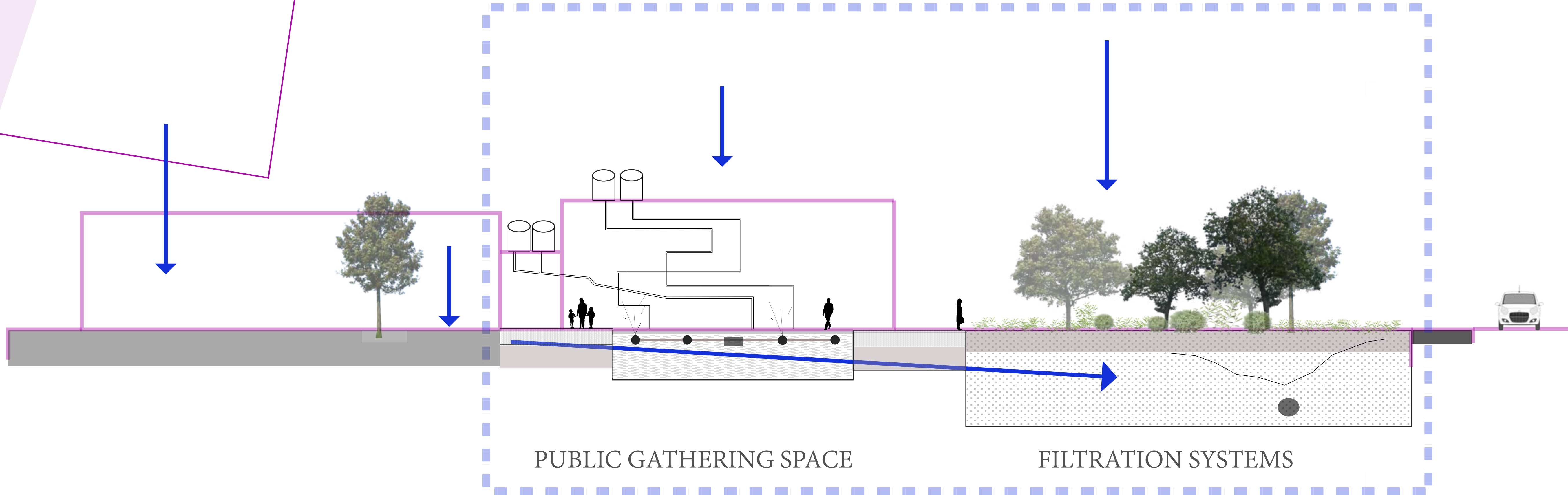
# STRATEGIC PLAN: OPPORTUNITY ONE



EXISTING CONDITION



PROPOSED GATHERING

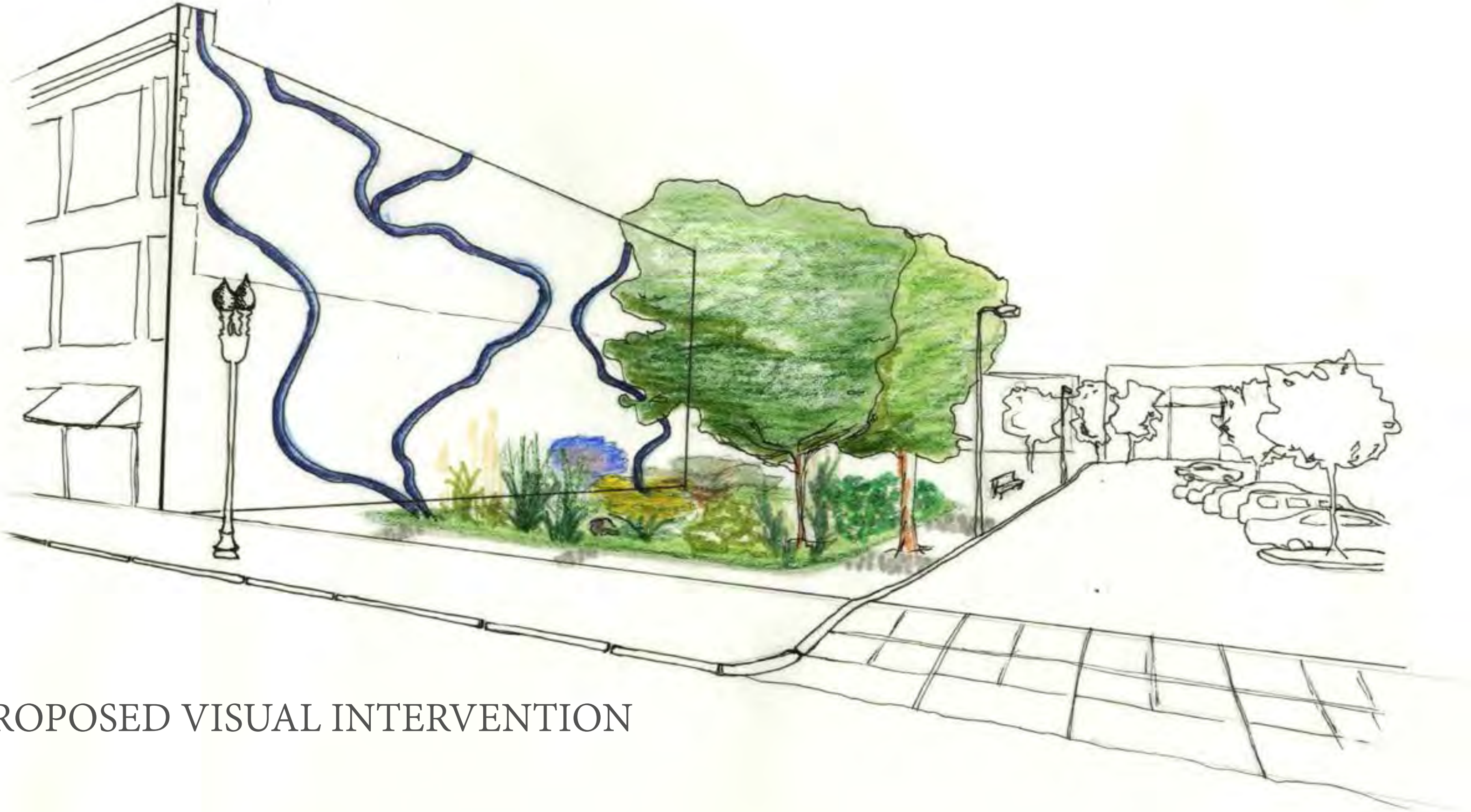




# STRATEGIC PLAN: OPPORTUNITY TWO



EXISTING STREET FENCING



PROPOSED VISUAL INTERVENTION



# STRATEGIC PLAN: OPPORTUNITY THREE

