



Union Square, Somerville, MA



Permeable pavement parking lane  
Stormwater planter

Stormwater tree trench  
Stormwater curb extension  
Bicycle lane

Source: National Association of City Transportation Officials  
<https://nacto.org/publication/urban-street-stormwater-guide/stormwater-elements/green-infrastructure-configurations/stormwater-curb-extension/>



Metal extension inlet structure provides a wide opening for stormwater flow



A grated inlet prevents large floatable trash



Bioswale separates sidewalks from bike lanes and vehicular traffic



An angled curb cut with a graded



Bioretention cell in sidewalk with seating along a commercial corridor

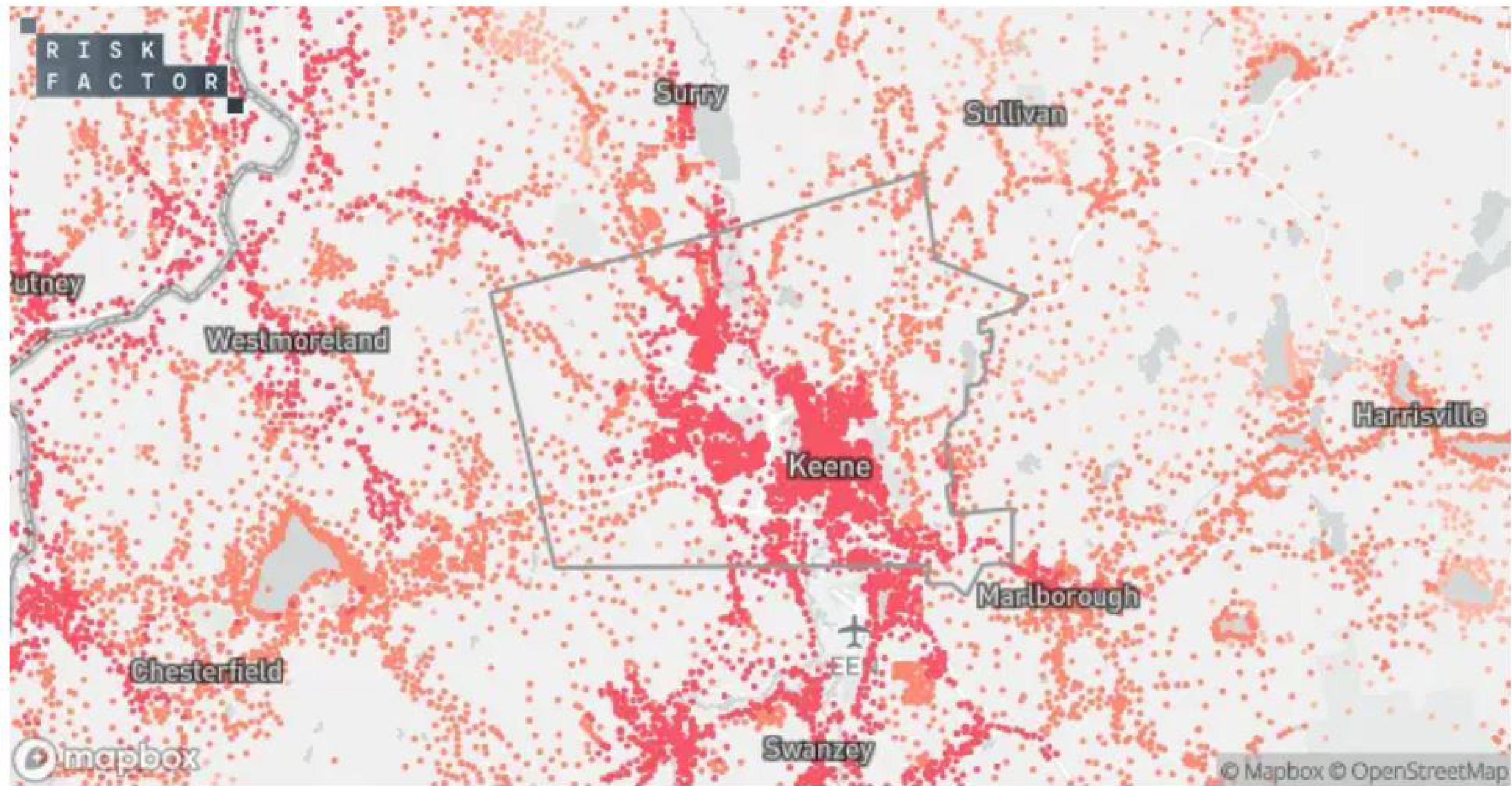


# Keene Downtown Infrastructure Project

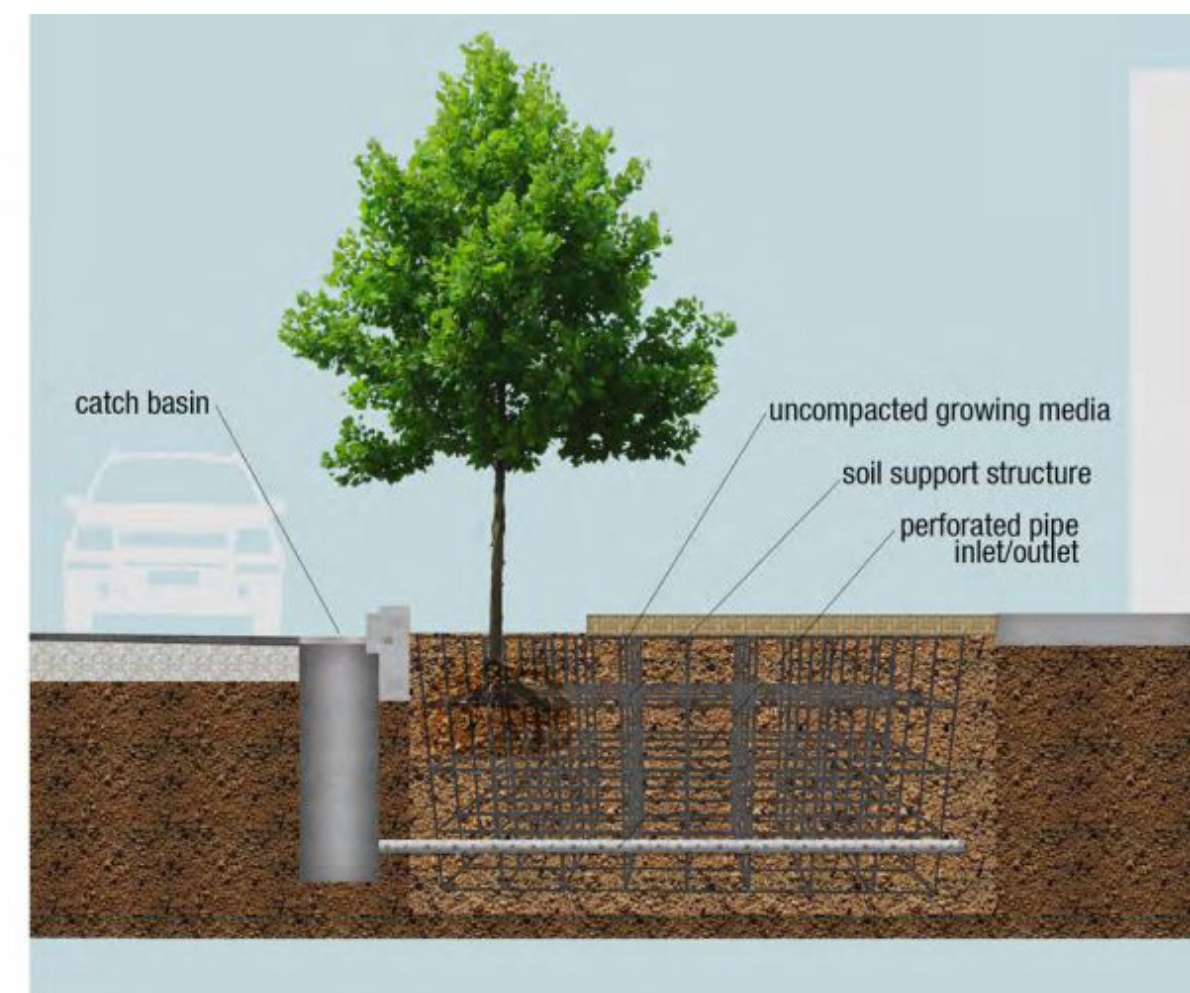
SUSTAINABLE STREETScape PRECEDENTS



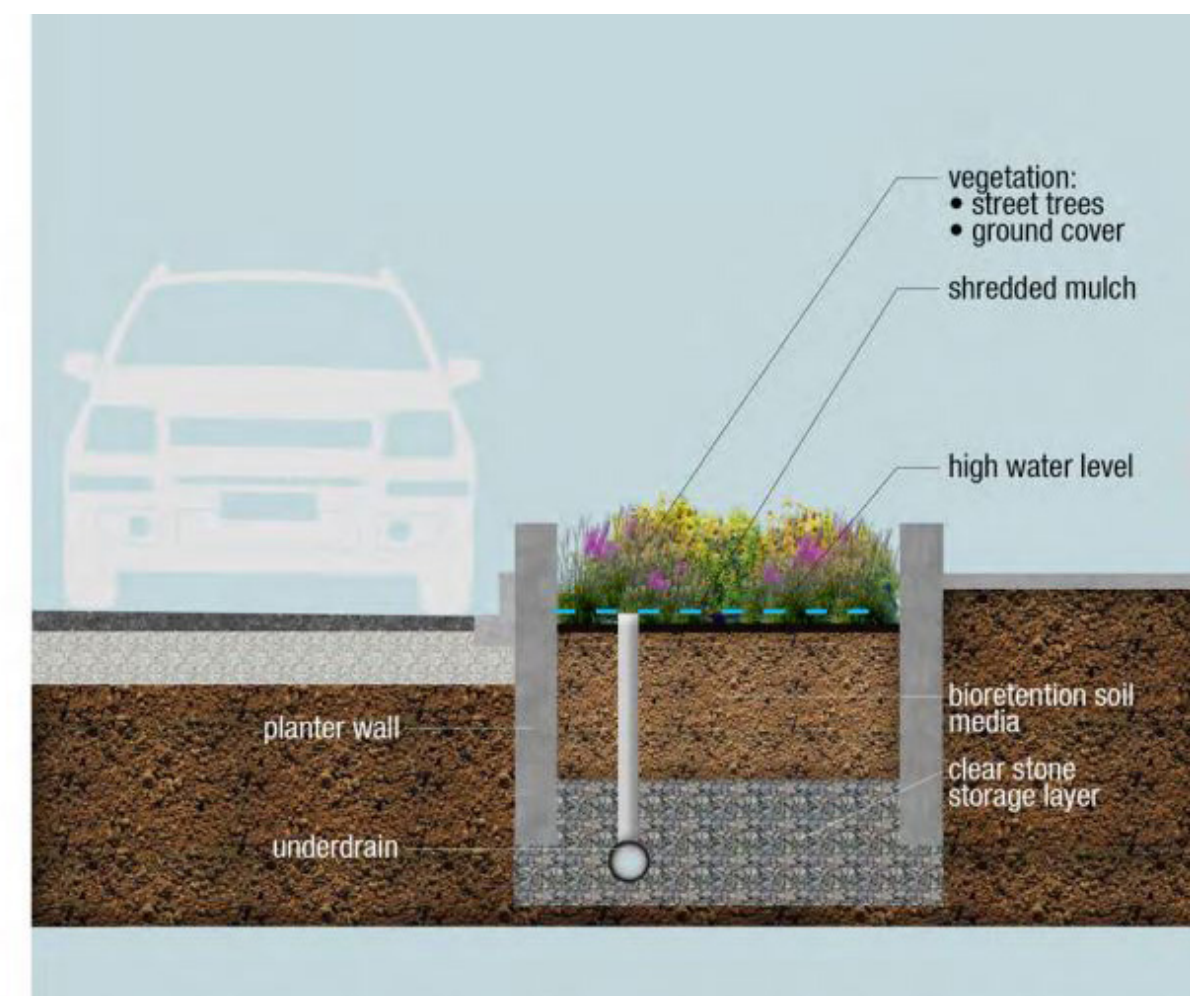




Properties at risk from heat



Solar Street Light



Stormwater Collection

- ### Stormwater Tree Pit Inlet
- 1 Trees filter and transpire stormwater while providing shade and enhancing the streetscape
  - 2 Stormwater runoff from roadway and sidewalk flows into system
  - 3 Underdrain (if needed)
  - 4 Stone (or other storage media) provides stormwater storage
  - 5 Stormwater infiltrates through soil
  - 6 Stormwater infiltrates into subgrade
  - 7 Uncompacted, level subgrade
  - 8 Overflow limits amount of surface ponding



- ### Corner Stormwater Bump-out
- 1 Vegetation filters and transpires stormwater while enhancing the streetscape
  - 2 Stormwater runoff from roadway and sidewalk flows into system
  - 3 Overflow limits amount of surface ponding
  - 4 Stone (or other storage media) provides stormwater storage
  - 5 Underdrain (if needed)
  - 6 Stormwater infiltrates into subgrade
  - 7 Uncompacted, level subgrade



Solar Structure over Parking

Source: UNI-Group U.S.A  
[https://www.uni-groupusa.org/PDF/Grey-to-Green-Road-ROW-Retrofits-Complete\\_1.pdf](https://www.uni-groupusa.org/PDF/Grey-to-Green-Road-ROW-Retrofits-Complete_1.pdf)

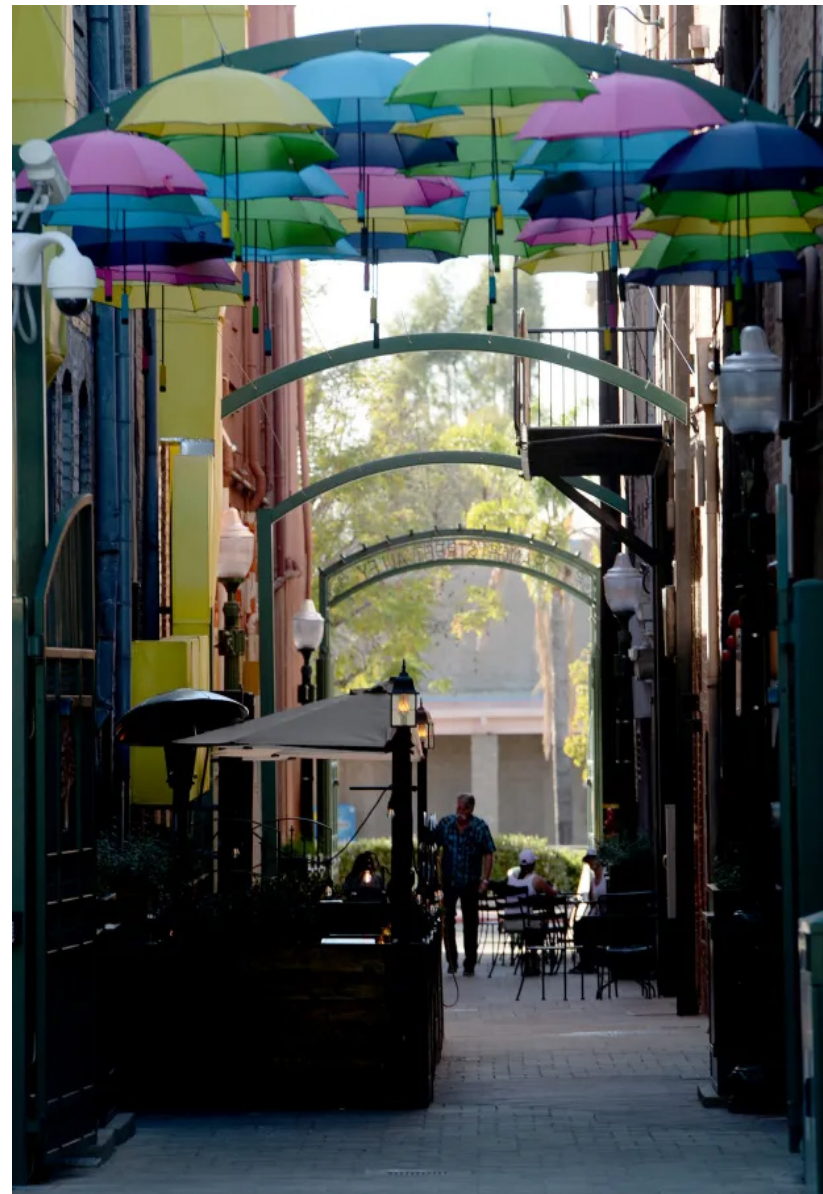
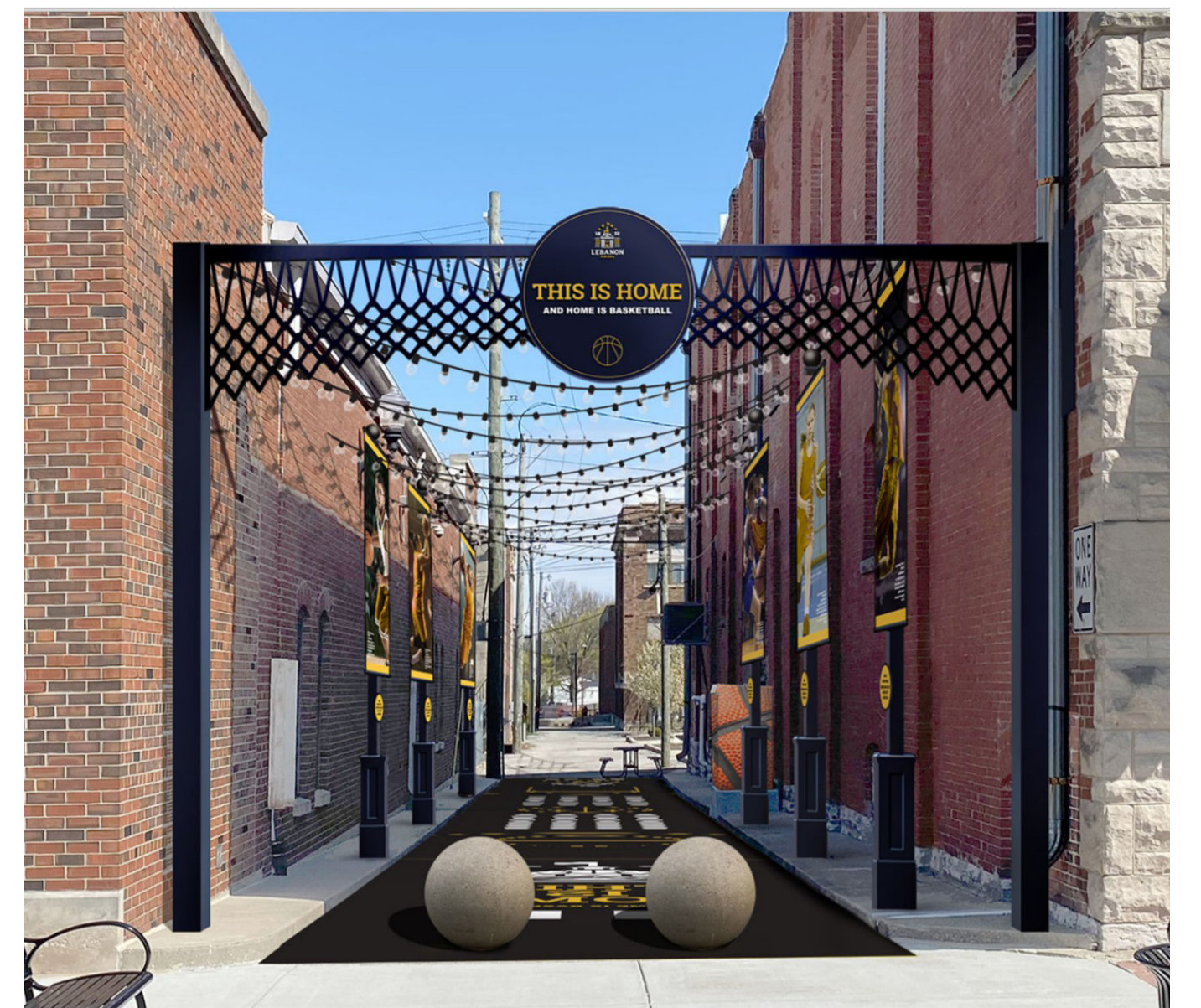


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SUSTAINABLE STREETScape PRECEDENTS







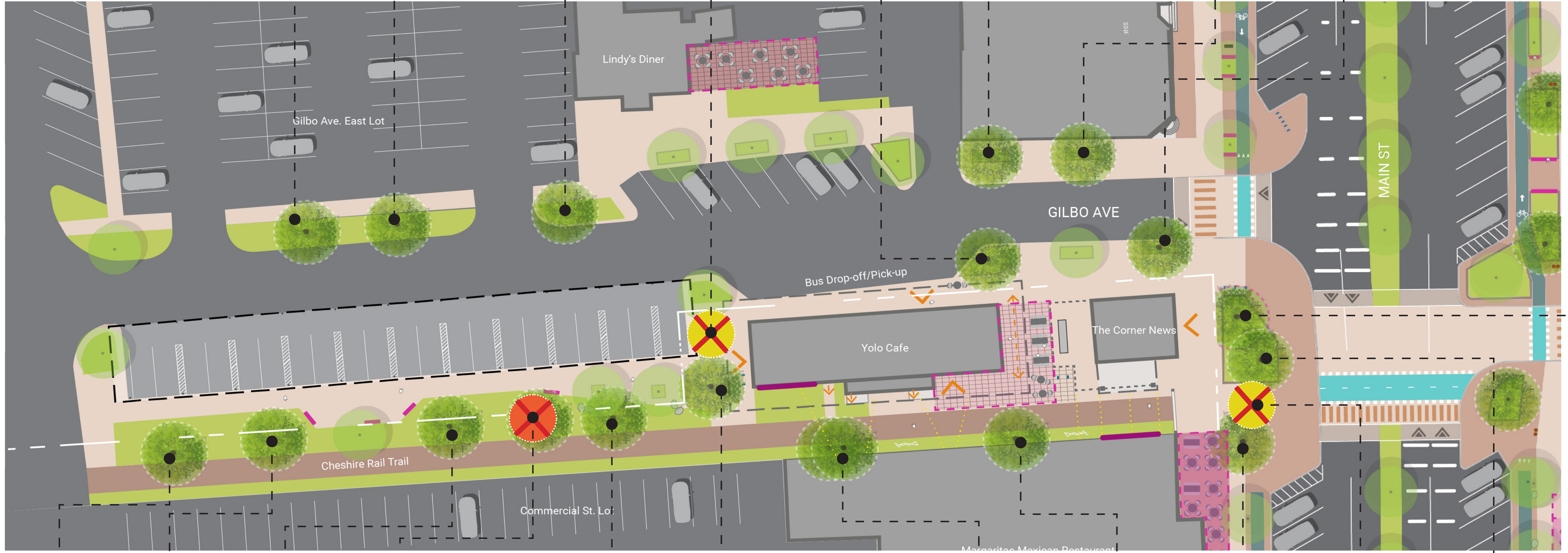
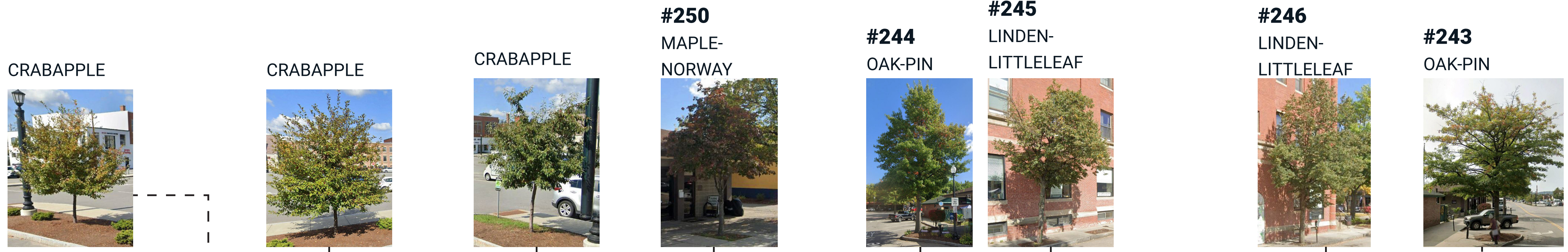
# Keene Downtown Infrastructure Project

GILBO AVENUE PRECEDENTS





-  GOOD CONDITION
-  FAIR CONDITION
-  POOR CONDITION



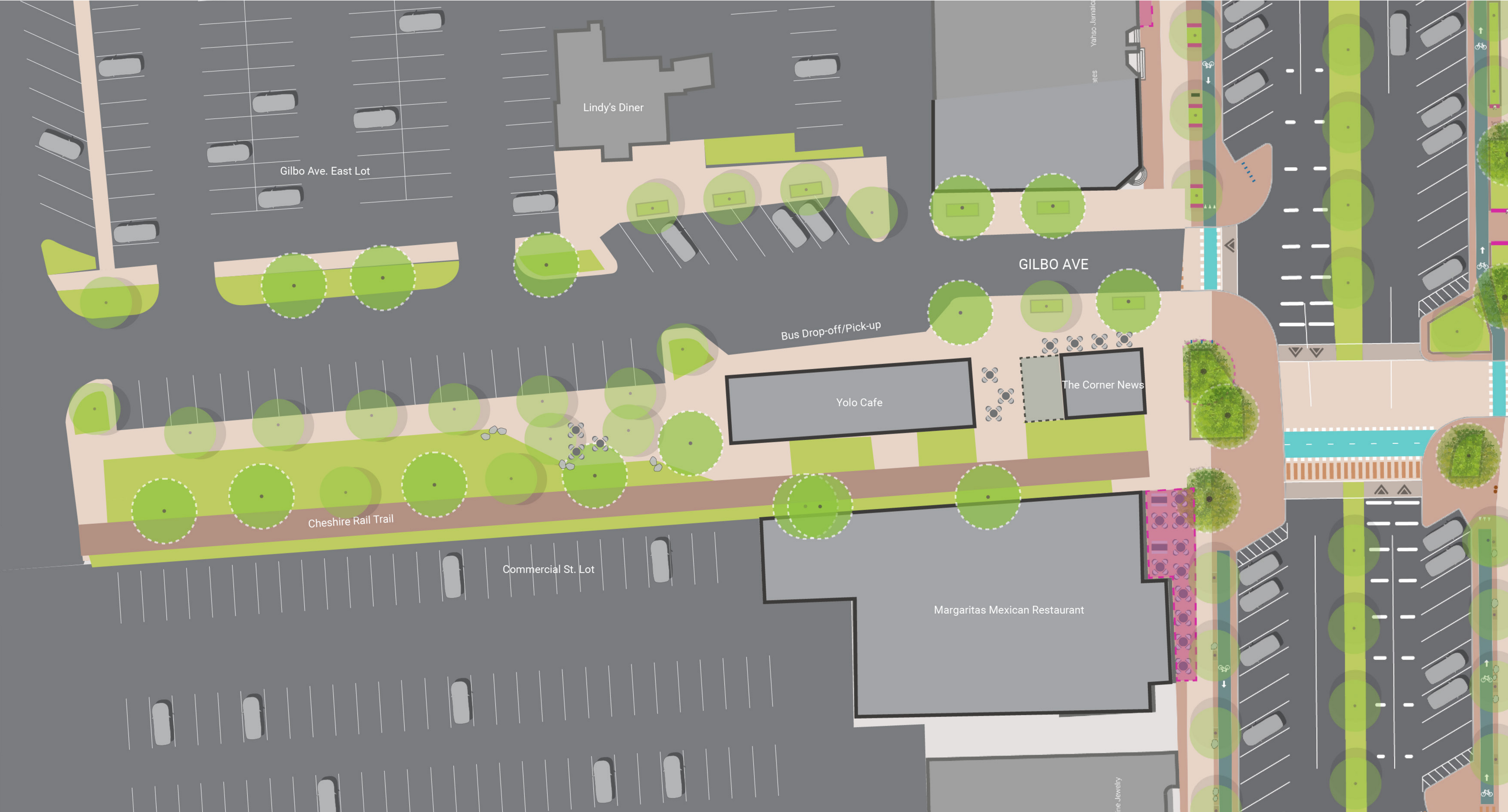
# Keene Downtown Infrastructure Project

## EXISTING TREE ASSESSMENT

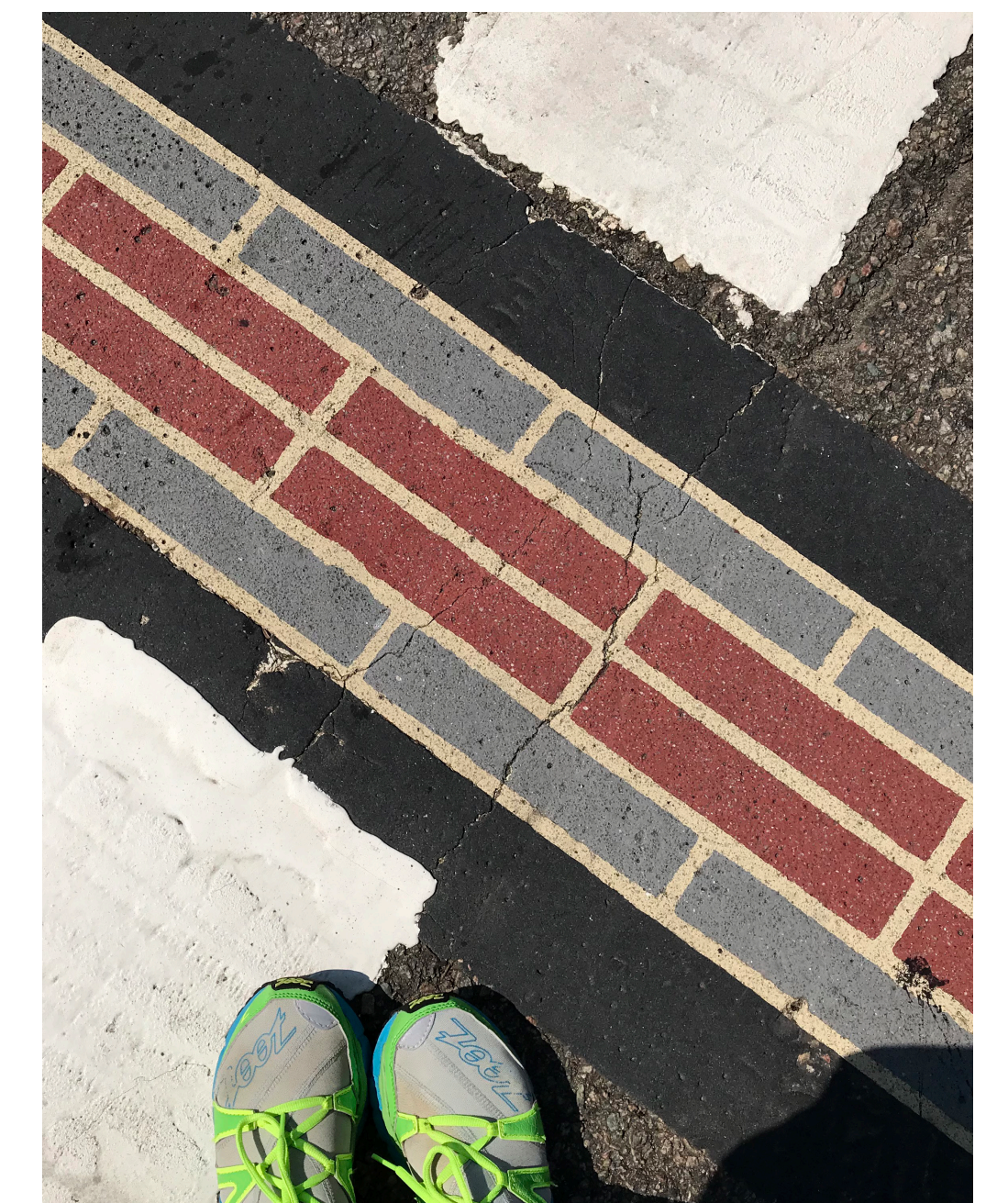
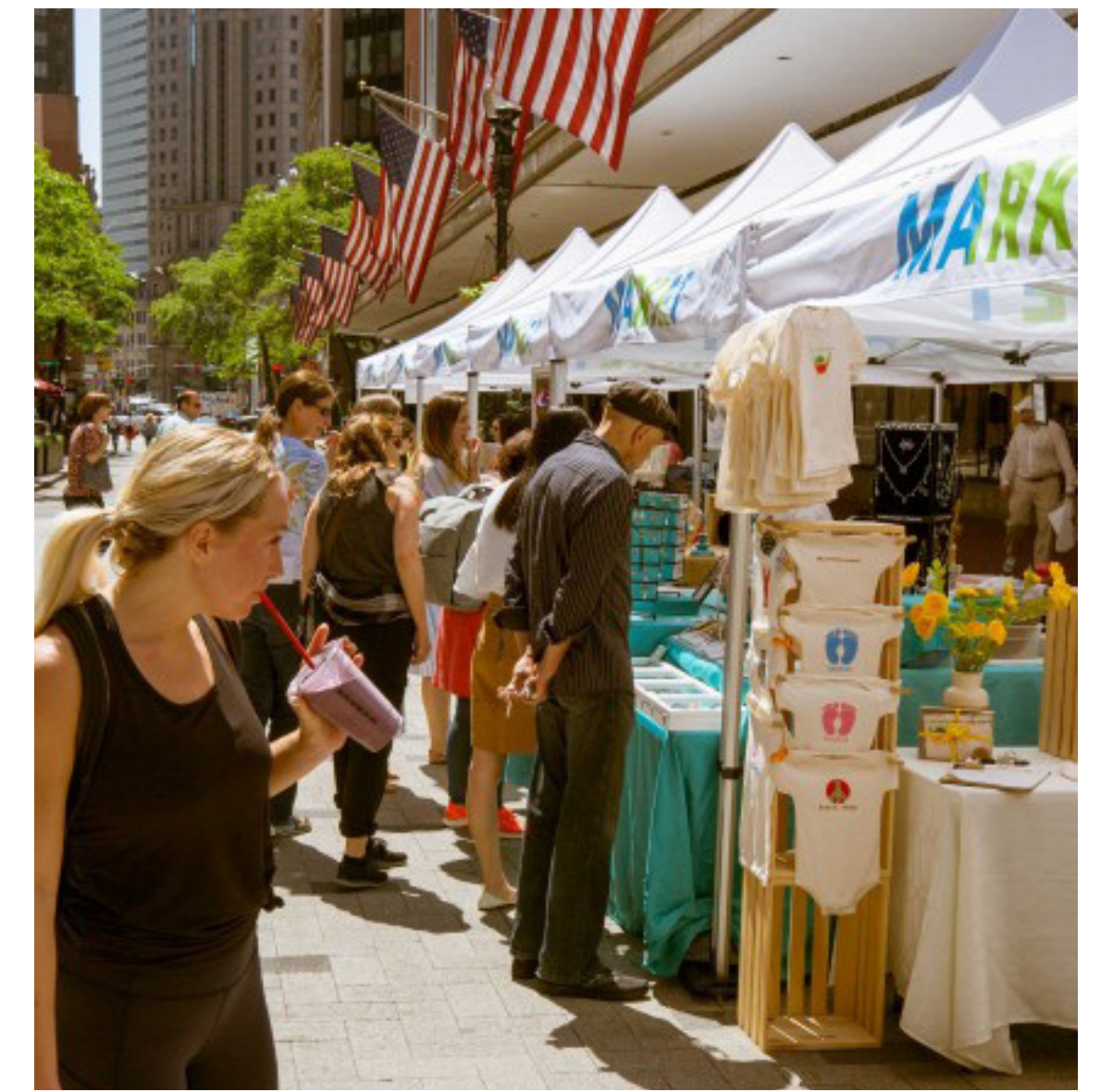




GILBO AVENUE ALTERNATIVE CONCEPT PLAN - MAXIMIZING GREEN SPACE







# Keene Downtown Infrastructure Project

RAILROAD SQUARE PRECEDENTS





-  GOOD CONDITION
-  FAIR CONDITION
-  POOR CONDITION

**#76**  
PEAR-CALLERY



**#77**  
YELLOW-WOOD



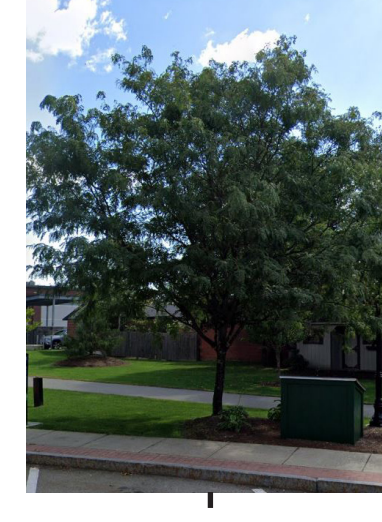
**#78**  
LINDEN-LITTLELEAF



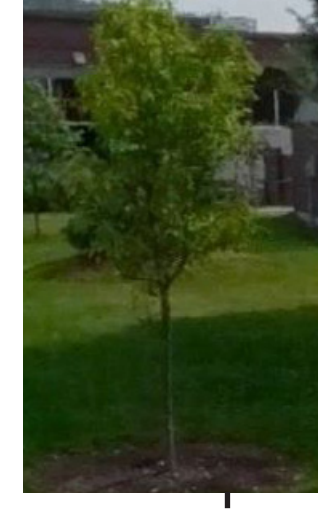
**#96**  
REDBUD-EASTERN



**#79**  
HONEY-LOCUST



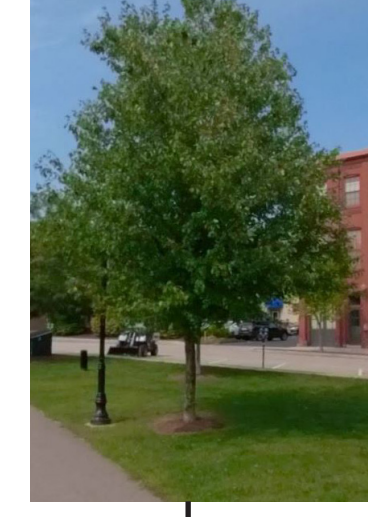
**#94**  
CRABAPPLE



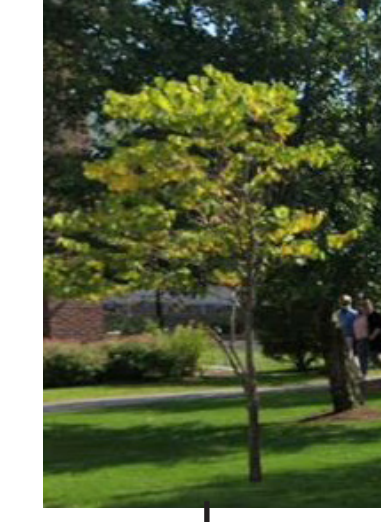
**#80**  
MAPLE-RED



**#81**  
CRABAPPLE



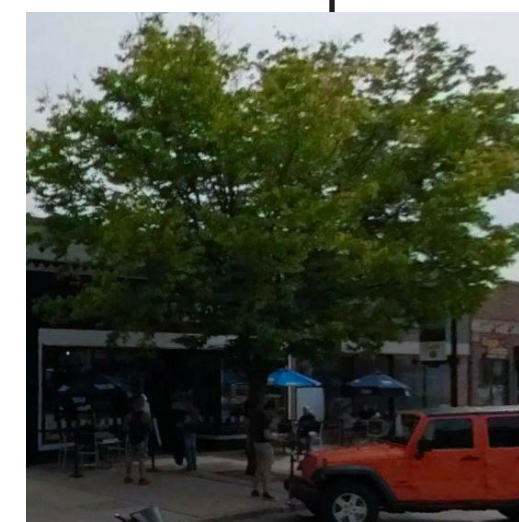
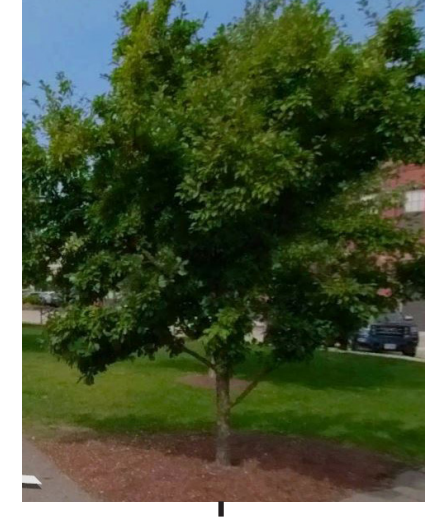
**#88**  
REDBUD-EASTERN



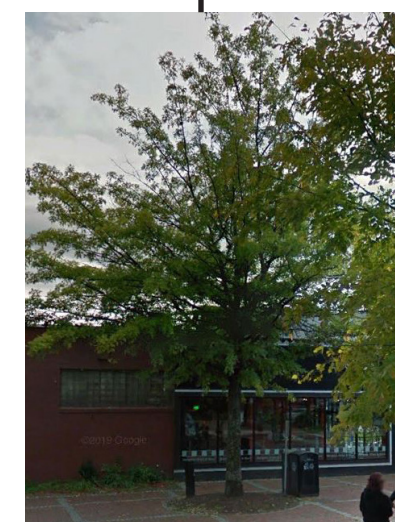
**#82**  
MAPLE-RED



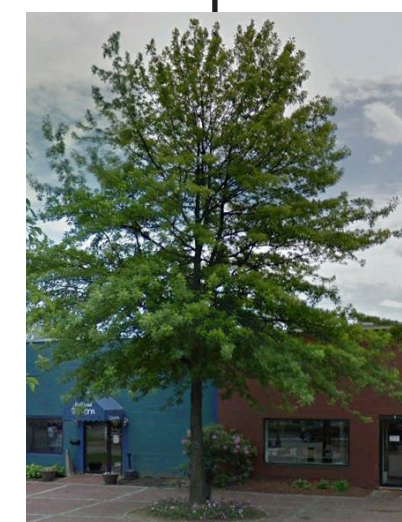
**#83**  
CRABAPPLE



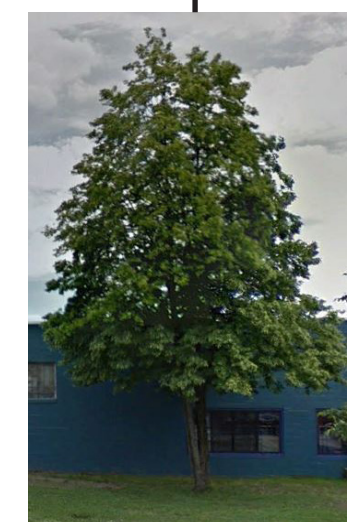
**#202**  
ZELKOVA-JAPANESE



**#201**  
OAK-PIN



**#100**  
OAK-PIN



**#99**  
OAK-PIN



**#98**  
LINDEN-LITTLELEAF



**#97**  
CRABAPPLE



**#95**  
LINDEN-LITTLELEAF



**#93**  
LINDEN-LITTLELEAF



**#92**  
FALSECY-PRESS-NOOTKA



**#91**  
REDBUD-EASTERN



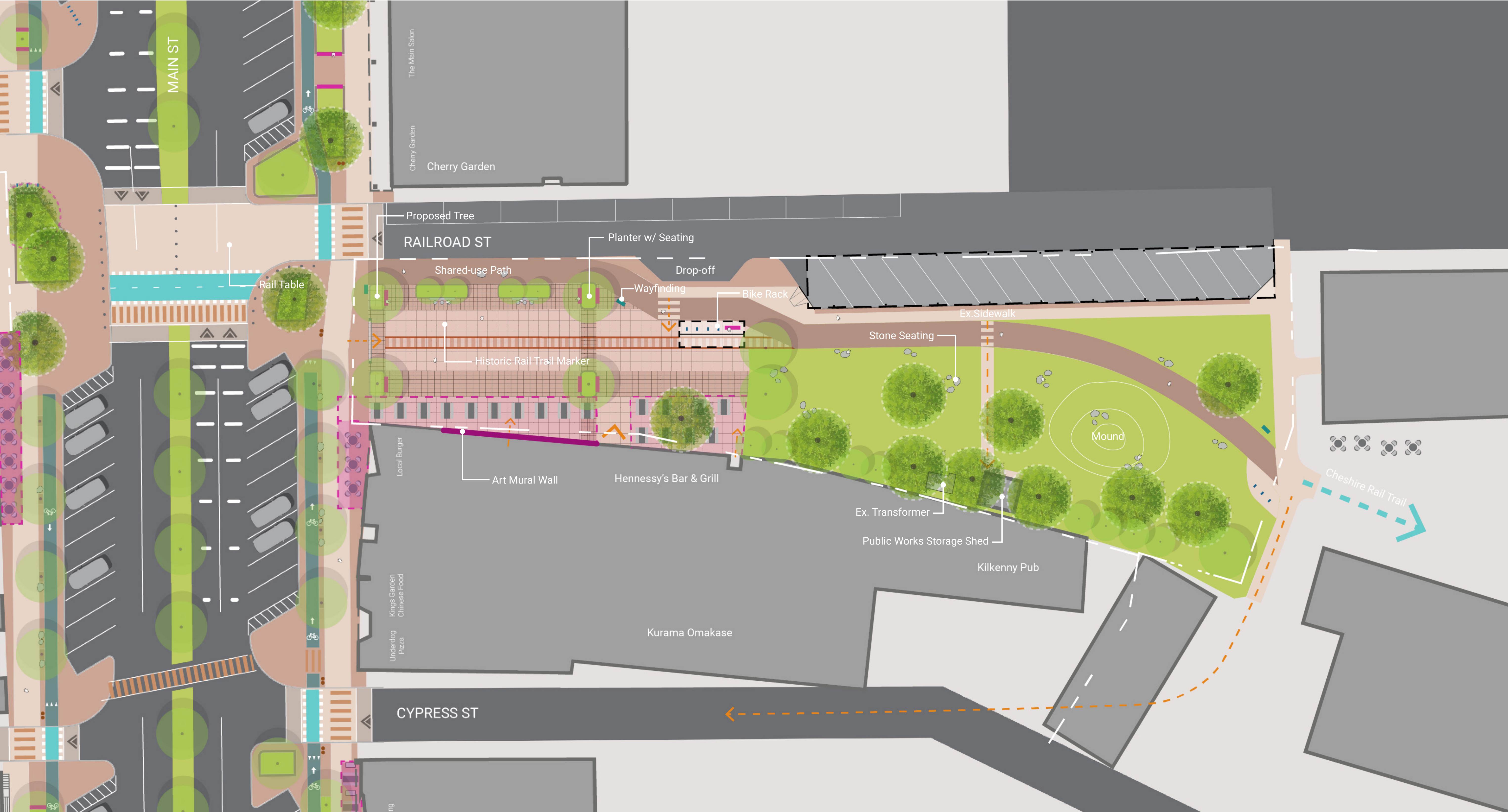
# Keene Downtown Infrastructure Project

EXISTING TREE ASSESSMENT





# RAILROAD SQUARE ALTERNATIVE CONCEPT PLAN - MAXIMIZING GREEN SPACE



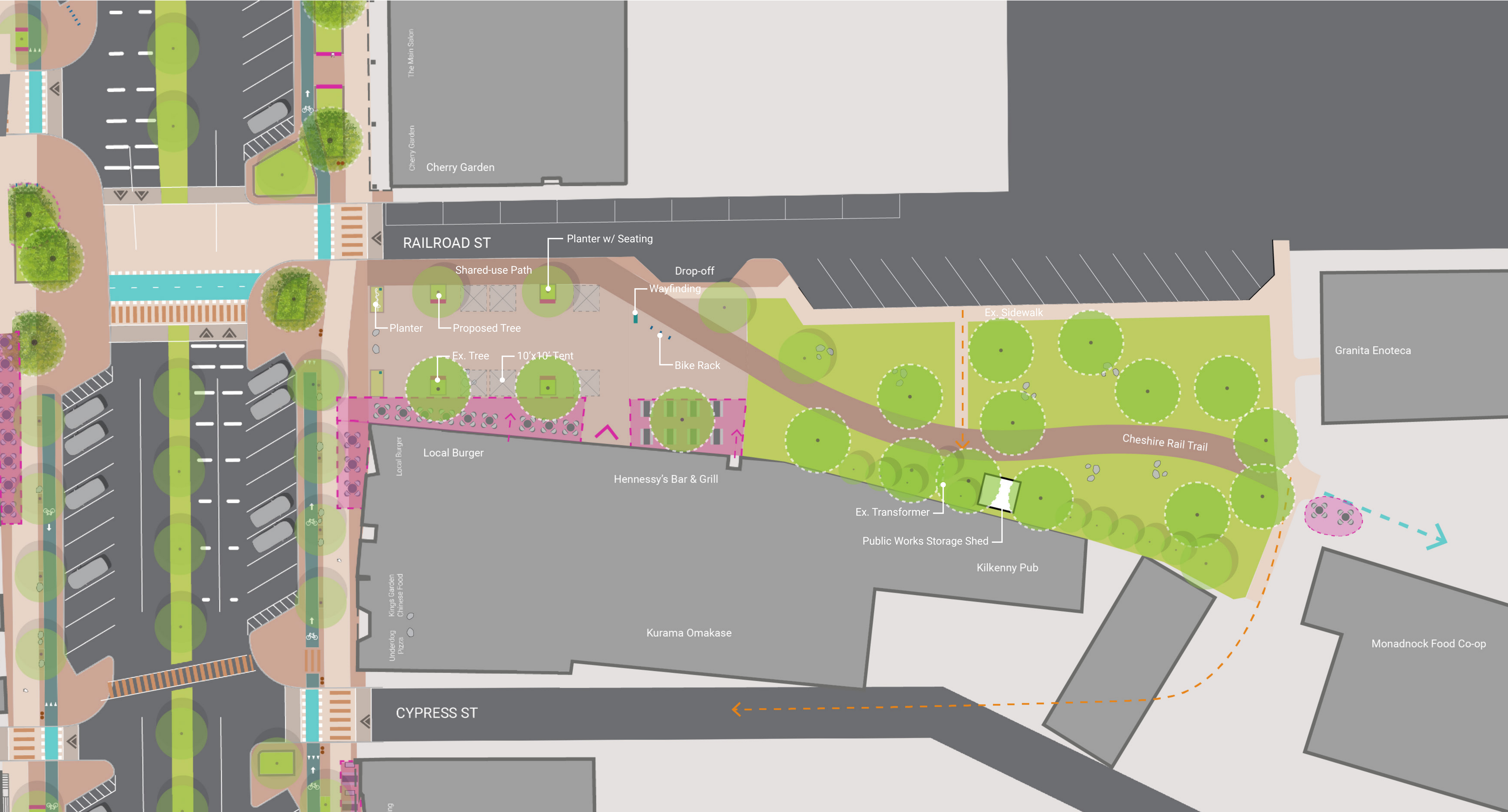
## Keene Downtown Infrastructure Project

ALTERNATIVE CONCEPT PLAN





# RAILROAD SQUARE ALTERNATIVE CONCEPT PLAN - MINIMAL



## Keene Downtown Infrastructure Project

ALTERNATIVE CONCEPT PLAN





# RAILROAD SQUARE ALTERNATIVE CONCEPT PLAN - INTEGRATING STRUCTURE

