



Arborway Yard

Bianca Rabbie, Zeina Alkhaja, and
Nathalia Galindo





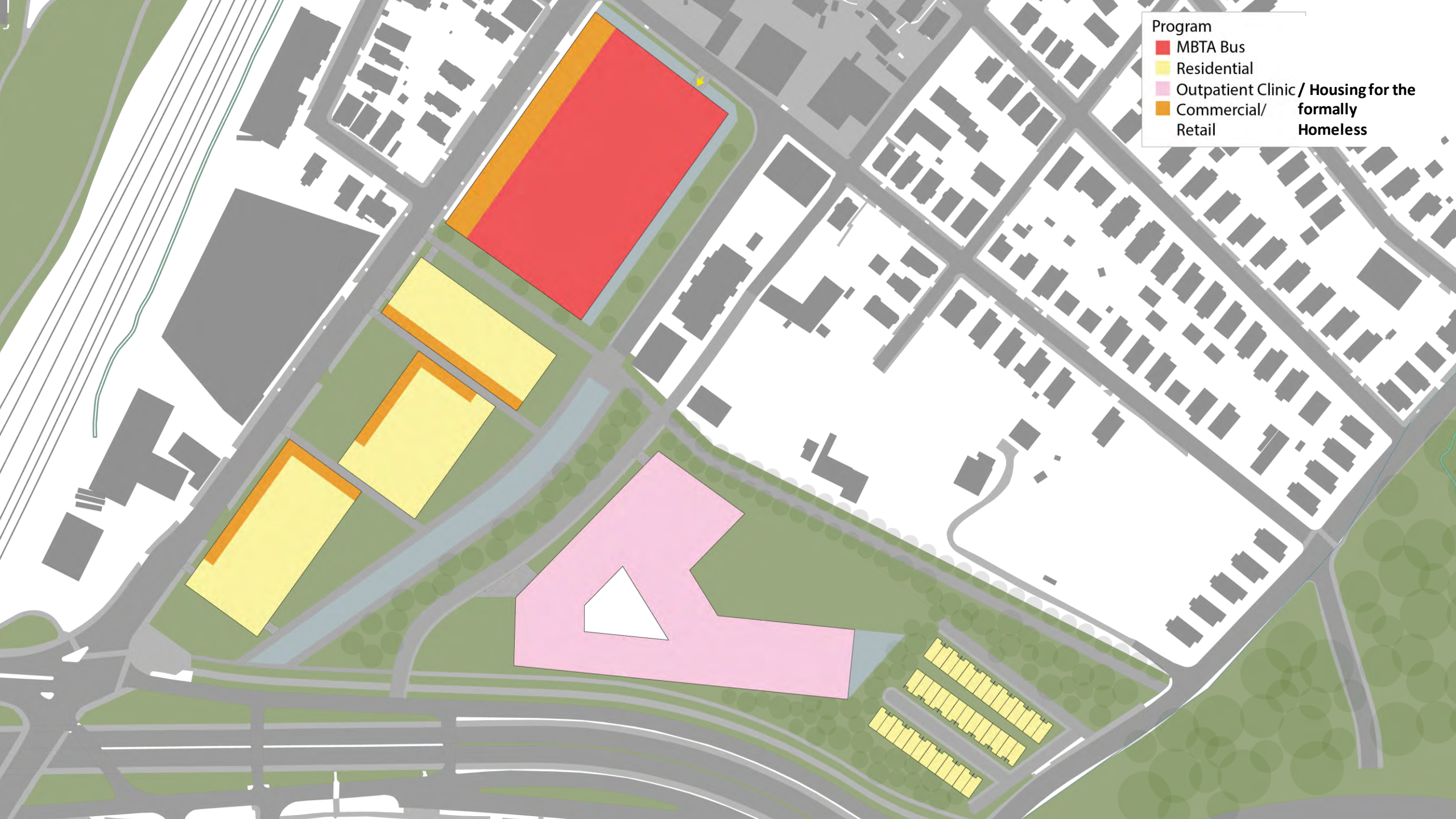
Community Needs

- Community services and amenities (grocery stores, pharmacy, childcare facilities, hardware shop, restaurants)
- Need for: affordable housing, youth recreation, retail, light industrial, the Emerald Necklace Re-Connector and mixed-use development.
- “for continuous pedestrian arcade. ... landscaped plaza areas and opportunities for outdoor seating.”
- more connected mobility network for pedestrians and cyclist
- Develop supportive housing units to accommodate Boston’s growing population of individuals facing severe mental illness, substance use disorders, and homelessness
- environmental justice
 - Assess the status of site contamination and develop the program for soil remediation.
- Improve landscaping and access points to Franklin Park for pedestrian access.
- 70% of respondents said that “wetlands” and “waterbodies” were the most popular park features used by residents
 - increase water-based recreation



- Design a more modern bus parking, with efficient use of space
- Provide community services and amenities (aiming to provide the "15 min city")
 - Pharmacy
 - Grocery store
 - Hardware Shop
 - Childcare facilities
 - Restaurants
- Stormwater management strategies
 - Constructed Wetlands
 - Increase green space
 - Pervious surfaces
- Provide more outdoor space
 - Seating area
 - Recreational space for children
 - Green connector-extension of Frankling Park
 - Increase tree canopy (Jamaica Plain and Roxbury both experienced a significant net loss of tree canopy in the last decade)

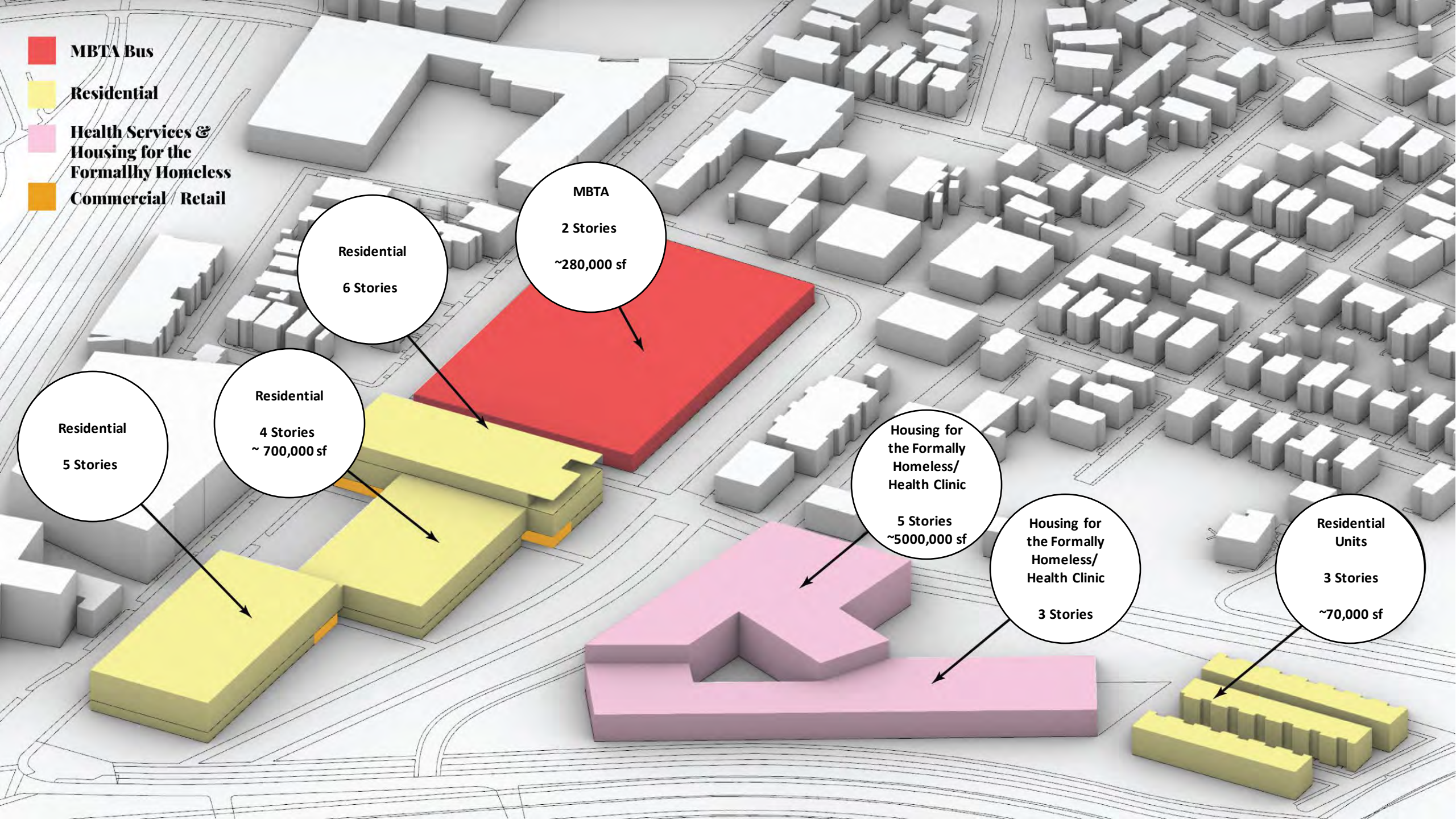




Program

MBTA Bus	
Residential	
Outpatient Clinic /	Housing for the
Commercial/	formerly
Retail	Homeless

-  **MBTA Bus**
-  **Residential**
-  **Health Services & Housing for the Formally Homeless**
-  **Commercial / Retail**



Residential
6 Stories

MBTA
2 Stories
~280,000 sf

Residential
5 Stories

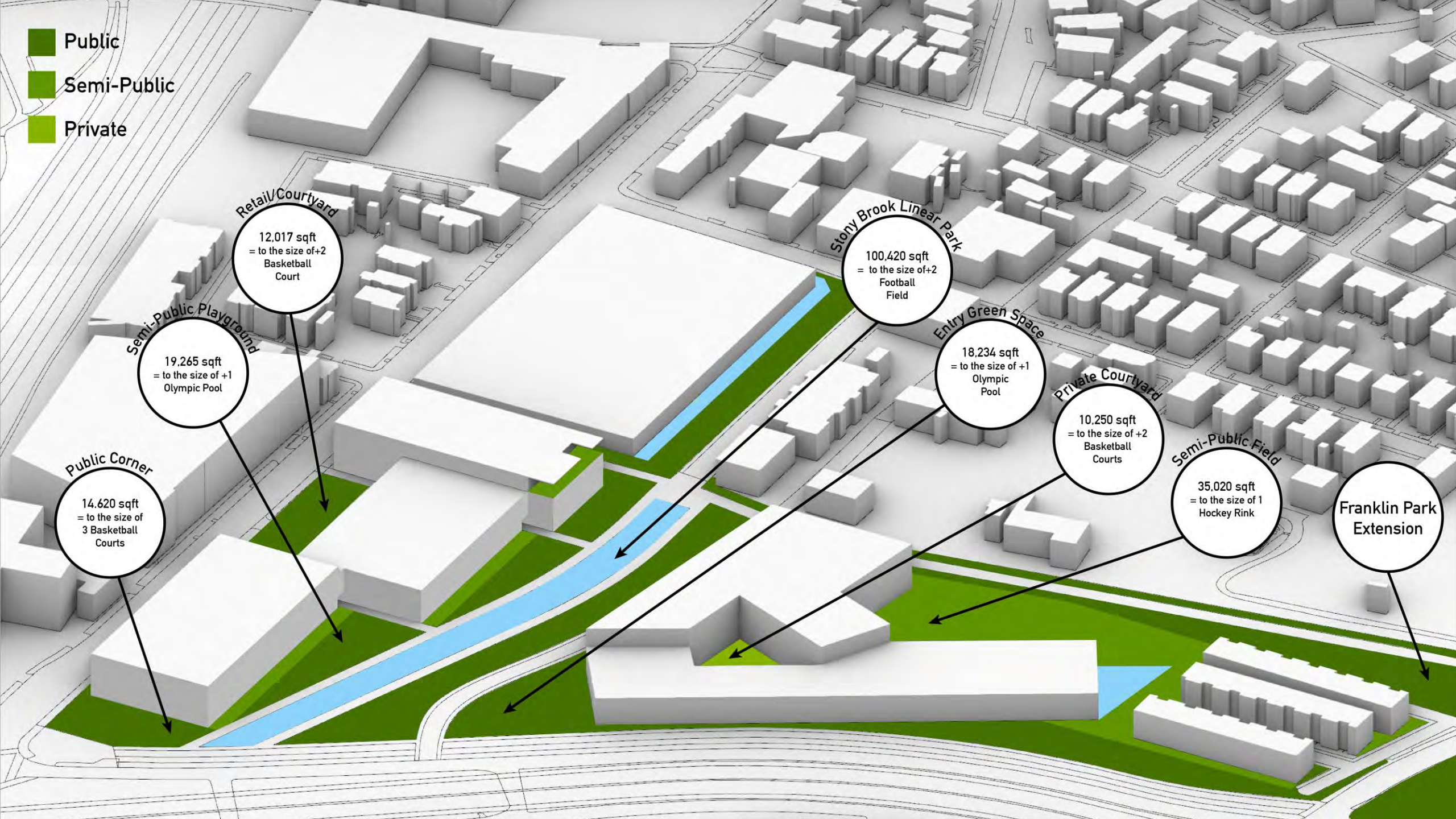
Residential
4 Stories
~ 700,000 sf

Housing for the Formally Homeless/ Health Clinic
5 Stories
~5000,000 sf

Housing for the Formally Homeless/ Health Clinic
3 Stories

Residential Units
3 Stories
~70,000 sf

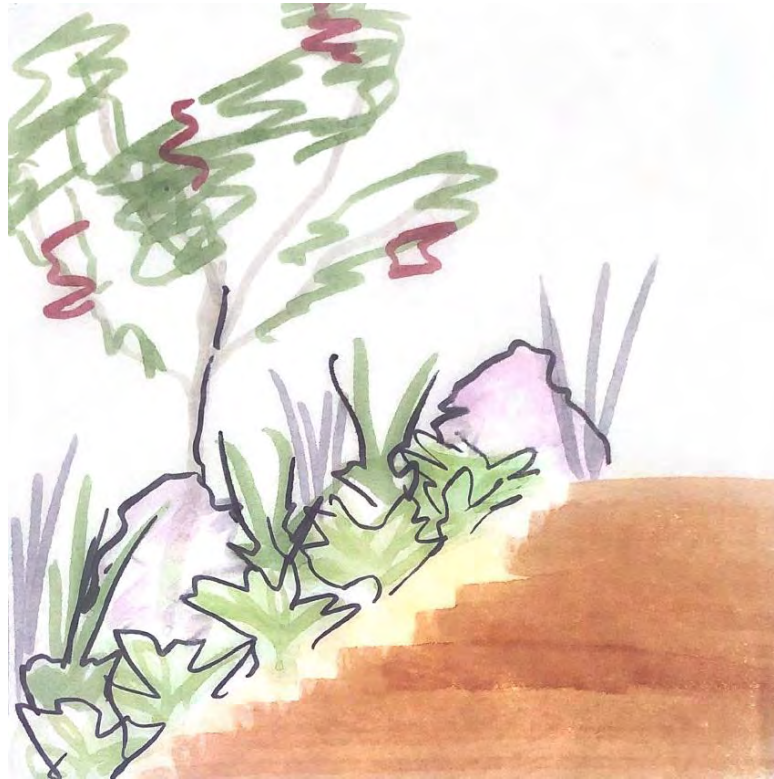
- Public
- Semi-Public
- Private





Landscaping Ideas?

- Use of permeable floor surfaces.
- Multilevel greenscape to foster curiosity + temporality
- Flowers + leaves at different times





Sidewalk Treatments

- Different sidewalks would allow for different scales of activity.
- Could act as a community hub, continuation of commercial space, or a green corridor.



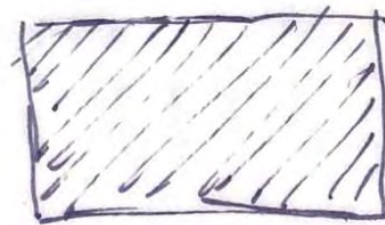
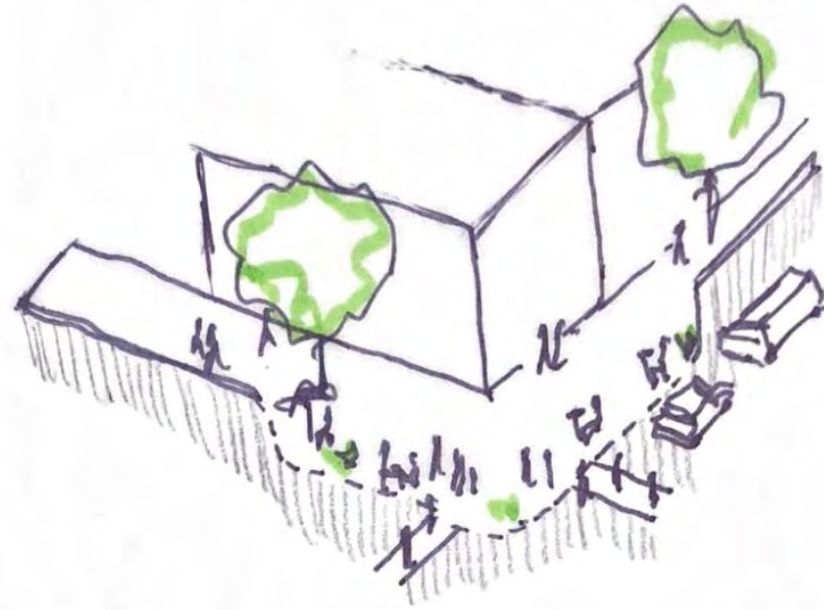
Porosity of Commercial Realm

- People feel able to enter the building + interact with the businesses
- It feels more welcoming
- Fosters community businesses?



Porosity of Commercial Realm

- The scale of urban block often blocks people from moving into spaces.
- How do we make these locations more accessible?



low
porosity
pathway



highly
porous pathways
that integrate
movement



MARANA AZ

→ **RICHMOND AMERICAN**
1.2 mi

↑ **MERITAGE HOMES**
.75 mi

← **D.R. HORTON**
3.7 mi

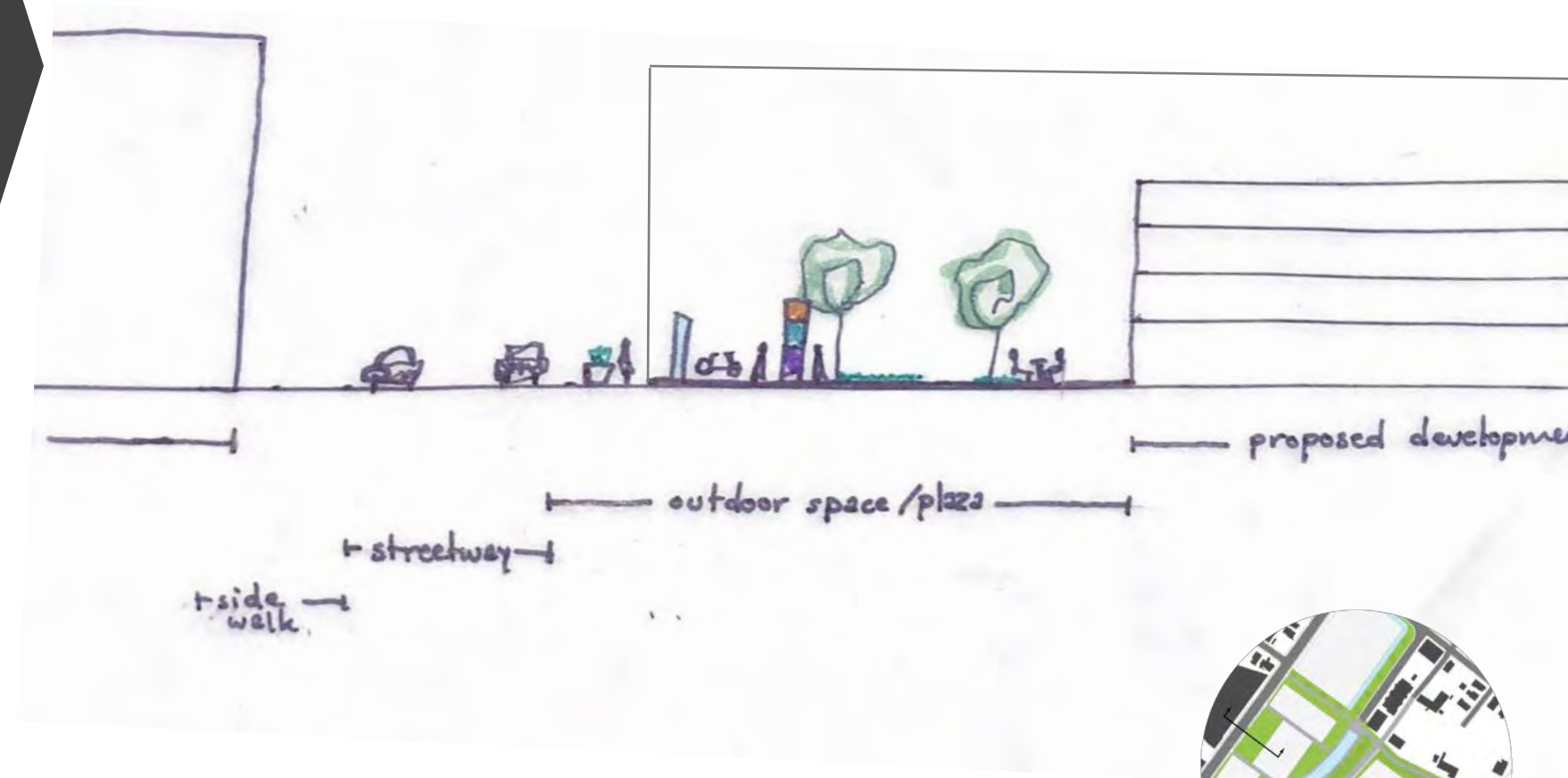
↻ **PULTE HOMES**
.5 mi

MARANA AZ

MARANA AZ

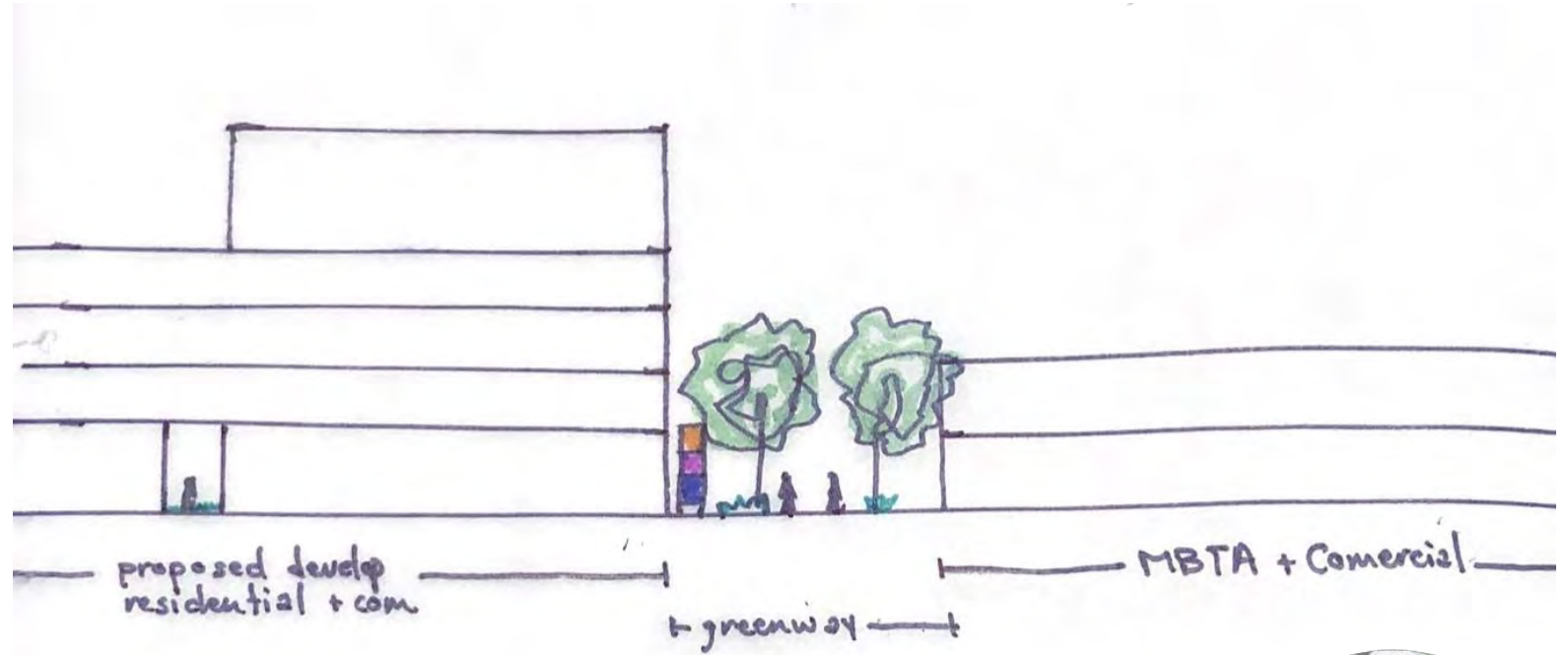
Section

- Plaza-like green space for congregation + infrastructure points (ie hubway or city info)
- Bike safe pathway
- Programmed commercial space



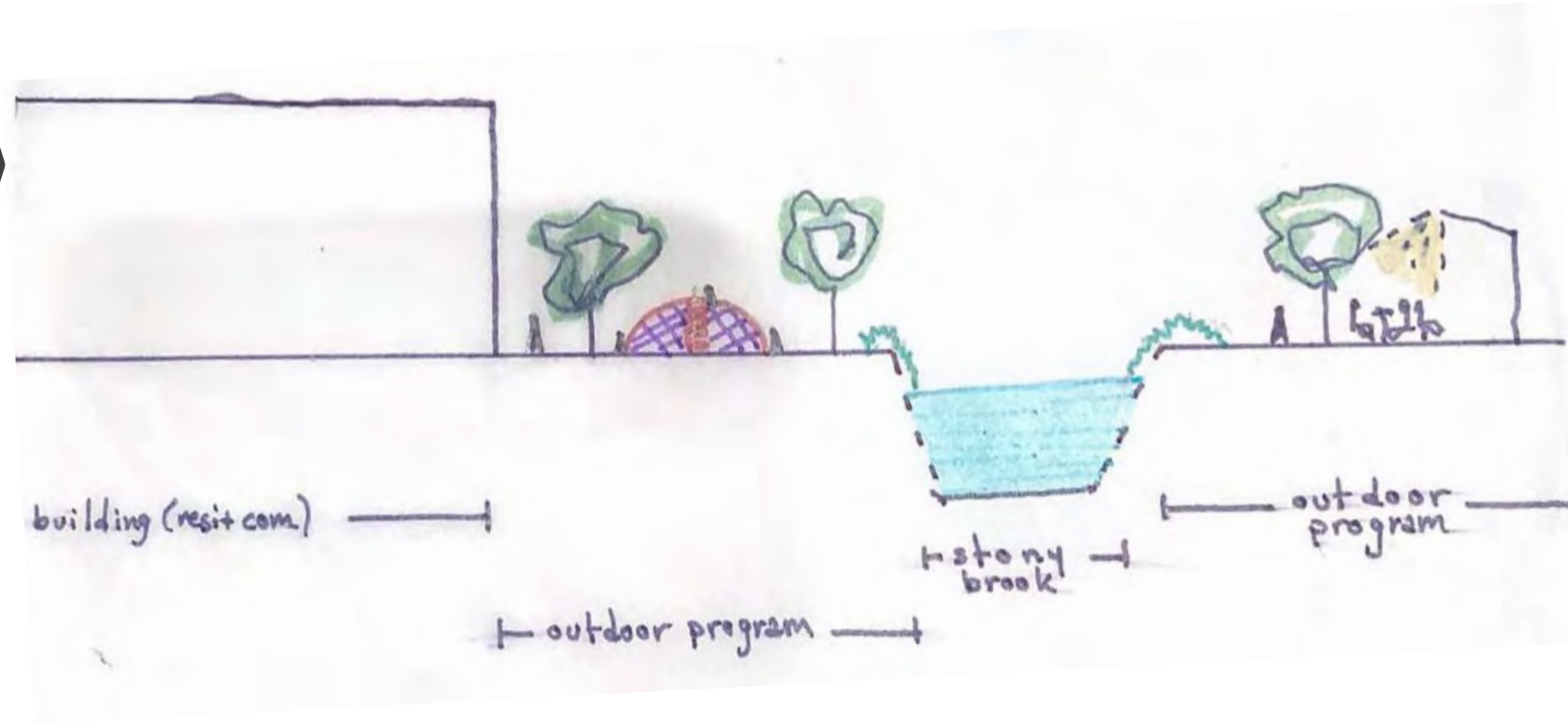
Section

- Greenway with focus on pedestrian + bike circulation
- Small alleyway between buildings



Section

- Multi-type programmed outdoor space
- Daylight stony brook
- High dense planting + permeable ground





Arborway Yard: Building Well-Being

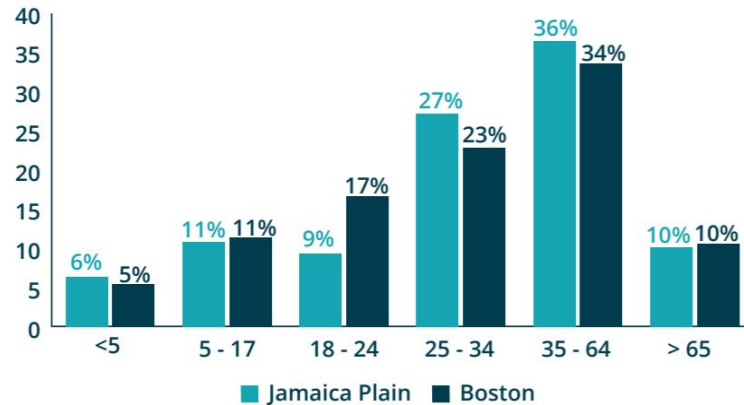
Katie-Li Walker, Marissa Eklund and Rachel Berman

Pre-Design Health Assessment & Existing Conditions

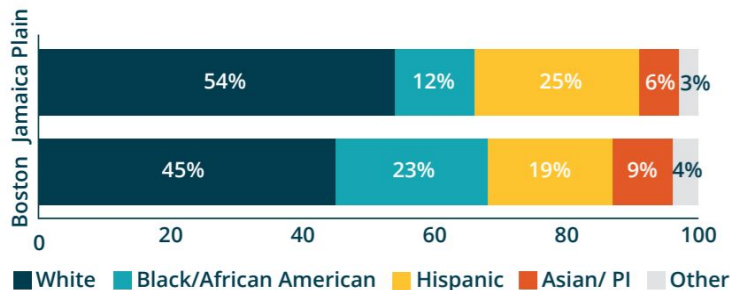
Neighborhood Profile:

- Population: 39,240
- Population density: 12,188 ppsm
- Average age: 35 y.o.
- Large Hispanic community (25%)
- Median income: \$32,41
- 55% of the population is b/w the ages of 25-64 y.o.
- High estimated asthma prevalence rates of 16%
- High mortality rate due to stroke & heart disease
- 34% of households do not own a motor vehicle

Jamaica Plain & Boston Residents by Age
2015



Jamaica Plain & Boston Residents by Race
2015

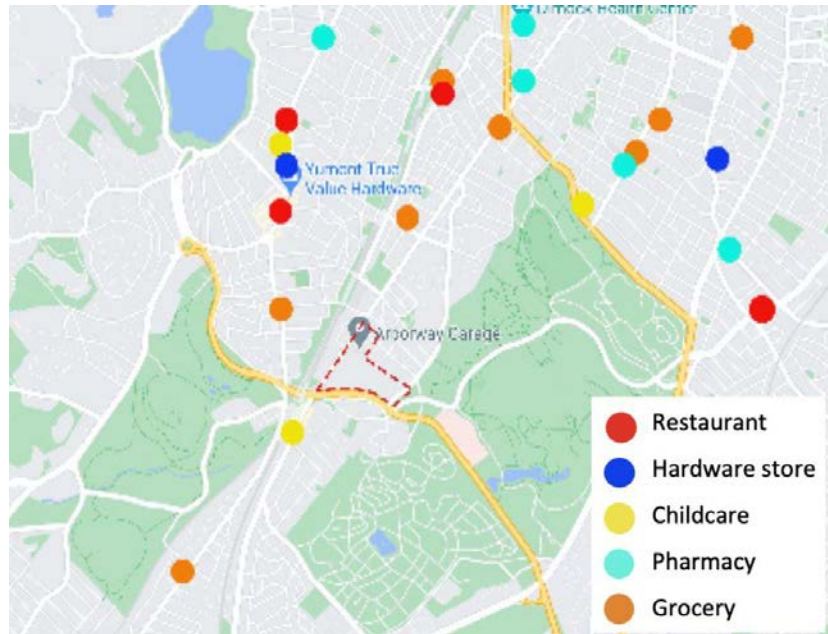
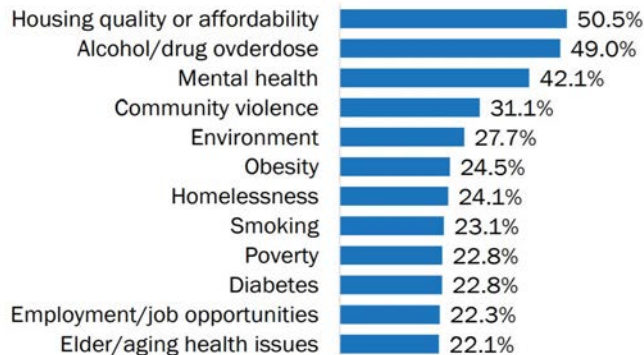


Pre-Design Health Assessment & Existing Conditions

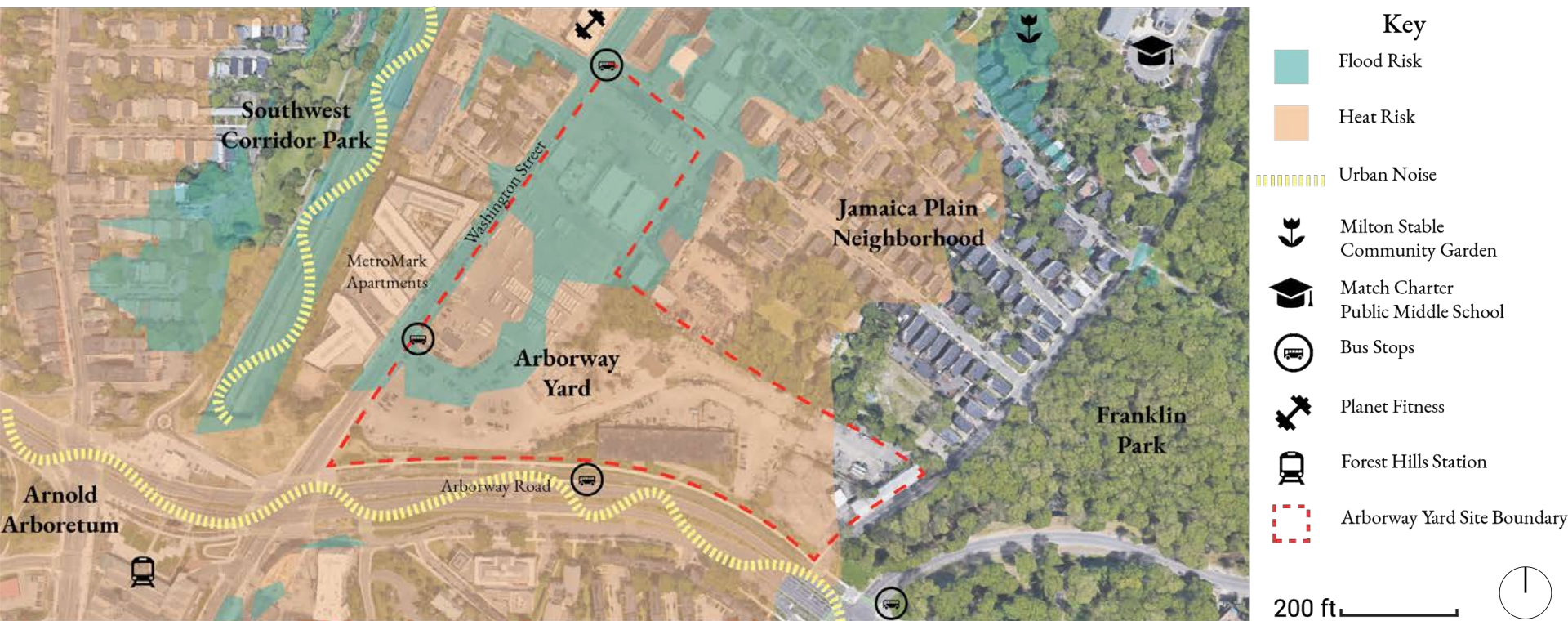
Neighborhood Health Concerns:

- 50% housing quality or affordability emerged as the top leading health concern
- Jamaica Plain reported a higher than Boston rate of suicide
- 51% of adults were reported obese or overweight
- Nearly 1 in 5 residents report being food insecure

Top Concerns in the Community that Affect their Health:



Pre-Design Health Assessment & Existing Conditions

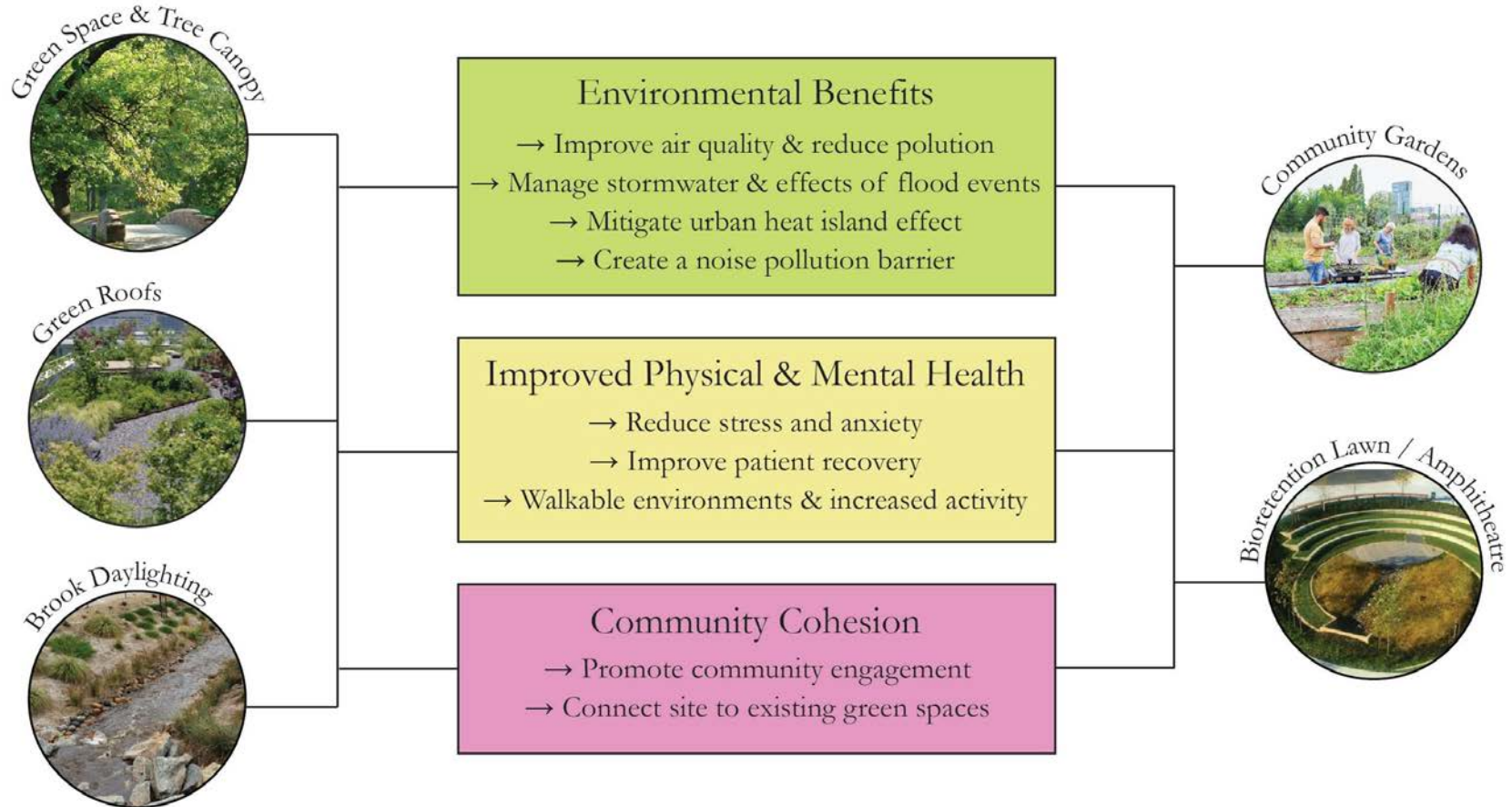


Potential Programs for the Site

- Mixed-Use
 - Daycare Center
 - Convenience Market
 - Community Center
 - Pharmacy
- Health Services
 - Homeless & Addiction Shelter
 - Psychiatric Facility
 - EMS Facility
- Open / Green Space
 - Community & Pollinator Garden
 - Public Playground/ Park
 - Bioretention Lawn / Green Amphitheater





How Healthy Design Strategies Contribute to Health



Proposal Plan Layout



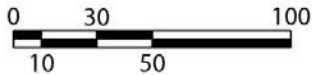
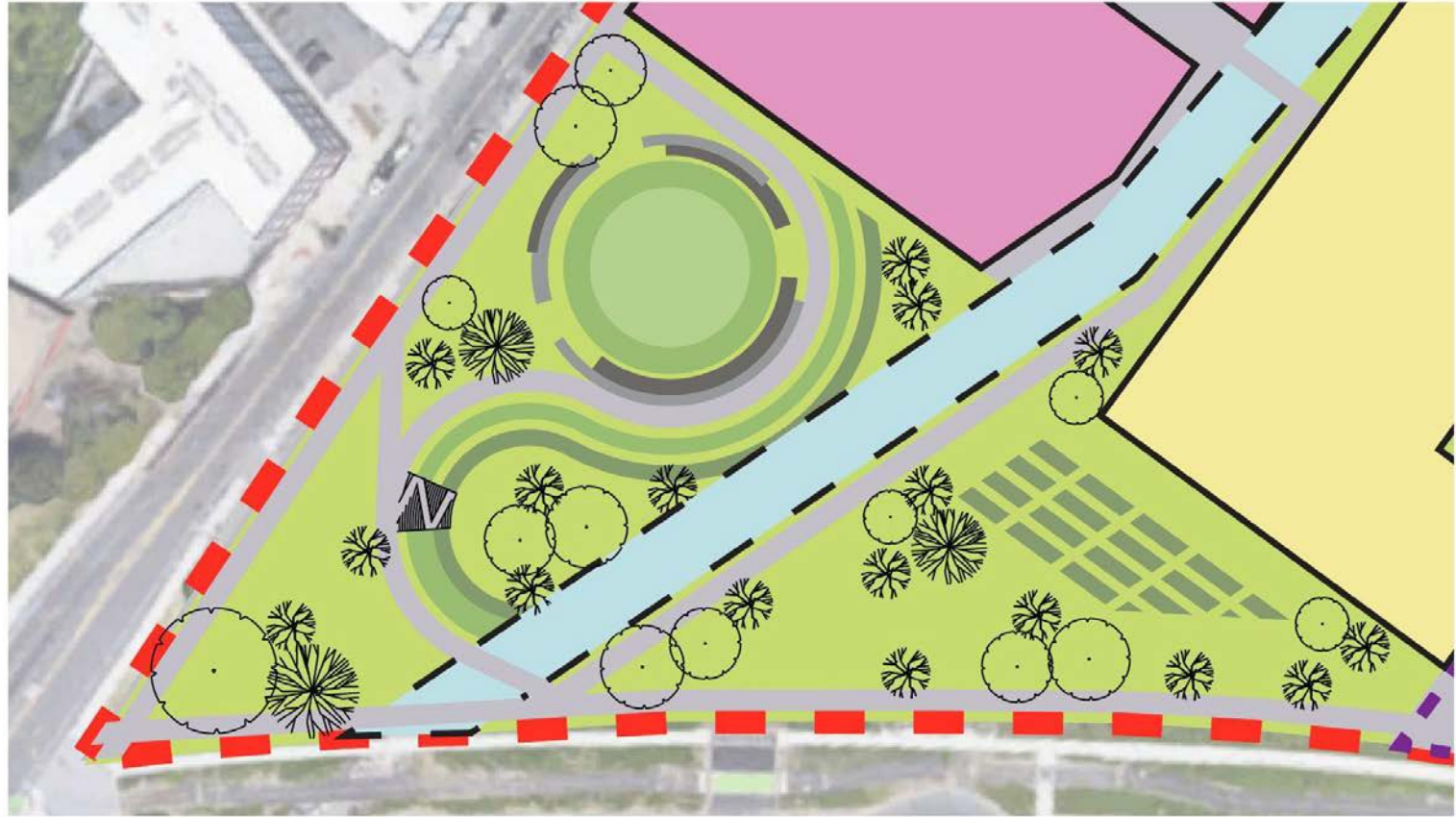
Scenario Key

-  Residential/Mixed-Use Development (422,031 SF)
-  Health/Supportive Services & Housing (190,414 SF)
-  MBTA Bus Facility (252,604 SF)
-  Stony Brook (13,257 SF)
-  Open/Green Space (154,678 SF)
-  Underground Bus Entrance/Exit
-  Site Boundary (335,802 SF)

200 ft 



A Closer Look | Green Space Programming



Massing Axonometric

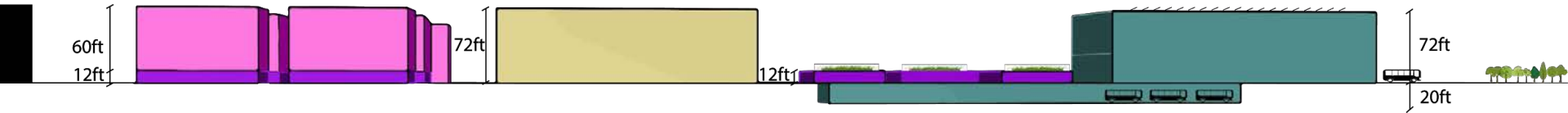


- Residential
- Mixed-Use
- Health/Supportive Services
- MBTA Bus Facility
- Open/Green Space
- Stony Brook

Section



- Residential
- Mixed-Use
- Health/Supportive Services
- MBTA Bus Facility
- Open/Green Space



Perspective View



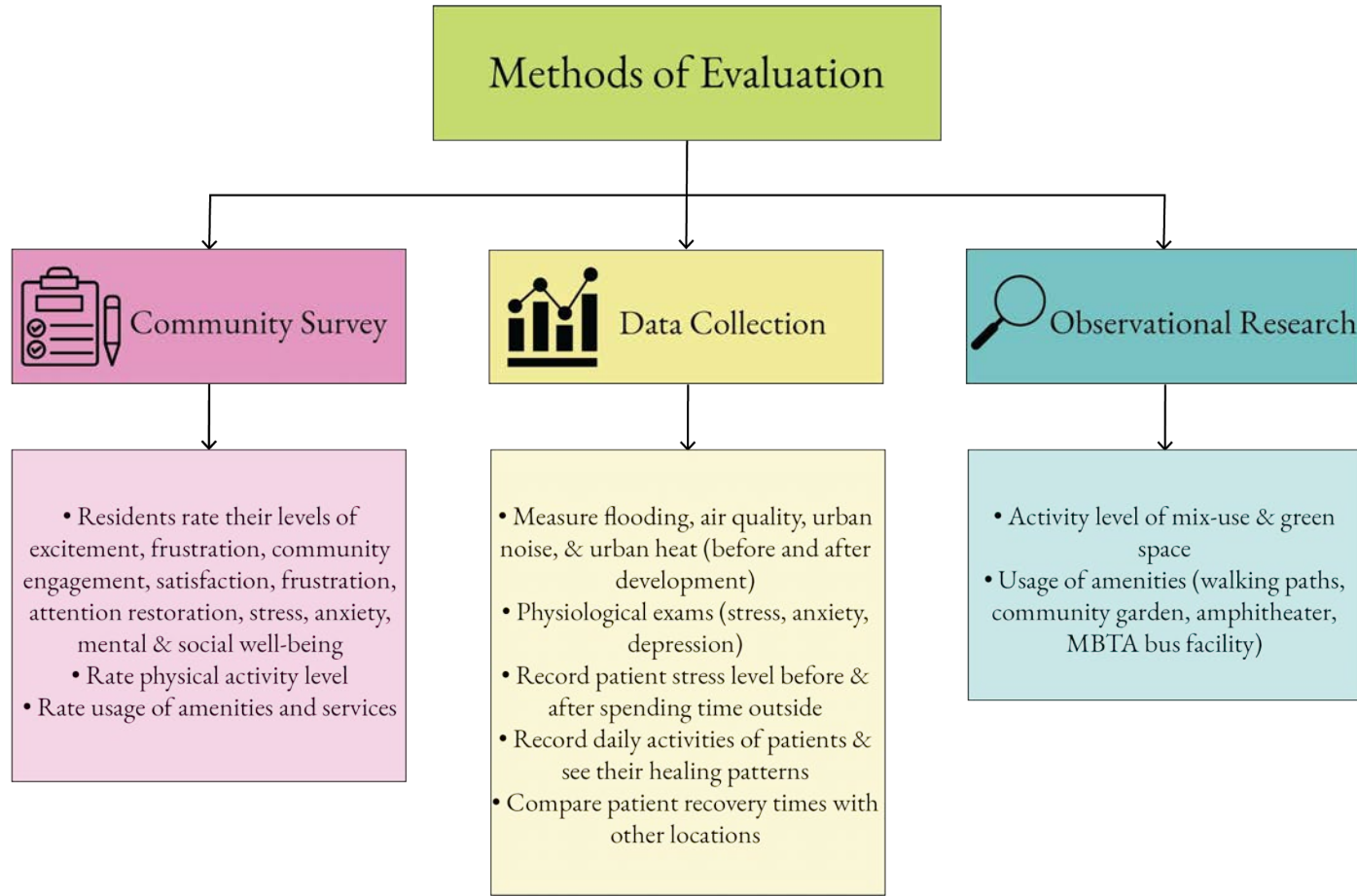
Perspective View



Perspective View



Monitoring Plan



An aerial photograph of a suburban area, likely in the Atlanta region, showing a complex highway interchange with multiple lanes and overpasses. The surrounding landscape includes residential neighborhoods with rows of houses, commercial areas with large parking lots and buildings, and green spaces with trees. The text "Thank You!" is overlaid in the center in a large, bold, black serif font.

Thank You!

Design Research References

- Carter, M., & Horwitz, P. (2014). Beyond Proximity: The importance of green Space Useability to Self-Reported Health. *EcoHealth*, 11(3), 322-332. doi:10.1007/s10393-014-0952-9
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- Eudy, L., & Jeffers, M. A. (2018). Zero-Emission Bus Evaluation Results: County connection battery electric buses. *FTA Research Report*. doi:10.2172/1488509
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- Jackson, L. E. (2003). The Relationship of Urban Design to Human Health and Condition. *Landscape and Urban Planning*, 64(4), 191-200. doi:10.1016/s0169-2046(02)00230-x
- Mao, Q., Wang, L., Guo, Q., Li, Y., Liu, M., & Xu, G. (2020). Evaluating cultural ecosystem services of urban Residential Green Spaces from the Perspective of Residents' Satisfaction With Green Space. *Frontiers in Public Health*, 8. doi:10.3389/fpubh.2020.00226
- Pope, D., Tisdall, R., Middleton, J., Verma, A., Van Ameijden, E., Birt, C., Bruce, N. (2015). Quality of and Access to Green Space in Relation to Psychological Distress: Results from a population-based cross-sectional study as part of the EURO-URHIS 2 project. *The European Journal of Public Health*. doi:10.1093/eurpub/ckv094

References

- Analysis of Best Use Options for Arborway Yard
- <http://www.bostonplans.org/getattachment/7987d9b4-193b-4749-8594-e41f1ae27719>
- https://www.cityofboston.gov/images_documents/Jamaica_Plain_Planning_District_Profile_tcm3-12993.pdf
- <https://www.cityofboston.gov/parks/pdfs/os3i.pdf>
- <https://www.brighamandwomensfaulkner.org/assets/Faulkner/about-bwfh/community-health/documents/bwfh-prioritization.pdf>
- https://www.bmc.org/sites/default/files/About_Us/Commitment_to_Our_Community/field_Attachments/BMC-Community-HealthNeedsAssessment-HNA.pdf
- <https://www.brighamandwomens.org/assets/BWH/about-bwh/pdfs/2016-CHNA-Report.pdf>



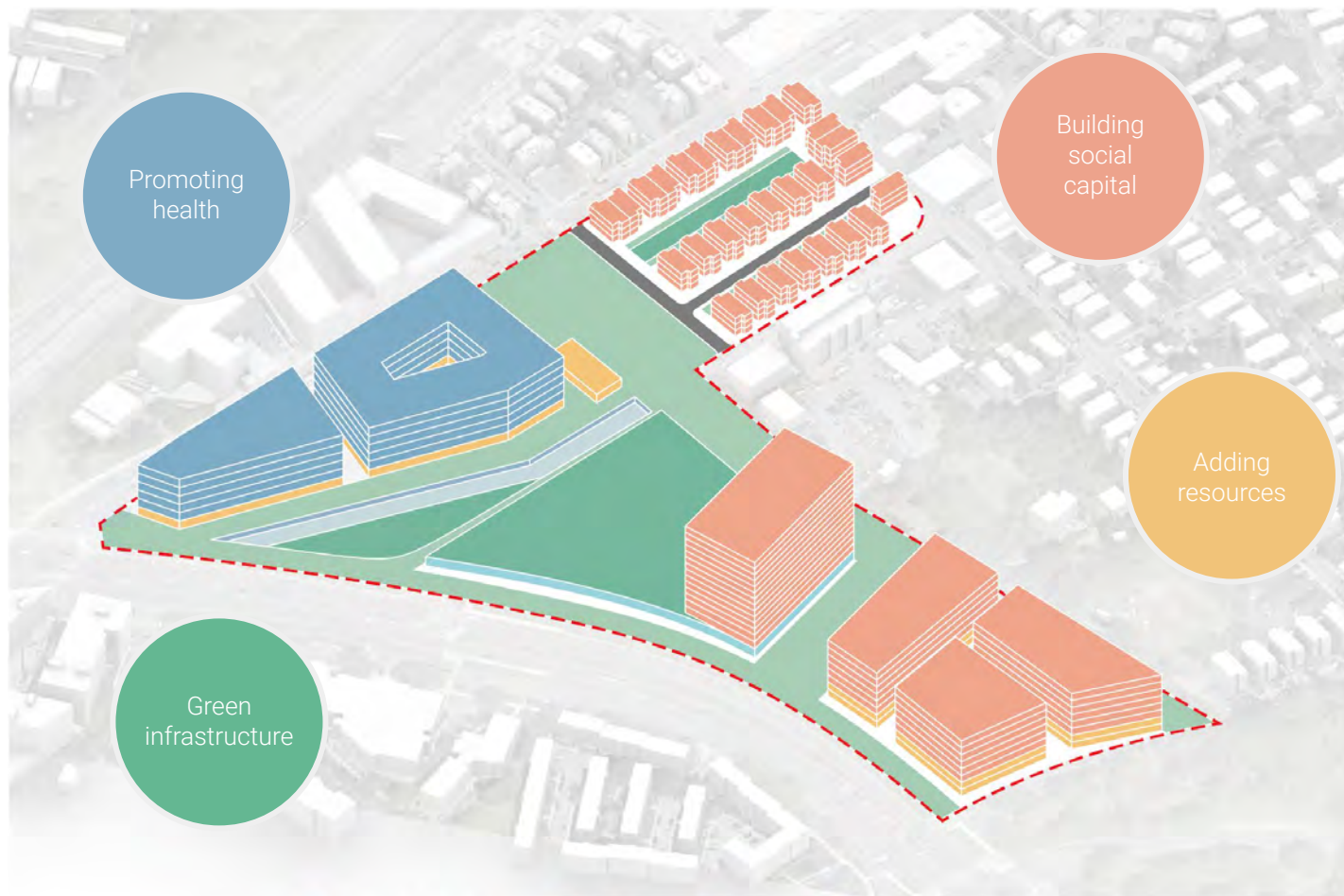
Arborway Yard

Building Well-Being

Designing for Health
Assignment 3

Katerie Boursiquot | Jazmin Cabrera | Tingsong Ou





Promoting health

Building social capital

Adding resources

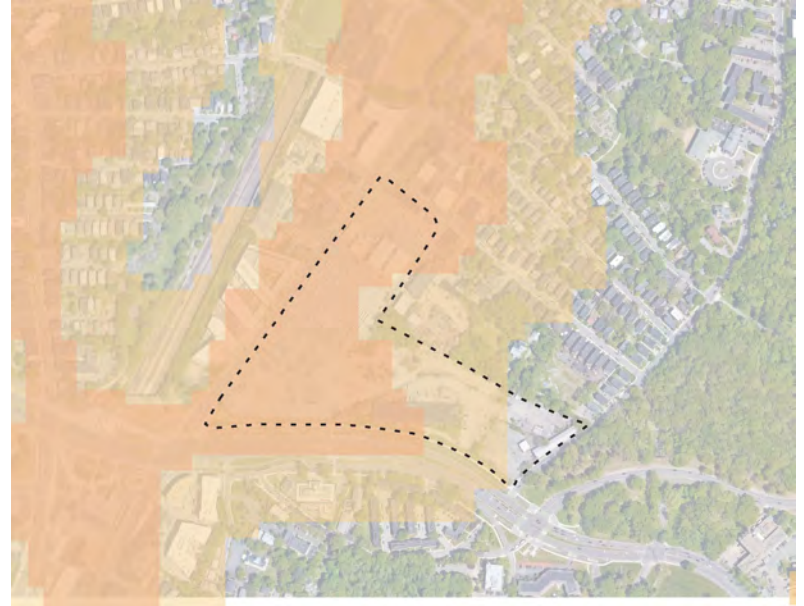
Green infrastructure

Supportive Housing Service Residential Units BEB Facility Commercial

In danger of...



Stormwater flooding

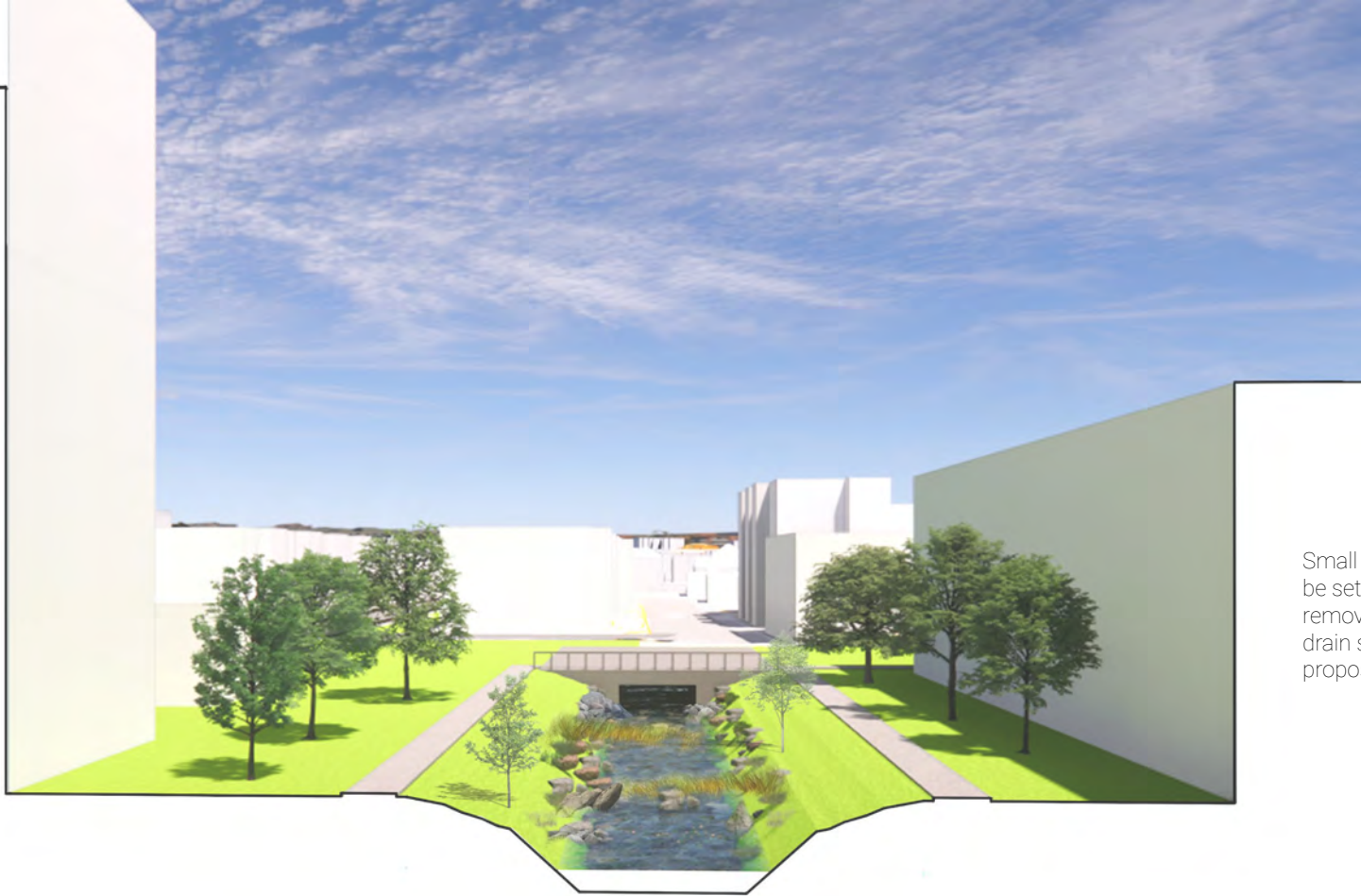


Land surface temperature

Green Infrastructure



Adding Bioswales to the triple decker neighborhood to help control stormwater flooding. Could be implemented through sidewalks by street grid.



Small topographic measures can be set in place along with the removal of impervious surfaces to drain stormwater flooding into the proposed daylight creek.



Circulation



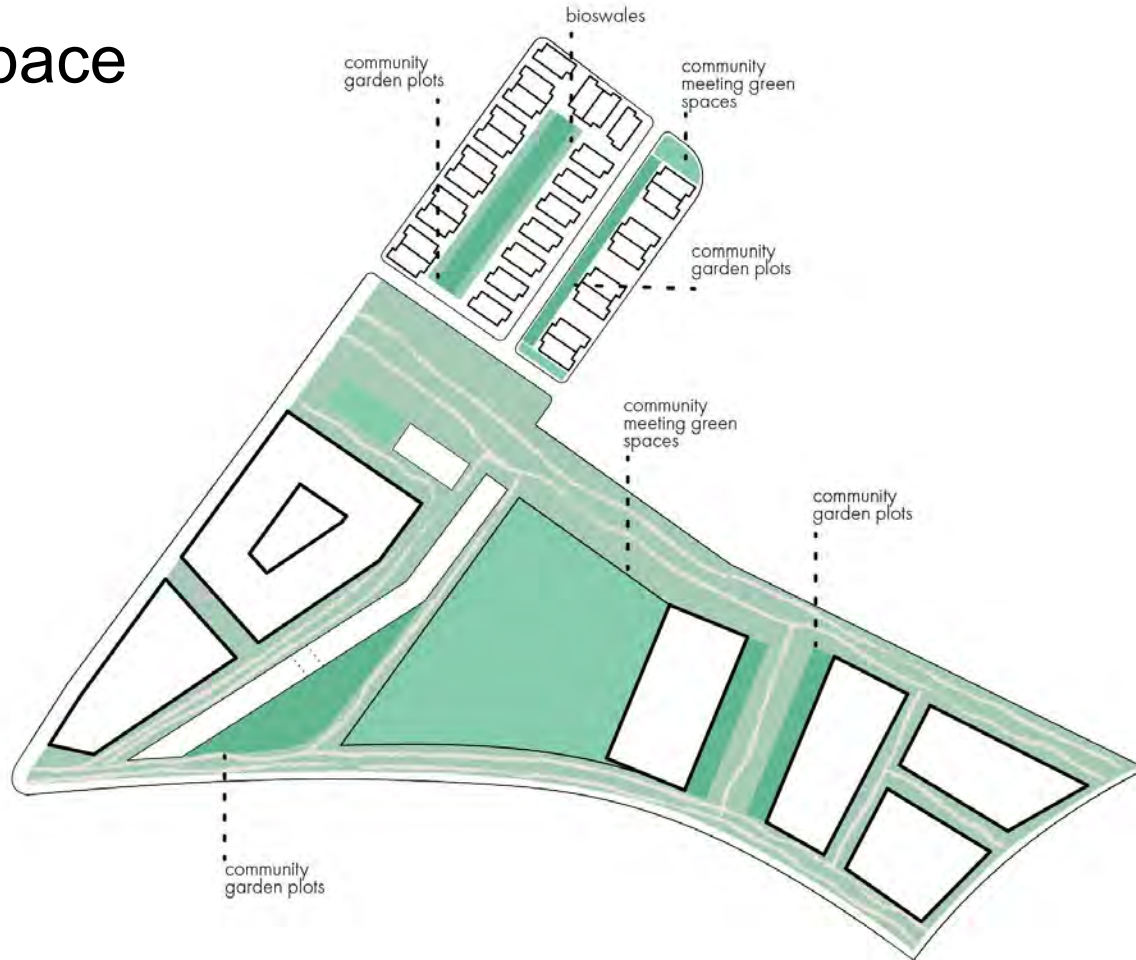
Green Space + Social Capital



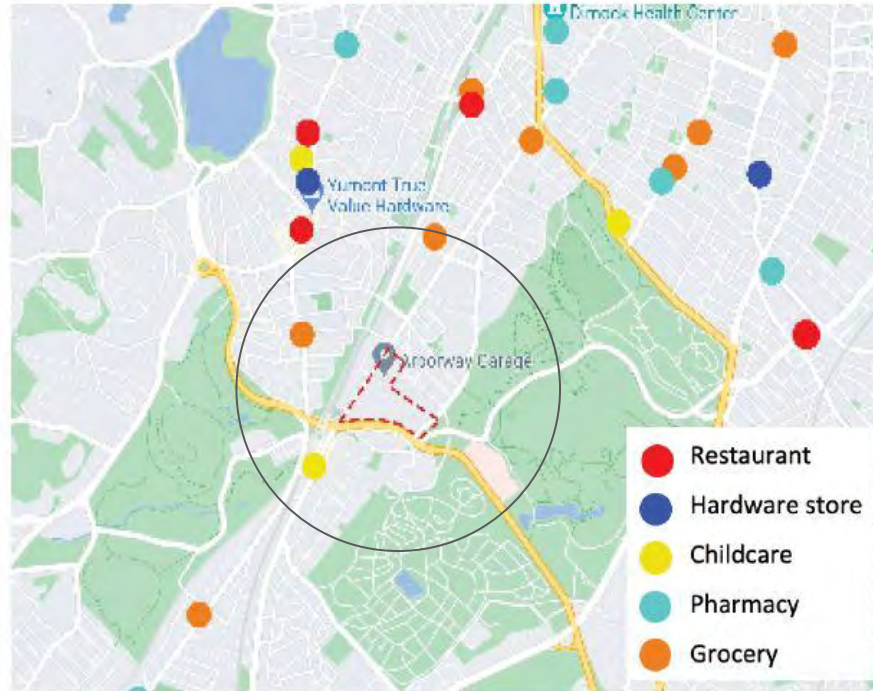
The findings underline the importance of social wellbeing as predictors of stress and, to a lesser extent, general health



Green Space



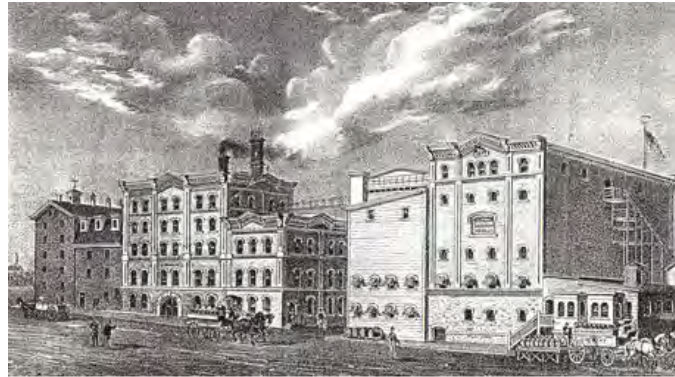
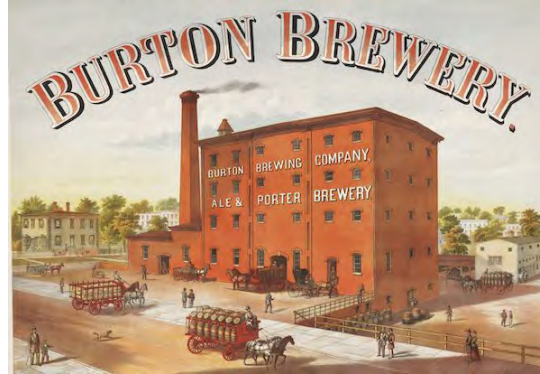
A walkable neighborhood?



Adding a Pharmacy and Hardware Store will not only give Arborway Yard needed resources but also the community surrounding it.

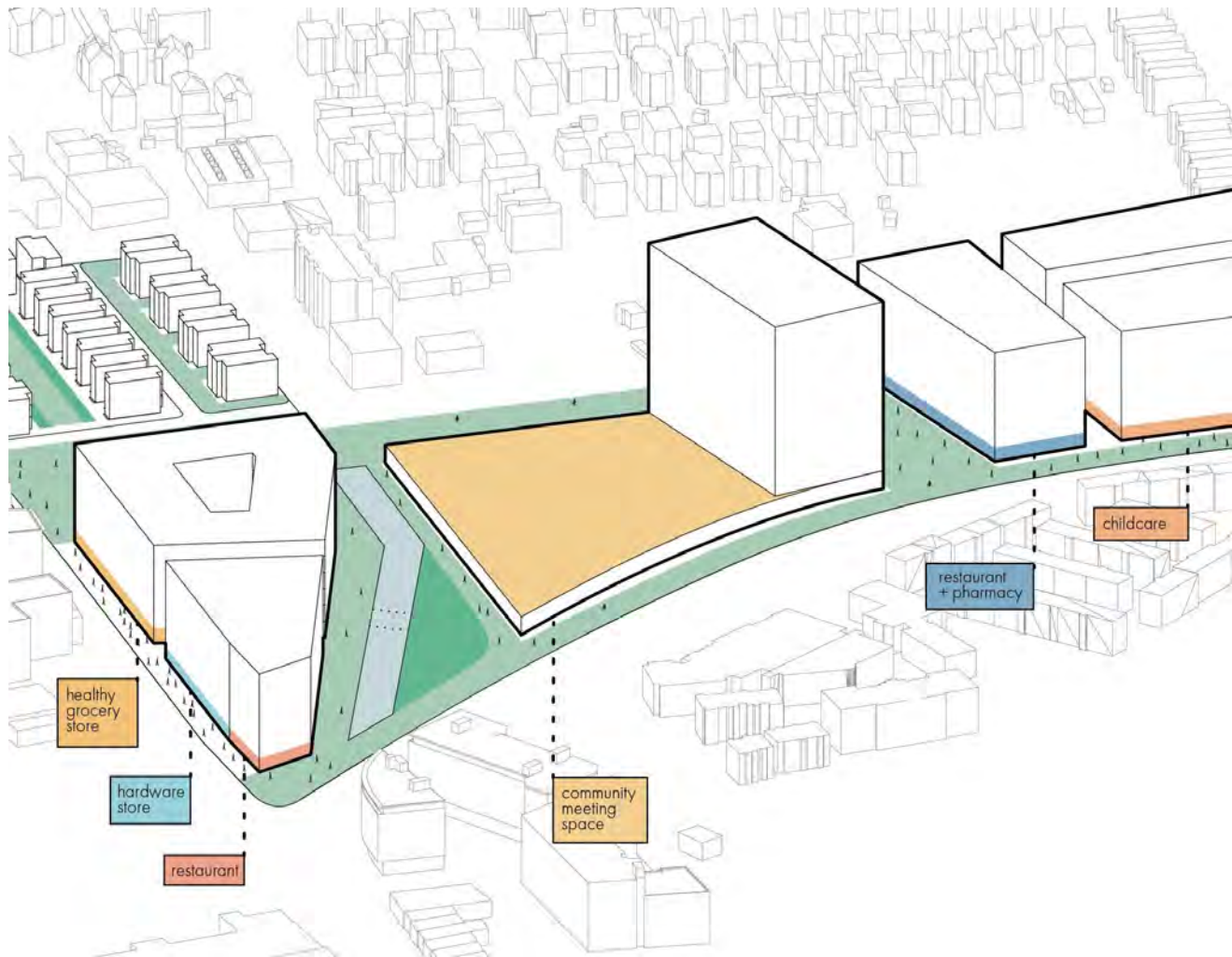
Picture 1. Source: Google Maps

Brewery



G. F. Burkhardt's Ale & Lager Brewery, 1883 From *Western Brewer*





Buildings



One of our stakeholders, MBTA, requires a large portion of the site to be the Battery Electronic Bus facility. Thus we can have limited lands for green space, housing, and supportive service.

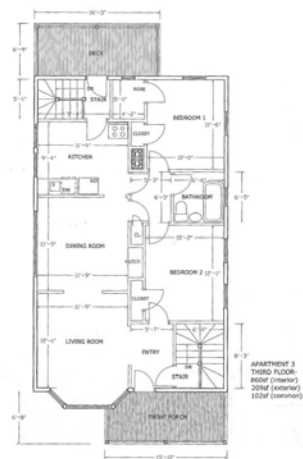
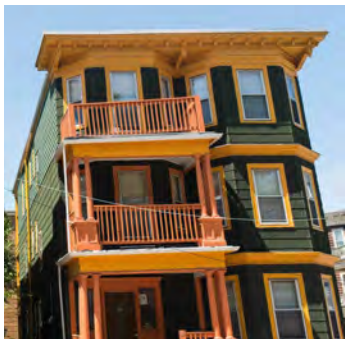
Sources: FHII (2008), MBTA CNG Bus Facility Design (2012)



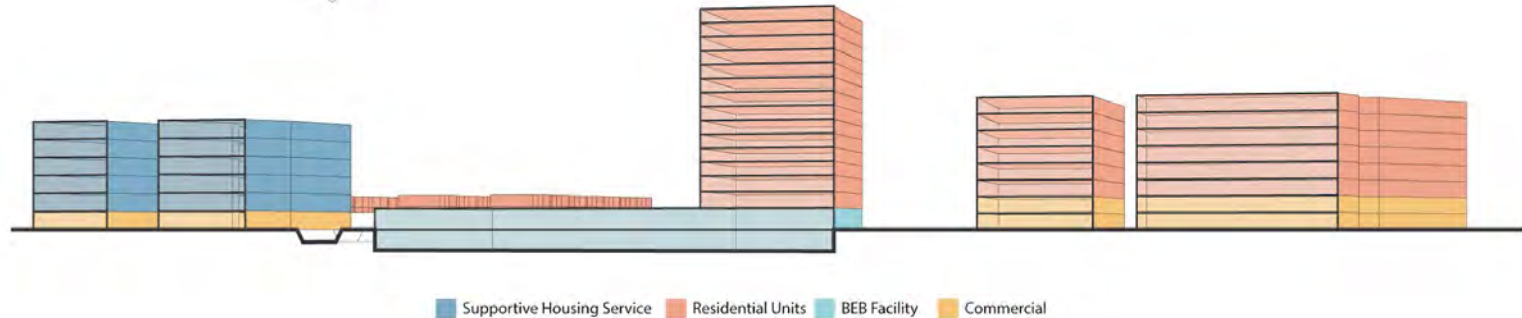
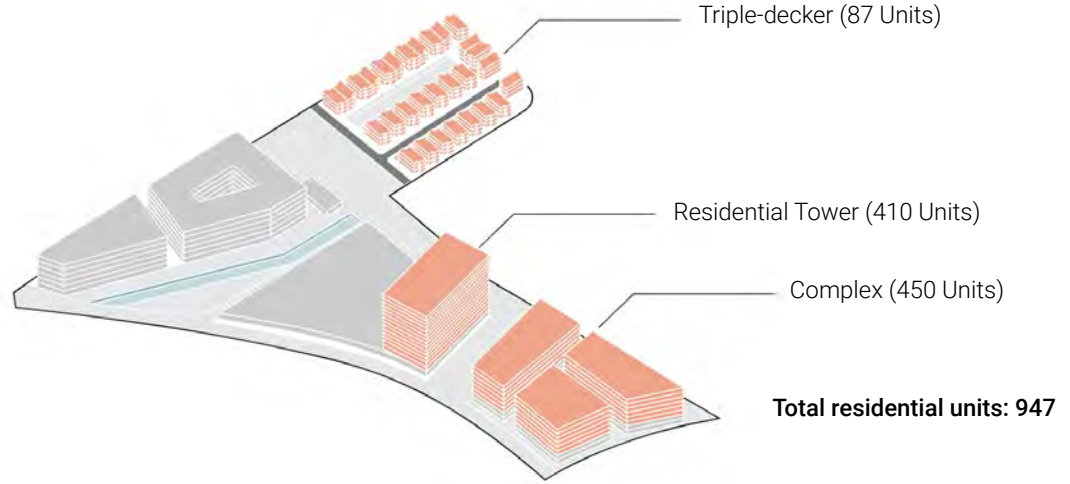
Affordable housing

<https://cohhio.org/report-shows-gap-in-affordable-housing-in-ohio/>

The triple-decker layout makes our project better blend into the surrounding fabric.

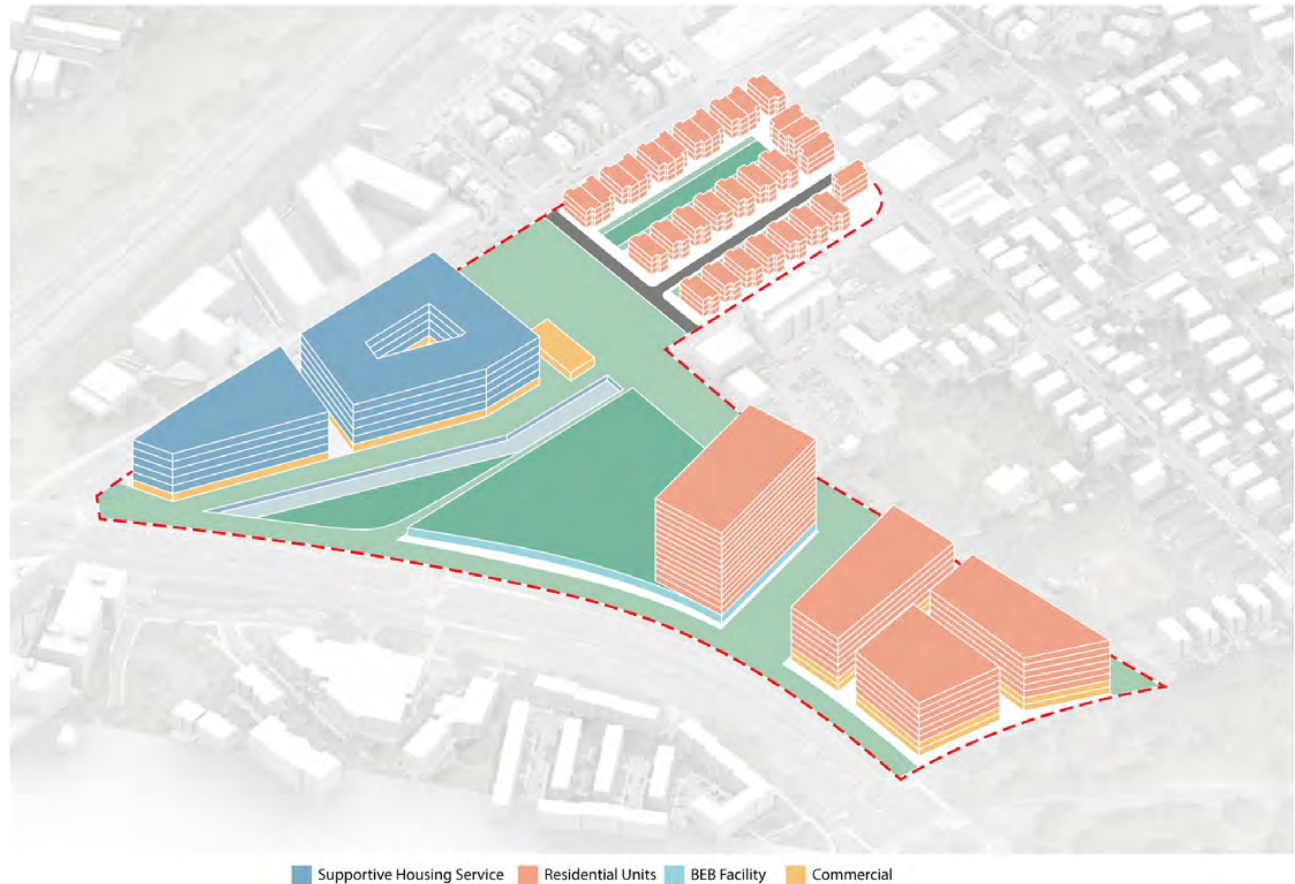


The two-story half-underground bus facility layout reduces this program's footprint, endows the surrounding community more space for affordable houses, greenaries, and community services.



- **Complex (8F):**
 - Commercial: 3.67
 - Residential: 11.02 (450 Units)
- **Complex Tower (15F):**
 - Residential: 9.50; (410 Units)
- **Triple-decker (3F):**
 - Total Area: 3.22; (87 Units)
- **Bus Facility (1F and 1UG):**
 - Total Area: 5.84;
- **Supportive Housing Service (6F):**
 - Commercial: 2.01;
 - Shattuck: 10.07;

Total Residential Units: 947



Community Feedback



SURVEYS



SELF-REPORTED STRESS
LEVELS



NEIGHBORHOOD HEALTH
DATA

Arborway Yard Design Proposal

Evan Maras & Brian Contois
ARCH 6340

A dark blue diagonal gradient bar that starts from the bottom left corner and extends towards the top right corner, covering the lower half of the slide.

The Neighborhood

- Jamaica Plain
 - Health
 - Transportation methods
 - 63.5% take car to work
 - 15.5% take the bus
 - 9.2% bike
 - 8.8% walk
 - Households receiving Supplemental Nutrition Assistance: 13%
 - Below Poverty Line: 18.3%
 - Mental Health:
 - Persistent Sadness: 10.7%
 - Persistent Anxiety: 22%
 - Mental Health Hospitalizations: 76.3/10,000
 - Open Space: 37.2%
 - Walk Score: 72-83
 - Asthma Emergency Department Visits: 108.3/10,000
 - Uninsured: 3.4%
 - Adults Getting Enough Physical Activity: 26%

The Neighborhood

- Roxbury
 - Health
 - Transportation methods
 - 54% take car to work
 - 34% take the bus
 - 2.3% bike
 - 8.4% walk
 - Households receiving Supplemental Nutrition Assistance: 33.1%
 - Below Poverty Line: 36.2%
 - Mental Health:
 - Persistent Sadness: 13.3%
 - Persistent Anxiety: 26.4%
 - Mental Health Hospitalizations: 78.2/10,000
 - Open Space: 9.2%
 - Walk Score: 72-83
 - Asthma Emergency Department Visits: 256.8/10,000
 - Uninsured: 4.7%
 - Adults Getting Enough Physical Activity: 19.8%

Health Resources

- Between Franklin Park and Arnold Arboretum, there is a solid amount of green space in the nearby area
- Two major hospitals in close proximity
- Decently walkable neighborhood although it could be better
- Planet Fitness is right in the neighborhood
- Appears to be a track and field but it may be privately owned by the school its on
- 10 schools within walkable distance

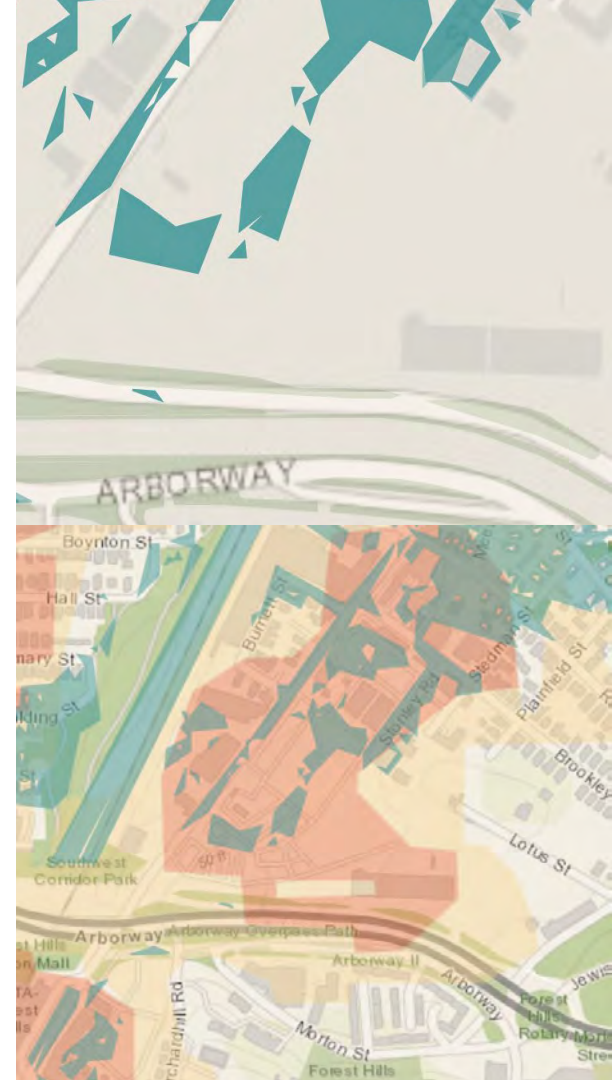
Lack of Health Resources

- Not many walking trails besides the Arboretum which is across busy road
- No public amenities such as playgrounds
- No connection to other green spaces due to a busy main road
- Lack of bike trails or paths
- Not a lot of open space in Roxbury
- No major grocery store in area
- Jamaica Plain considered a food desert
- No major sense of place
- Not scaled to the human at all
 - Can lead to less walking and outdoor activity as it is not incentivized
- Tree canopy on the site is lacking
- Stormwater management is poor
- Heat island effect is an issue

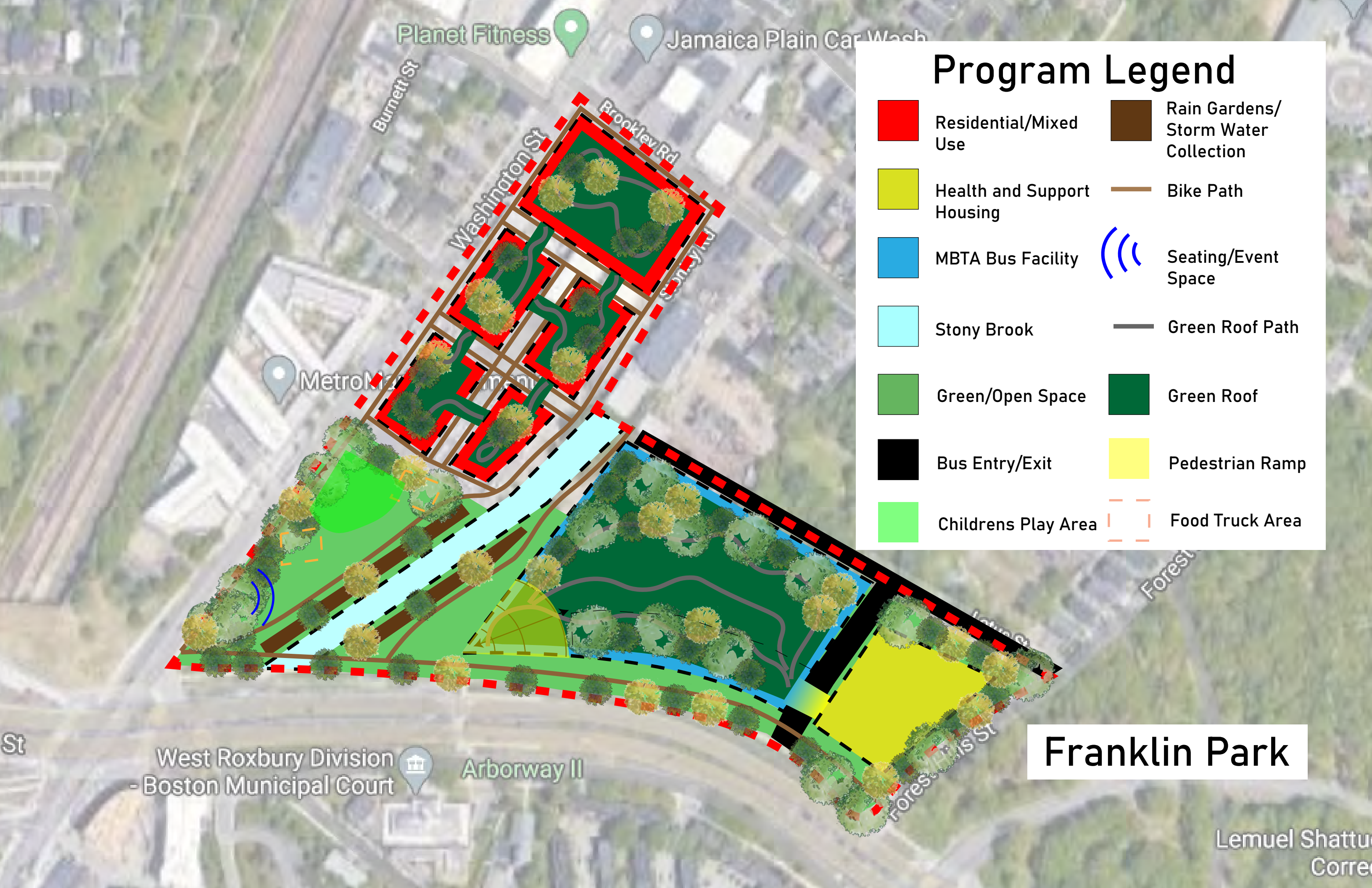
Site Research/Class Information Impacts

- Environmental Research
 - Flood Impact area
 - Heat Risk Zone
- Health Resources
 - Lack of health resources in neighborhood
- Neighborhood Demographic
 - Health habits
- Transportation Trends
- Mental Health Impact from Green space
- Social Impact from Green space

Storm Water Flooding



Heat Risk Zone



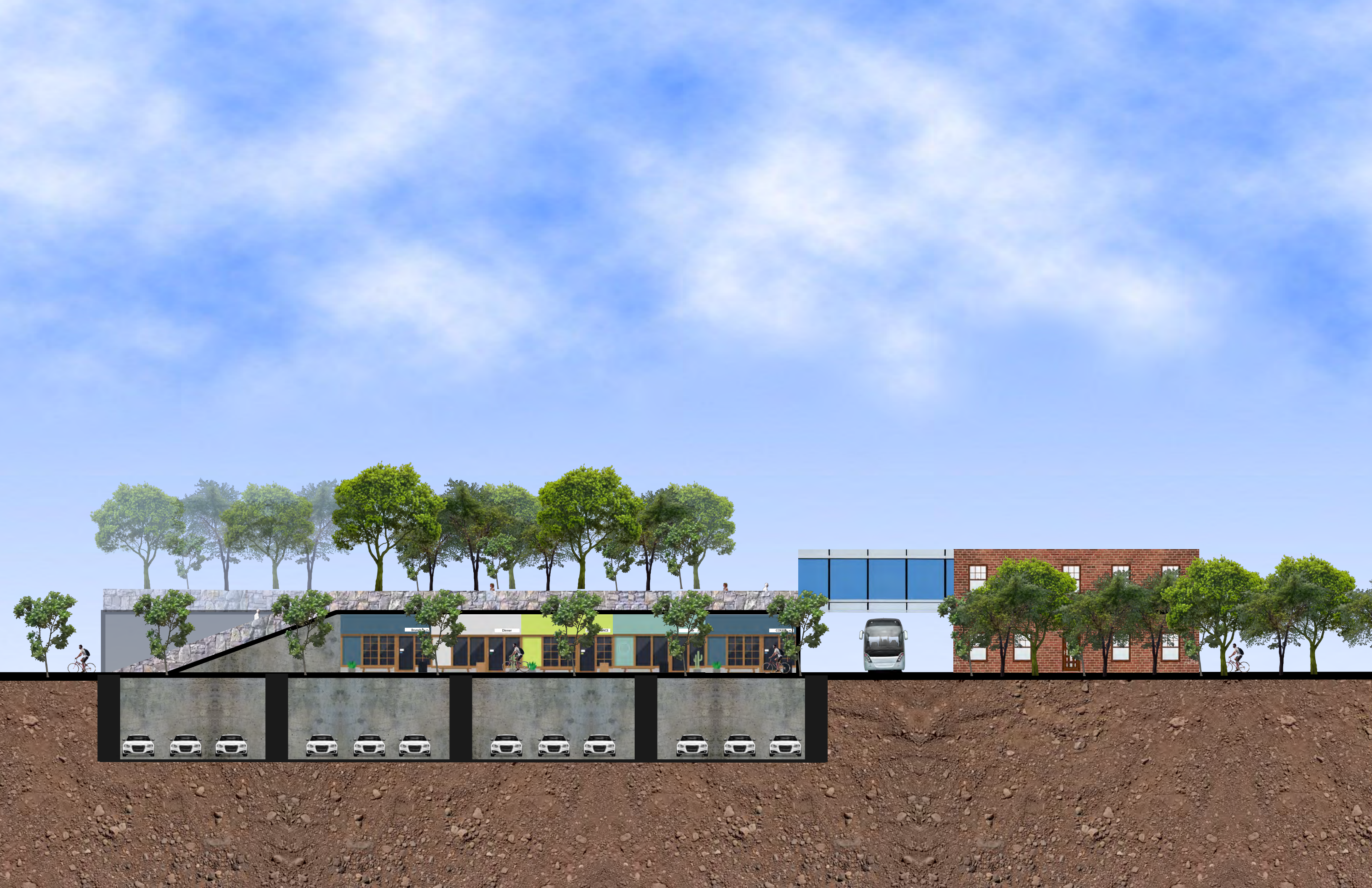
Program Legend

- | | |
|--|--|
|  Residential/Mixed Use |  Rain Gardens/ Storm Water Collection |
|  Health and Support Housing |  Bike Path |
|  MBTA Bus Facility |  Seating/Event Space |
|  Stony Brook |  Green Roof Path |
|  Green/Open Space |  Green Roof |
|  Bus Entry/Exit |  Pedestrian Ramp |
|  Childrens Play Area |  Food Truck Area |

Franklin Park



Washington St Elevation



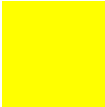
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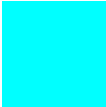
Residential/Retail



MBTA Bus/Retail



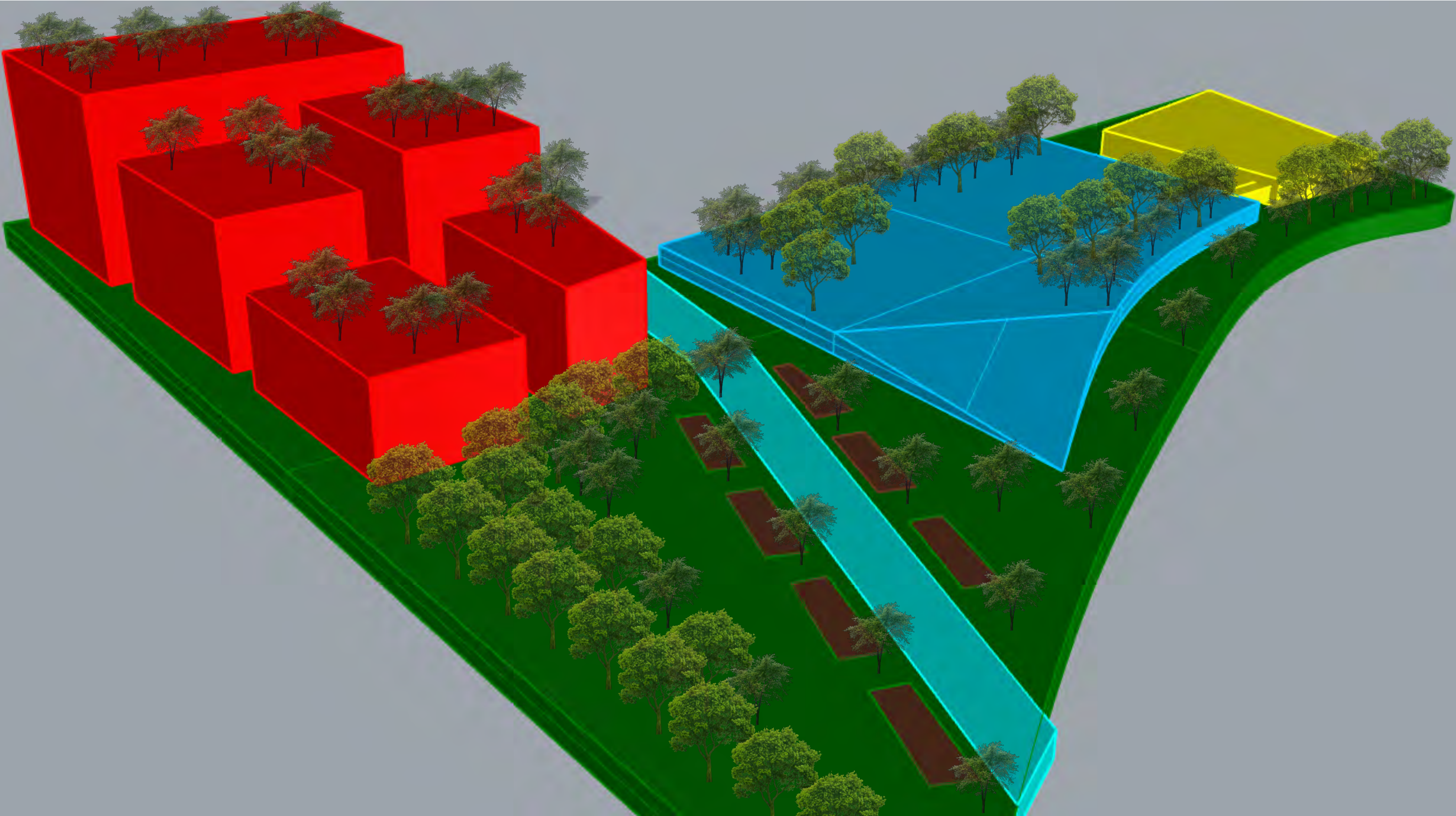
Health & Support
Housing



Stony Brook



Rain Gardens/Storm Water
Collection



Monitoring Plan

- Conduct interviews with locals every 6 months
 - Make sure everything is working as intended and if anything needs maintenance or repair
 - What about the green spaces are working and what is not?
- Ask residents of the health and support housing facility if they are able to enjoy the green roof over the MBTA
 - How often do they use it?
 - How do they feel before and after?
 - How easy is it to access and use?

Resources

- https://www.cityofboston.gov/images_documents/Jamaica_Plain_Planning_District_Profile_tcm3-12993.pdf
- <https://www.point2homes.com/US/Neighborhood/MA/Boston/Jamaica-Plain-Demographics.html>
- https://bphc.org/healthdata/health-of-boston-report/Documents/5_C2_SDH_16-17_HOB_final-5.pdf
- https://www.cityofboston.gov/Images_Documents/Roxbury_Planning_District_Profile_tcm3-12996.pdf
- <https://www.point2homes.com/US/Neighborhood/MA/Boston/Roxbury-Demographics.html><https://www.point2homes.com/US/Neighborhood/MA/Boston/Roxbury-Demographics.html>
- <https://bphc.org/healthdata/health-of-boston-report/Pages/Health-of-Boston-Report.aspx>
- http://sites.tufts.edu/gis/files/2013/02/Lawrence_Kelly.pdf
- <https://storymaps.arcgis.com/stories/1548beb5360e48648a43a595239fe3c5>
- <https://boston.maps.arcgis.com/apps/View/index.html?appid=7a599ab2ebad43d68adabc9a9e0e6&extent=-71.1583,42.2897,-70.9309,42.4060>