

THE QUILT

Weaving together community, ecology and connectivity.

TEAM: 2023 - 8514



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DEEP MAP OF NORTH CHARLESTON AND LOWCOUNTRY REGION



MARKET RESEARCH

GROWING POPULATION

- **>20%** metro area **population growth** over the past two decades (U.S. Census)
- **Over 40 people** are moving to the Charleston area **per day** (Charleston Regional Development Alliance)
- 2020 Charleston metro population of 800k matches a 2003 Clemson University study projecting this would be the 2030 population

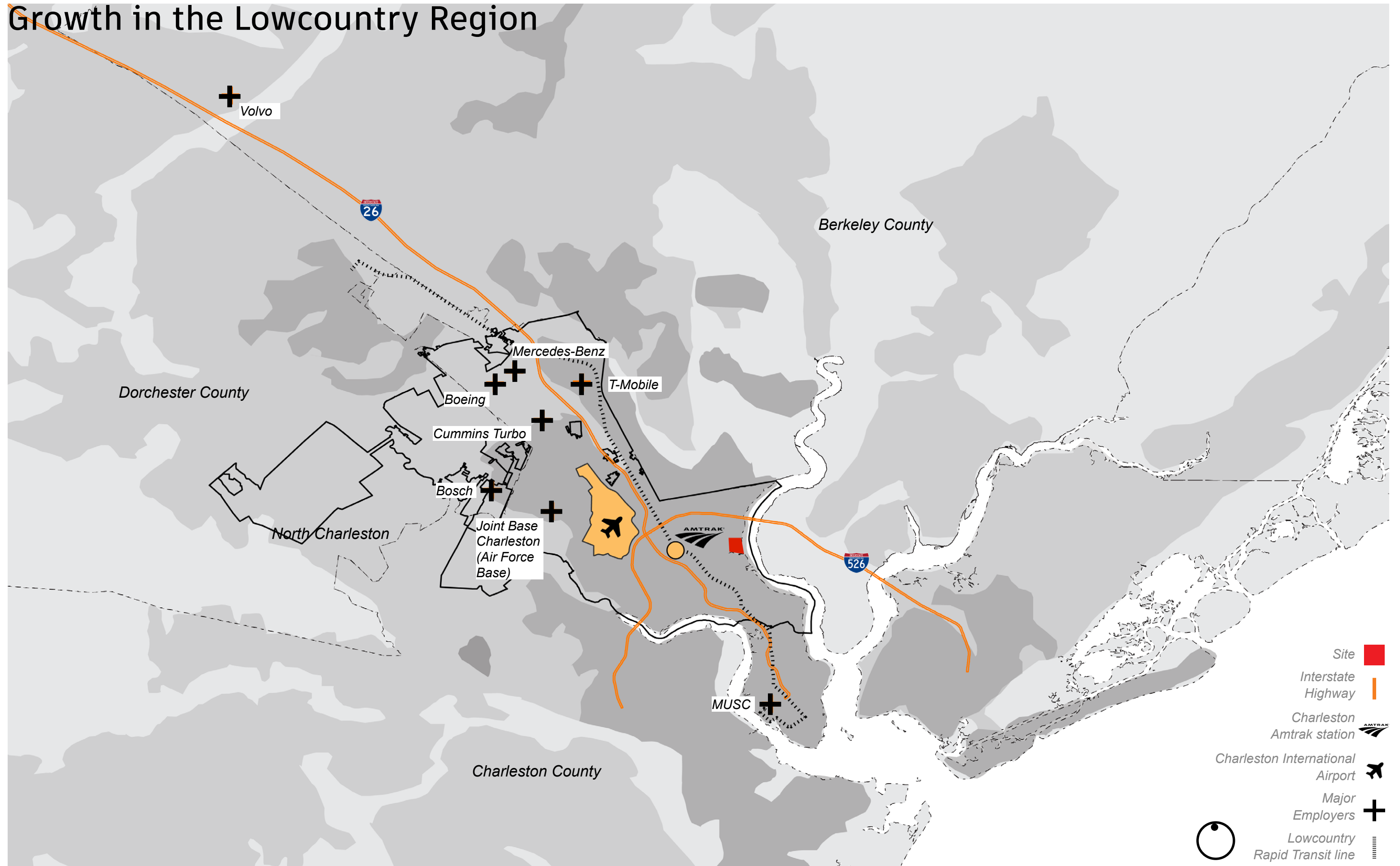
INCREASING JOB OPPORTUNITIES

- **5.9% job growth** rate in the Charleston metro from Dec 2021 to Dec 2022 (U.S. Bureau of Labor Statistics)
- **Consistent** 4Q 2021 to 4Q 2022 year-over-year **growth** in Manufacturing, Business Services, Financial Activities, and Leisure & Hospitality sectors. (U.S. BLS)
- This indicates the opportunity to **supplement growth** in these sectors, **within a prime location.**

LOWER HOUSING DELIVERIES

- Vacancy rates in North Charleston/Charleston area are ~8.5% (CoStar)
- However, with a **limited amount of projected multifamily unit deliveries** beyond 2Q '24 (CoStar) and **rapid job and population growth** into the area:
- This is indicative of an opportunity to **introduce additional rental housing units.**

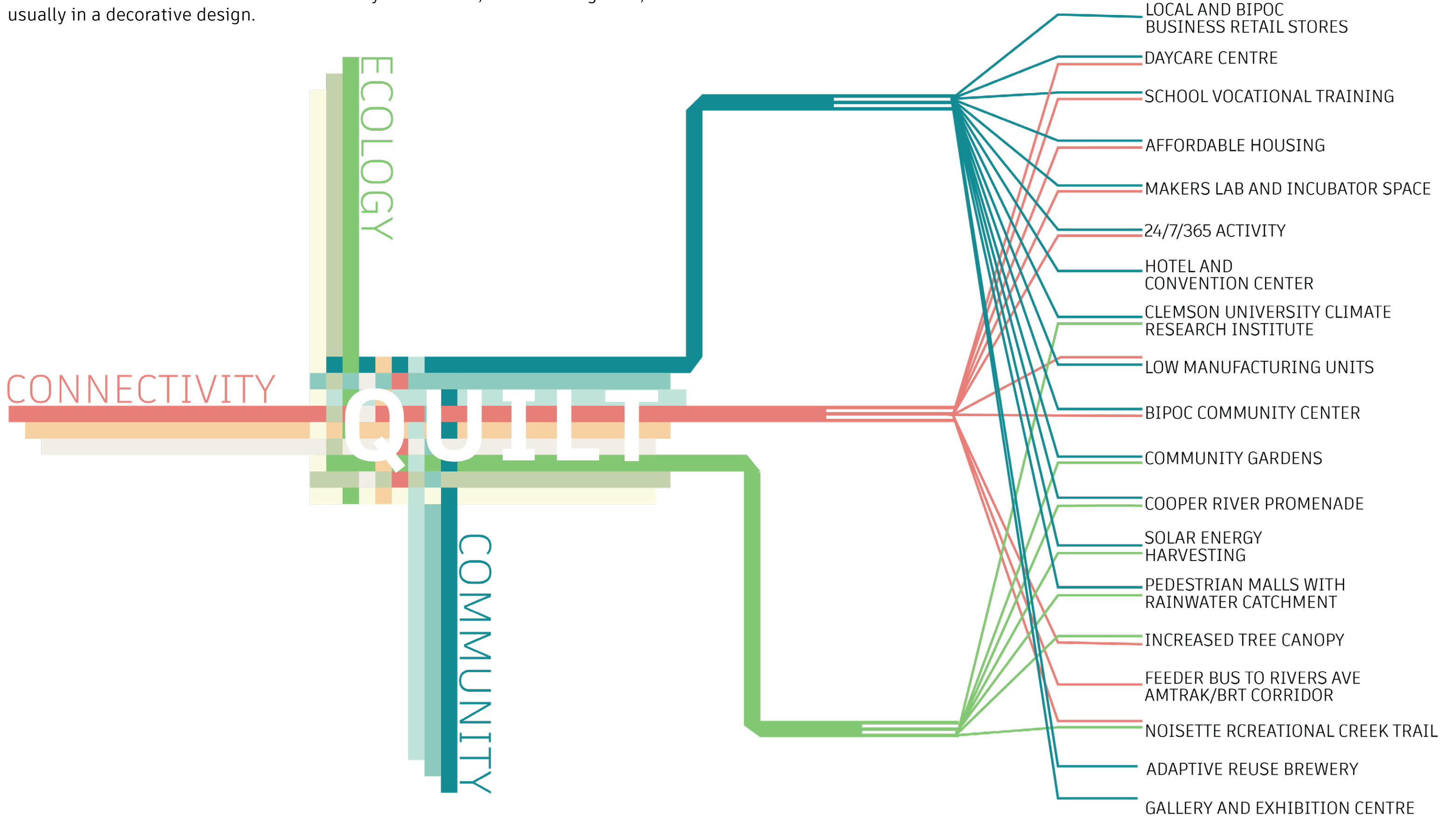
Growth in the Lowcountry Region



THE QUILT

Quilt (n.)

A coverlet or blanket made of two or more layers of fabric, all woven together, usually in a decorative design.

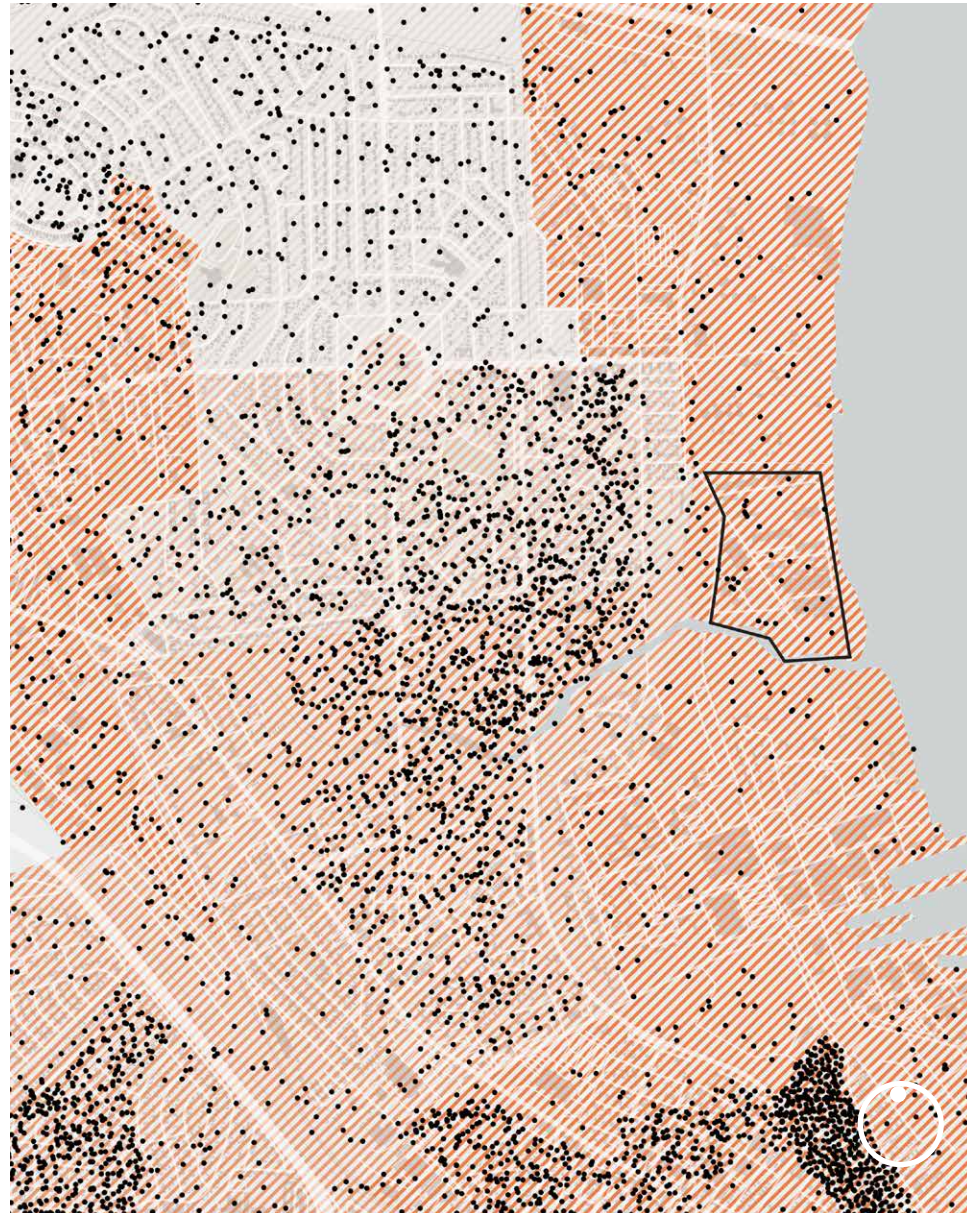


COMMUNITY

SITE ANALYSIS

UNSAFE NEIGHBORHOOD

High instances of reported property crime makes this neighborhood less safe.



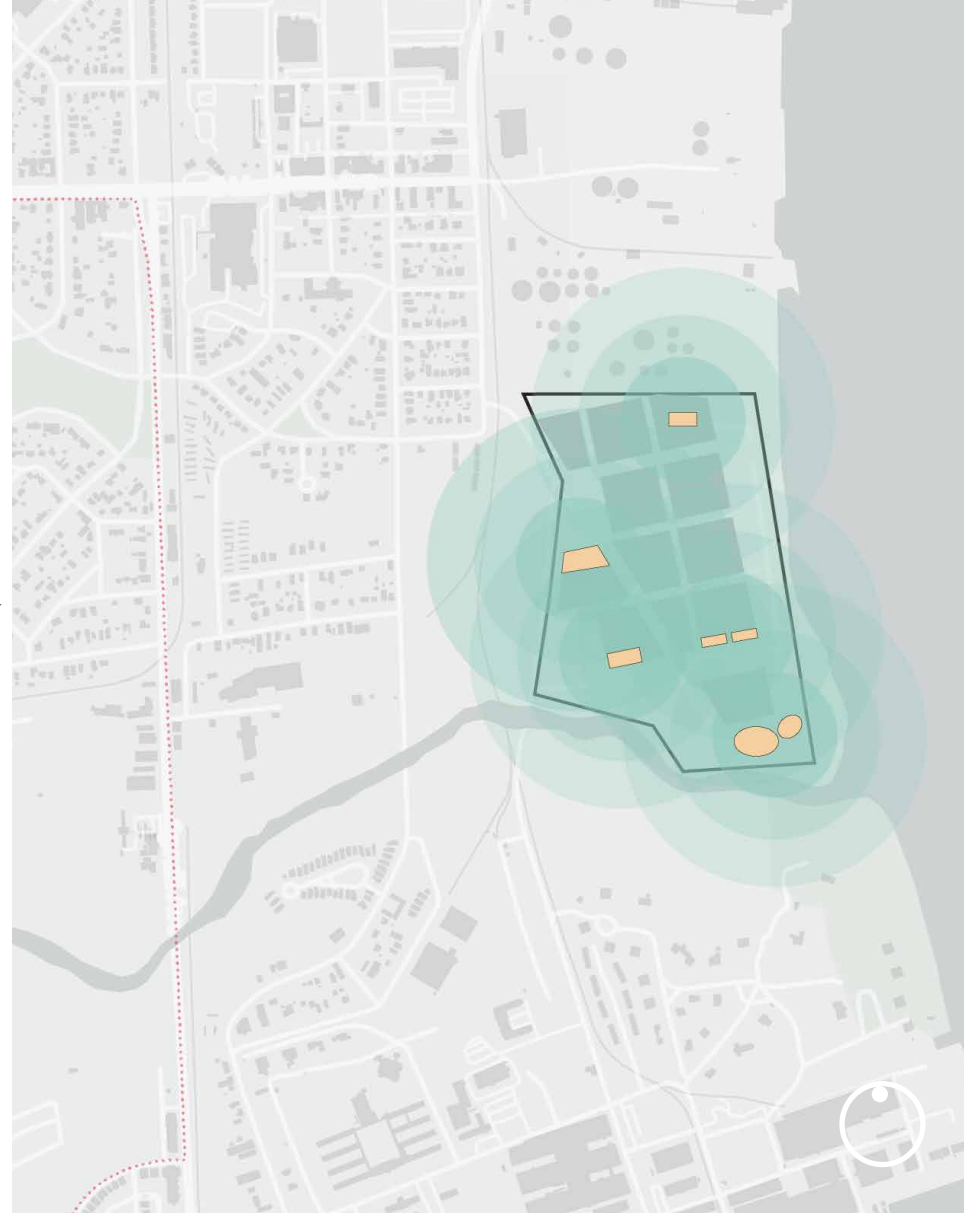
 Instances of reported crime

 Percentage of people not finishing school

SITE STRATEGY

MAKING SAFER STREETS

Adding public programs and spaces within the new development to increase the eyes on the street.



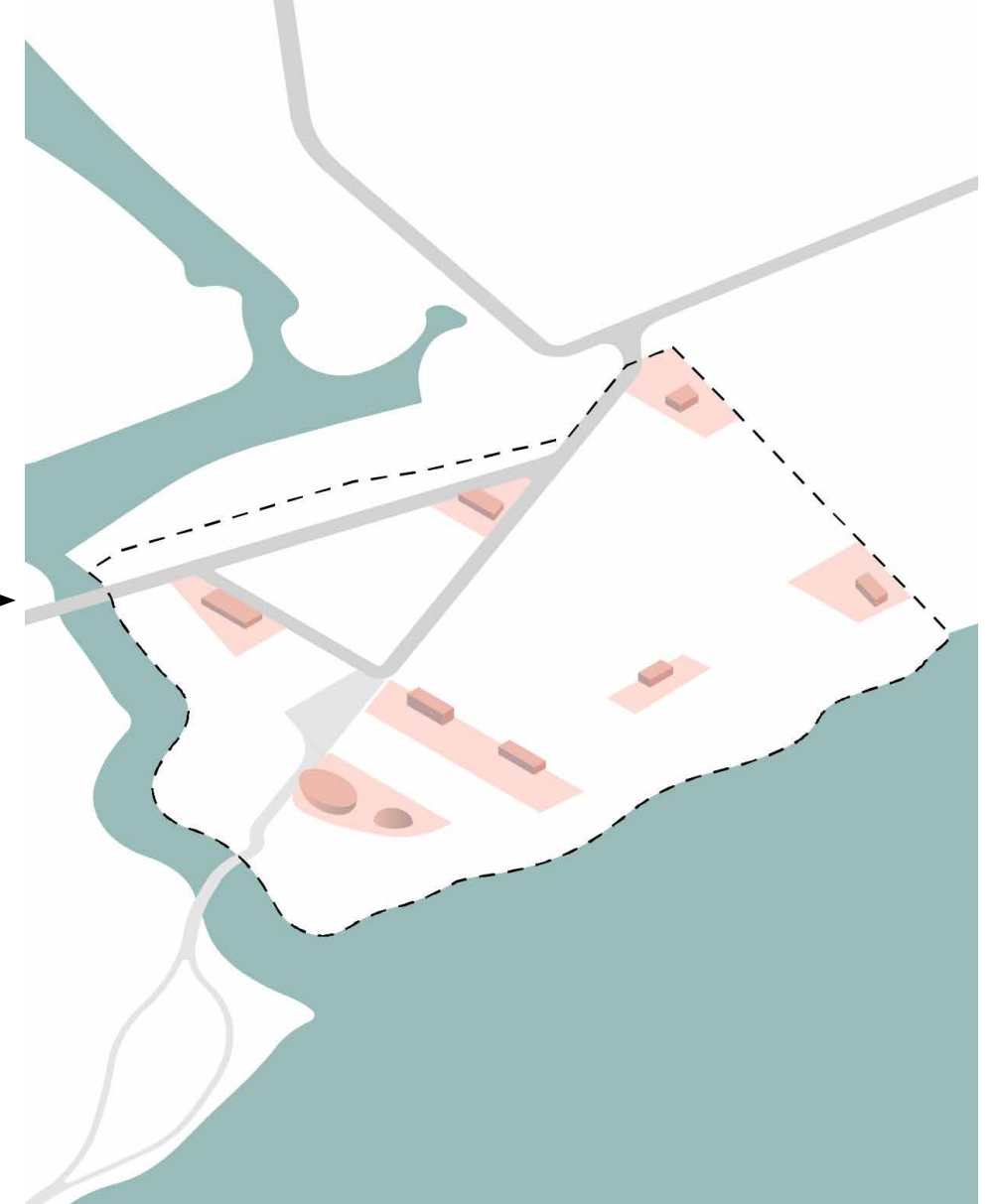
 Public anchors

 Safety ring

SITE INTERVENTION

THE PUBLIC ANCHORS

Public functions within the neighborhood that facilitate the creation of community.



 Public anchors

 Retail

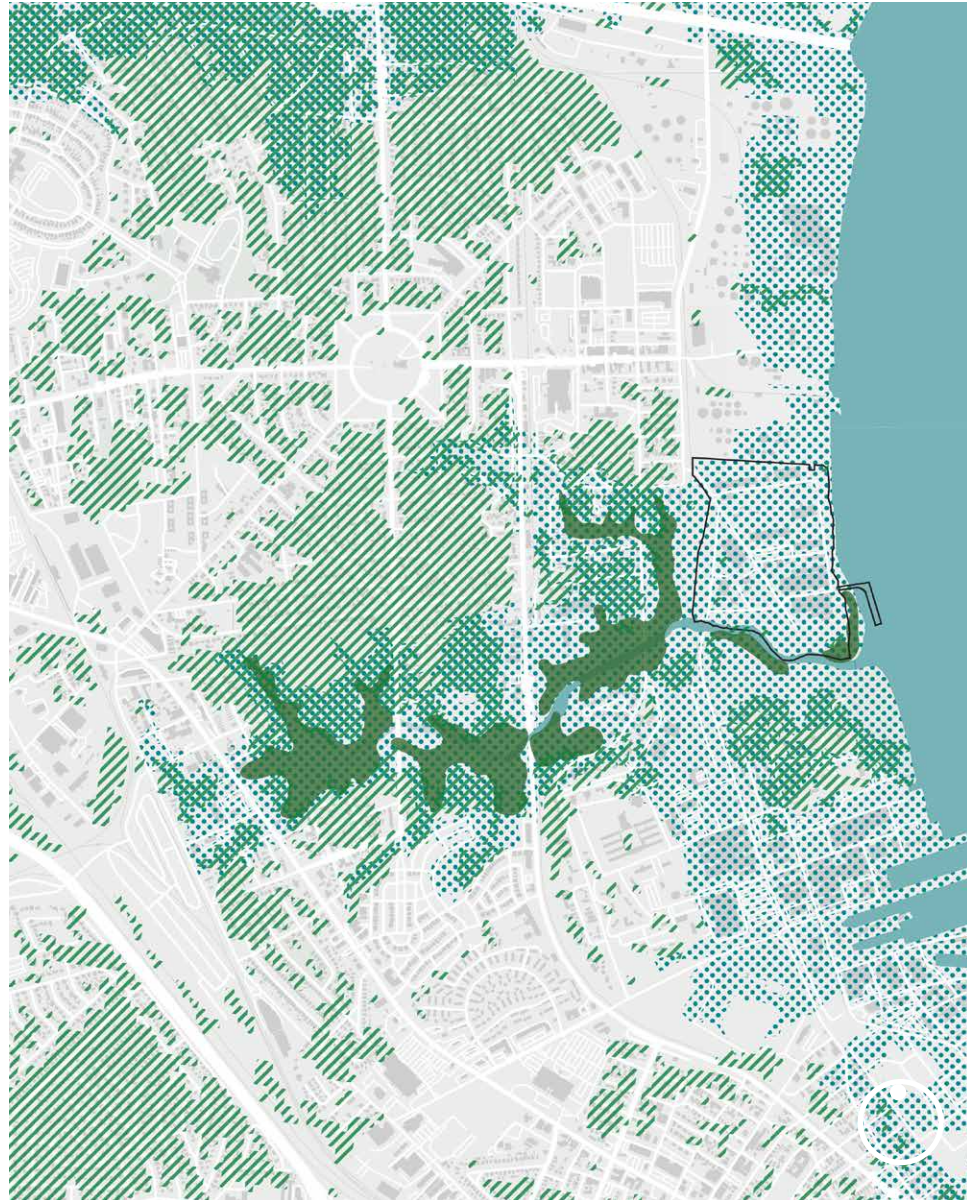
 Community spaces

ECOLOGY

SITE ANALYSIS

HIGH FLOOD RISK SITE

The low-lying land and sparse tree cover makes the neighborhood an ecologically challenging site.



 Flood risk area  Wetlands  Tree canopy

SITE STRATEGY

CREATING A RESILIENT SITE

Introducing a series of green infrastructures to create a resilient site.



 Flood level rise  Wetlands  New tree canopy

SITE INTERVENTION

THE SPONGE

Landscaped elements act as a sponge to capture floodwaters and protect the site from sea-level rise.



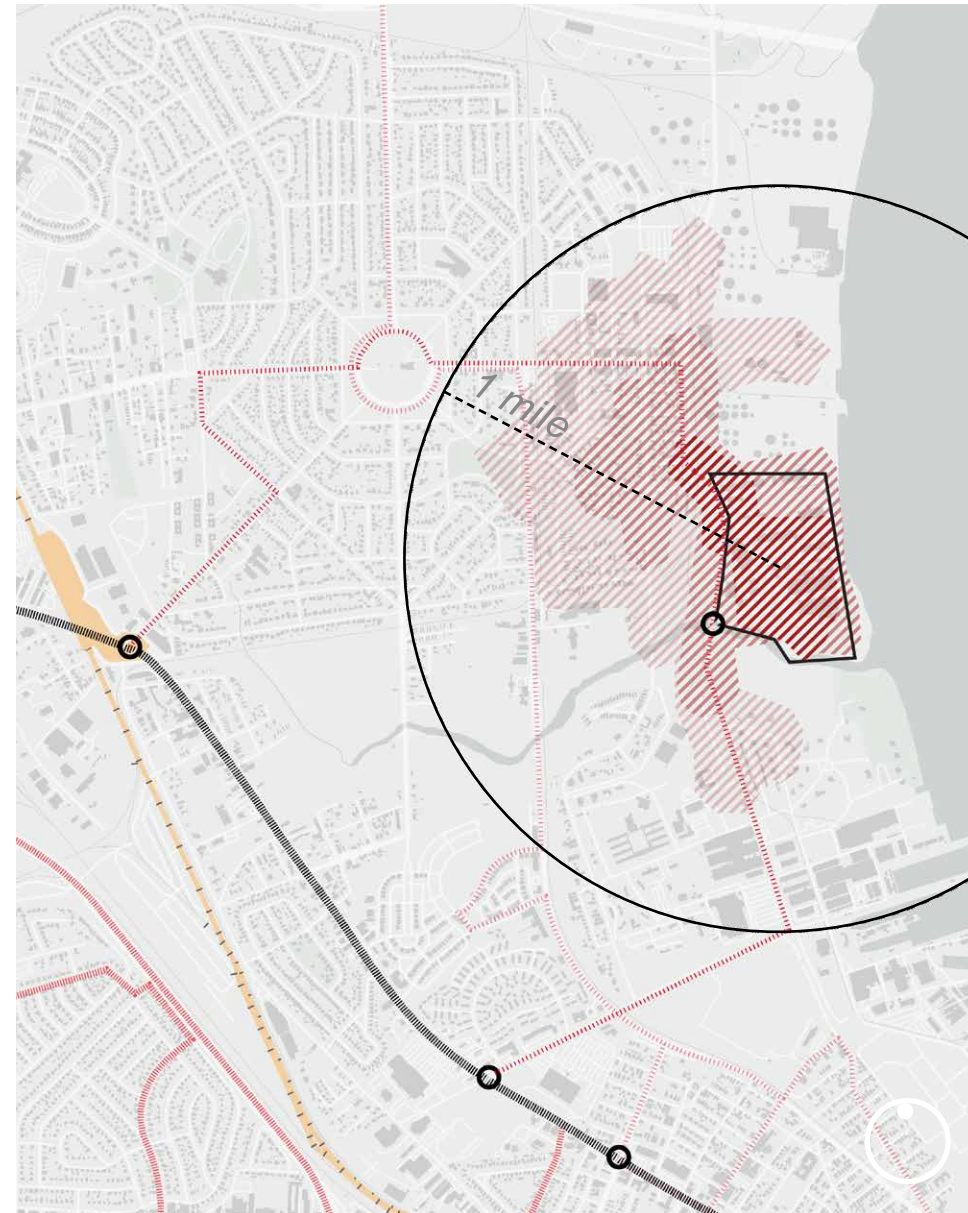
 Wetlands  Courtyard gardens

CONNECTIVITY

SITE ANALYSIS

UNWALKABLE NEIGHBORHOOD

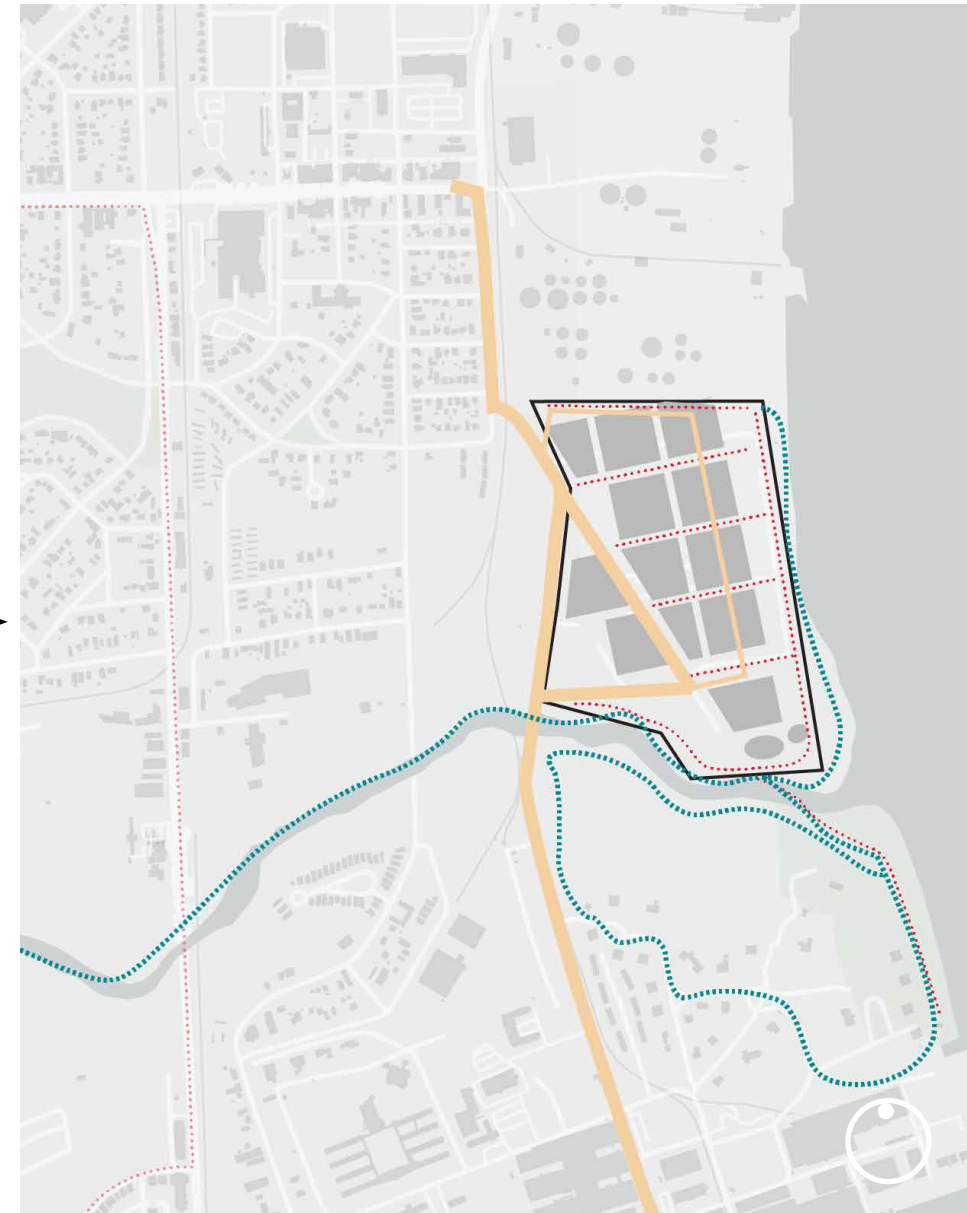
Lack of pedestrian areas, bike lanes, shade giving trees, and amenities close by make the site unwalkable.



SITE STRATEGY

WALKABLE NEIGHBORHOOD

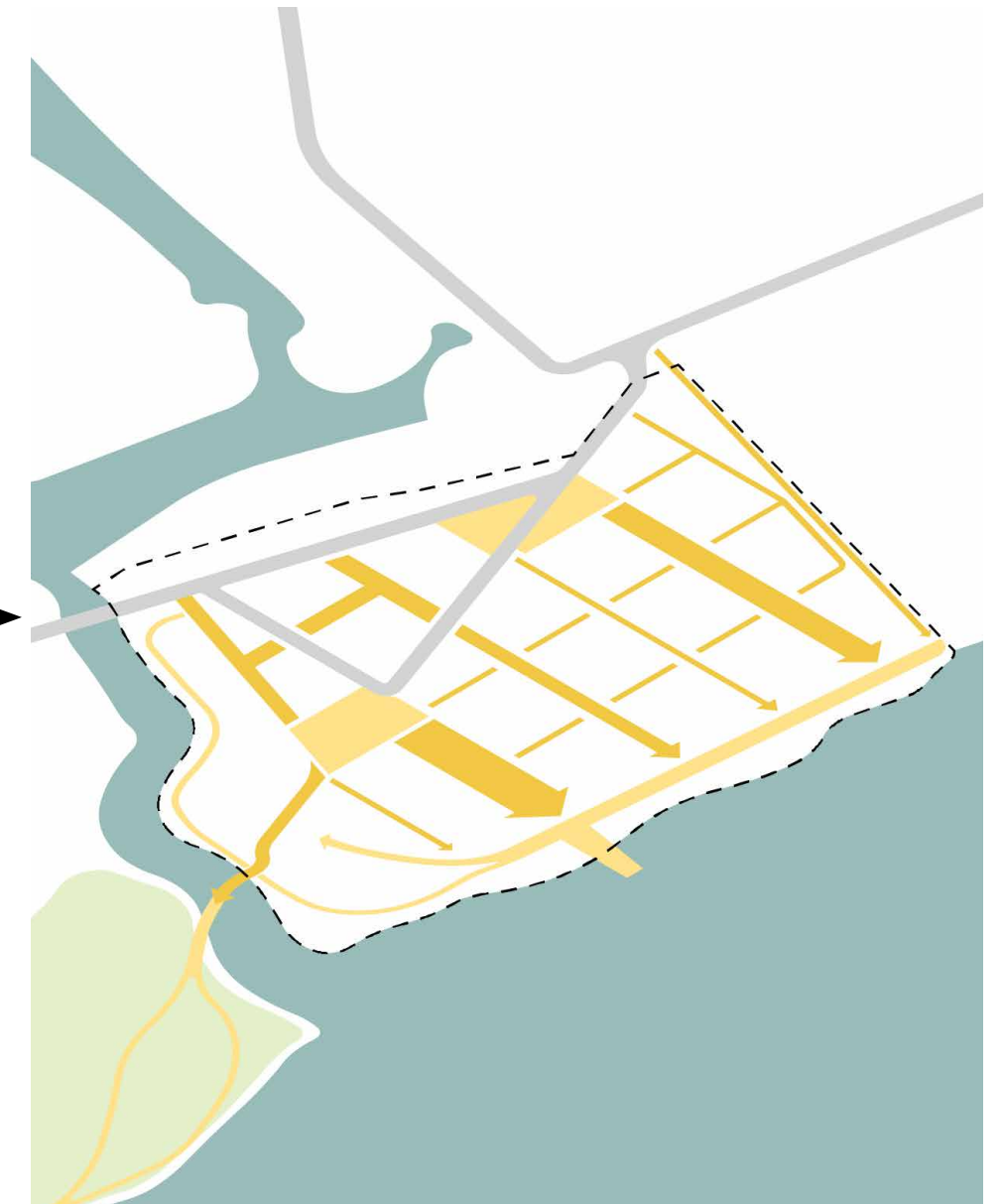
Enhanced accessibility to the riverfront by linking the site with a hike-and-bike trail to Durant Ave BRT stop.



SITE INTERVENTION

THE GRID

An easily navigable grid system is laid out on the site to make the riverfront more accessible.



DESIGN & DEVELOPMENT NARRATIVE

CREATING AN EMPOWERING AND INCLUSIVE COMMUNITY:

The Quilt introduces a **denser urban design model** which **addresses the need for rental housing** in a rapidly-growing city and greater metropolitan area filled with single-family homes. 20% of multifamily units will be **affordable** through the U.S. HUD HOME program. The community embraces **activities contributing to positive wellbeing** through community gardening and a health and fitness facility. The Quilt builds off North Charleston's **diversity** by incorporating a **cultural center** for people to learn about the Gullah Geechee people and Cusabo tribes, and for North Charleston's African-American community to **engage in fellowship**. A new childcare center will also serve as a vocational training center for skilled trades at later hours of the day.

REVITALIZING PAST ECOLOGY AND RESPONDING TO ENVIRONMENT:

The Quilt includes a waterfront park and promenade, and landscaped corridors, which **mitigate the threat of coastal inundation**. The Quilt incorporates landscaped stormwater retention within the aforementioned pedestrian corridors, and photovoltaic panels for solar energy generation. The development **lessens urban heat island effects** on the Cooper River waterfront by addressing the lack of tree canopy coverage and blending into North Charleston's **urban forest**. Through the creation of a **new climate change research institute**, Clemson University will expand on its presence in the Charleston area.

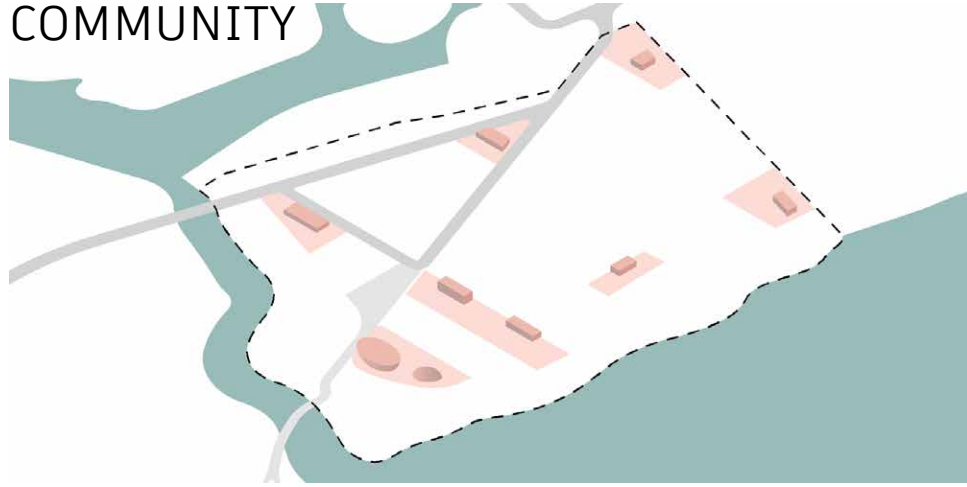
INTEGRATING PHYSICAL, SOCIAL, AND ECONOMIC CONNECTIVITY:

The Quilt's promenade, park, and trails along the Cooper River and Noisette Creek serve as a multi-faceted **destination** for people, establishing a physical **link to the marine environment**. The development **improves existing streets** to allow for enhanced CARTA service connecting to Amtrak, Charleston International Airport, and the upcoming Lowcountry Rapid Transit line. A **state-of-the-art maker and incubator space** is located on the southern pedestrian boulevard. An **iconic hotel and conference center**, developed in conjunction with the City of North Charleston, provides for a venue for commerce and cooperation near regional operations of Fortune 500 companies like Boeing, Mercedes-Benz, and Volvo.

THE QUILT

Weaving the sponge, the grid, and the public anchors together create The Quilt.

COMMUNITY



+

ECOLOGY



+

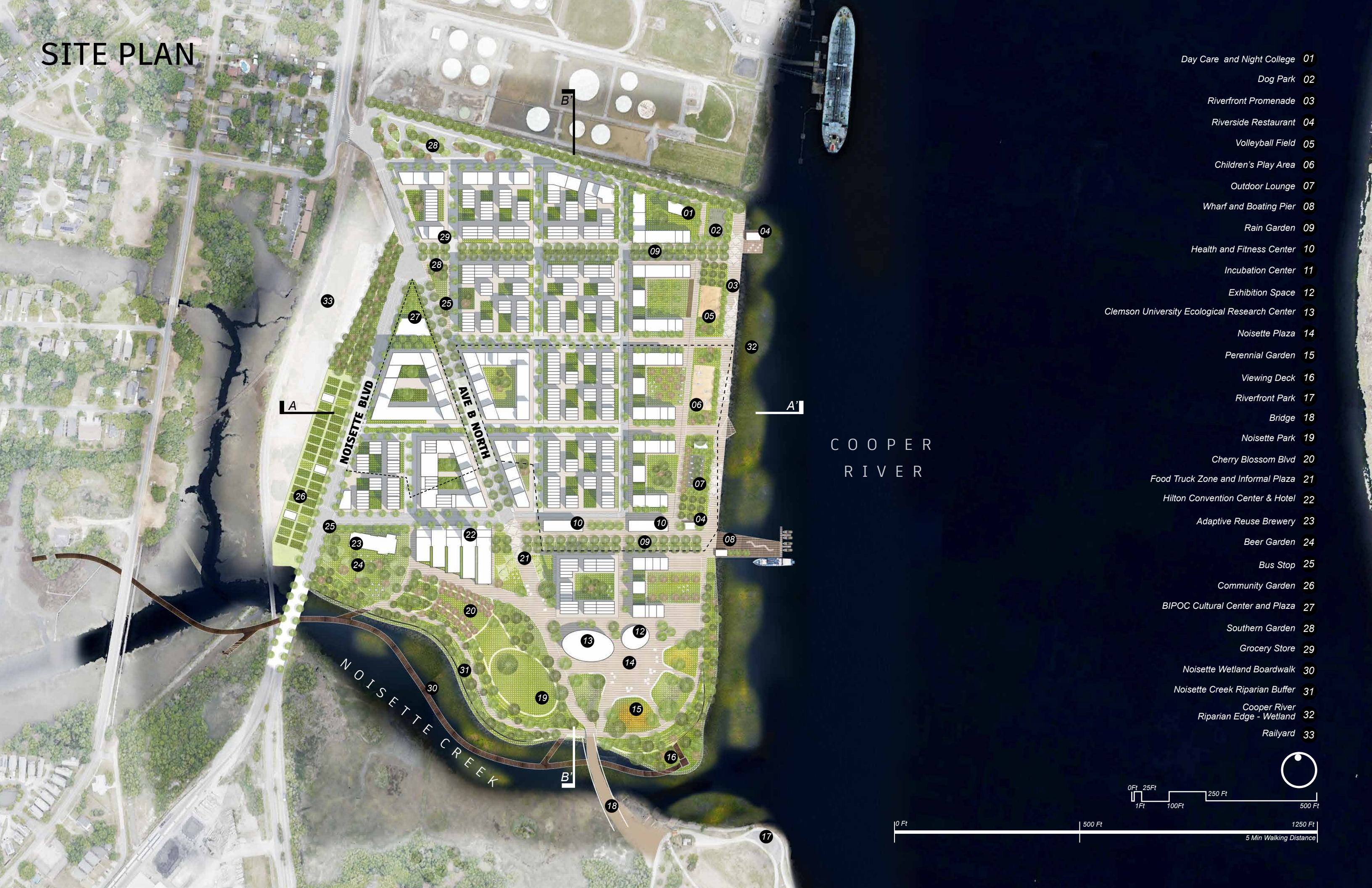
CONNECTIVITY



THE QUILT



SITE PLAN



- Day Care and Night College 01
- Dog Park 02
- Riverfront Promenade 03
- Riverside Restaurant 04
- Volleyball Field 05
- Children's Play Area 06
- Outdoor Lounge 07
- Wharf and Boating Pier 08
- Rain Garden 09
- Health and Fitness Center 10
- Incubation Center 11
- Exhibition Space 12
- Clemson University Ecological Research Center 13
- Noisette Plaza 14
- Perennial Garden 15
- Viewing Deck 16
- Riverfront Park 17
- Bridge 18
- Noisette Park 19
- Cherry Blossom Blvd 20
- Food Truck Zone and Informal Plaza 21
- Hilton Convention Center & Hotel 22
- Adaptive Reuse Brewery 23
- Beer Garden 24
- Bus Stop 25
- Community Garden 26
- BIPOC Cultural Center and Plaza 27
- Southern Garden 28
- Grocery Store 29
- Noisette Wetland Boardwalk 30
- Noisette Creek Riparian Buffer 31
- Cooper River Riparian Edge - Wetland 32
- Railyard 33

COOPER RIVER

NOISETTE CREEK

NOISETTE BLVD
AVE B NORTH



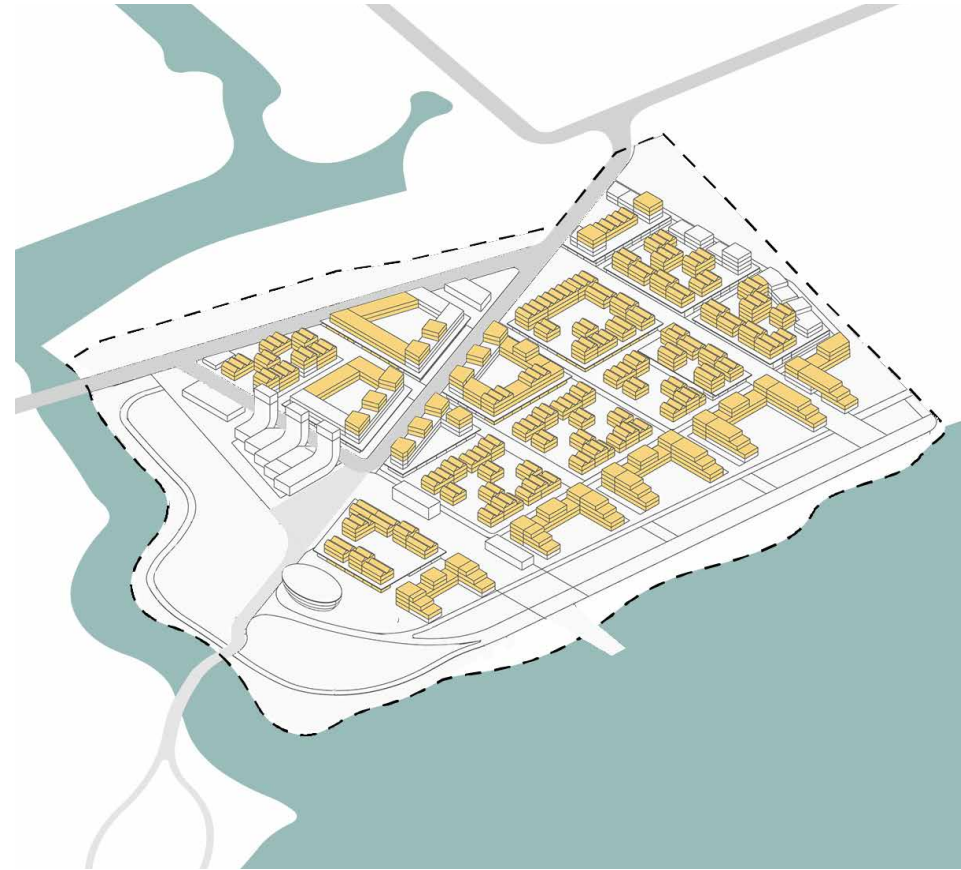
COOPER RIVER PROMENADE



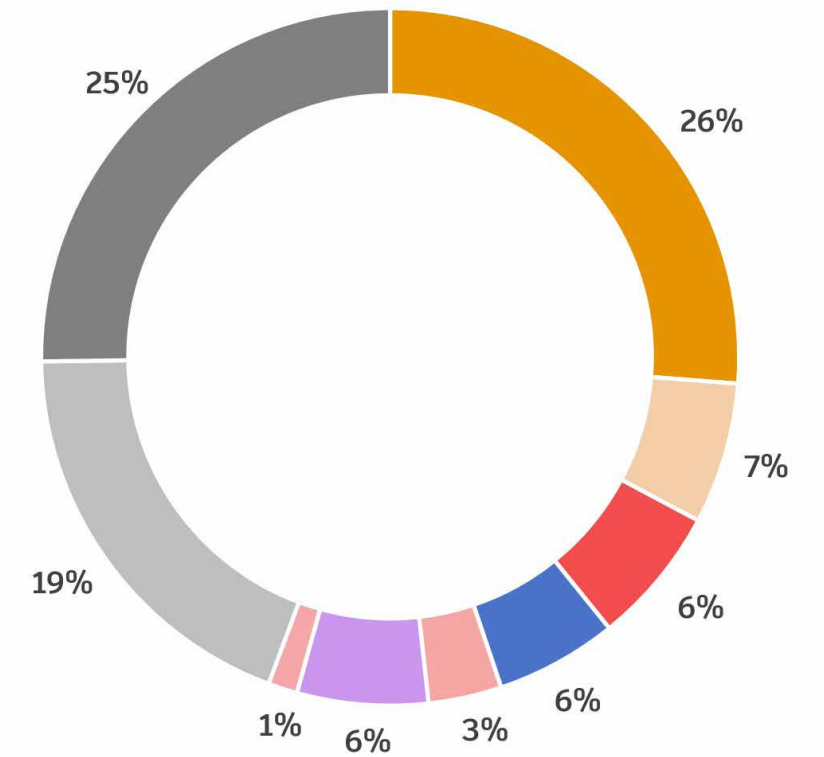
MIXING THE USE



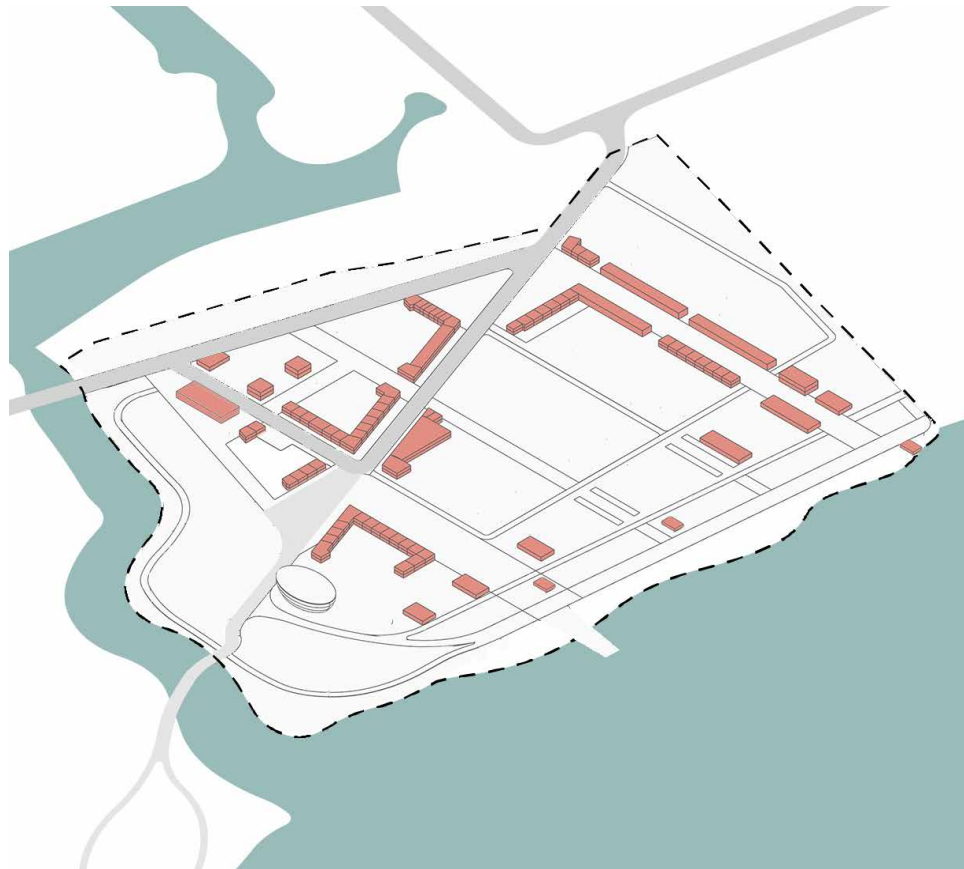
RESIDENTIAL



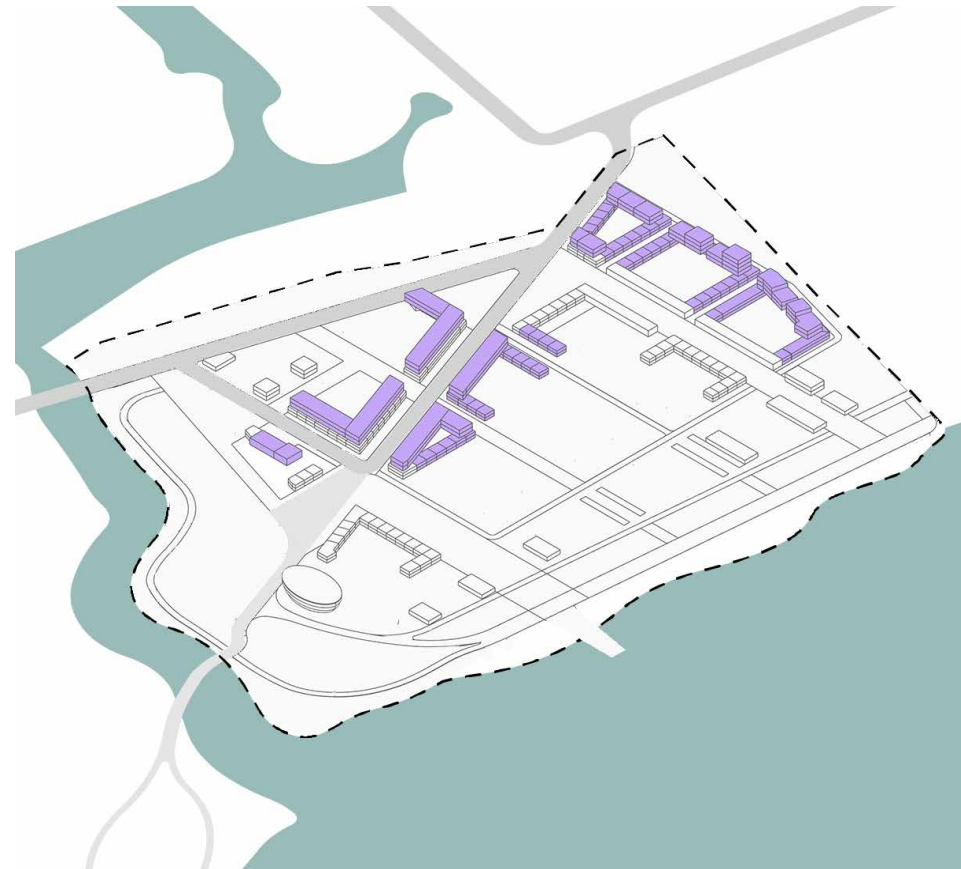
PROGRAM MIX



RETAIL + COMMERCIAL



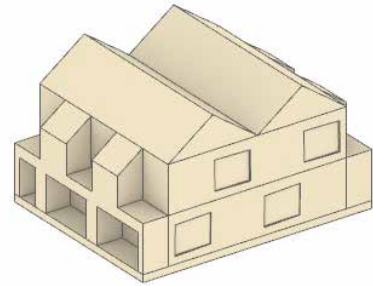
WORK SPACES



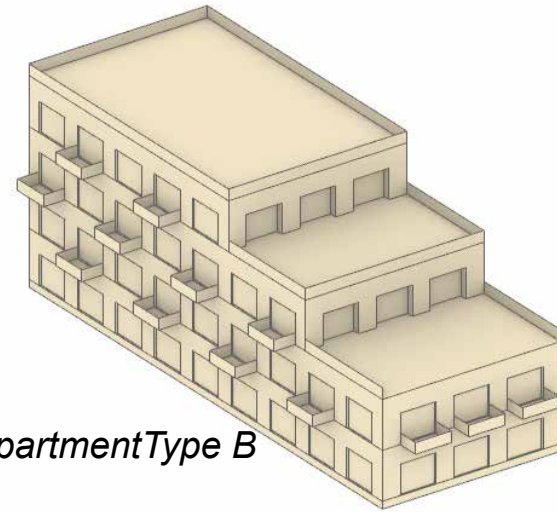
	Market Rate Residential	492,660 sf / 615 units
	Affordable Residential	123,165 sf / 154 units
	Retail	120,425 sf
	Office	106,200 sf
	Hotel	63,750 sf / 150 rooms
	Workshop	114,000 sf
	Convention Center	25,400 sf
	Residential Parking	359,450 sf / 1,106 spaces
	Commercial Parking	473,525 sf / 1,457 spaces

BUILDING TYPOLOGY

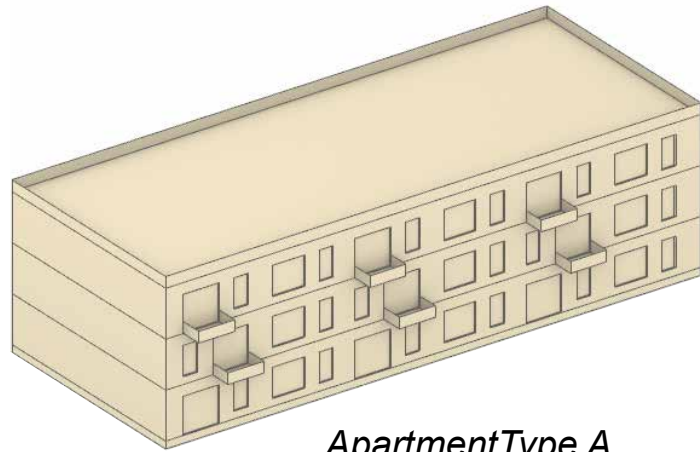
A mix of housing types offer variable amounts of space to fit the needs of all residents, from single professionals to families.



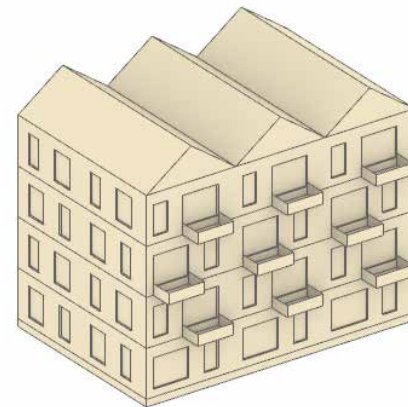
Townhome Type A



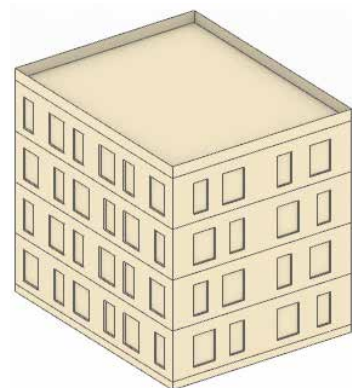
Apartment Type B



Apartment Type A

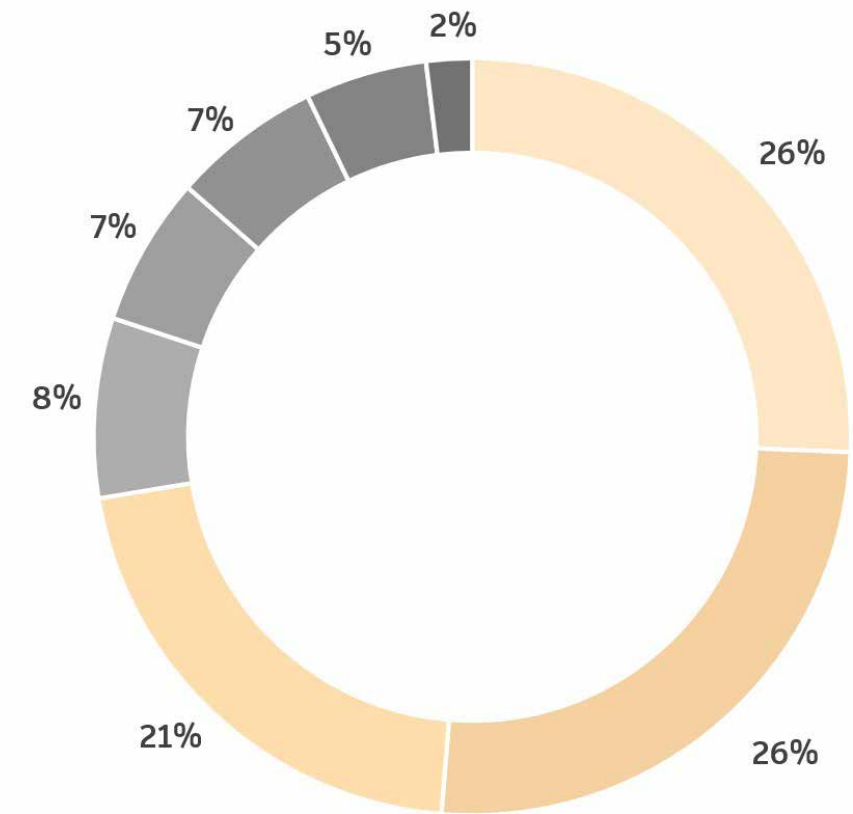


Townhome Type B



Apartment Type C

RESIDENTIAL UNIT MIX



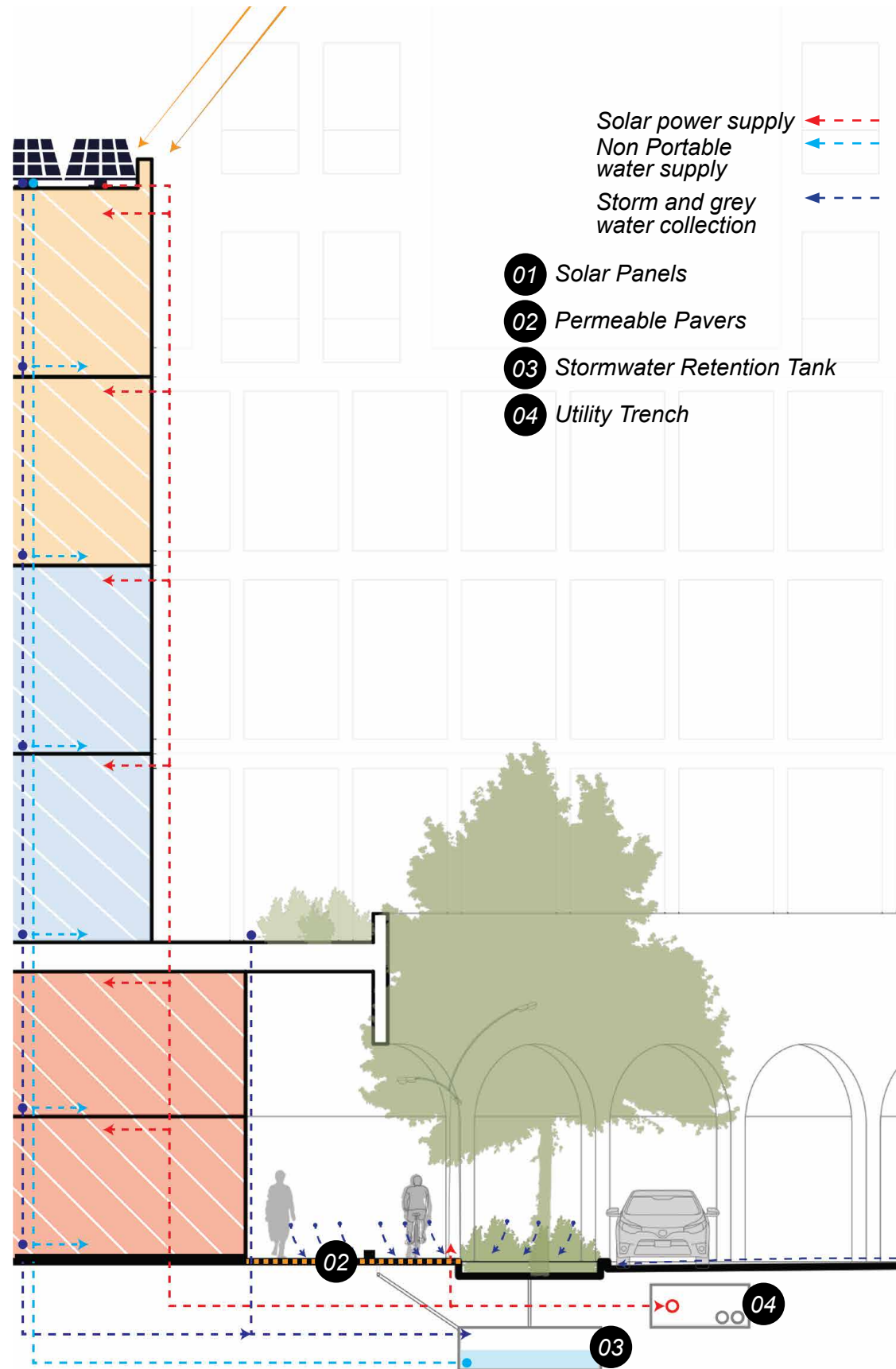
	Studio (Market)	197 units
	1BR/1BA (Market)	197 units
	2BR/2BA (Market)	162 units
	3BR/3BA (Market)	59 units
	Studio (Affordable)	49 units
	1BR/1BA (Affordable)	49 units
	2BR/2BA (Affordable)	40 units
	3BR/3BA (Affordable)	15 units

PRODUCTIVE LANDSCAPES



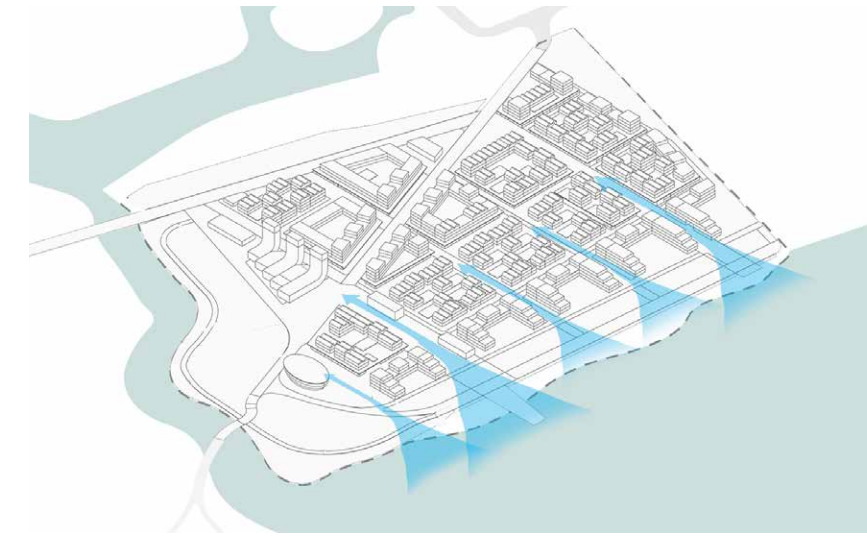
SUSTAINABILITY

The Quilt incorporates photovoltaic panels for solar energy capture and a closed-loop system for water usage.

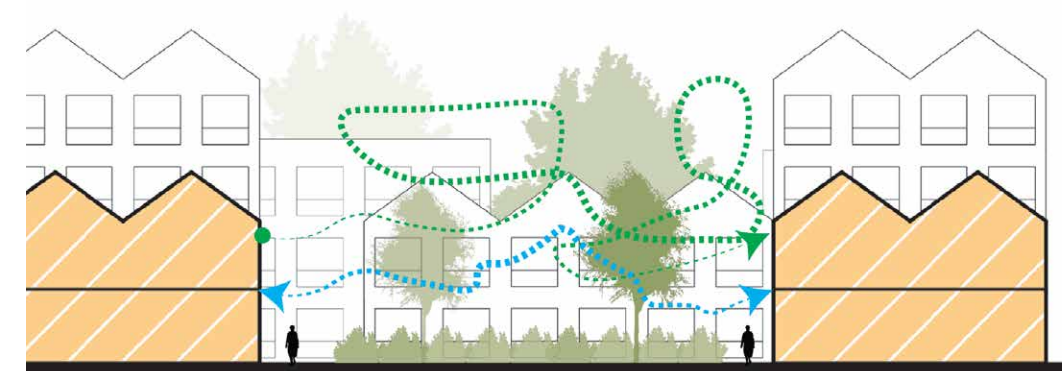


CREATING A PLEASANT MICROCLIMATE

BRING IN COOL BREEZE



CROSS VENTILATED COURTYARDS



SHADING THE STREETS








PEDESTRIAN PLAZAS

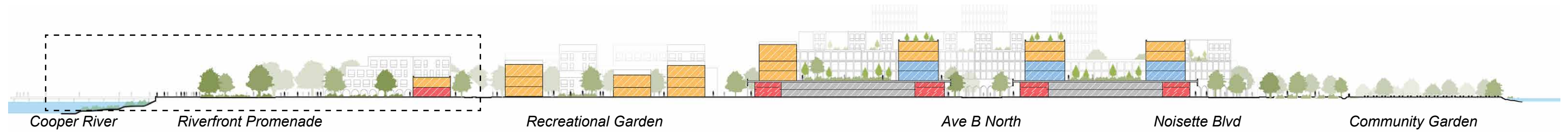
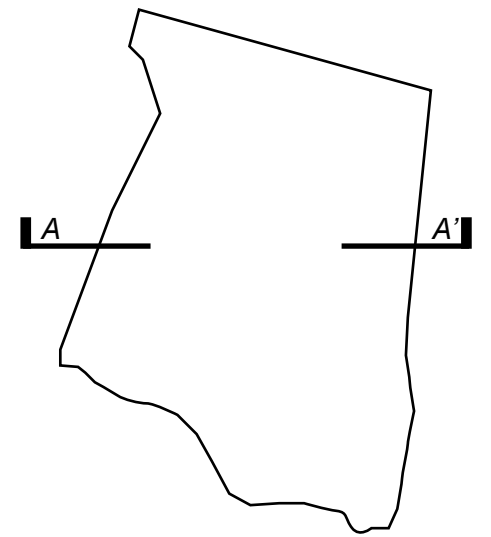


DESIGN SECTIONS

SECTION A






Section through the Riverfront

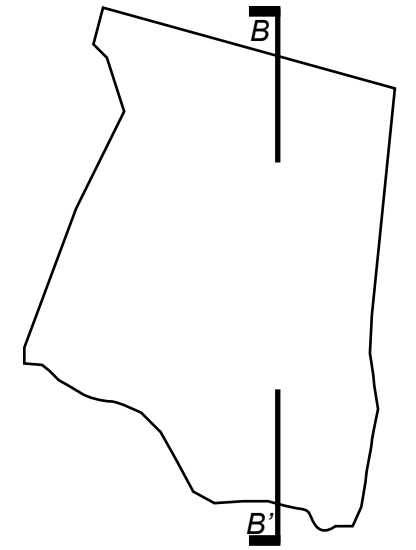
-  Mixed Income Housing
-  Office and Manufacturing space
-  Parking
-  Retail and Restaurants
-  Public Anchors



DESIGN SECTIONS

SECTION B

-  Mixed Income Housing
-  Office and Manufacturing space
-  Parking
-  Retail and Restaurants
-  Public Anchors

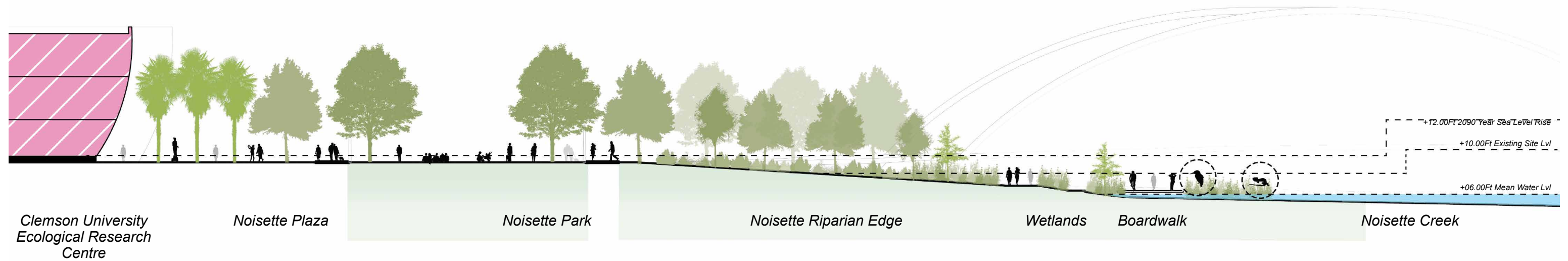


Vehicular + Bike Road

Pedestrian Plaza

Pedestrian Recreational Plaza

Noisette Park



Clemson University Ecological Research Centre

Noisette Plaza

Noisette Park

Noisette Riparian Edge

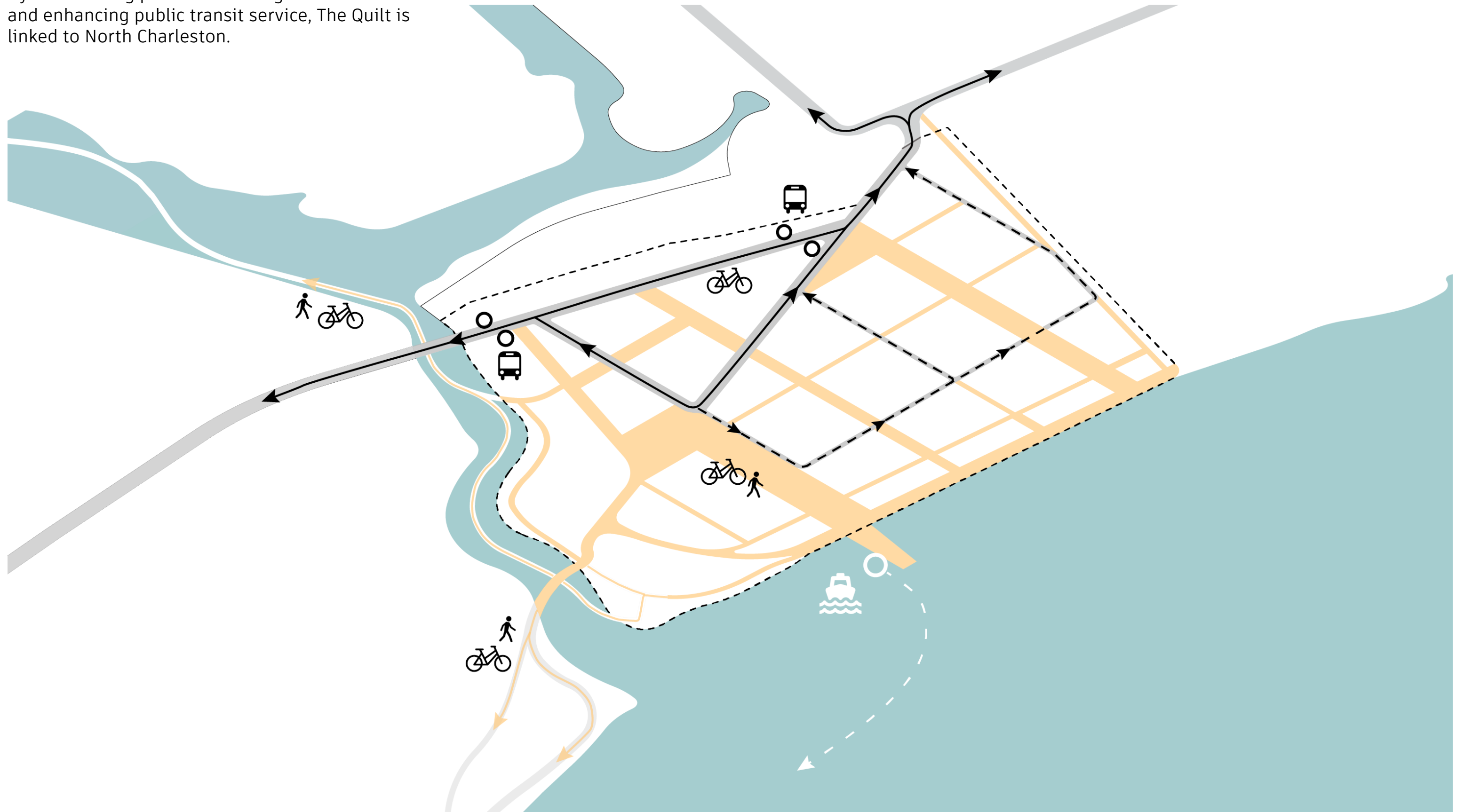
Wetlands

Boardwalk

Noisette Creek

CONNECTIVITY

By establishing pedestrian linkage to the waterfront and enhancing public transit service, The Quilt is linked to North Charleston.



○ *Bus stops*

↑ *Two way roads*

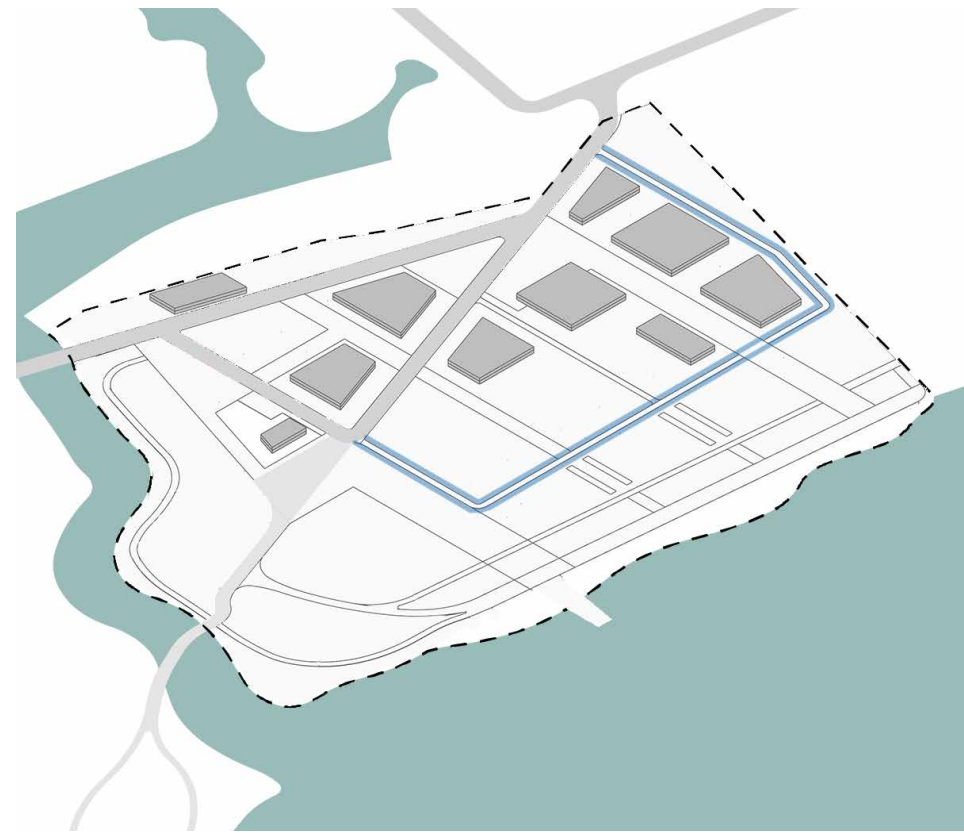
↑ *One way roads*

■ *Pedestrian areas*

↑ *Ferry route*

STREET AND PARKING DESIGN

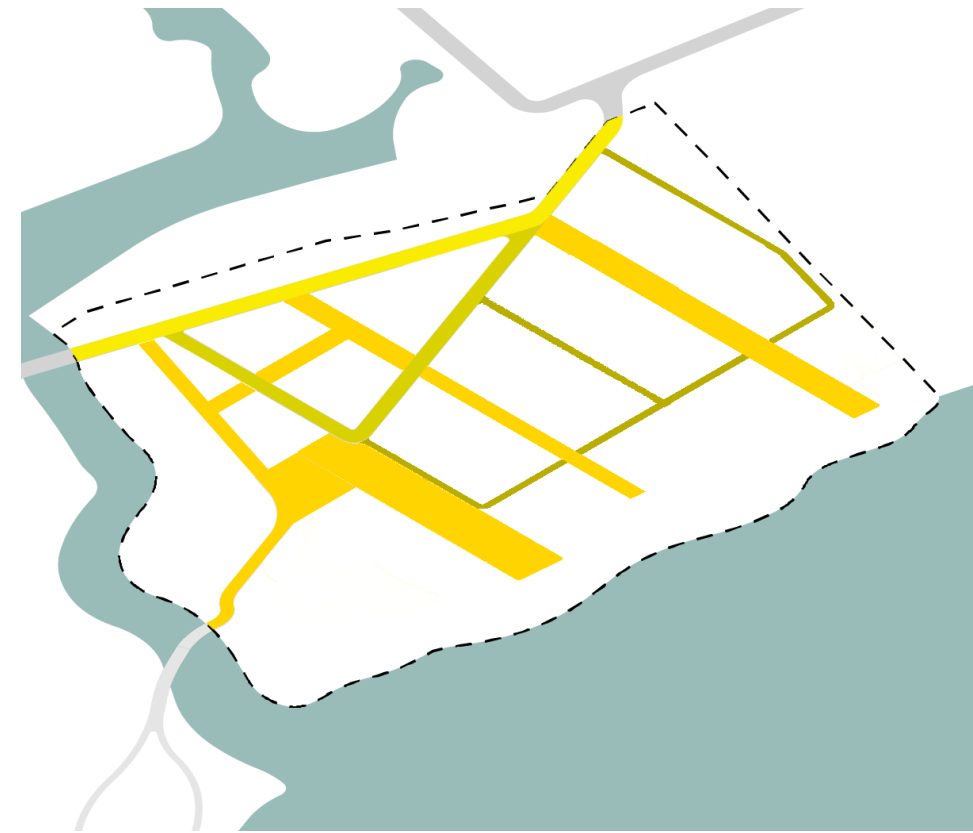
PARKING AREAS



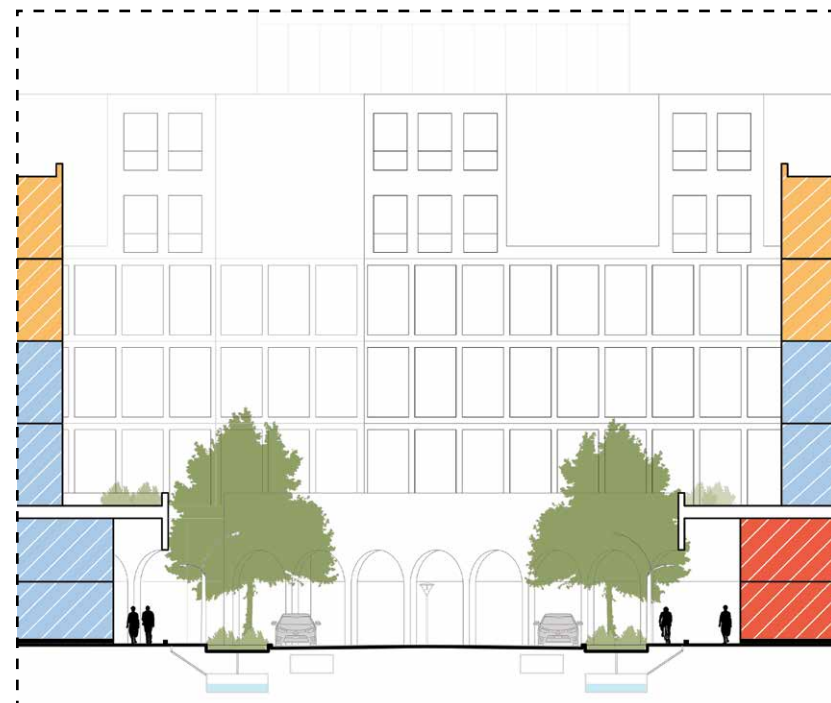
Street parking count: 358
 Structured parking count: 1406

■ Parking structures
 ■ Street parking

STREET TYPES



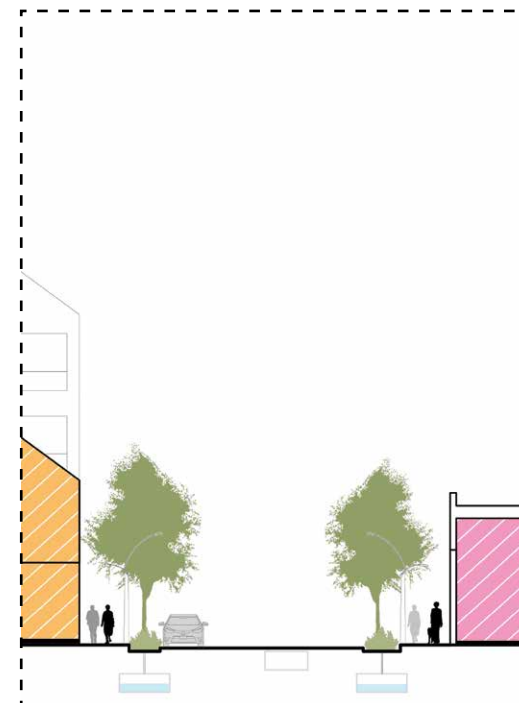
TWO WAY STREET TYPE A



TWO WAY STREET TYPE B



ONE WAY STREET



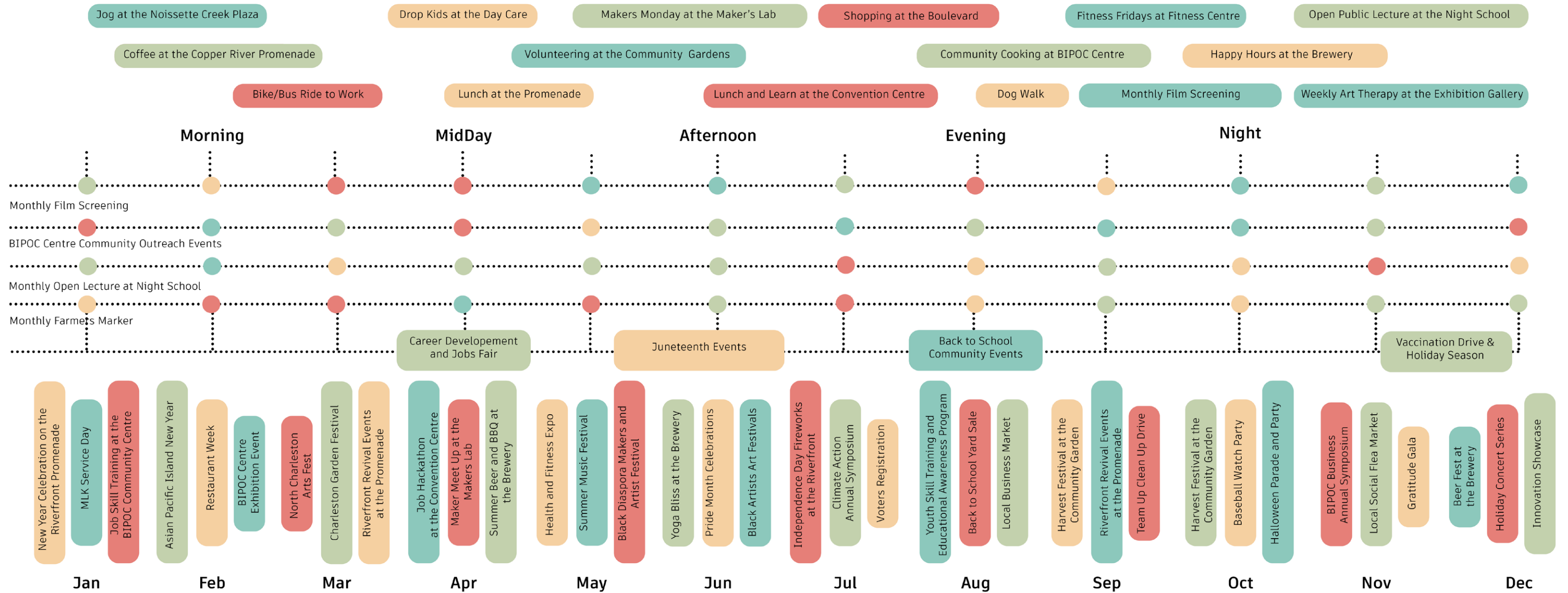
PEDESTRIAN MALL



DAILY LIFE AND YEARLY PROGRAMMING

EYES ON THE STREET: CREATING A SAFE NEIGHBORHOOD

Activated 24-hour program along the waterfront promenade and within the grid of The Quilt always brings people out to the street, resulting in a safer atmosphere for the neighborhood.



ANCHOR PROJECTS

Tourist
 “My husband and I love the brewery and beer gardens along the waterfront.”

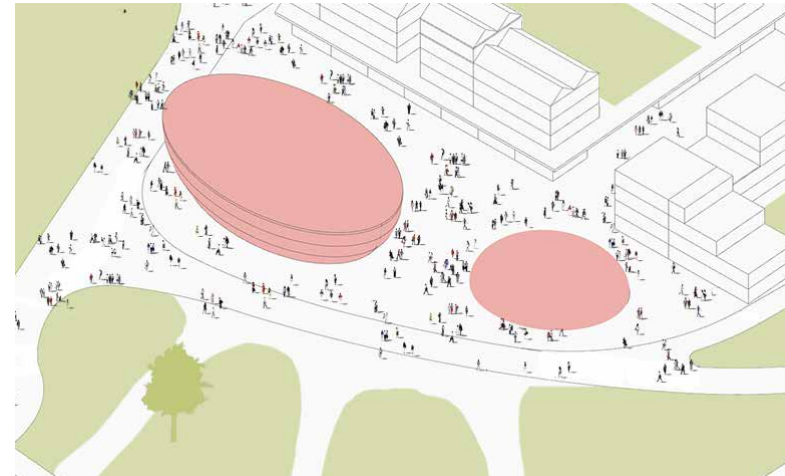
Business Executive
 “The new North Charleston Convention Center has got really sleek meeting spaces.”

High School Student
 “The Fitness Center is a really short walk from home and it’s really fun to workout there with my friends!”

Retired Worker
 “I love having time to finally do what I want. I often find myself wandering through the community garden or exploring the promenade.”

MUSC Student
 “Everything I need is a few minutes walk away and the bike connection along the Noisette Creek has helped me get to school faster without using my car!”

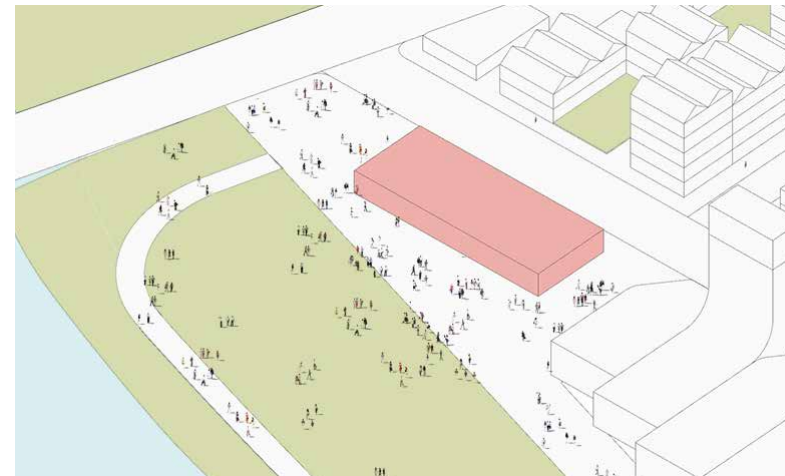
CLEMSON UNIVERSITY CLIMATE RESEARCH CENTER AND EXHIBITION SPACE



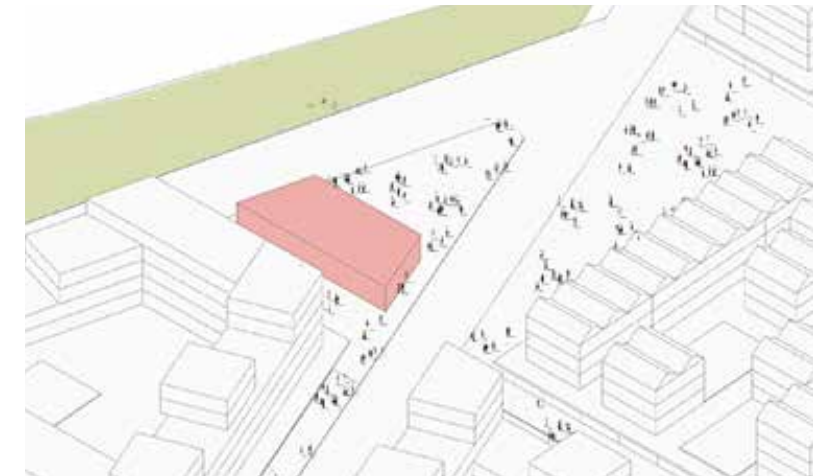
INCUBATION CENTER



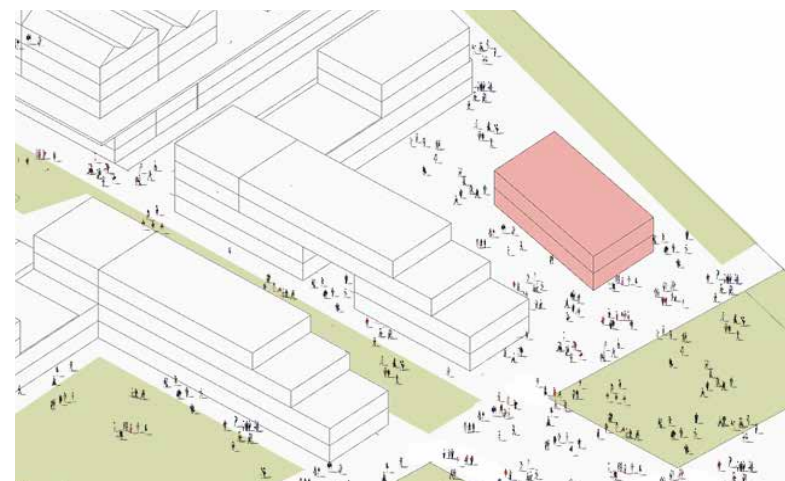
ADAPTIVE REUSE OF EXISTING BREWERY



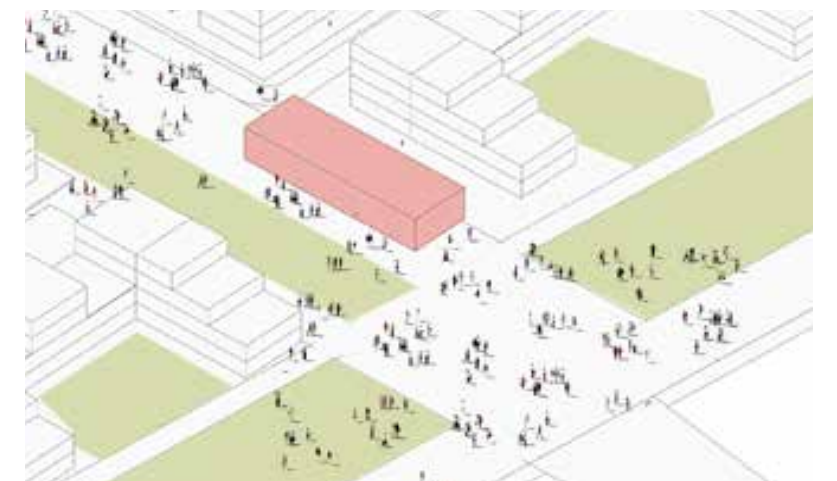
NOISETTE BIPOC CULTURAL CENTER



DAYCARE AND NIGHT COLLEGE



HEALTH AND FITNESS CENTER



BIPOC CENTER



FINANCIAL NARRATIVE

The Quilt’s **first two phases consist of a 1.15 million square foot mixed-use development**, which will be delivered in two phases over eight years. A **third and final phase totaling 871,200 square feet** will be built out past a 10-year window. In addition, an approximately 6.1 acre waterfront promenade and park will couple with North Charleston’s existing Riverfront Park to act as extended parkland and serve as a recreational destination for North Charleston.

Phase I

To acquire parcels for the first phase of development, a privately-owned parcel will be **purchased at a market rate value of \$2 million**, and municipally-owned parcels will be **purchased at a 30% deduction of an estimated market rate value of \$20.48 million** in a deal with the City of North Charleston for investing into the public realm.

581 new housing units will be introduced to North Charleston, of which **116 units will be low-income housing** units. Phase I will include a mix of commercial space, including **44,000 GSF of retail space for restaurants and smaller shops**, and a **34,600 GSF Publix urban-model grocery store**. In addition to this leasable retail space, Phase I introduces **114,000 GSF of workshop space** and **106,200 GSF of office space**, including **43,250 GSF of corporate offices for Volvo and Polestar**, Volvo’s electric vehicle subsidiary. Phase I also includes anchor projects such as a **12,600 GSF educational facility**, a **12,600 GSF multifaith center**, and a **14,350 GSF BIPOC-focused cultural center**.

Phases I and II will be financed through a mix of sources, including **\$176.8 million in private equity** and **\$295.5 million in senior debt**. An additional \$20.2 million in supplemental sources include: **\$3.7 million in Low-Income Housing Tax Credits (LIHTC)**; **\$1.6 million in Federal New Markets (FNM) Tax Credits**; **\$324,325 in South Carolina Jobs Tax Credits** for the creation of new jobs through Volvo USA’s new offices; **\$172,800 in blue carbon offset credits from Norfolk Southern** for the construction of new wetlands; **\$11.3 million from Clemson University** to fund its new research and exhibition spaces; and **\$3.1 million from the City of North Charleston** to cover 50% of convention center construction cost. Residential units will be financed on a separate title to be able to utilize both LIHTC and FNM tax credits.

Phase I will deliver in Q3 of 2029 and Phase II will deliver in Q3 of 2031, bringing in a new decade with a new era of living, learning, working, and playing for the Charleston area.

Phase II

To acquire parcels for the second phase of development, a privately-owned parcel will be **purchased at a market rate value of \$375,600** and municipally-owned parcels will be **purchased at a 30% deduction of an estimated market rate value of \$27.25 million** in a deal with the City of North Charleston for investing into the public realm.

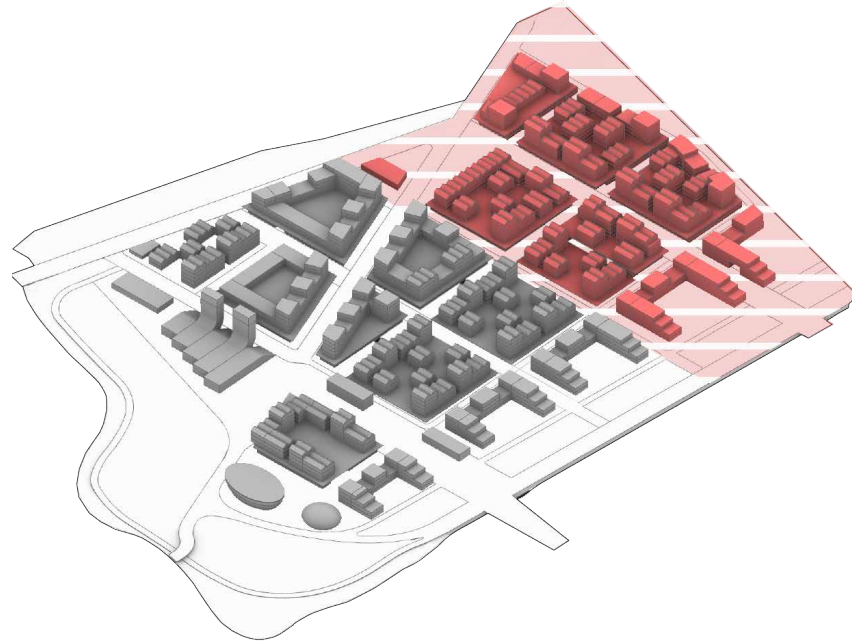
The second phase of development will bring **188 additional housing units** to North Charleston, of which **38 units will be low-income housing**. Phase II will also include **41,825 GSF of commercial space** including an **11,700 GSF food hall**, which will be the new home of local family-owned COAST Brewing Company. Next to the new food hall, a new **150-room flagship Hilton North Charleston Hotel and Convention Center** will feature **25,400 GSF of meeting and ballroom space**. A **38,000 GSF research facility** and **8,300 GSF exhibition facility** for Clemson University, a **18,750 GSF maker and incubator space**, and a **12,750 GSF health and fitness facility** will be built in Phase II.

FINANCIAL RETURNS

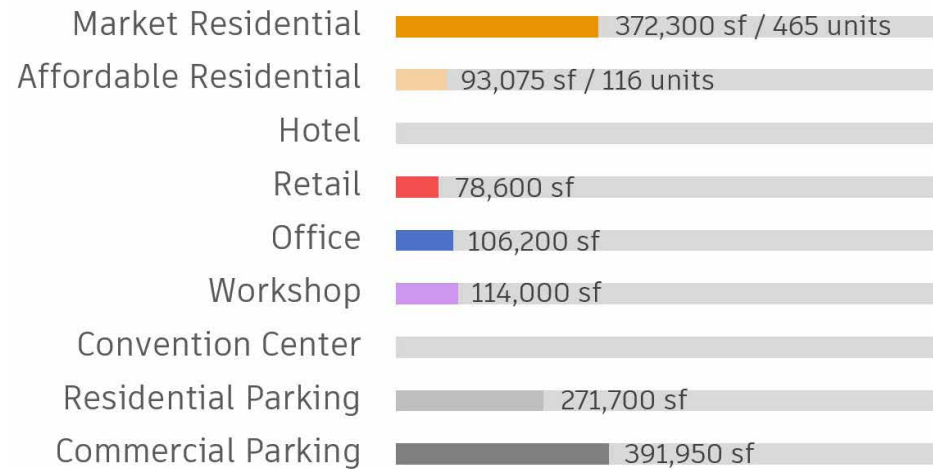
UNLEVERED IRR:	12.77%	LEVERED IRR:	21.73%
YIELD-ON-COST:	6.07%	EQUITY MULTIPLE:	2.01X

PHASING: A DEVELOPMENT STRATEGY CREATING PRIME SITES

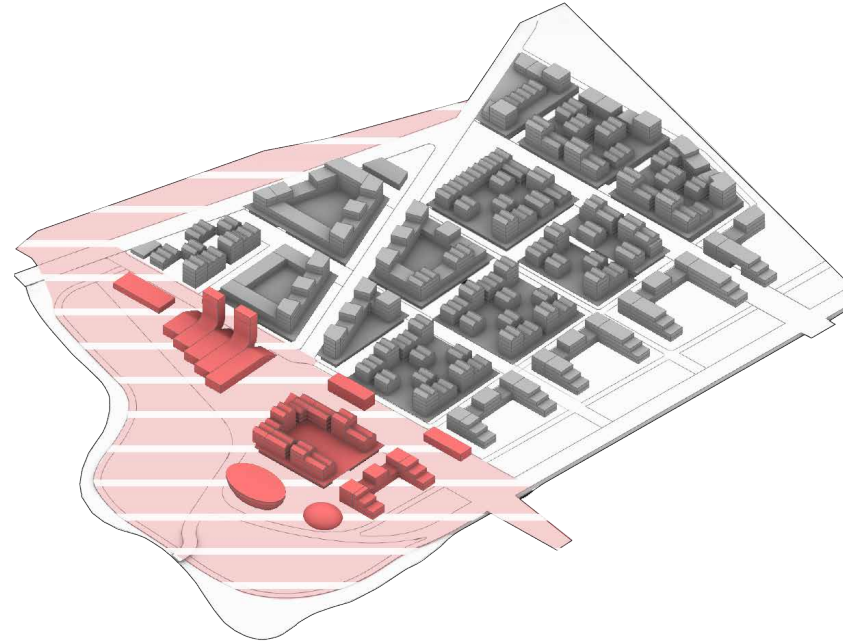
PHASE 01 (BEGINS 2026)



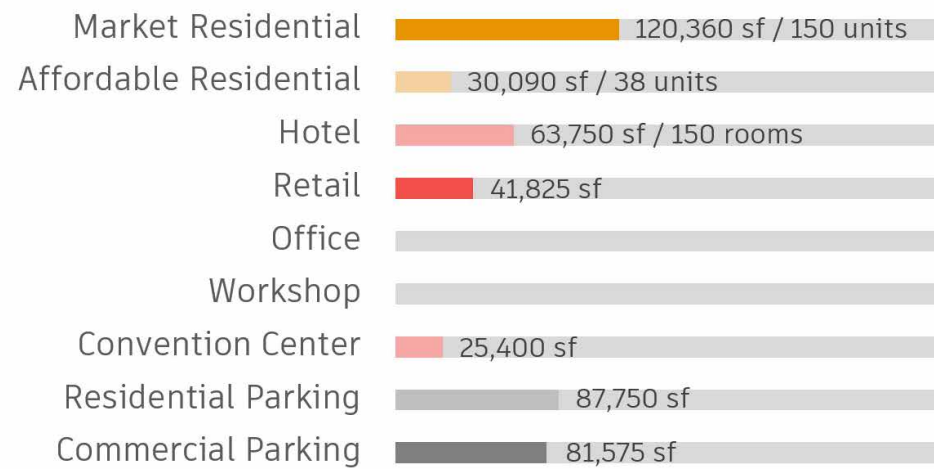
PHASE 01 PROGRAM



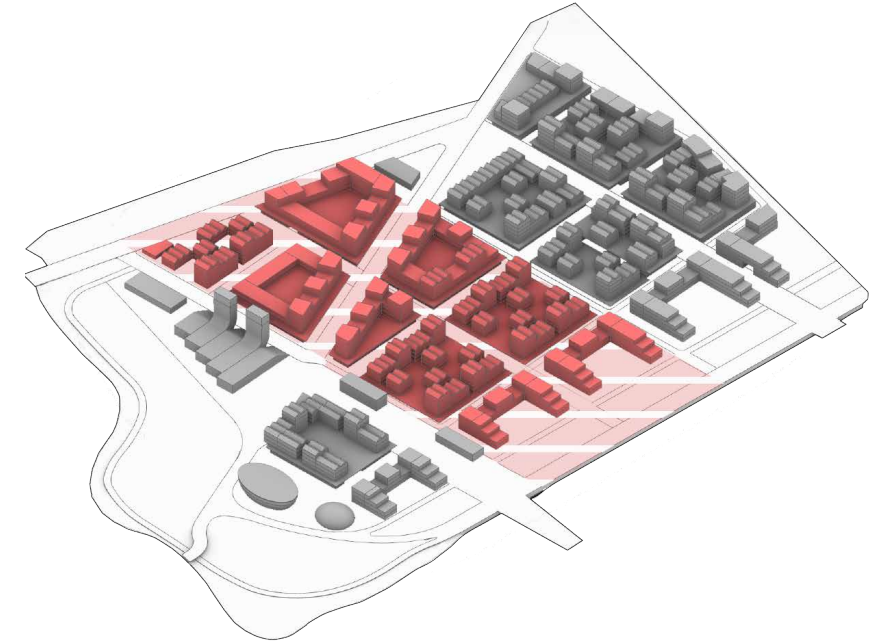
PHASE 02 (BEGINS 2028)



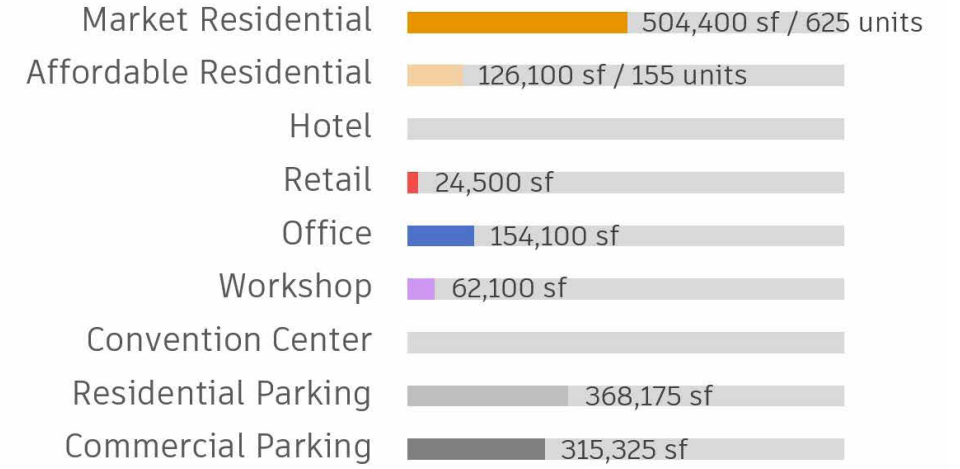
PHASE 02 PROGRAM



PHASE 03 (POST 10 YRS)



PHASE 03 PROGRAM



TOTAL BUILD OUT: 1,427,825 SF
 TOTAL PROJECT COST: \$314,699,712
 YIELD-ON-COST: 6.07%
 UNLEVERED IRR: 13.31%
 LEVERED IRR: 20.63%
 EQUITY MULTIPLE: 1.9X

TOTAL BUILD OUT: 450,750 SF
 TOTAL PROJECT COST: \$177,764,227
 YIELD-ON-COST: 6.06%
 UNLEVERED IRR: 11.71%
 LEVERED IRR: 24.32%
 EQUITY MULTIPLE: 2.3X

COMBINED FINANCIAL RETURNS

UNLEVERED IRR: 12.77%
 LEVERED IRR: 21.73%
 YIELD-ON-COST: 6.07%
 EQUITY MULTIPLE: 2.01X

PARTNERS AND STAKEHOLDERS

PUBLIC AND GOVERNMENT ENTITIES



CIVIC, CULTURAL, AND EDUCATIONAL ENTITIES



CORPORATE ENTITIES

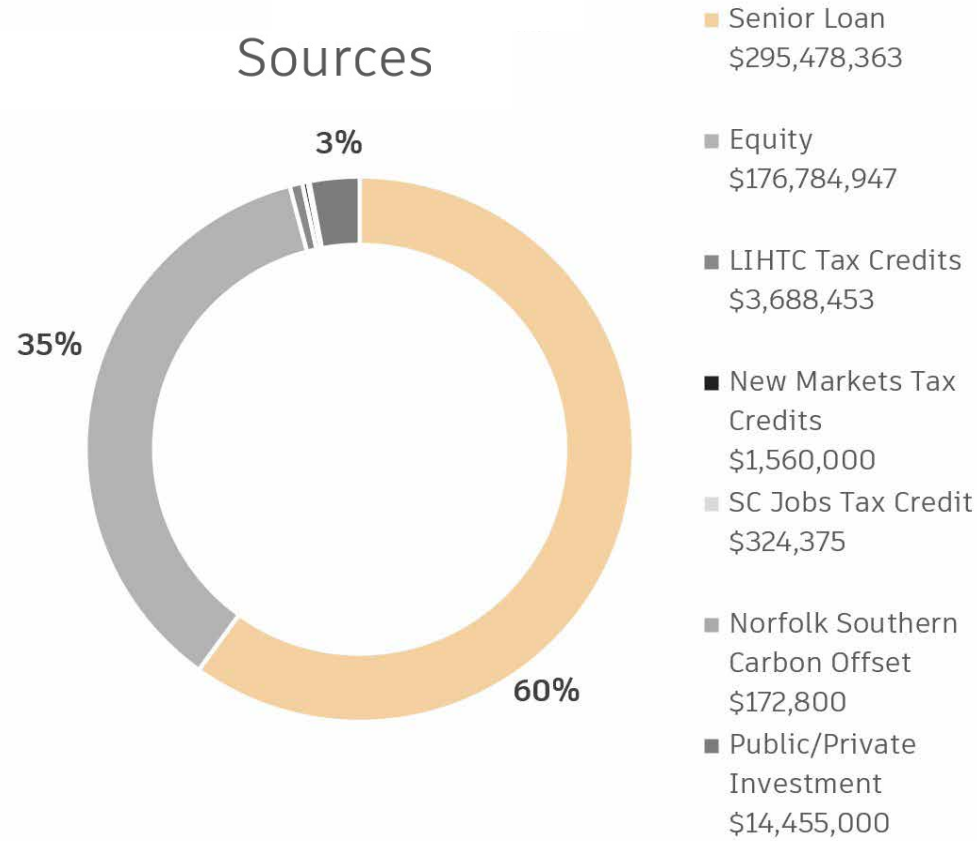


COMMERCIAL ENTITIES

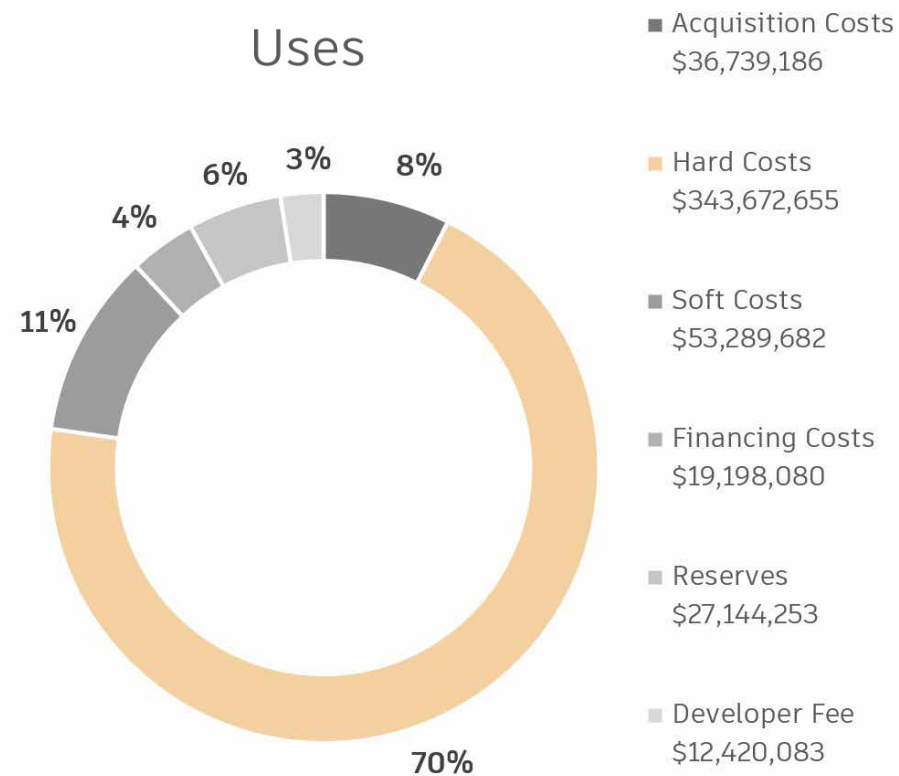


FUNDING + REVENUE

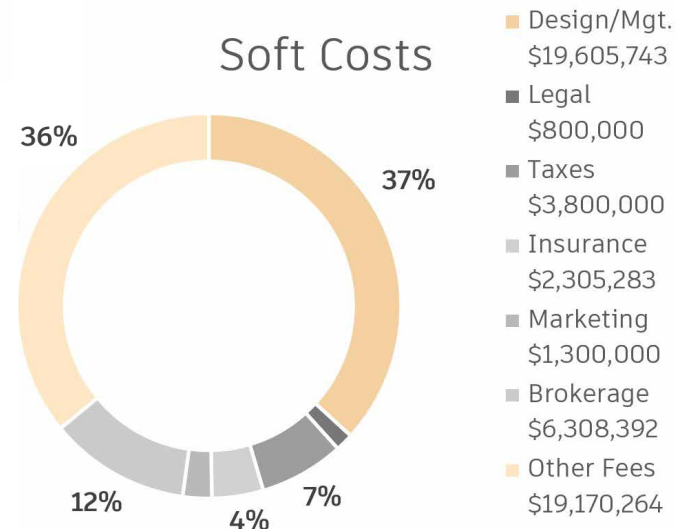
Sources



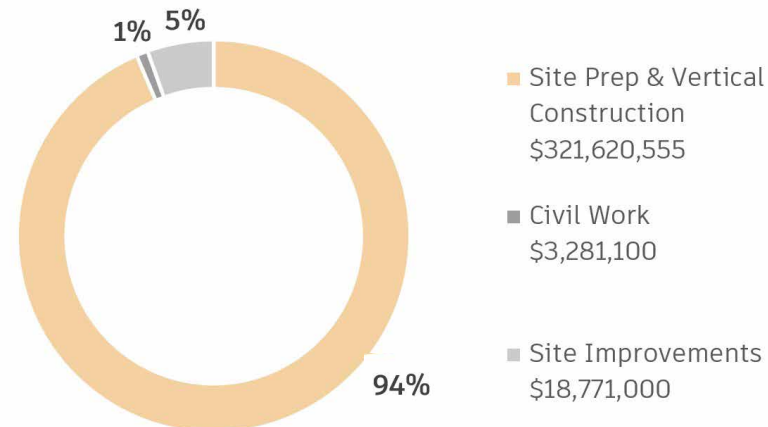
Uses



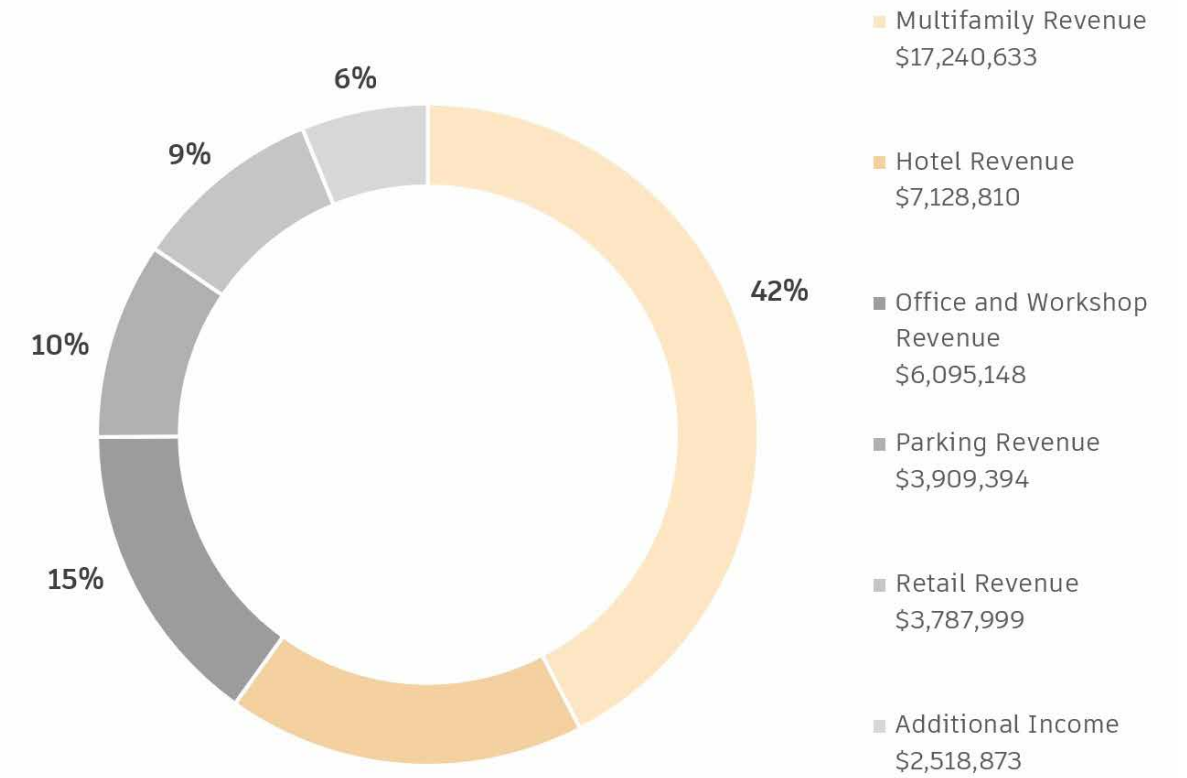
Soft Costs



Hard Costs



Annual Revenue



PHASE I NET OPERATING INCOME:	\$19,112,240
PHASE I PROJECT VALUE:	\$424,716,435
PHASE II NET OPERATING INCOME:	\$10,773,448
PHASE II PROJECT VALUE:	\$239,409,961
TOTAL PROJECT VALUE:	\$664,126,396



PROJECT COST: \$492.5 MILLION

PROJECT VALUE: \$664.1 MILLION

LEVERED IRR: 21.73%

EQUITY MULTIPLE: 2.01X

YIELD-ON-COST: 6.07%

UNLEVERED IRR: 12.77%

THE **QUILT**

UNIVERSITY OF VIRGINIA

TEAM: 2023 - 8514