

Scenario 2: Canal City

Cory Gann, *School of Architecture*

Shannon Strobhar, *School of Architecture*

Thomas Magee, *School of Architecture*

Mojtaba Tahmasebi, *Department of Landscape Architecture*

Carson Crockett, *Department of Urban and Regional Planning*

Scenario 2: Canal City

What if?...

the Cape Coral canal system became the focal point of the ‘Waterfront Wonderland,’ encouraging community movement, while facilitating a sense of place and belonging?



GOALS & OBJECTIVES

“A WATERFRONT WONDERLAND”

1. *Urban & Regional Planning*
Carson Crockett

Create a **community destination** for residents and visitors alike to gather in Cape Coral.
2. *Architecture*
Thomas Magee

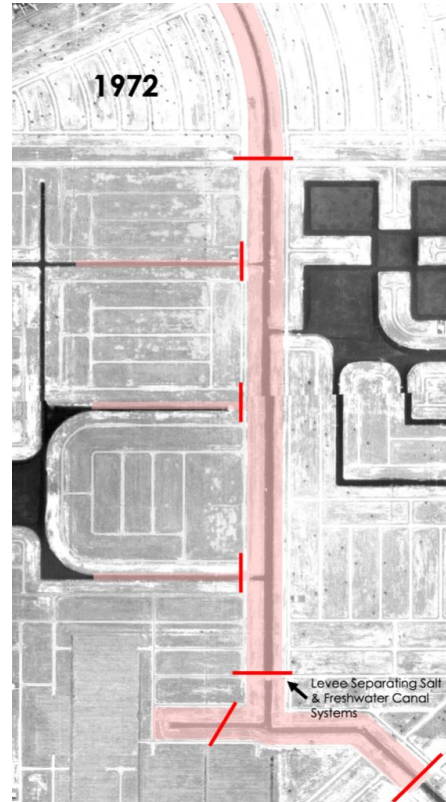
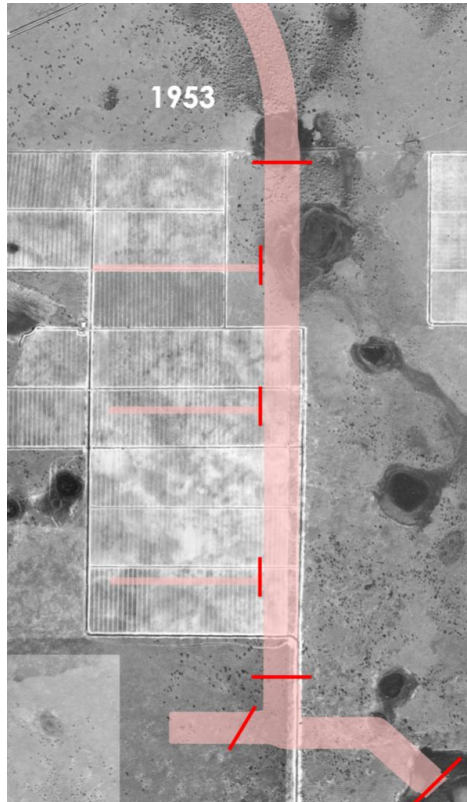
Create a **sense of place** that Cape Coral and its residents can identify with.
3. *Landscape Architecture*
Mojtaba Tahmasebi

Redesign the canals to encourage **biodiversity**, improved habitats, and greater water quality.
4. *Architecture*
Shannon Strobhar

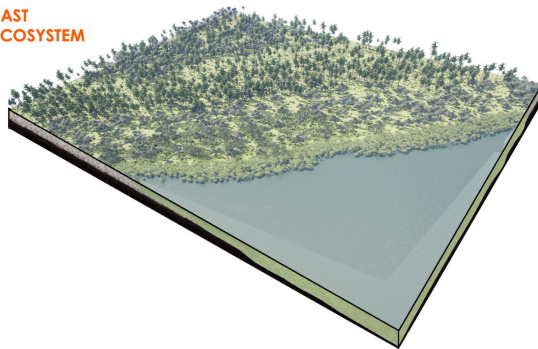
Increase **accessibility** to the canal system through multiple modes of travel.
5. *Architecture*
Cory Gann

Responsibly provide **affordable housing** resilient to sea level rise and natural hazards.

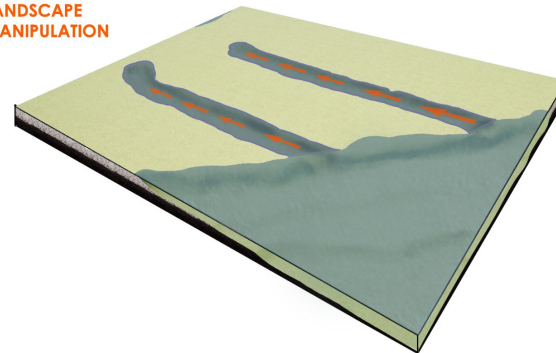
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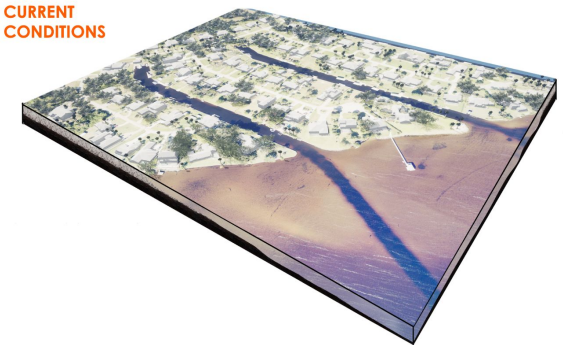
PAST ECOSYSTEM



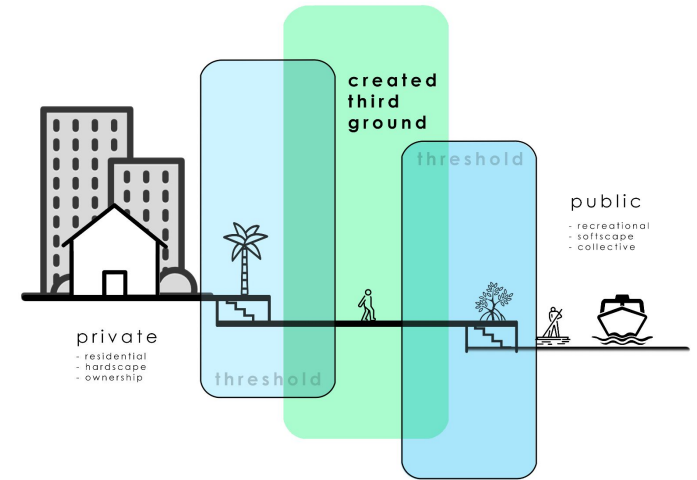
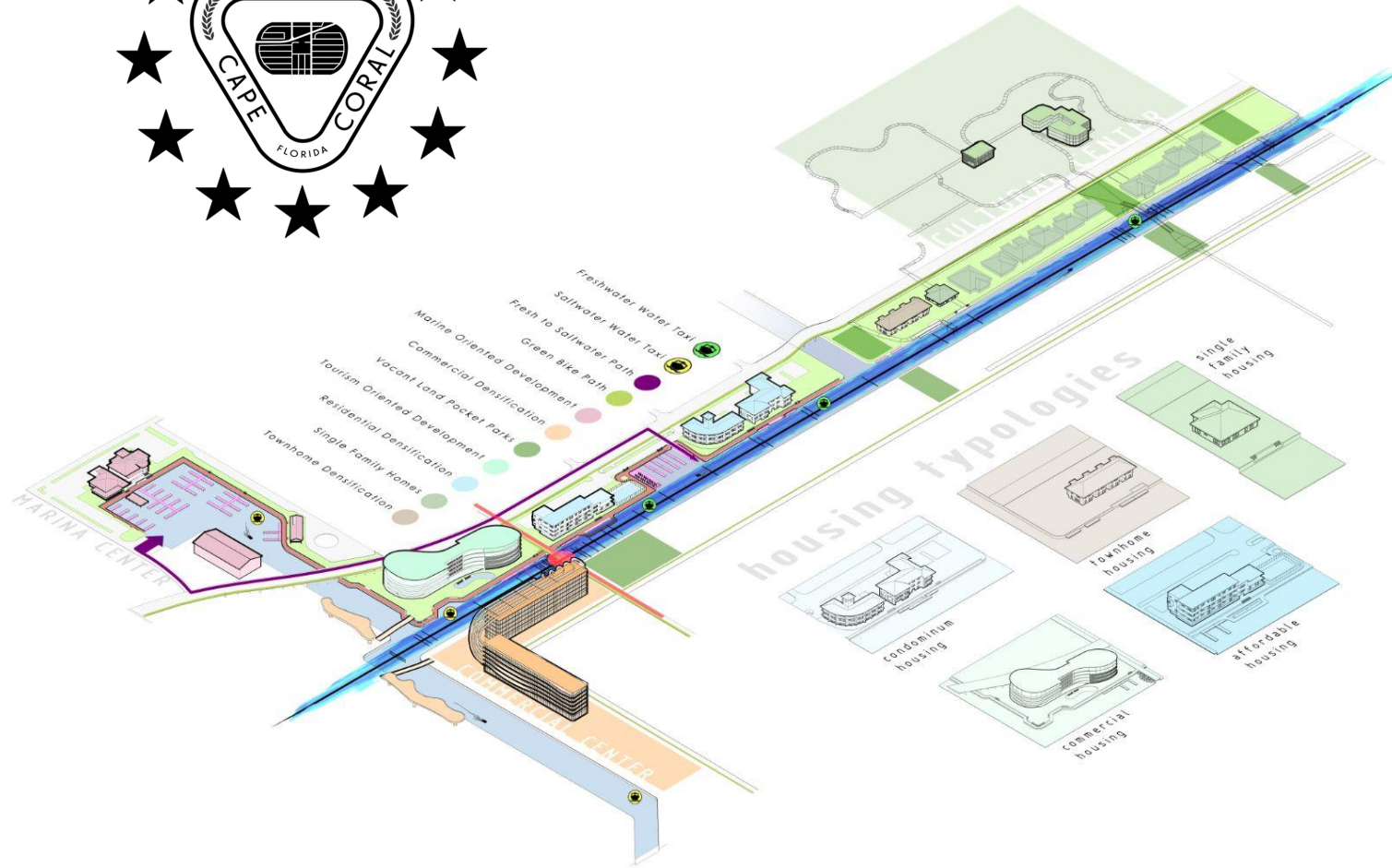
LANDSCAPE MANIPULATION



CURRENT CONDITIONS



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BULLETS

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- Encourage Biodiversity, improve habitats and greater water quality.
- If we allow residential development on vacant lands, the natural soft edges will be replaced by hard edges.



Scenario 2: Canal City

Proposed Development by the Numbers (Approximation)

Site Area = 130ac



63% Increase in Housing Units

122 New units, half are marked for affordable housing



150,000 SqFt

New dining, retail, and commercial space



13 acres

New, publicly accessible park space

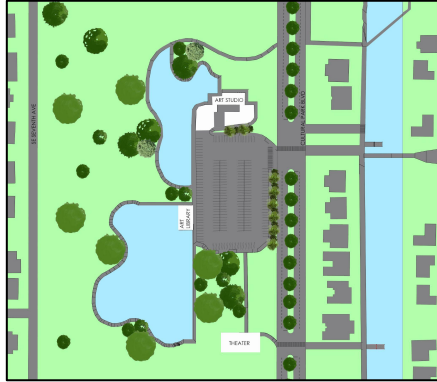


2% Reduction in impervious space

	Current	Removing	Adding	Net Difference	Proposed
Density (DUA)	1.50	--	--	1.00	2.50
Single Family Units	70	1	0	-1	69
Duplex, Triplex, Quadplex Multifamily Units	116	28	0	-28	88
Townhome Multifamily Units	0	0	9	9	9
Apt Multifamily Units	8	8	90	82	90
Apt Multifamily Affordable Restricted Units	0	0	60	60	60
Total Housing Unit Change	194	37	159	122	316
Hotel Room Units	0	0	170	170	170
Intensity (FAR)	0.10	--	--	0.10	0.20
Hotel (SqFt)	0	0	80000	80000	80000
Commercial, Retail, & Dining (SqFt)	0	0	150000	150000	150000
Industrial & Storage (SqFt)	58500	58500	0	-58500	0
Accessible Park Space (ac)	16.43	0.00	13.00	13.00	29.43
Impervious Surface (ac)	34.86	3.44	2.87	-0.57	34.28

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Individual Projects Key

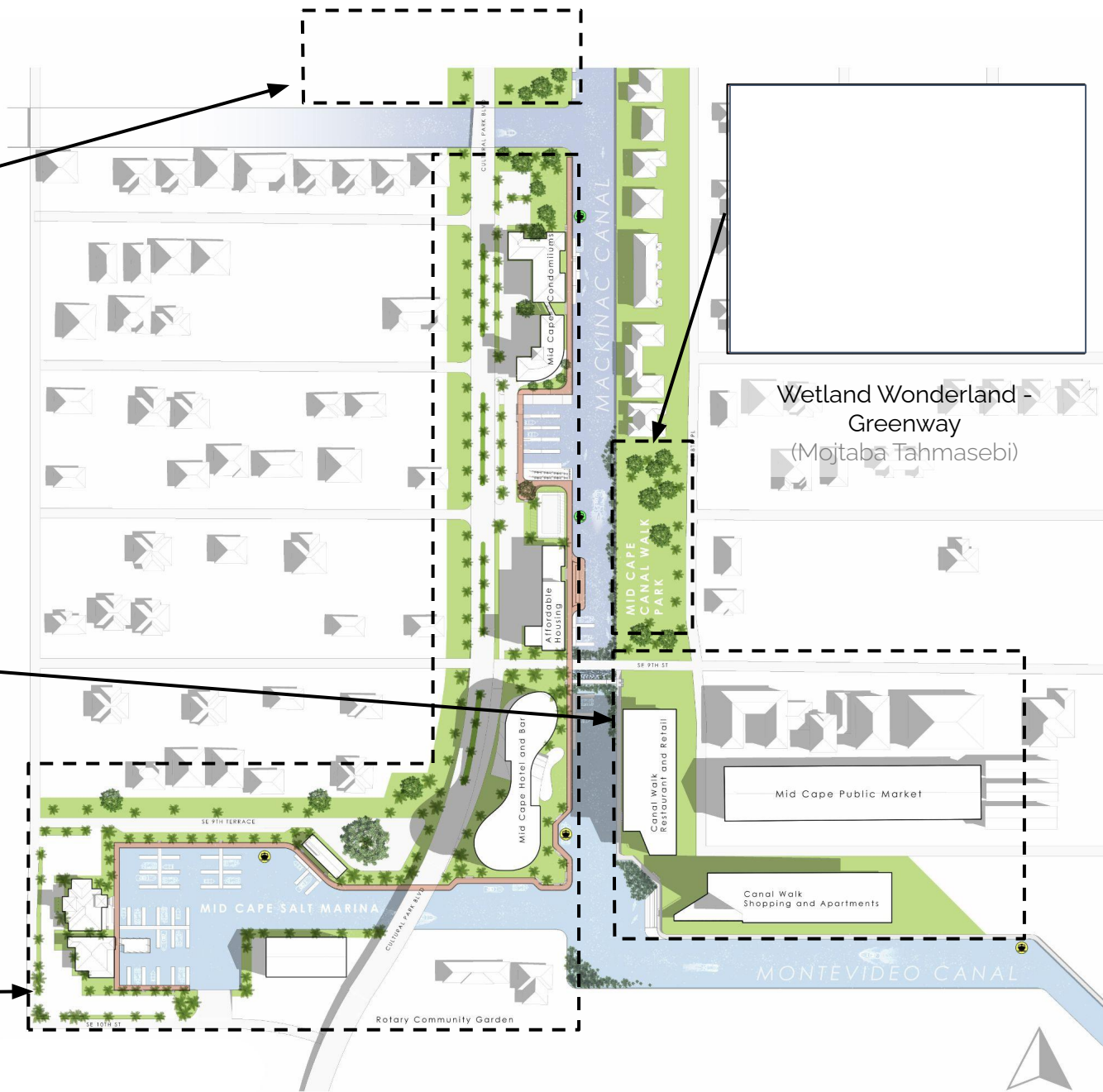


Cultural Center - Art District
(Shannon Strobhar)



Commercial District - Mixed Use
(Thomas Magee)

Canal Walk - Housing Gradient
(Cory Gann)



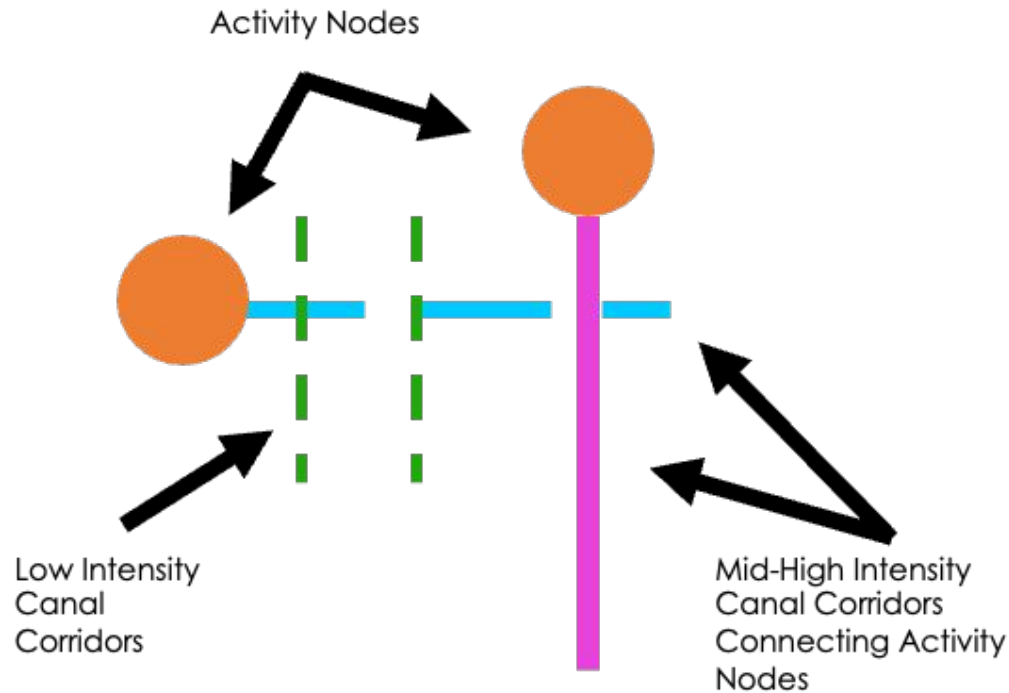
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Canal Policy

Carson Crockett, Department of Urban and Regional Planning

Addressing one canal does not create a paradigm shift.
Applying a system of canal hierarchies to a broader area could create a true city-wide shift towards the canal system.

Concept Diagram



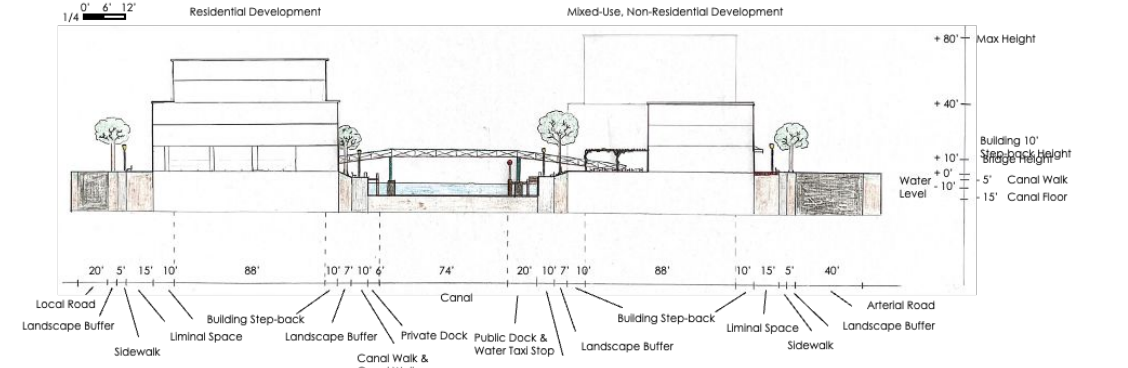
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Canal Policy

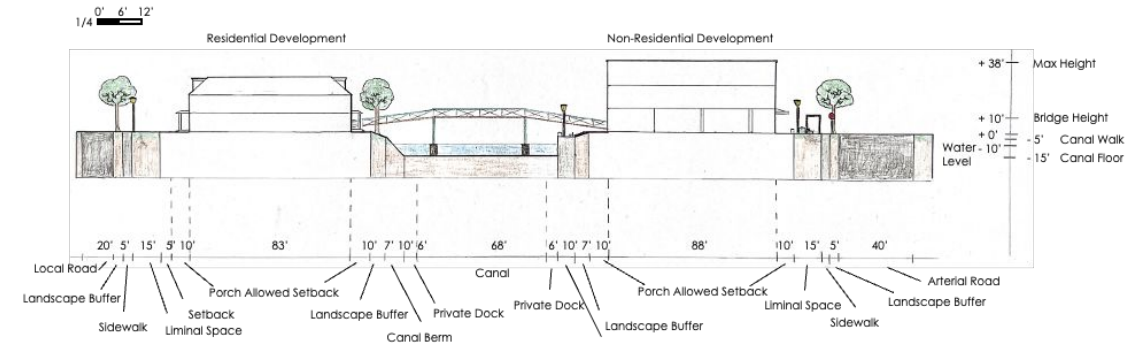
Carson Crockett, Department of Urban and Regional Planning



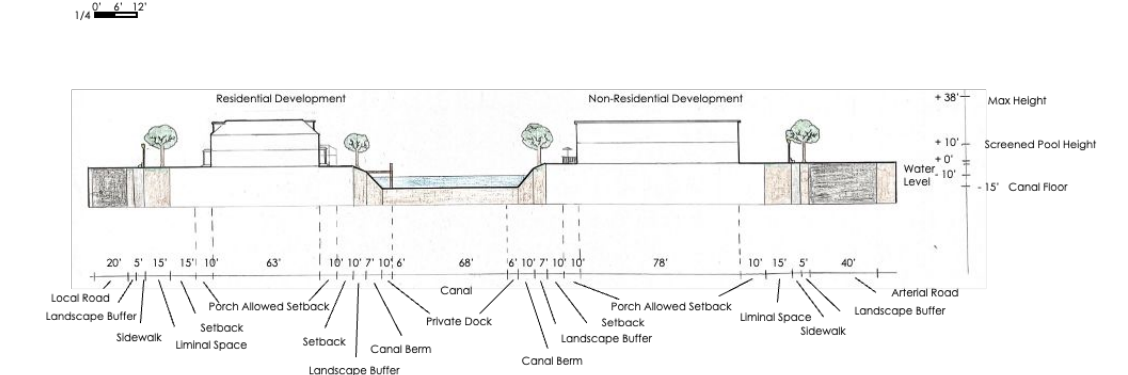
Type A Canal



Type B Canal



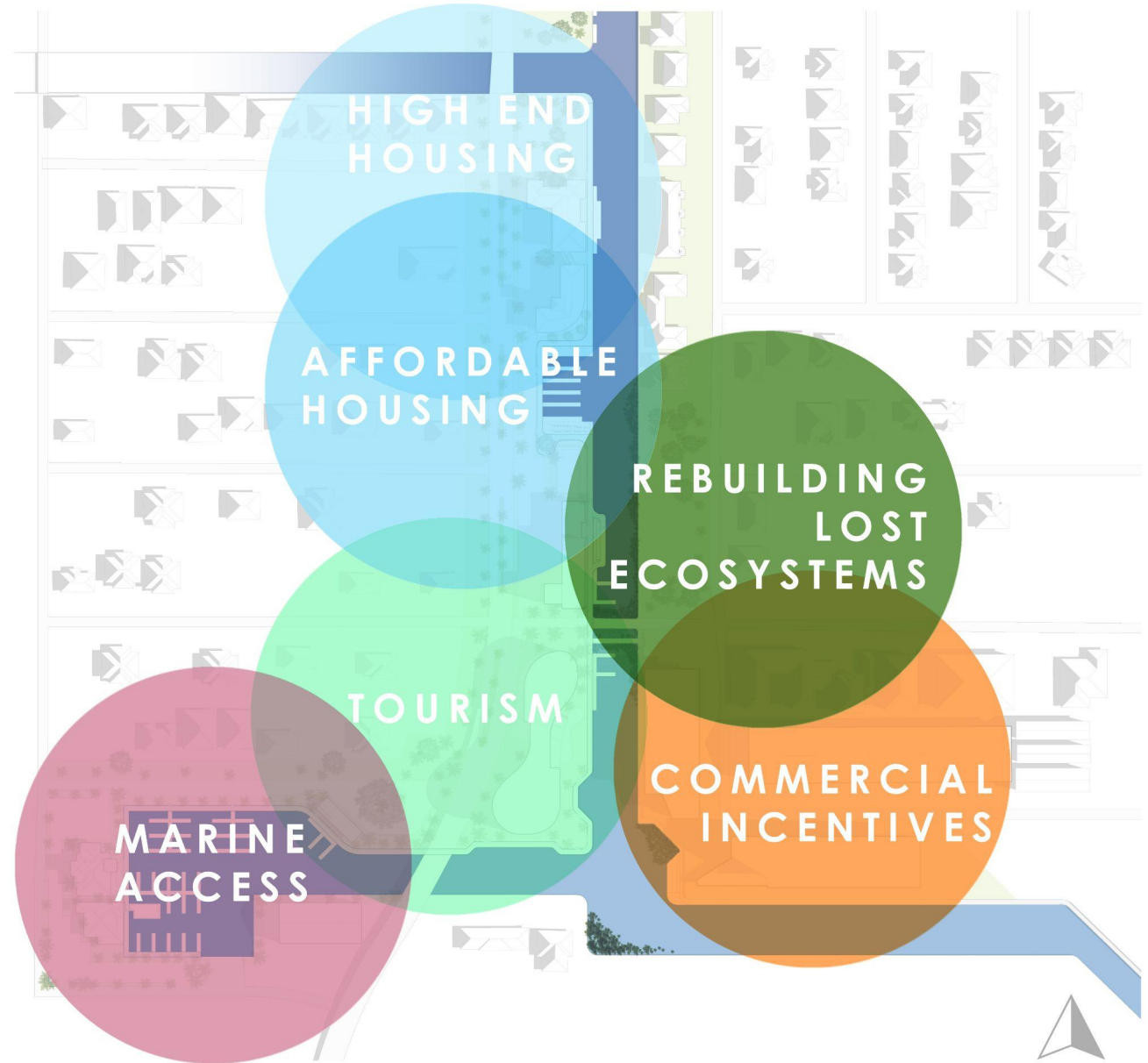
Type C Canal



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Core at the End of Two Canals

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Salt and Freshwater Canal Walk

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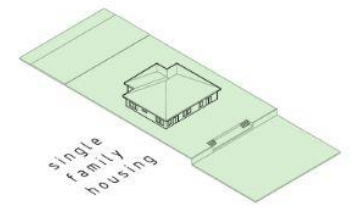
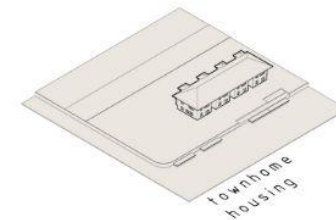
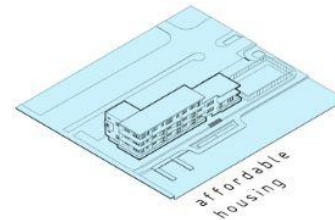
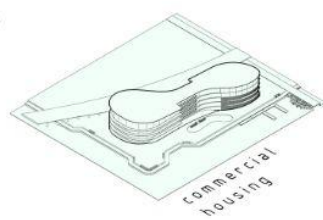
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Residential Transition Spaces

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housing typologies

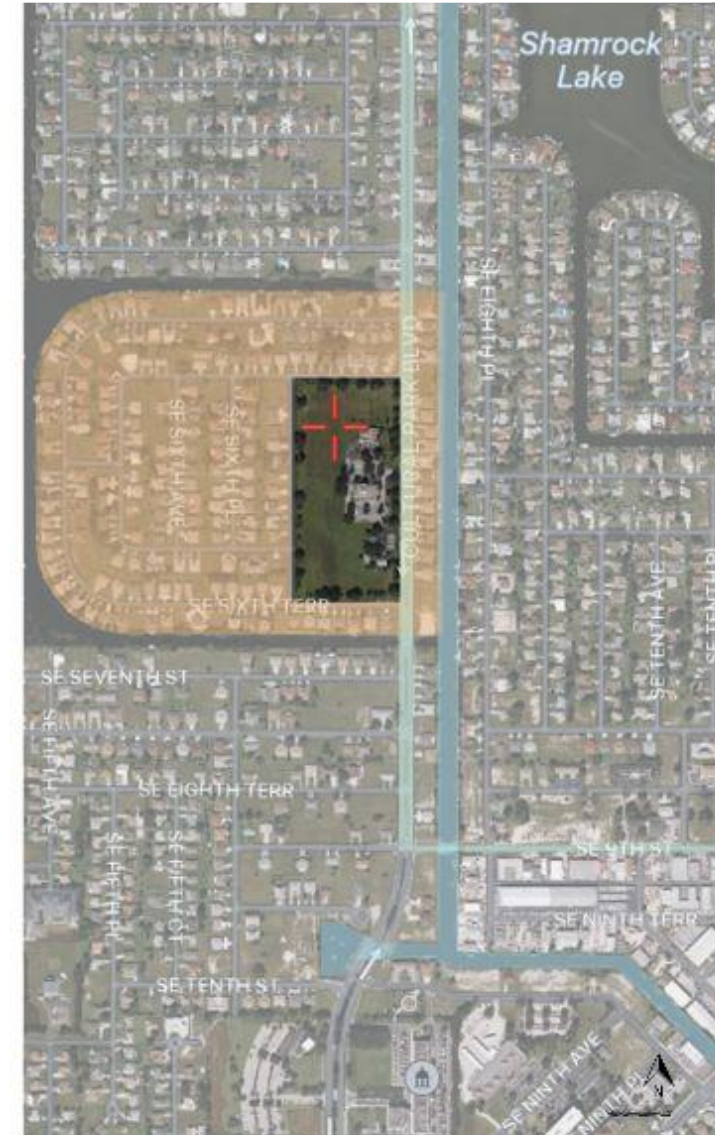


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Cultural Center

Shannon Strobhar, School of Architecture

Granular City
Transportation City
Canal City



Scenario 2: Canal City

A Place to Connect

Shannon Strobhar, School of Architecture

TYPOLOGY: CONNECTIVITY

Artistic Connection

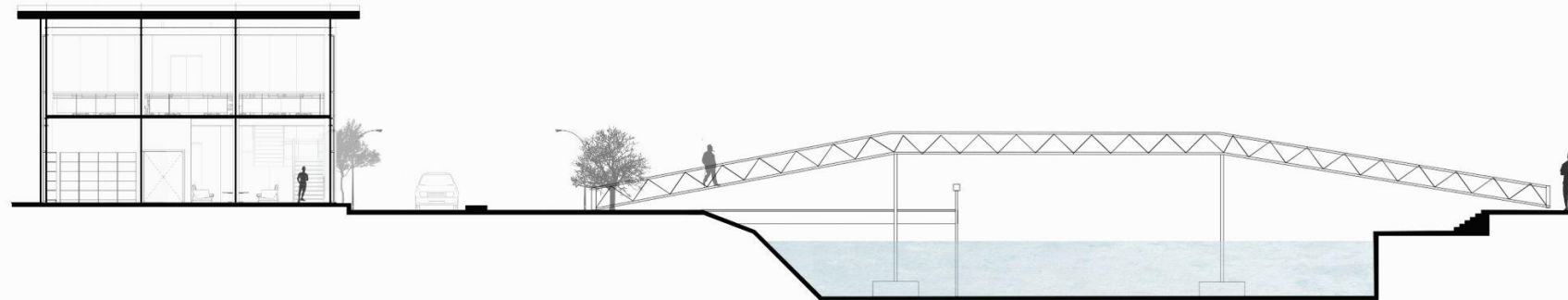
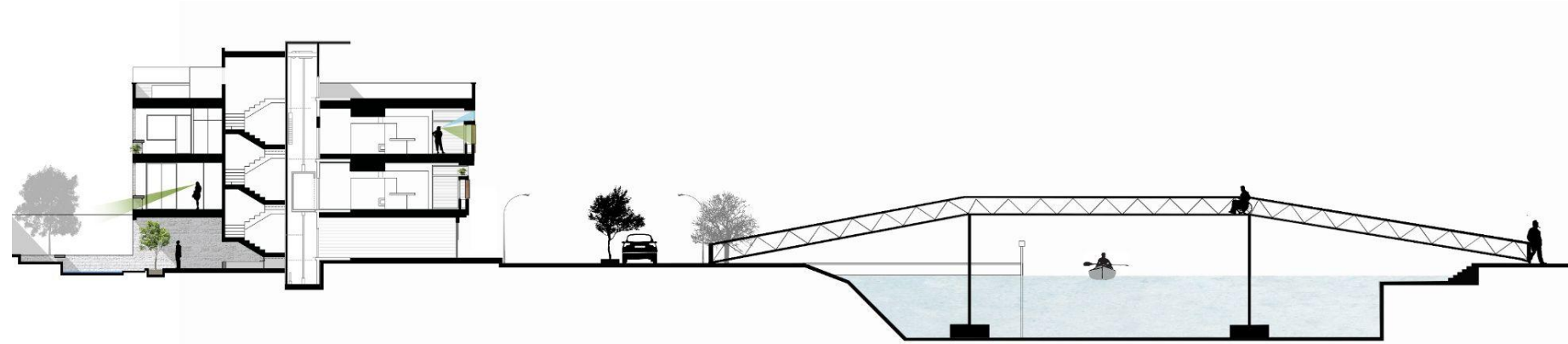
THEATER: 6,500 SQFT

ART LIBRARY: 4,200 SQFT

ART STUDIO: 12,000 SQFT

Aquatic Connection

Pedestrian Connection



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An Accessible Future

Shannon Strobhar, School of Architecture



Scenario 2: Canal City

Wetland Wonderland

Mojtaba Tahmasebi, School of landscape Architecture

- Improve Connections between environment of land and water through hardscape and softscape barrier.
- Through occupying vacant land and varying typologies, this will increase biodiversity, habitat strength, and water quality.



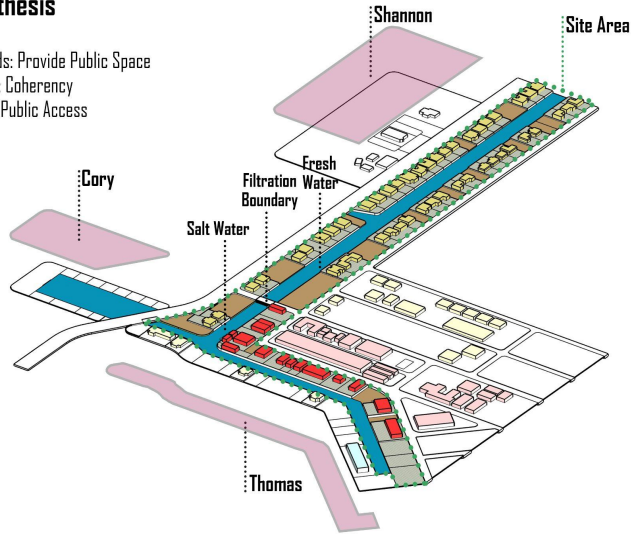
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Wetland Wonderland

Mojtaba Tahmasebi, School of landscape Architecture

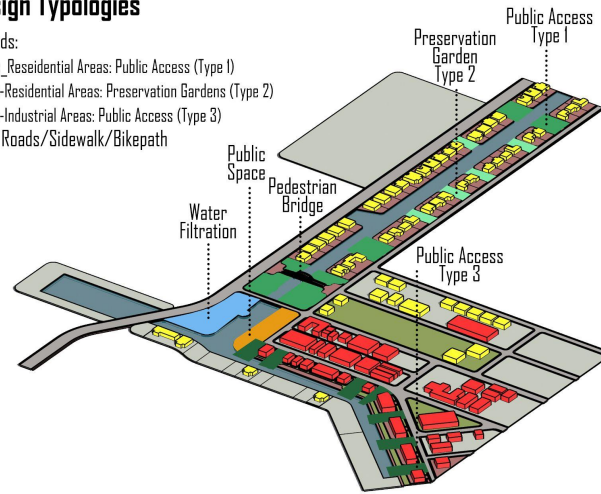
Site Synthesis

- Vacant Lands: Provide Public Space
- Hard Edges: Coherency
- Soft Edges: Public Access



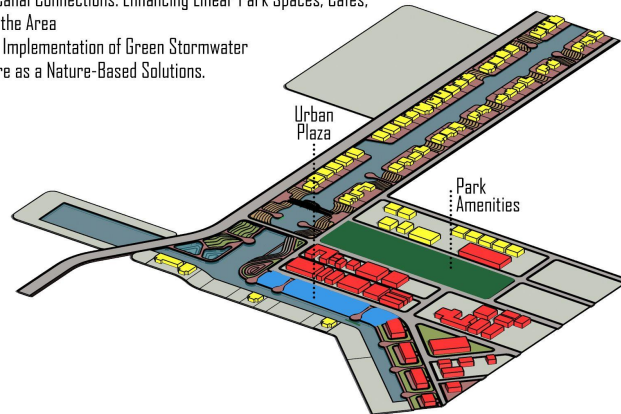
Site Design Typologies

- Vacant Lands:
- Vacant Lands-Residential Areas: Public Access (Type 1)
- Vacant Lands-Residential Areas: Preservation Gardens (Type 2)
- Vacant Lands-Industrial Areas: Public Access (Type 3)
- Hierarchy: Roads/Sidewalk/Bikepath

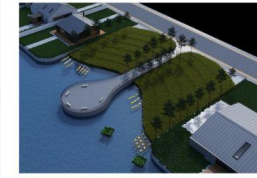


Future Development

- Urban Plaza: Revitalizing Canal Connections: Enhancing Linear Park Spaces, Cafes, and Retail in the Area
- Flood Park: Implementation of Green Stormwater Infrastructure as a Nature-Based Solutions.



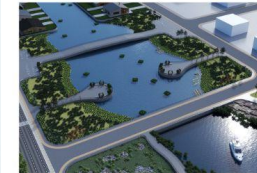
Site Plan



Typology 1



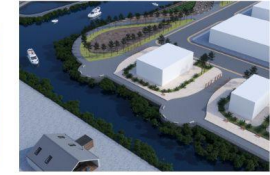
Typology 2



Typology 3



Typology 4



Typology 5



1. Vertical Flow Wetland
2. Horizontal Subsurface Flow Wetland
3. Filter Treatment
4. Free Water Surface Wetland

Types of Plants

Typology 1:

1. Slash pine
2. Grass
3. Floating Wetlands

Typology 2:

1. Slash pine
2. *Tripsacum floridanum*
3. Floating Wetlands

Typology 3:

1. *Spartina bakeri*
2. *Hamelia patens* (Firebush)
3. Floating Wetlands

Typology 4:

1. *Cyperus Papyrus*
2. *Typha angustifolia*
3. *Cyperus alternifolius*
4. *Eleocharis dulcis*
5. *Eichhornia crassipes* plant
6. *Hydrilla verticillata* If royle plant
7. American Lotus
8. Red mangrove
9. *Quercus virginiana* (live oak)

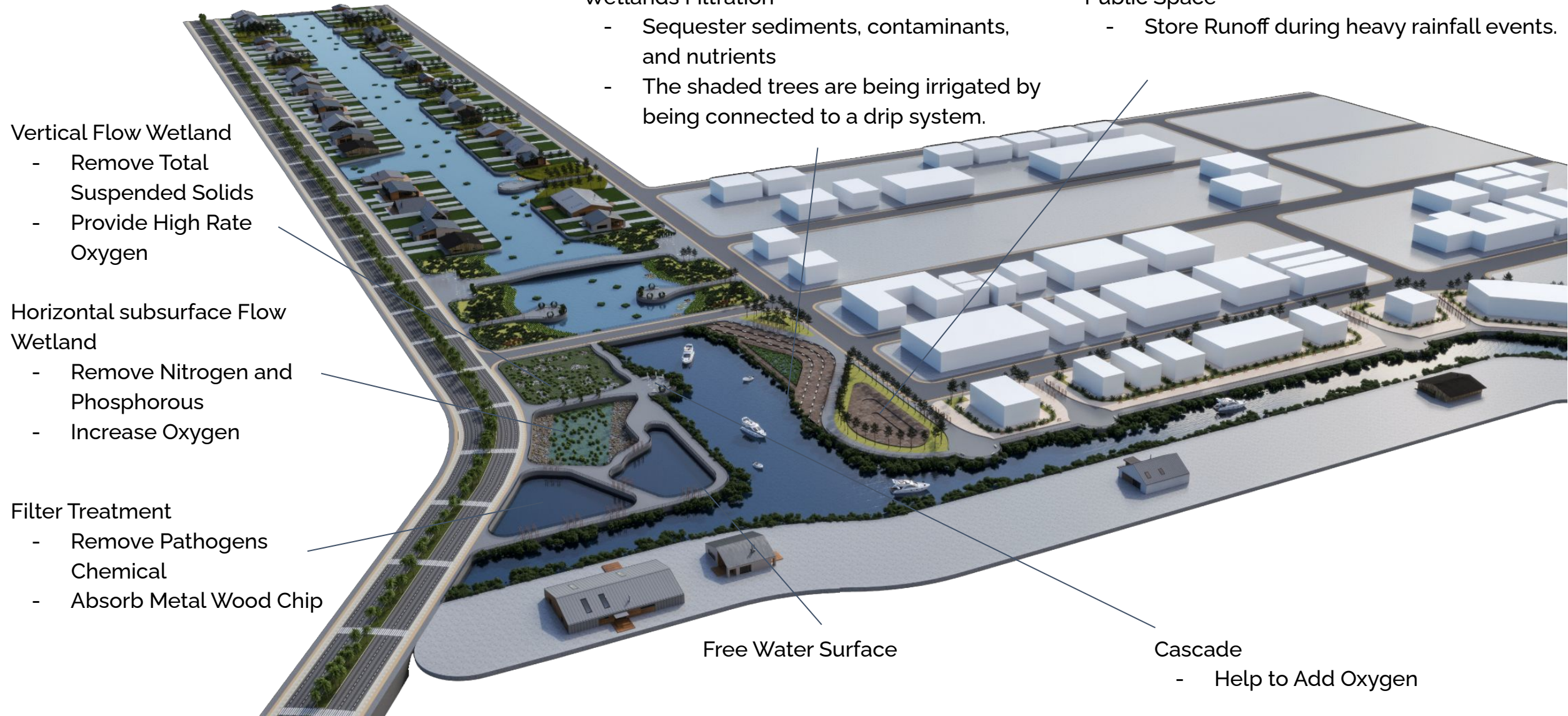
Typology 5:

1. Slash pine
2. Coontie, Arrowroot
3. Royal Palm (palm)
4. *Typha angustifolia*
5. Red Mangrove

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Wetland Wonderland

Mojtaba Tahmasebi, School of landscape Architecture



Vertical Flow Wetland

- Remove Total Suspended Solids
- Provide High Rate Oxygen

Horizontal subsurface Flow Wetland

- Remove Nitrogen and Phosphorous
- Increase Oxygen

Filter Treatment

- Remove Pathogens Chemical
- Absorb Metal Wood Chip

Wetlands Filtration

- Sequester sediments, contaminants, and nutrients
- The shaded trees are being irrigated by being connected to a drip system.

Public Space

- Store Runoff during heavy rainfall events.

Free Water Surface

Cascade

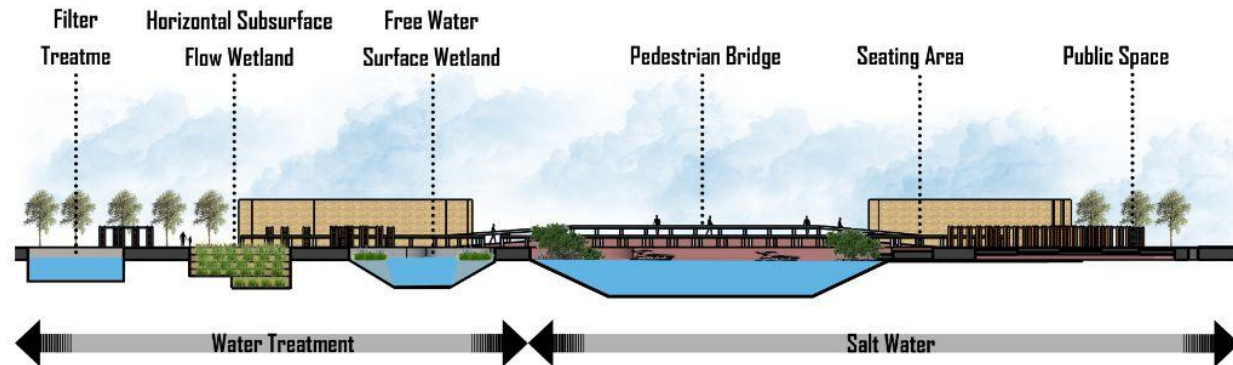
- Help to Add Oxygen

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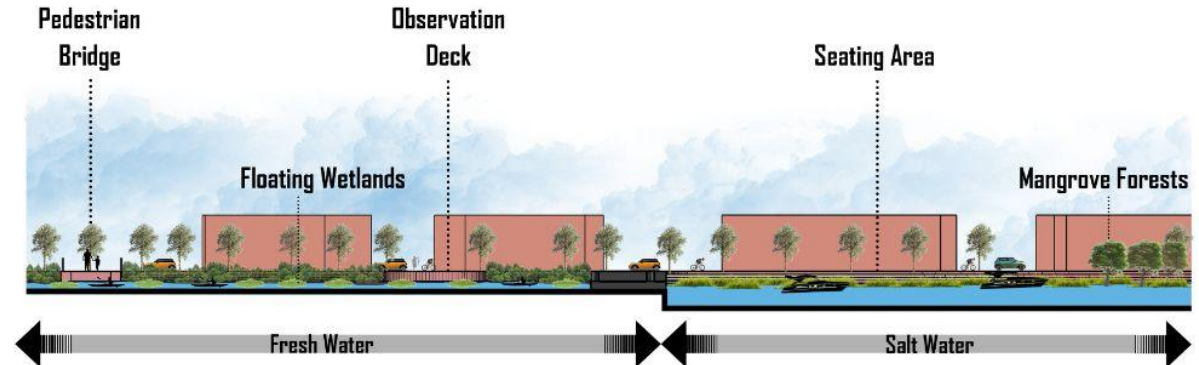
Wetland Wonderland

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Fresh Water: Floating Wetlands



Salt Water: Mangrove and Aquatic plants



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Commercial District

Thomas Magee, School of Architecture



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Commercial District

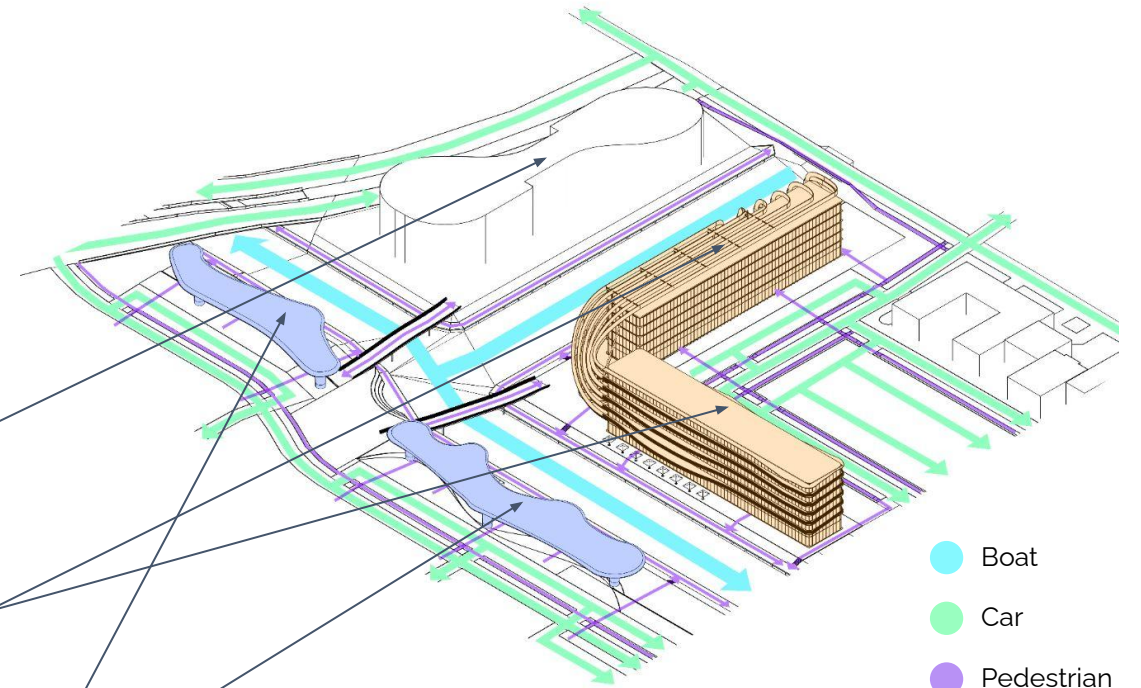
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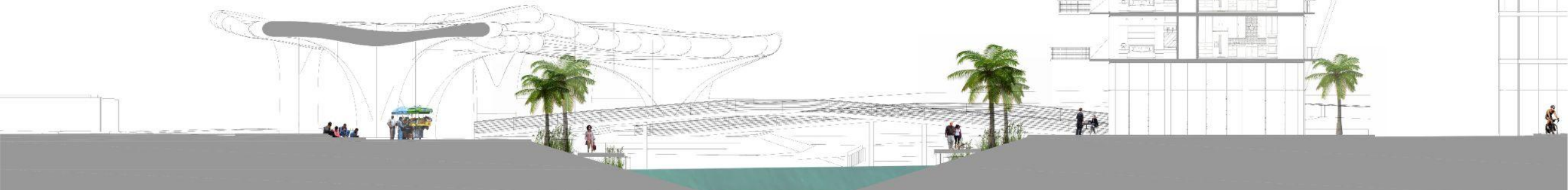
Hotel

Mixed Use

Marketplace



- Boat
- Car
- Pedestrian

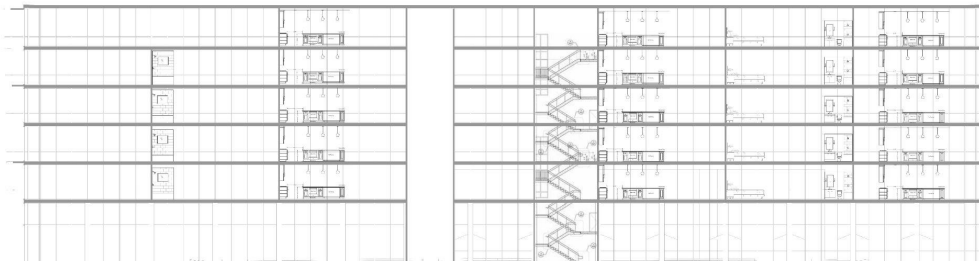
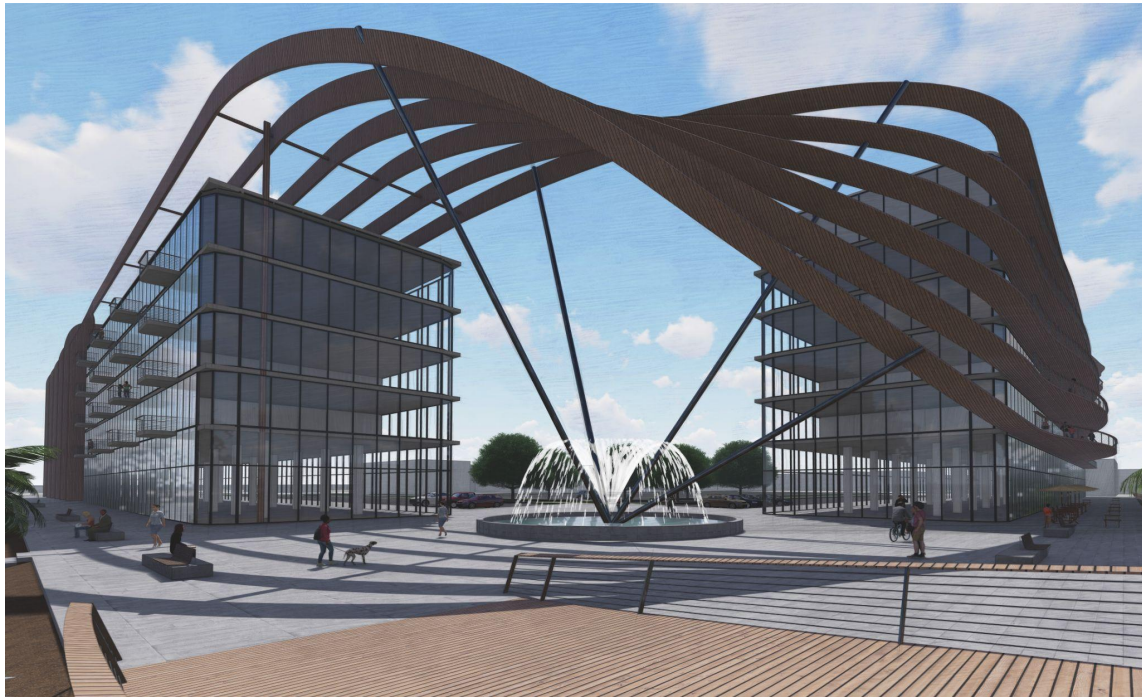


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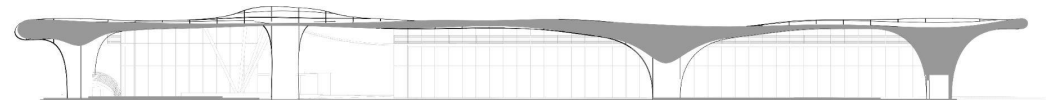
Commercial District

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Mixed Use Typology



Marketplace Typology



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Canal Policy

Carson Crockett, Department of Urban and Regional Planning

New development regulations Introduced
as part of the tiered canal system

Incremental Change Over Time

