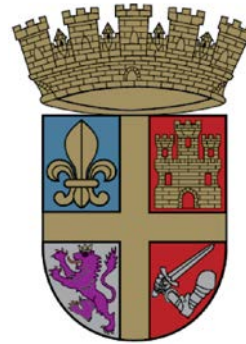


City of St. Augustine Resiliency Strategy Workshop



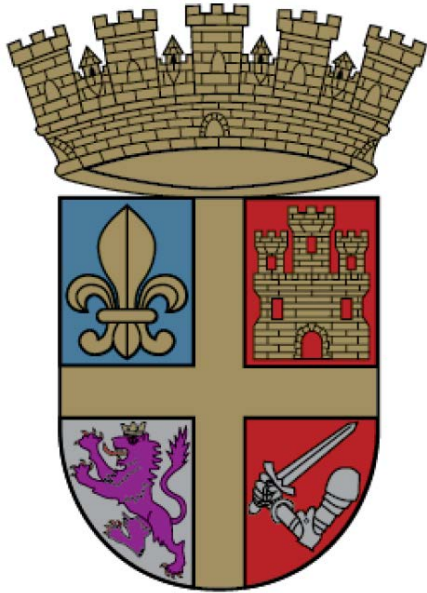
Welcome & Registration

Overview of the Day's Agenda

City of St. Augustine Resiliency Strategy Workshop

Rebecca Vanderbeck, PE
Wood Environment & Infrastructure Solutions

Introductions



Mayor Nancy Shaver

City Manager – John Regan

Public Works Deputy Director – Todd Grant

Environmental Compliance Analyst – Glabra Skipp

Introductions



Workshop Facilitators and Resiliency Strategy Experts

wood.

SCAPE

Agenda

May 8, 2018

9:00 am	Registration	
9:30 am	Overview of the Day's Agenda	Rebecca Vanderbeck, Wood
10:00 am	Welcome	Mayor Nancy Shaver, City of St. Augustine
10:20 am	What is Resiliency and why are we here? Vision and priorities	John Regan, City of St. Augustine
10:40 am	Why are we creating a Resilience Strategy? Hazards and vulnerabilities	Todd Grant, City of St. Augustine
11:00 am	Break	
11:15 am	Roadmap to Resiliency An overview of resilience strategy framework and how it will support City of St. Augustine	Rebecca Vanderbeck, Wood
11:45 am	Lunch setup	
12:00 pm	Resilience Inspiration and Success Stories Projects from around the world (working lunch)	Peter Hall, Wood Pippa Brashear, SCAPE



Agenda

May 8, 2018

1:00 pm	City Context: Priority Shocks and Stresses Review shocks and stresses	Chris Barnes, SCAPE
1:15 pm	Facilitation Exercise: Breakout by Asset Types Identify priority area(s) and critical city assets; discuss vulnerability to shocks and stresses	Pippa Brashear, SCAPE
2:15 pm	Break	
2:30 pm	Facilitation Exercise: Evaluating Resilience Discuss how to evaluate resilience on project basis	Rebecca Vanderbeck, Wood
3:00 pm	Next Steps and Adjourn	Todd Grant, City of St. Augustine



Objectives for Today

- Confirm list of **critical shocks and stresses** for City of St. Augustine
- Identify the **key City assets** that are vulnerable to those shocks and stresses
- Identify or develop **criteria to evaluate projects** to improve resilience of those assets

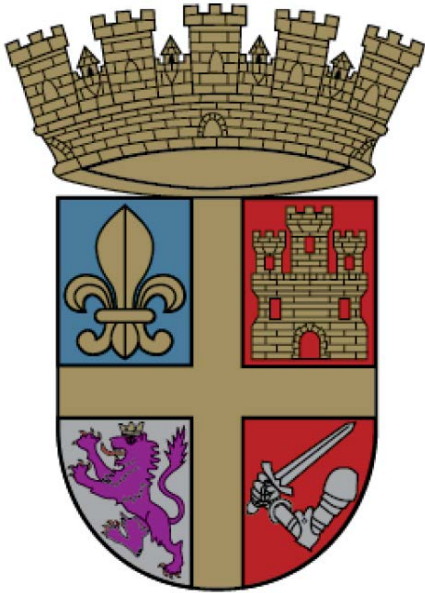


Logistics

- Sign-in Sheet
- Restrooms
- Emergency Exits
- Lunch
- Phones



Presentations



Opening Address and Welcome
Mayor Nancy Shaver

Resiliency and Vision
City Manager – John Regan

Why are we creating a resilience strategy?
Public Works Deputy Director – Todd Grant

Roadmap to Resiliency

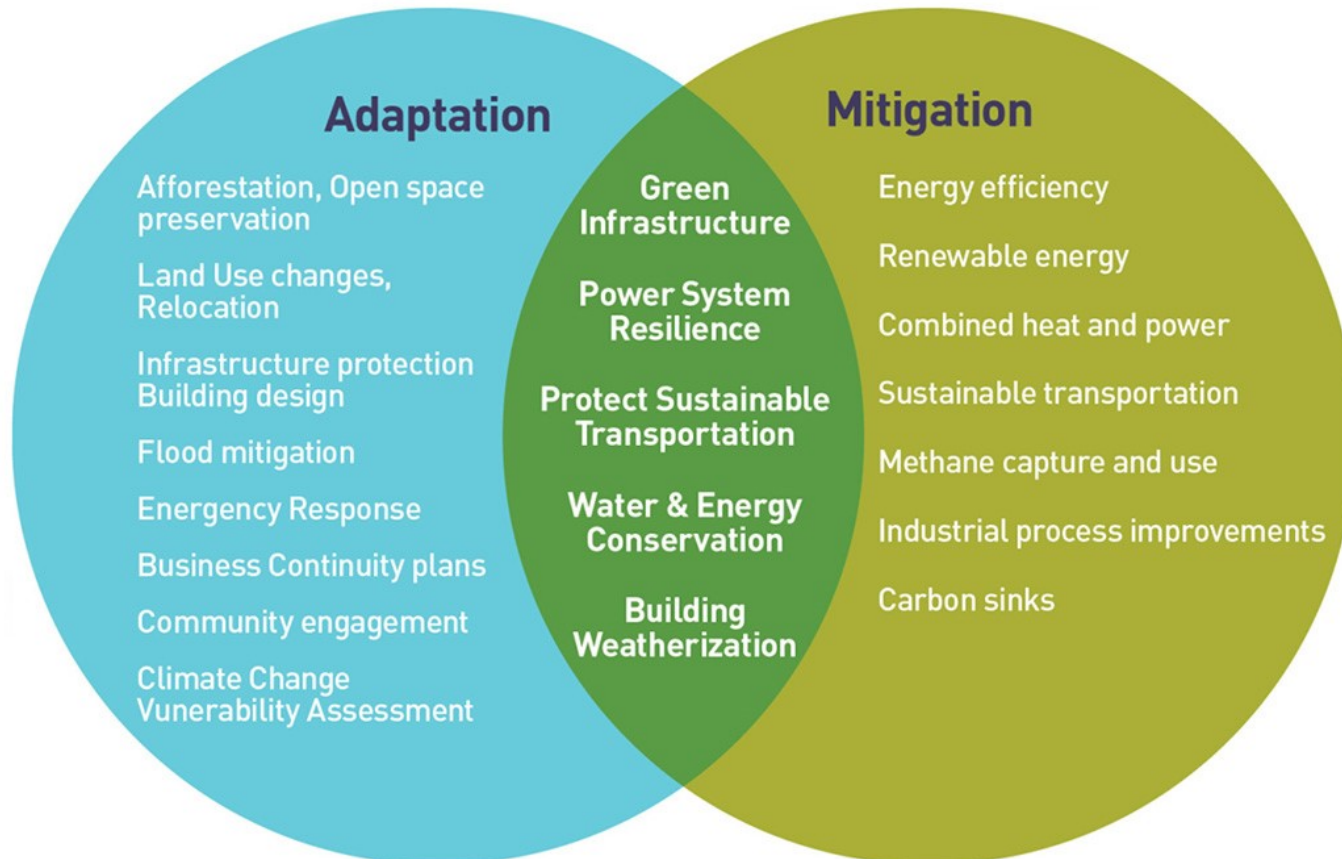
An overview of resilience strategy framework and how it will support the City of St. Augustine

Resilience Defined

Urban resilience can be defined as “the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience.”

– 100 Resilient Cities

Resiliency vs. Sustainability



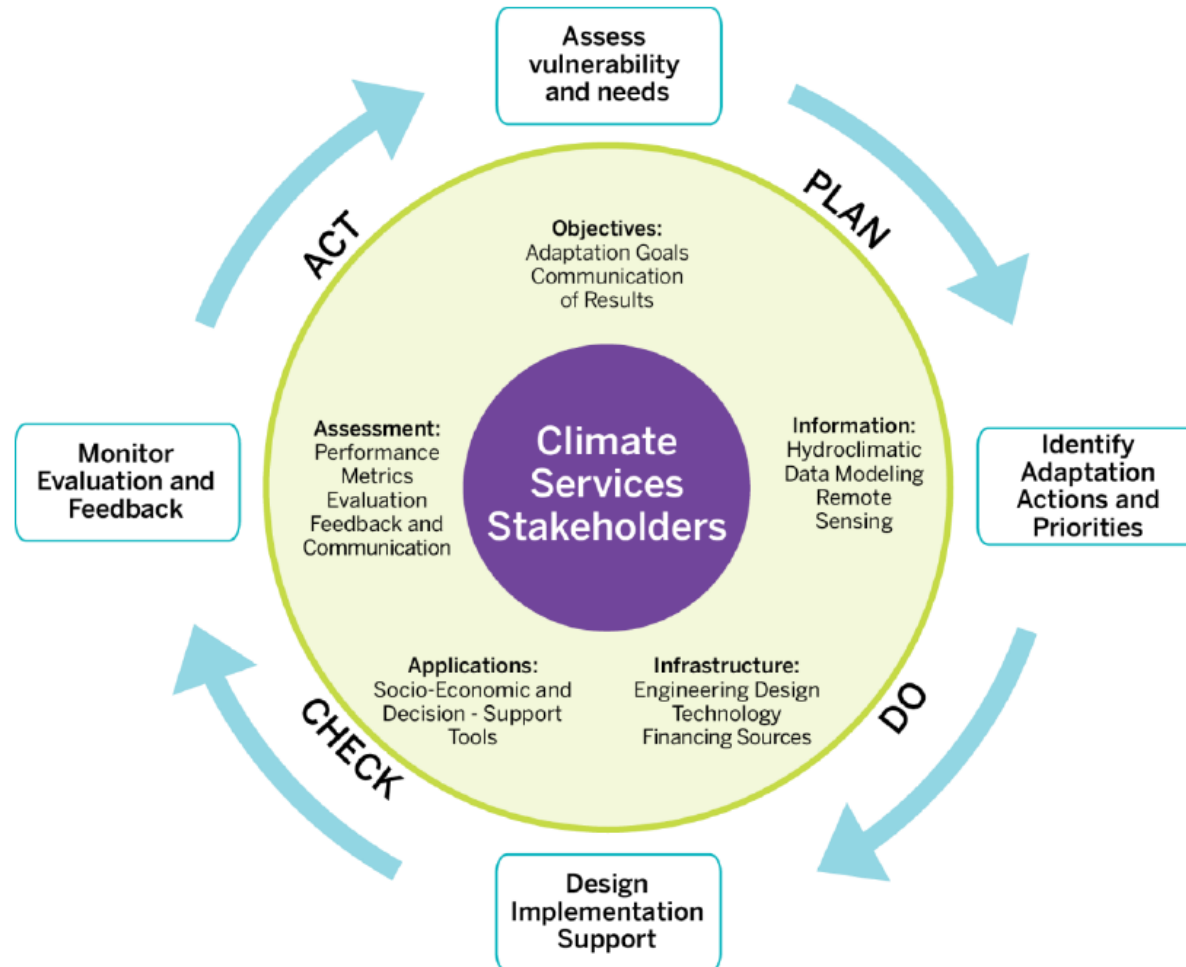
Key Outcomes

The City's Resilience Plan will:

- Be a product of cross-sector **input** with broad **buy in** and adoption
- Include a **scorecard** to aid the City in prioritizing capital improvements
- Include actionable **initiatives** aimed at solving specific resilience problems
- Form the basis for allocated city capital **budgets** on projects that can result in significant value for the city and identify future **funding** streams for key projects



Strategy Framework



Today's Focus

Shocks and Stresses

- Review hazards and vulnerabilities outlines identified in previous studies
- Confirm list of critical shocks and stresses

Vulnerable Assets

- Identify key City assets in each group
- Which assets are most vulnerable to shocks and stresses?

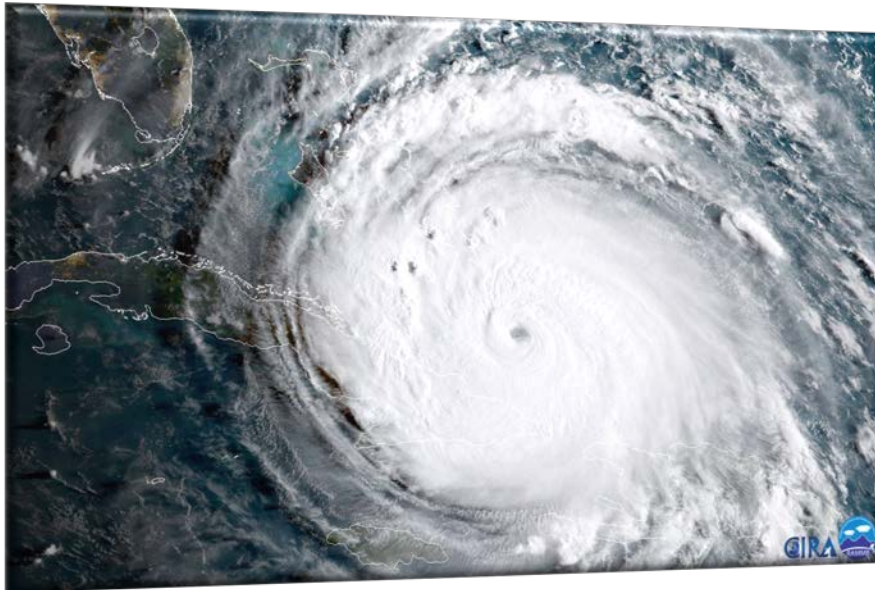
Evaluation Criteria

- What makes a project “resilient” for St. Augustine?
- Development of project scorecard

Shocks and Stresses

Shocks

Shocks are typically considered **single event disasters**, such as fires, hurricanes, and floods.



Stresses

Stresses are factors that **pressure a city on a daily or reoccurring basis**, such as chronic food and water shortages, an overtaxed transportation system, endemic violence or high unemployment.



Identify Vulnerable Assets

Social/Cultural/Historic Resources

- Tourist destinations
- Historic buildings/districts
- Cemeteries
- Churches
- Libraries
- Museums
- Theaters
- Schools

Open Space & Natural Resources

- Natural areas
- Conservation areas
- Parks
- Marinas
- Wetlands
- Beaches
- Rivers

Health and Human Resources

- Hospitals/clinics
- Emergency response
- Fire stations
- Police
- Government
- Nursing homes
- Community centers
- Shelters

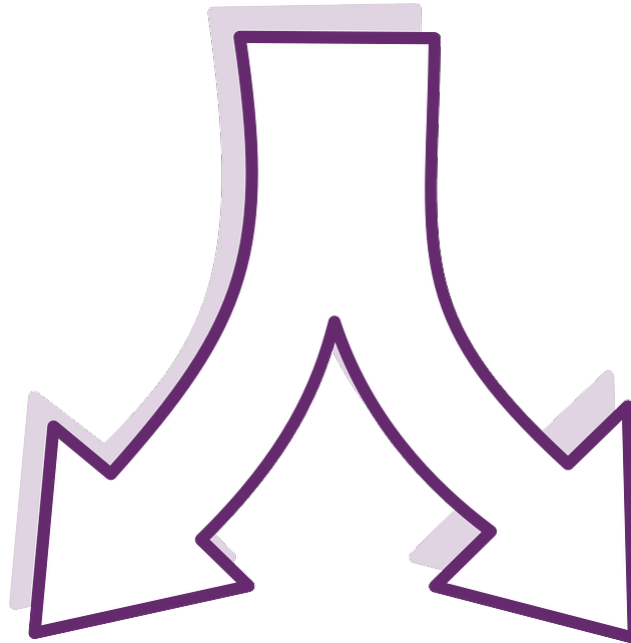
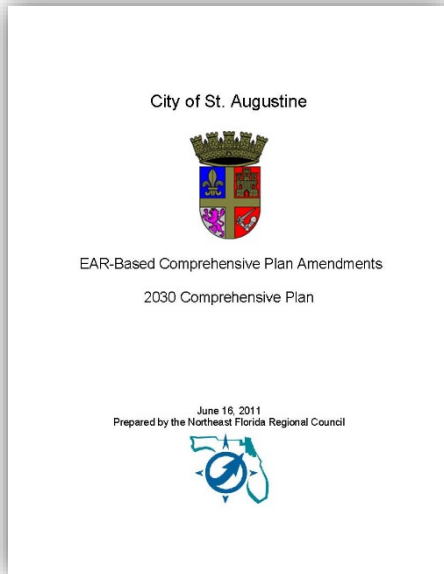
Physical Infrastructure

- Wastewater treatment plant
- Water treatment plants
- Roads and bridges
- Bus routes
- Parking
- Energy supply and power grid

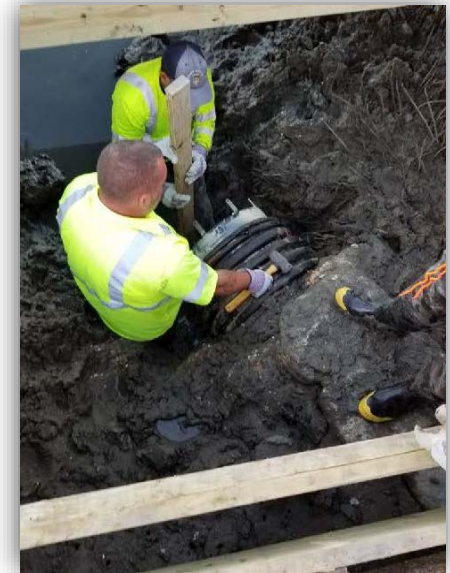


Addressing Vulnerabilities

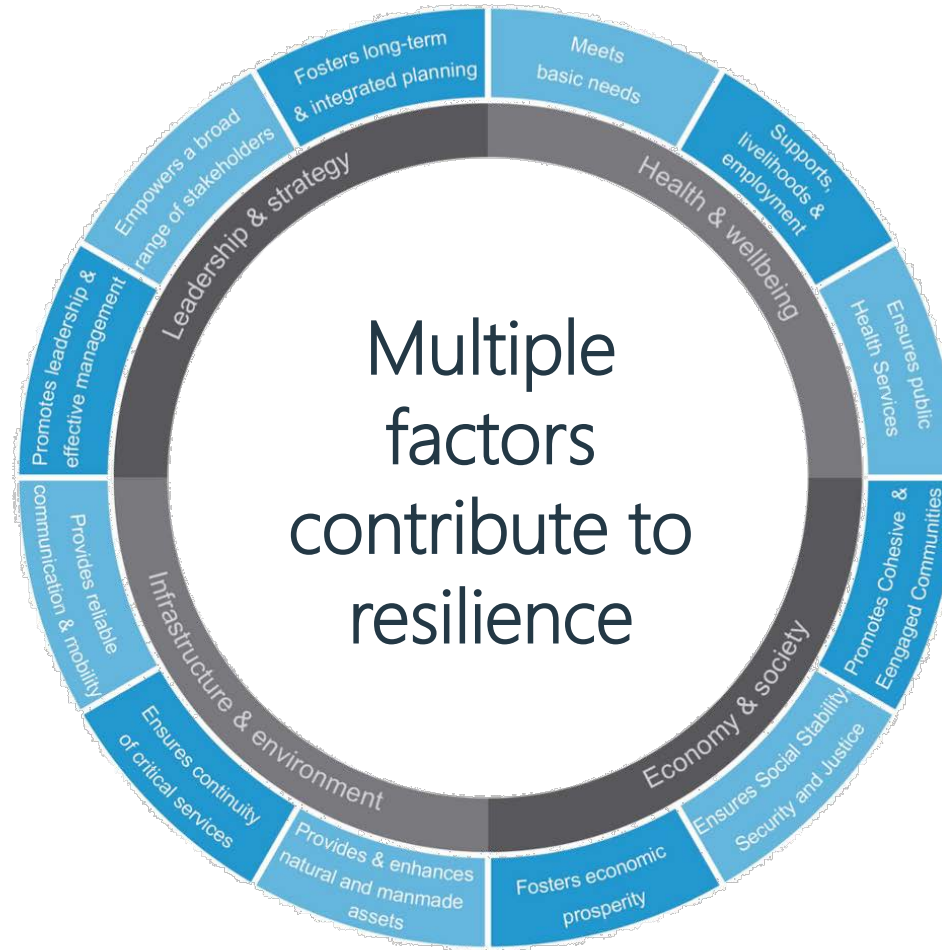
Policy



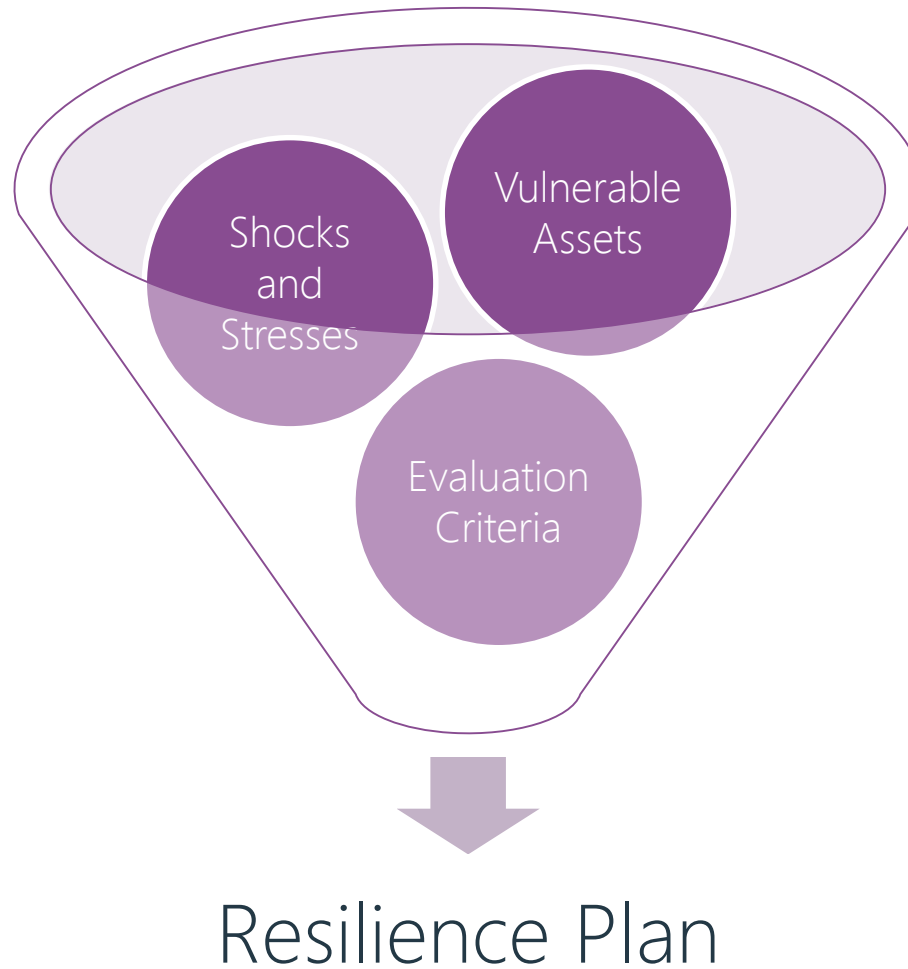
Projects



Project Evaluation Criteria



Workshop Results



Resilience Plan



Roadmap

- Shocks and stresses analysis
- Steps for addressing resiliency of key vulnerable assets
- Scorecard to support evaluation of projects
- Plan for ongoing public outreach and engagement

Thank you!

Rebecca Vanderbeck, PE

Rebecca.Vanderbeck@woodplc.com

The logo for Wood plc, featuring the word "wood." in a bold, dark blue, sans-serif font.

woodplc.com



Resilience Inspiration & Success Stories

St. Augustine Resilience Strategy Workshop

[woodplc.com](https://www.woodplc.com)



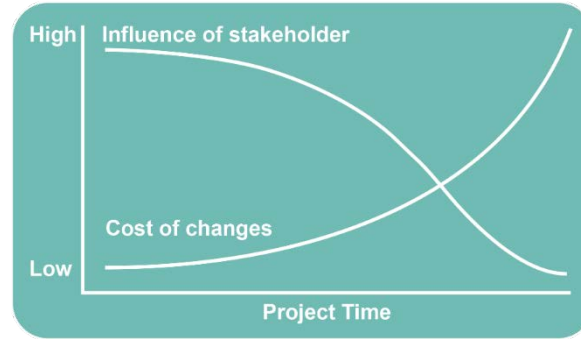
Resilience Drivers



100RC AIMS TO SOLVE TWO PROBLEMS:

1. Cities are complex, siloed ecosystems
2. Existing solutions do not scale or reach cities efficiently

100 RESILIENT CITIES



Half of the Infrastructure Cities will have by 2050
hasn't been Built Yet

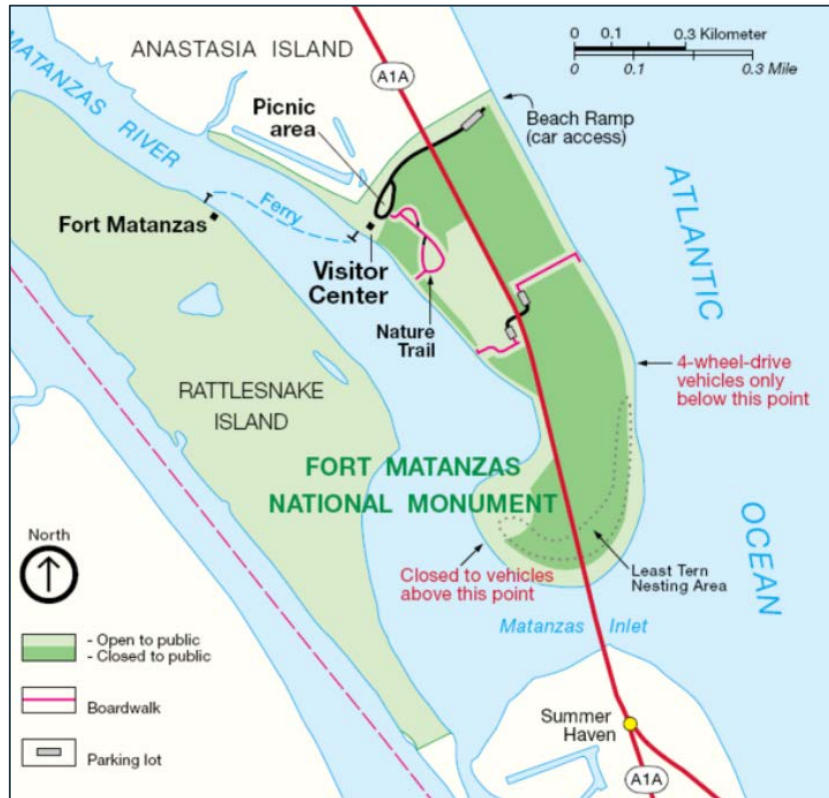
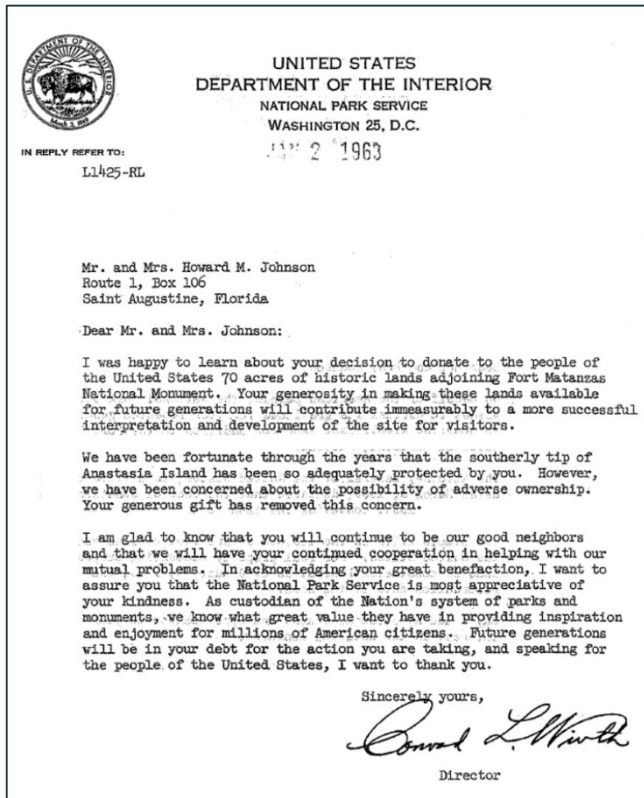


Realizing a Resilience Dividend in a Changing World

- Best Practices
 - Multiple Benefits and Stakeholders
 - Optimize Value
 - Flooding – Storm Surge
 - Severe Storms
 - Heat Waves
 - Infrastructure Failure
 - Disease Outbreak
 - Affordable Housing
 - Aging Infrastructure
 - Mobility
 - Homelessness
 - Flooding – King Tides/Sea Level Rise
-
- Integration and Solutions
 - Shocks and Stresses Result in 'Resilience Dividends'/Opportunities for Innovation!

88 of 100 cities in our network are at risk of river or coastal flooding. **Nearly half** have some level of earthquake hazard.

Connections



Resilience Strategy, Solutions and Stakeholder's

"There is no Handbook for City Resilience Solutions"



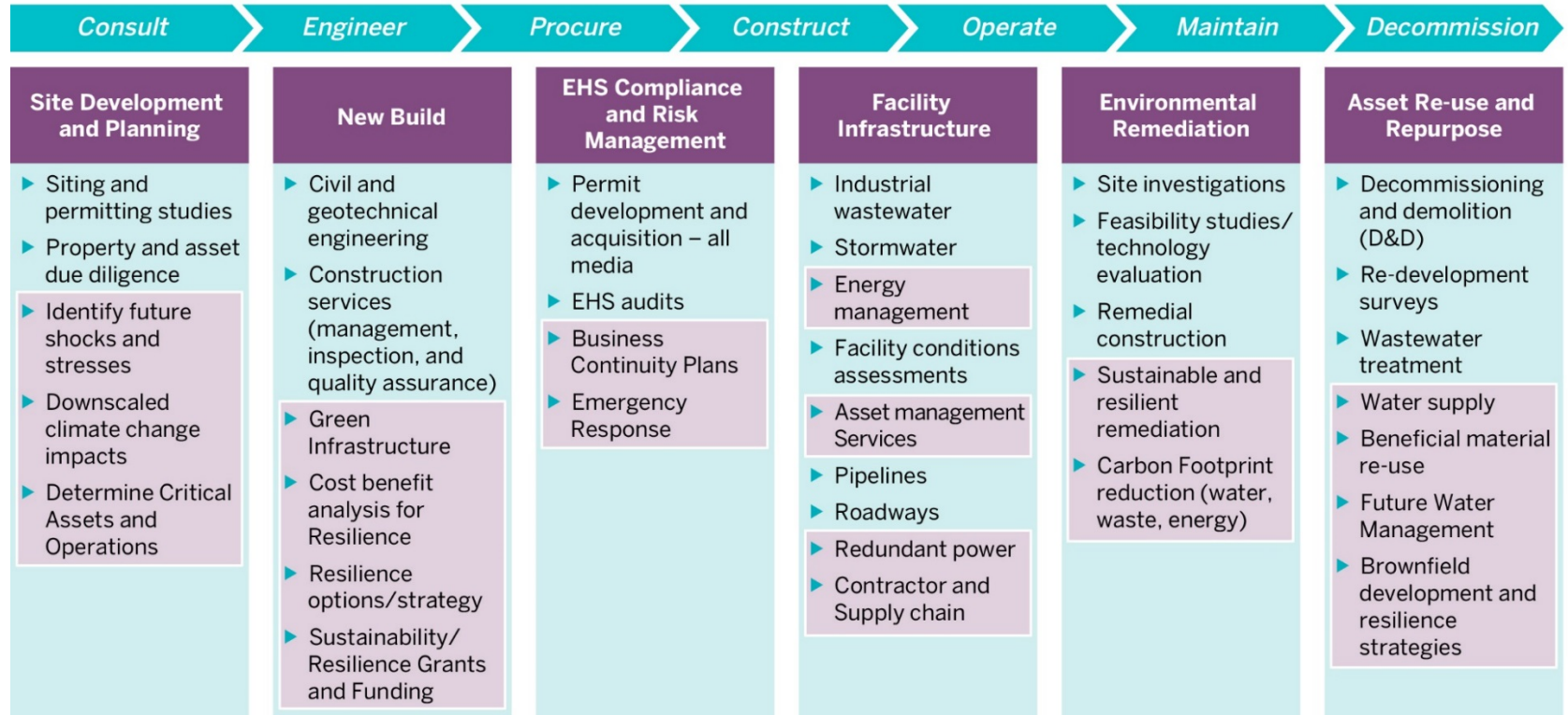


“In this increasingly interconnected world, only **real and lasting resilience** will allow us to solve for multiple problems at once.”

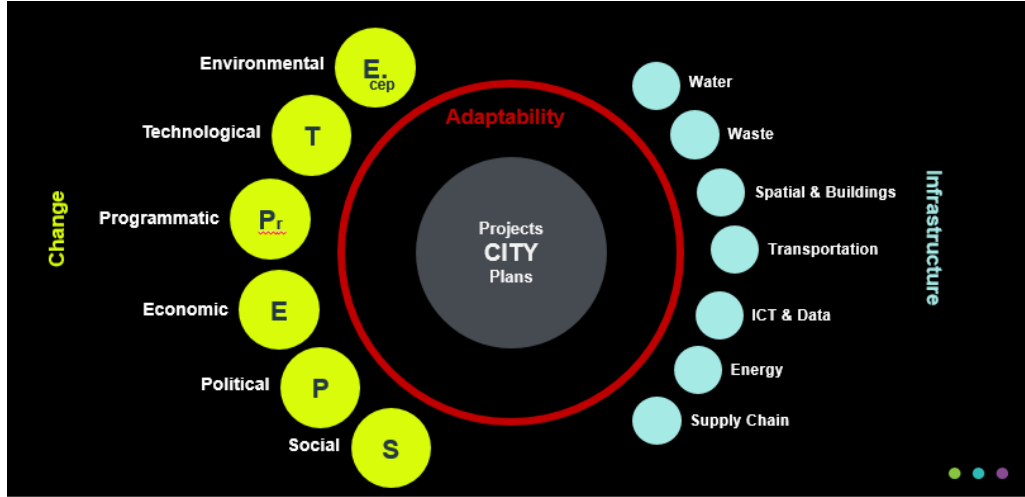
JUDITH RODIN
THE ROCKEFELLER FOUNDATION



Integrated Resilience Planning



Design for Change



“The creative, multi-benefit approaches to climate challenges that cities across the country are taking are now even more critical to the country’s future.”



Resilience Planning for Innovation

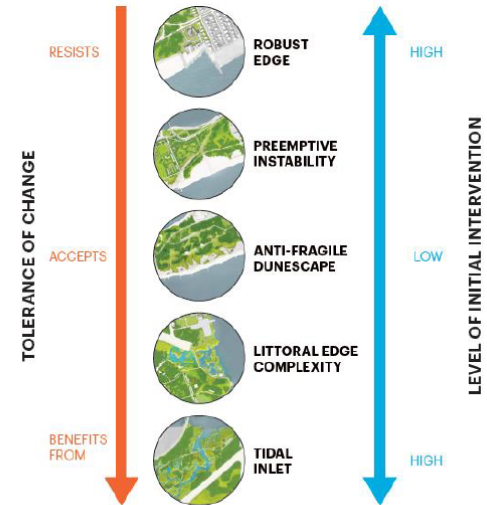
ECONOMIC DEVELOPMENT

WATER ACCESS



RESILIENCE

POTENTIAL INTERVENTIONS



Storm Surge Adaptation / City & Regional Solutions



JACOB RIIS PARK

THE BATHHOUSE AND BACK BEACH

BUILD ON CITY ROCKAWAYS' BEACH BRAND
REVITALIZE BATHHOUSE COMPLEX AS
ANCHOR FOR NEW CONCESSIONS
CREATE RESILIENT GREENSPACE

NYC / Proactive Flood Protection for Transportation, Mobility and Housing



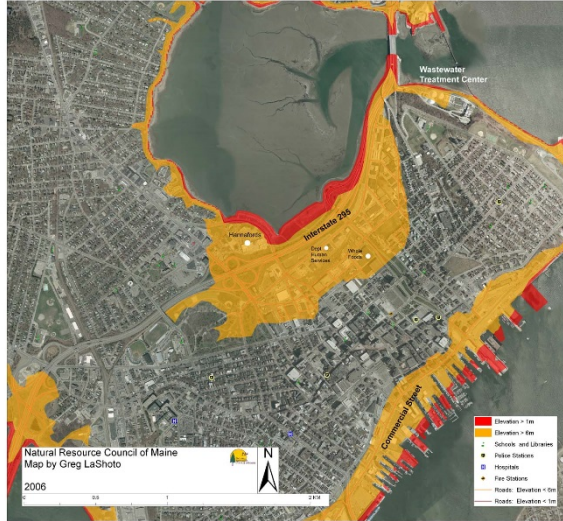
Identify Critical Assets to Protect / Safe to Fail

Clifton Yard/Shop: Perimeter Barrier Wall



Portland ME / Flood and SLR Mitigation Drives Housing and Development

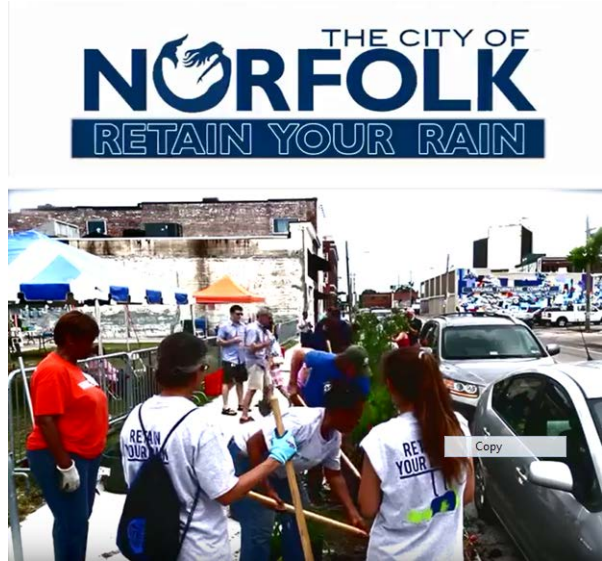
Impact of Sea Level Rise on Portland, ME



King Tide Flooding / Green Infrastructure can improve neighborhoods, access funding and reduce flooding



Rainfall Management to Reduce Flooding and Revitalize a neighborhood



Resilience Planning to Address Heat Impacts



Flexible Infrastructure to Address Shocks and Stresses

Climate change impacts and modeling
Climate change vulnerability assessment

Vulnerability Assessments

Clients require an assessment of future climate Change Impacts into projects and across Portfolios

Hazard mitigation planning and catastrophe modeling
Coastal mapping and extreme flooding evaluations
Weather forecasting and extreme events
Business Continuity and Resiliency Management Systems
Emergency Response and Security
Water re-use and security

Infrastructure & Operations

Our Clients need to identify those assets, activities, operations and supply chains that must be protected to ensure viability and profitability

Resilience Engineering
Green Infrastructure
Energy, Waste and Water
Resilient Transportation
Flood Protection and Management
Water Resources

Resilience through Adaptation

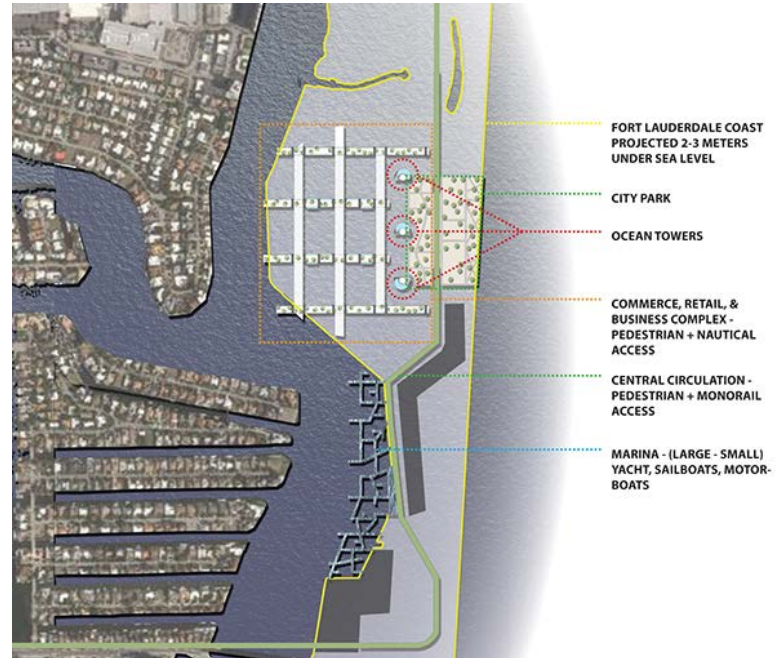
Engineering and management projects to reduce future risks, drive value and engage global Amec Foster Wheeler Resources



Bridge and Roadway Vulnerability

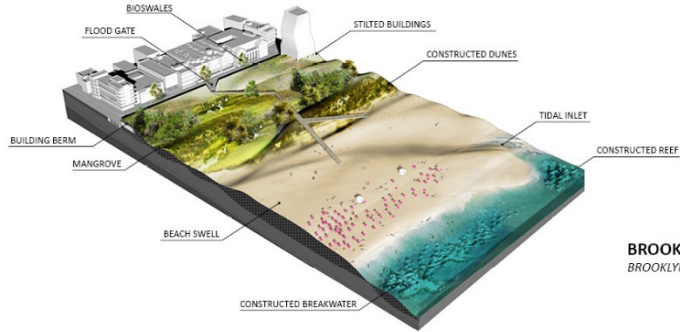


Park, Flood Management for Neighborhood Growth and Housing

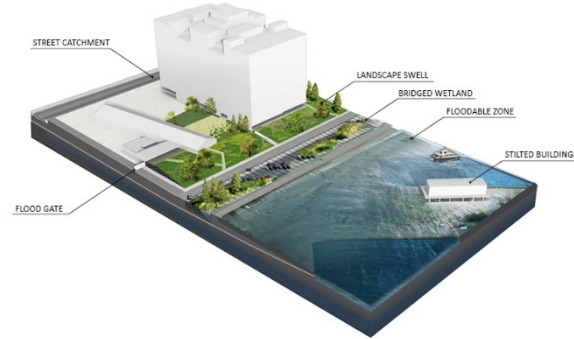


Adaptation Options for Coastal Cities

MIAMI, FLORIDA, USA
SOUTH BEACH: TOURIST COMMUNITIES

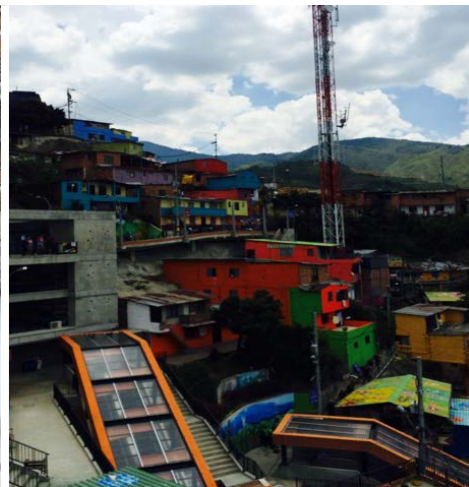


BROOKLYN, NY, USA
BROOKLYN NAVY YARD: INDUSTRY



Medellin, Columbia / Transportation, Mobility and Housing

Turning Risk into Opportunity and Prosperity



Linking Transportation to Housing (Funding and Resilience)



**Metro Joint Development and
Affordable Housing**



[illegible]

MIAMI BEACH TOTAL

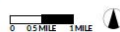
35%

INTERSECT AT 2FT
(2255/6381 PARCELS)

LOCAL AND NATIONAL
REGISTER HISTORIC DISTRICTS

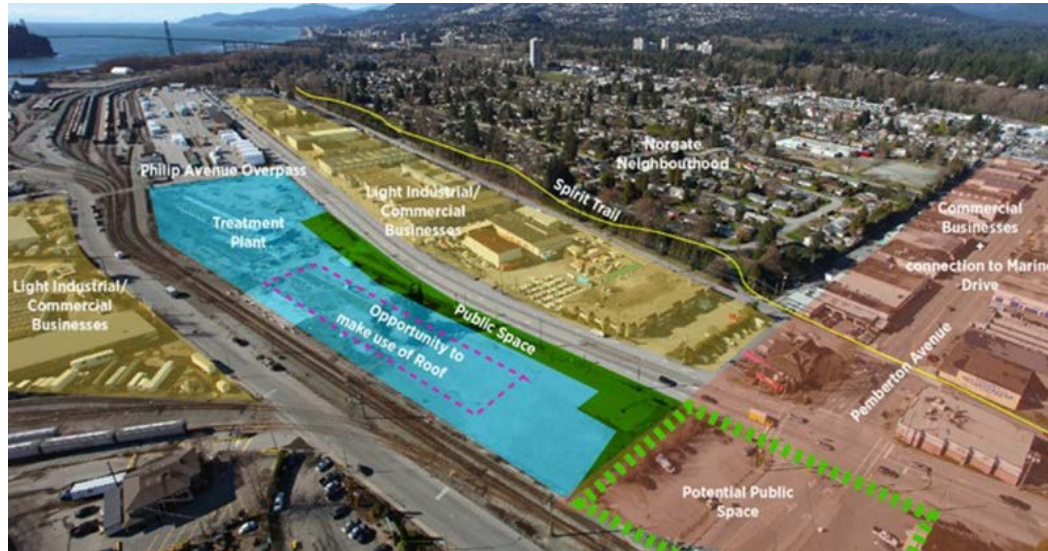
28%

INTERSECT AT 2 FT
(645/2315 PARCELS)



Resilient Water Infrastructure

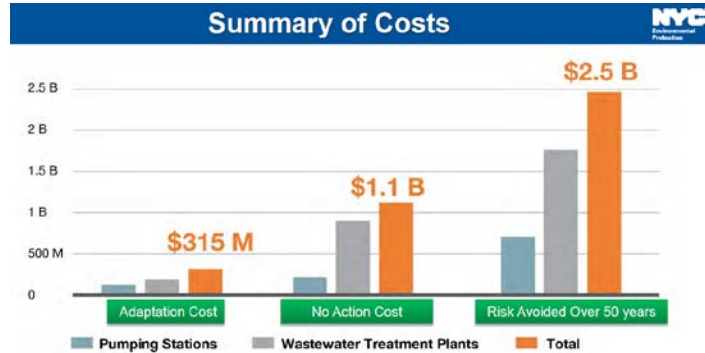
Resilience and Partnerships are embedded into projects



Transportation Can Drive Resilience

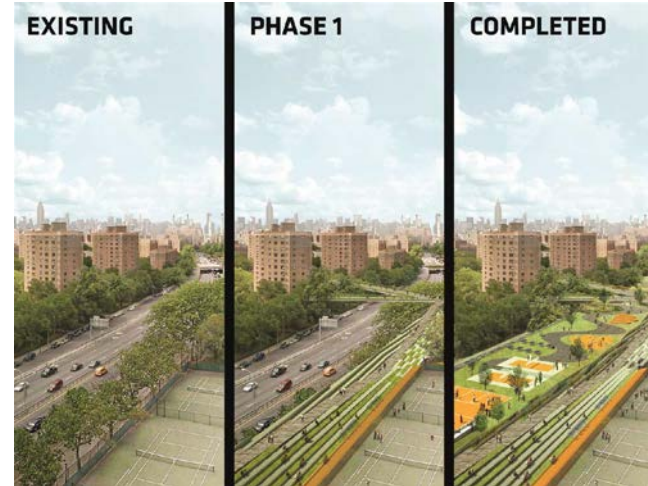


Risk Avoidance Costs – What Needs Protection?



Investing **\$315 Million** in strategic fortification can safeguard **\$1.1 Billion** of vital infrastructure and save the city **\$2.5 Billion** in emergency response costs over the next 50 years.

All estimates are based on AACE Level 5 Cost Estimate guidelines as noted in the NYCDEP BEDC Cost Estimating Manual



Insurance and Resilience

AIG – Amec Foster Wheeler Resilience Solutions Program for Cities



Overview

Cities are struggling to meet social and infrastructure demands and are further challenged by climate change impacts due to floods and windstorms and other natural perils such as earthquakes or tsunamis. Innovative solutions are needed to invest and build the infrastructure that will support global, sustainable urbanization. The World Bank estimates that 80% of the expected \$100 Billion per year in climate adaptation costs will be borne by Cities.¹ Where cities have inadequate access to capital and financing for projects, innovative finance that combines the financial and engineering sectors is required to build resilient infrastructure and sustainable communities.

AIG and Amec Foster Wheeler have formed a strategic partnership to support cities by evaluating environmental stressors and risks, and developing a variety of solutions to build resilience. AIG, a global insurer and investor, and Amec Foster Wheeler, a global consultancy and engineering firm, have created an innovative "risk management" service called the Resilience Solutions Program.

The Resilience Solutions Program goes beyond risk transfer through traditional insurance coverage to offer proactive client services. The goals of the Resilience Solutions Program are to help cities:

1. Identify and prepare for climate change impacts
2. Reduce losses from extreme weather events
3. Create finance mechanisms for resilient projects
4. Engineer and construct sustainable and resilient projects
5. Create insurable assets

Through this strategic partnership, AIG and Amec Foster Wheeler can help cities identify and manage risks, as well as design and construct solutions to reduce or mitigate these risks. With our joint capabilities, clients benefit from expertise across the following areas in one complete package:

Data Analytics and Risk Consulting



Resilience Strategy Consulting



Insurance and Financing



Engineering and Construction



Through Amec Foster Wheeler's involvement as a Platform Partner with the Rockefeller Foundation's 100 Resilient Cities (100RC) Program, the biggest gap identified thus far is the need to help cities implement their resilience strategies with an innovative package that delivers risk management, financing, insurance, engineering, and construction of projects.

Benefits to Cities

Through this unique partnership, AIG and Amec Foster Wheeler can identify risks and evaluate the most cost-effective solutions for cities to make sound business decisions to invest in building resilience. Benefits include:

1. Understand risks and impacts due to climate and environmental stressors
2. Evaluate alternatives and return on investment
3. Insure existing and new assets
4. Access alternative funding mechanisms
5. Reduce damages and losses
6. Improve operations and avoid disruptions
7. Increase property and business value
8. Improve quality of life (food, water, energy, technology)
9. Increase connectivity and prosperity
10. Adapt to a changing world

New York MTA's new MetroCat Re 2017 cat bond priced below mid-point

by ARTEMIS on MAY 16, 2017

Share

1

The new \$125 million [MetroCat Re Ltd. \(Series 2017-1\)](#) catastrophe bond from the New York Metropolitan Transportation Authority (MTA) has now been priced at a level below the middle of guidance and sources tell us the deal has not been upsized.

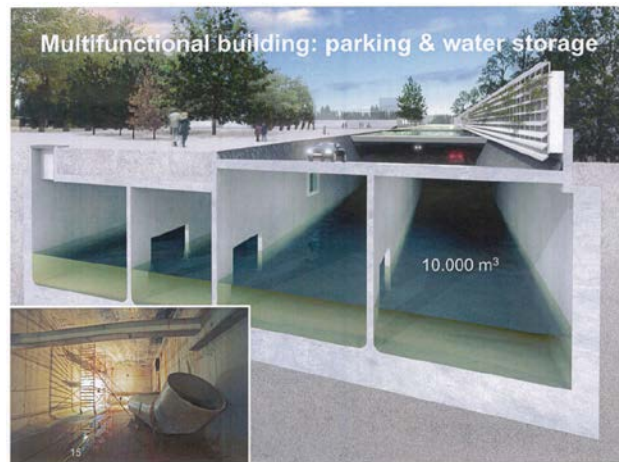
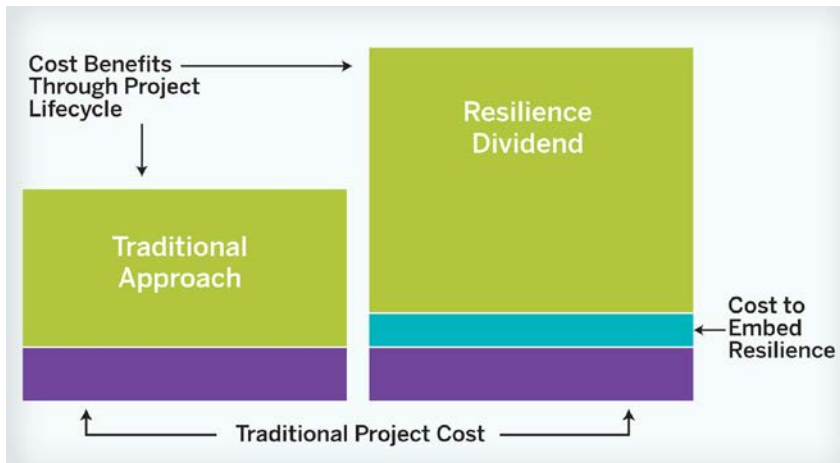
RMS Revolutionizes Risk Management with RMS(one)

Boston, MA - May 08, 2013 - RMS today unveiled RMS(one)™, the company's resilient, real-time exposure and risk management environment purpose-built for insurance companies to manage all of their risk models, exposures and analytics on a single, open platform.

RMS is collaborating with clients to ensure the RMS(one) environment delivers the industry's most powerful models and modeling capabilities so as to realize the business benefits of a truly resilient and real-time



Resilient Infrastructure, Sustainable Communities



The Resilience Shift

The Resilience Shift is an initiative pioneered by Lloyd's Register Foundation (LRF) in partnership with Arup to **catalyse resilience within and between critical infrastructure sectors.**

Cable cars for urban transport and mobility in coastal areas

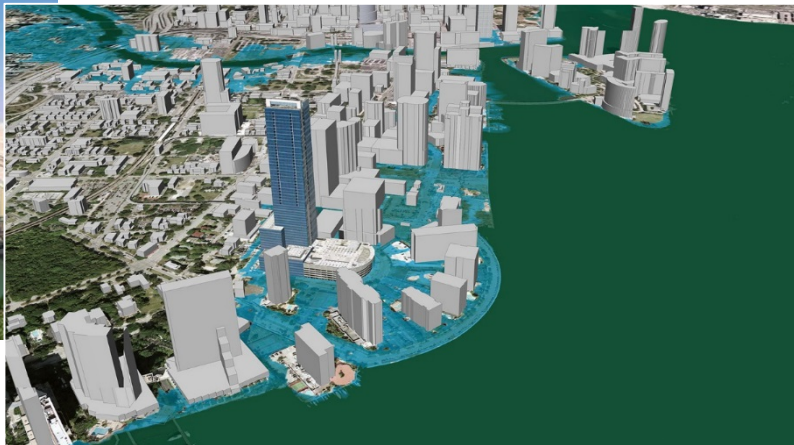
TRANSPORT CABLE CARS September 17, 2014

\$100m cable car network proposed for New York

By CityMetric staff



The region's new \$234m (£140m) cable car system, which whisks passengers between sleek modern terminals in controlled silence, was given its first public outing this week. When all three lines are running they will be able to transport 18,000 passengers an hour over nearly 11 kilometres – making it the longest urban cable-car system in the world. It's an innovation many Bolivians hope will turn their uncomfortable, seemingly interminable commute into a quick and modern ride.



Thank you!

Peter Hall

Peter.j.Hall@woodplc.com

wood.

woodplc.com

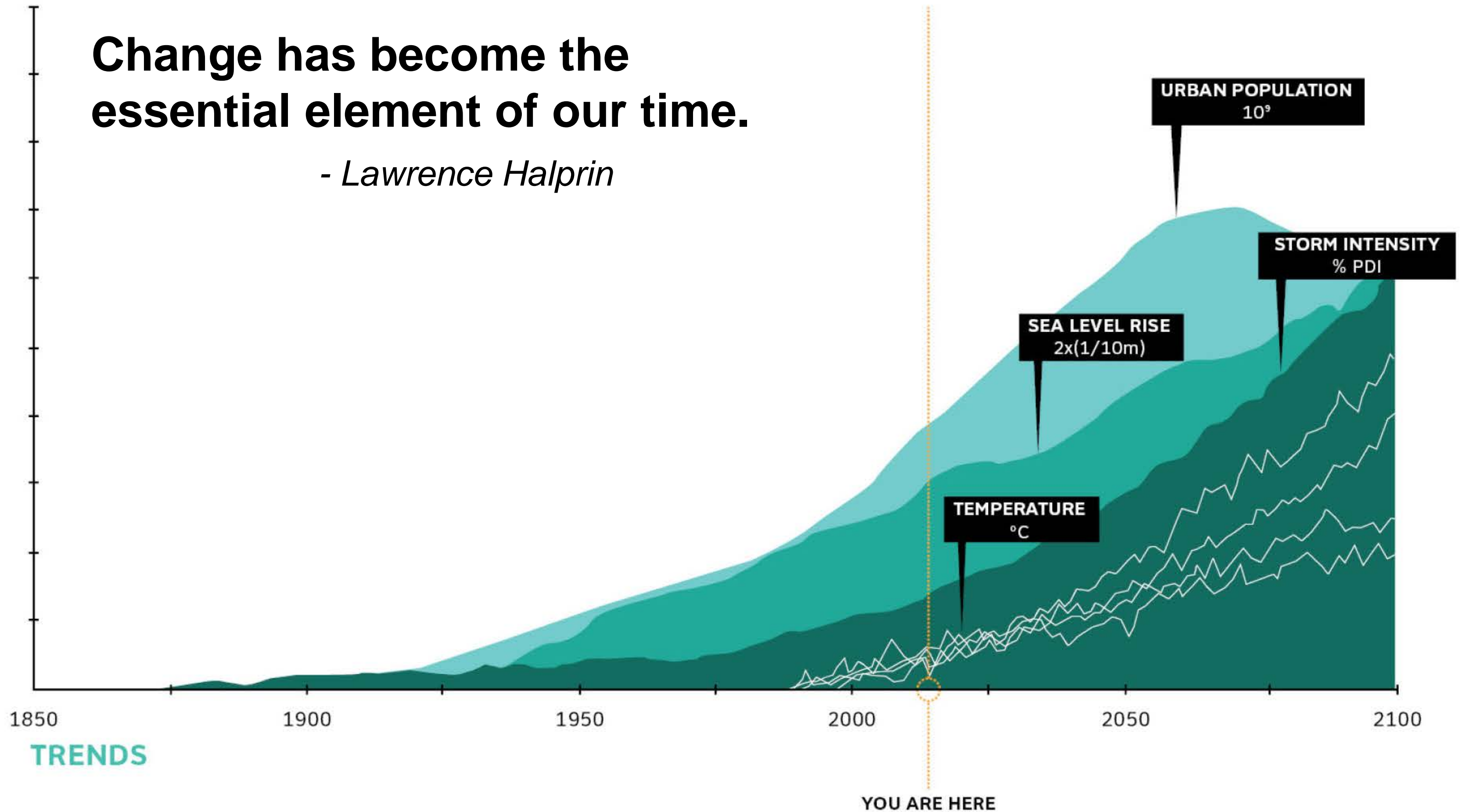
RESILIENT LANDSCAPES

integrating resilience into design: a landscape perspective

Pippa Brashear + Chris Barnes
SCAPE Landscape Architecture

**Change has become the
essential element of our time.**

- Lawrence Halprin



ADAPTATION

a form or structure modified to fit a changed environment.

Biology. modification of an organism or its parts that makes it more fit for existence under the conditions of its environment

Sociology. a modification of individual and social activity in adjustment to cultural surroundings.



Source: Weather.com (http://s.w-x.co/houseraising_primary2.jpg)



Resilience is the capacity of any entity—an individual, a community, an organization, or a natural system—to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience.

- *Judith Rodin, 'The Resilience Dividend'*

HOW CAN LANDSCAPES ADAPT?

HOW CAN THEY HELP US BE MORE RESILIENT?

Resilience as part of open space
leveraging redevelopment and restoration for resilience

Town Branch
Lexington, KY

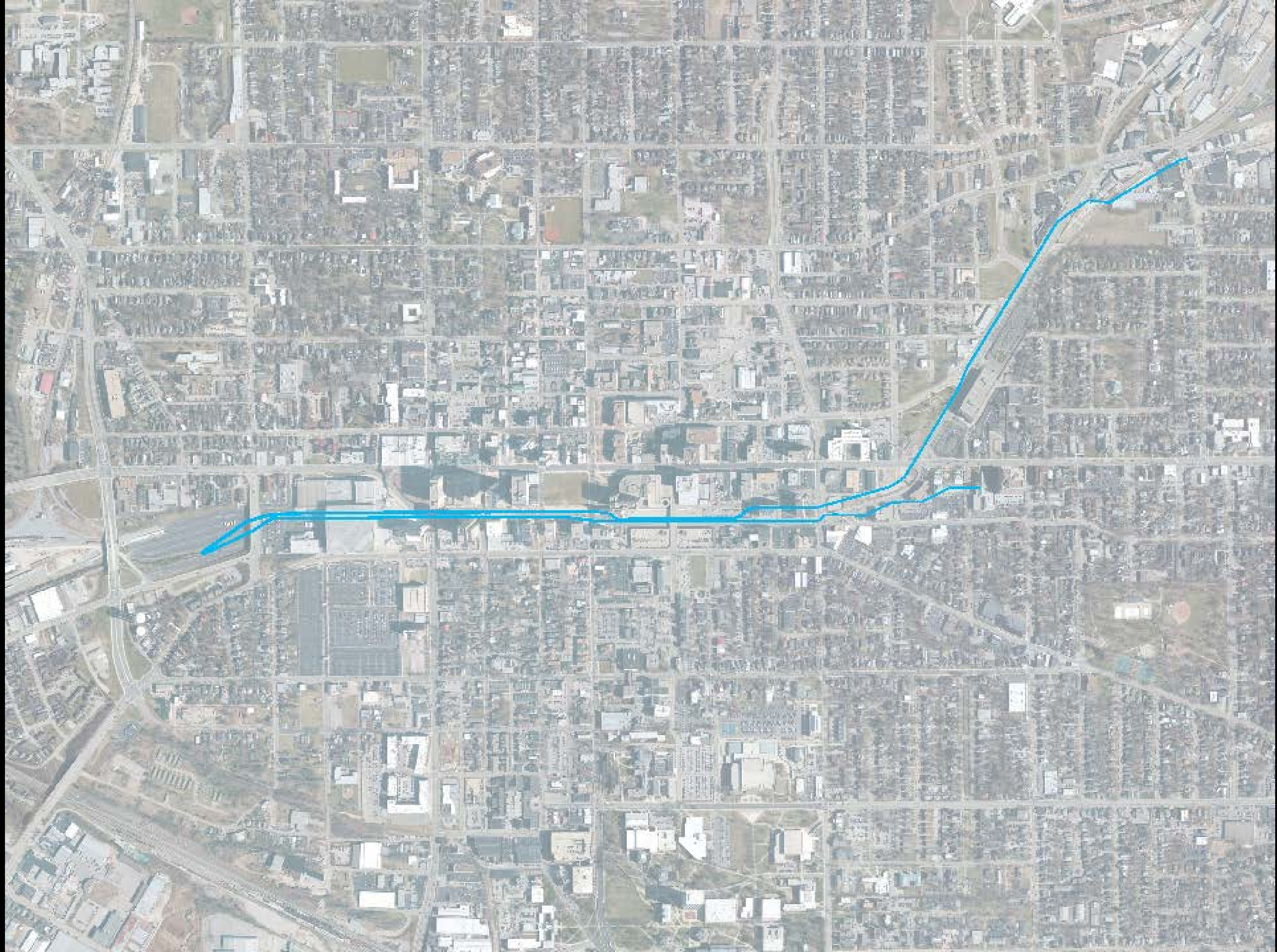
LEXINGTON, KY



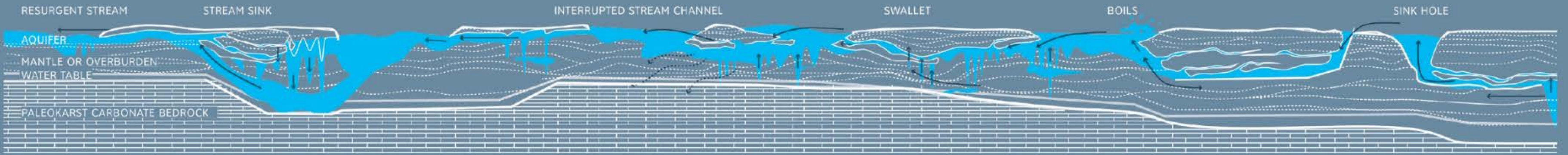
LEXINGTON, KY



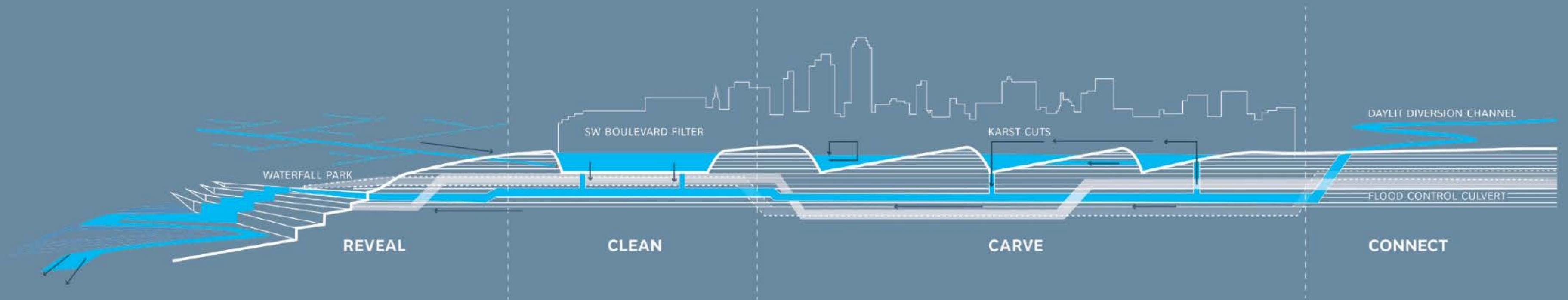




KARST HYDROLOGY



TOWN BRANCH HYDROLOGY





BLUE HOLE



**INTERRUPTED
STREAM
CHANNEL**



SWALLET



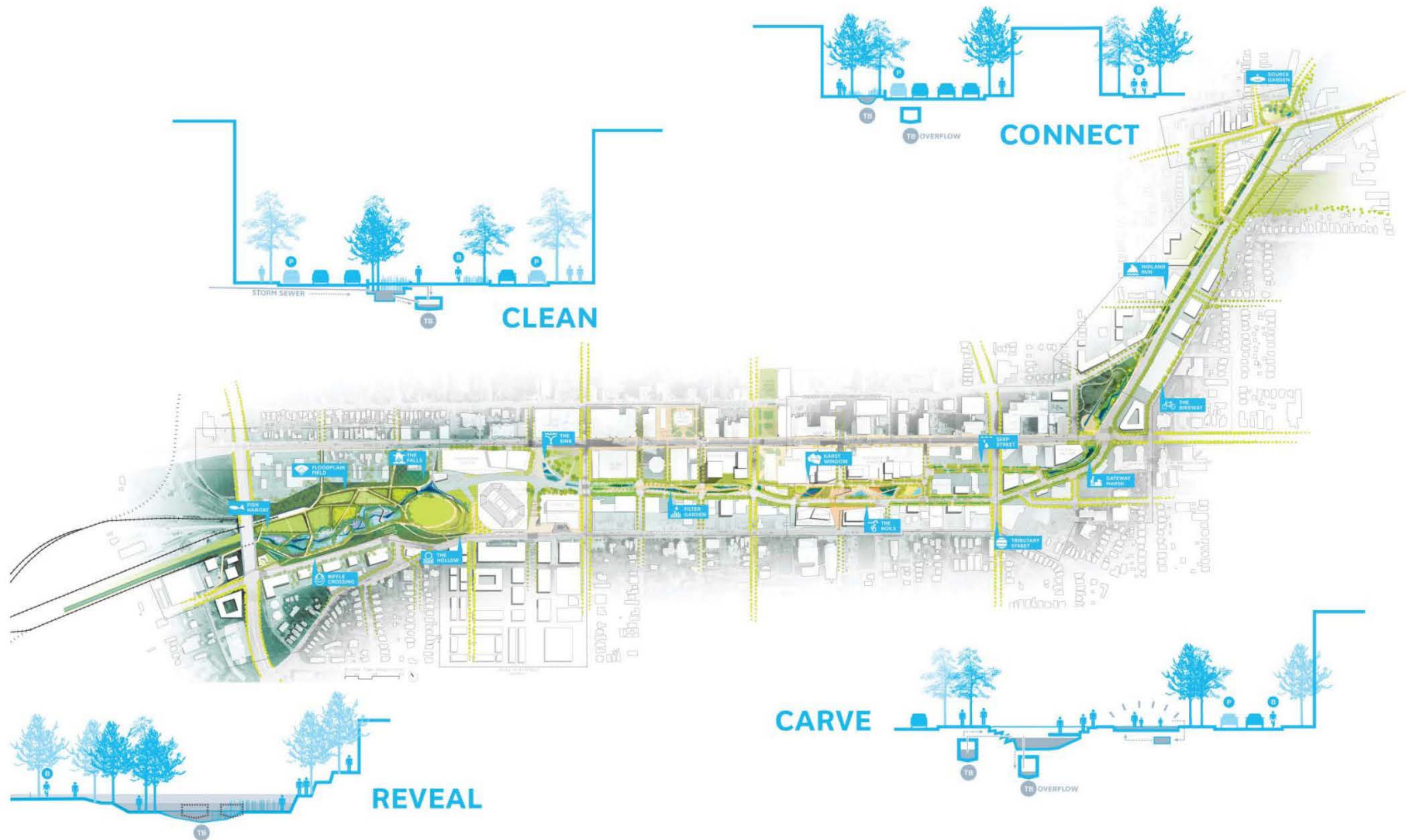
KARST WINDOW



FALLS



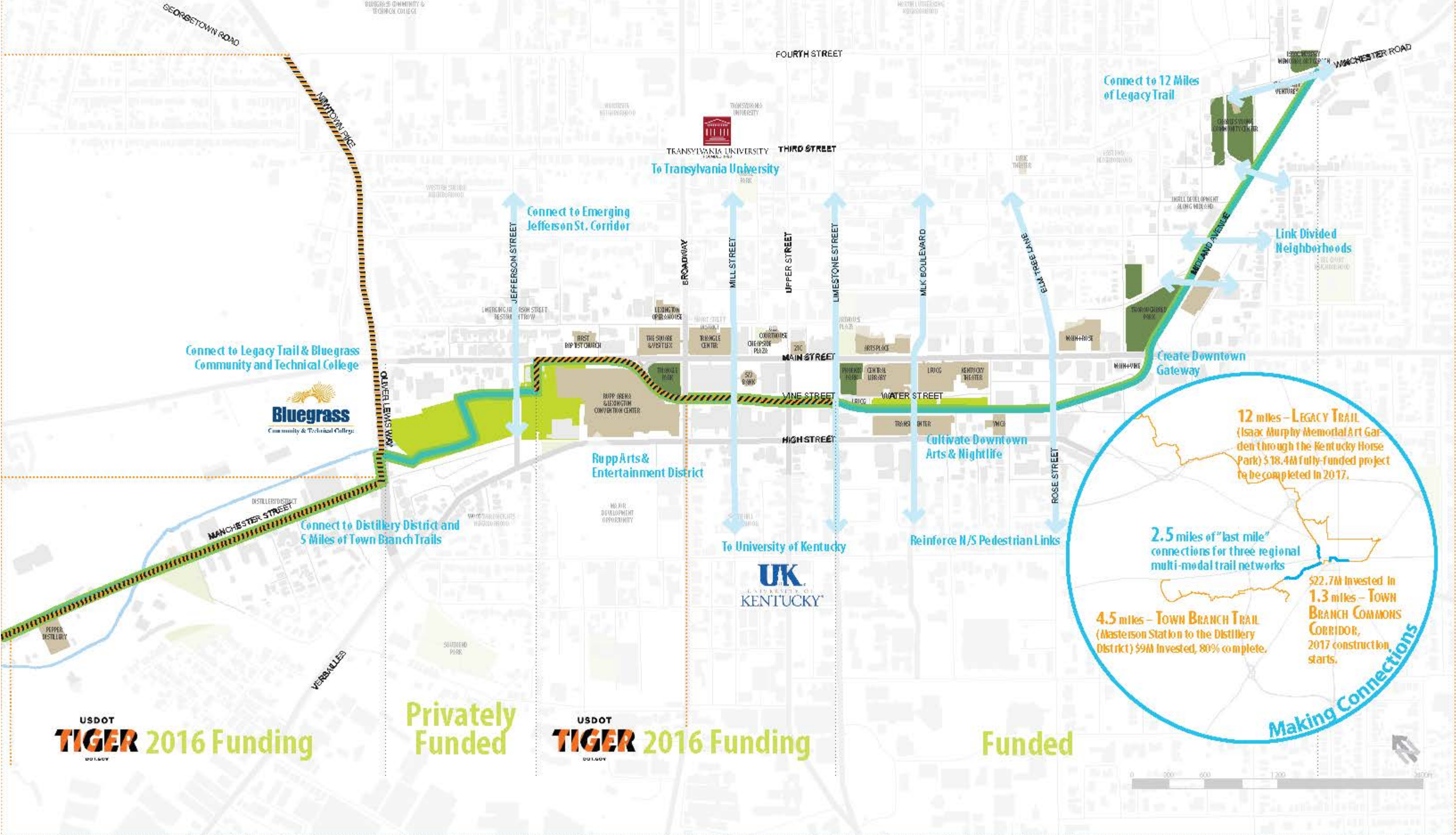
BOILS








Town Branch Commons Corridor



Google http://www.nytimes... http://webmail.mym... SCAPE Info Page Google Maps FilesAnywhere Construction Cam The 65 sharepoint ib Bookmarks Spotify Web Play

TOWN BRANCH COMMONS CORRIDOR PROJECT

Transforming Lexington with a Regional Vision



PROJECT | ABOUT | CONTACT

In Lexington, we like to refer to Town Branch Commons as a strip of Bluegrass running through downtown into the rural community. In fact, it's much more. It's a strip of history, of waterfront, of walking and cycling trail, and of economic potential. It's a game changer for generations to come.

The 2016 TIGER funding offers the opportunity to complete this transformational corridor.


First the basics: **Town Branch Commons Corridor is a 2.5 mile multi-modal path and park system that will wind through downtown Lexington, following the path of historic Town Branch Creek.** It is being funded and built through a public-private partnership (P3). Through its unique design and stormwater management systems this project will create an environmentally friendly livable, sustainable streetscape.

Town Branch Commons Corridor is the final link in an innovative project to connect Lexington's rural and urban communities. It will connect to two established regional trails—the Legacy Trail and Town Branch Trail, establishing a connection between Lexington's urban core and the magnificent Bluegrass countryside. Along the way, Town Branch Commons will connect the historic East End, the Isaac Murphy Memorial Art Garden, three higher education campuses, the Downtown Transit Center, Lexington Civic Center, restaurants, entertainment venues, the emerging Distillery District, and the Kentucky Horse Park.

The Legacy and Town Branch trails already represent a \$24 million investment in local, state and federal funds. Several citizens groups were involved the creating the trails, and their popularity with local citizens and tourists, is rapidly growing.


TIGER

Download the Application



Download the TIGER Application

Project Applicant



LEXINGTON

Project Partners and Supporters

Federal and State Support

U.S. Department of Transportation
U.S. Department of Agriculture
U.S. Environmental Protection Agency
U.S. Forest Service
U.S. Fish and Wildlife Service
U.S. Geological Survey
U.S. National Park Service
U.S. National Science Foundation
U.S. National Security Agency
U.S. National Security Council
U.S. National Security Intelligence Community
U.S. National Security Intelligence Community

MCCONNELL ANNOUNCES \$14.1M GRANT TO COMPLETE TOWN BRANCH COMMONS CORRIDOR

By: WTVQ Web Desk 2

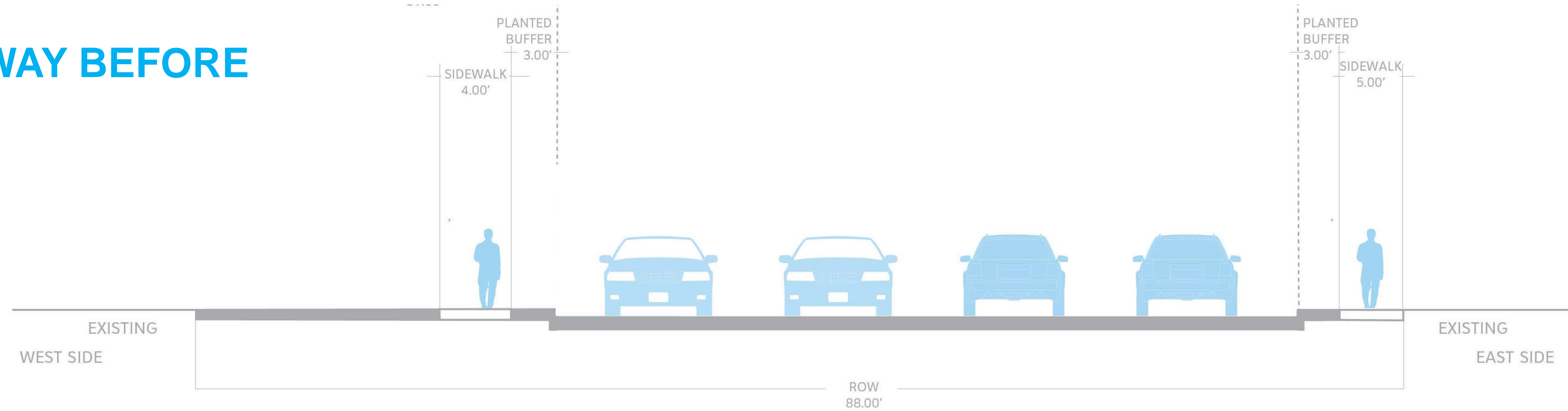
Submitted: 07/26/2016 - 3:52pm

Tags: Grant, Town Branch Commons Corridor

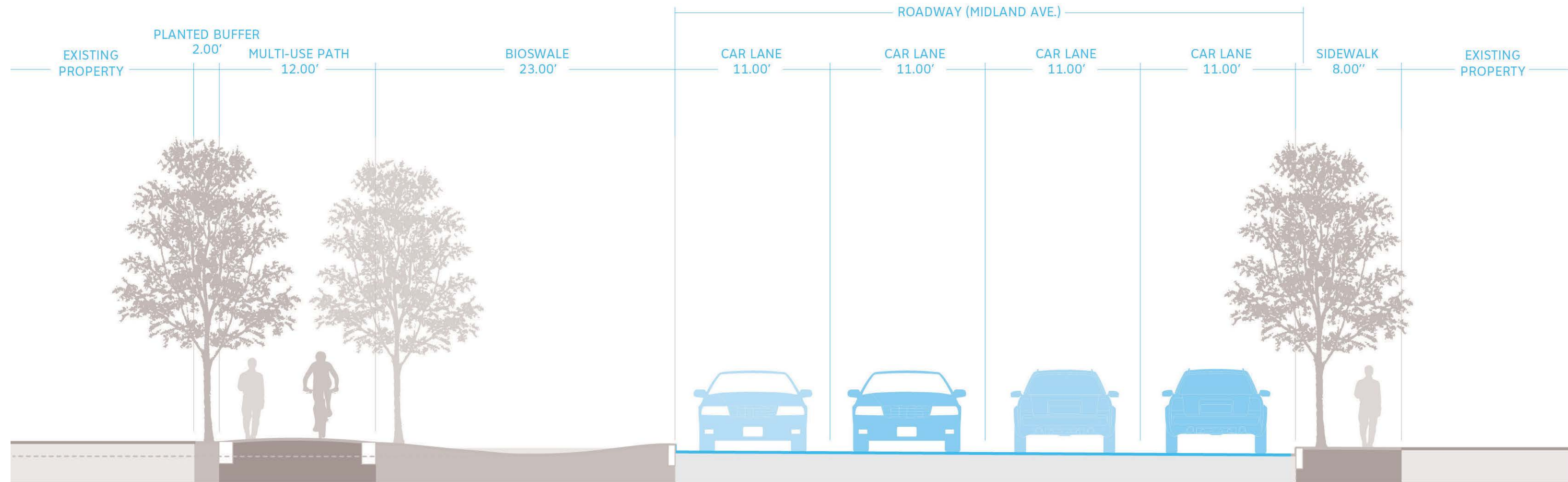
HENDERSON, Ky. (WTVQ) – U.S. Senate Majority Leader Mitch McConnell announced today that the Lexington-Fayette Urban County Government has received a \$14.1 million competitive federal grant from the U.S. Department of Transportation which will be used to complete the Town Branch Commons Corridor (TBCC) project. The grant was awarded by DOT's TIGER discretionary grant program.

TBCC is a comprehensive trail, greenway and park system that in addition to providing recreation activities for Central Kentuckians, will also, according to city officials, improve transit access and reduce pedestrian, bicycle, and vehicular conflicts in the area. The federal grant award will allow the city to complete the project.

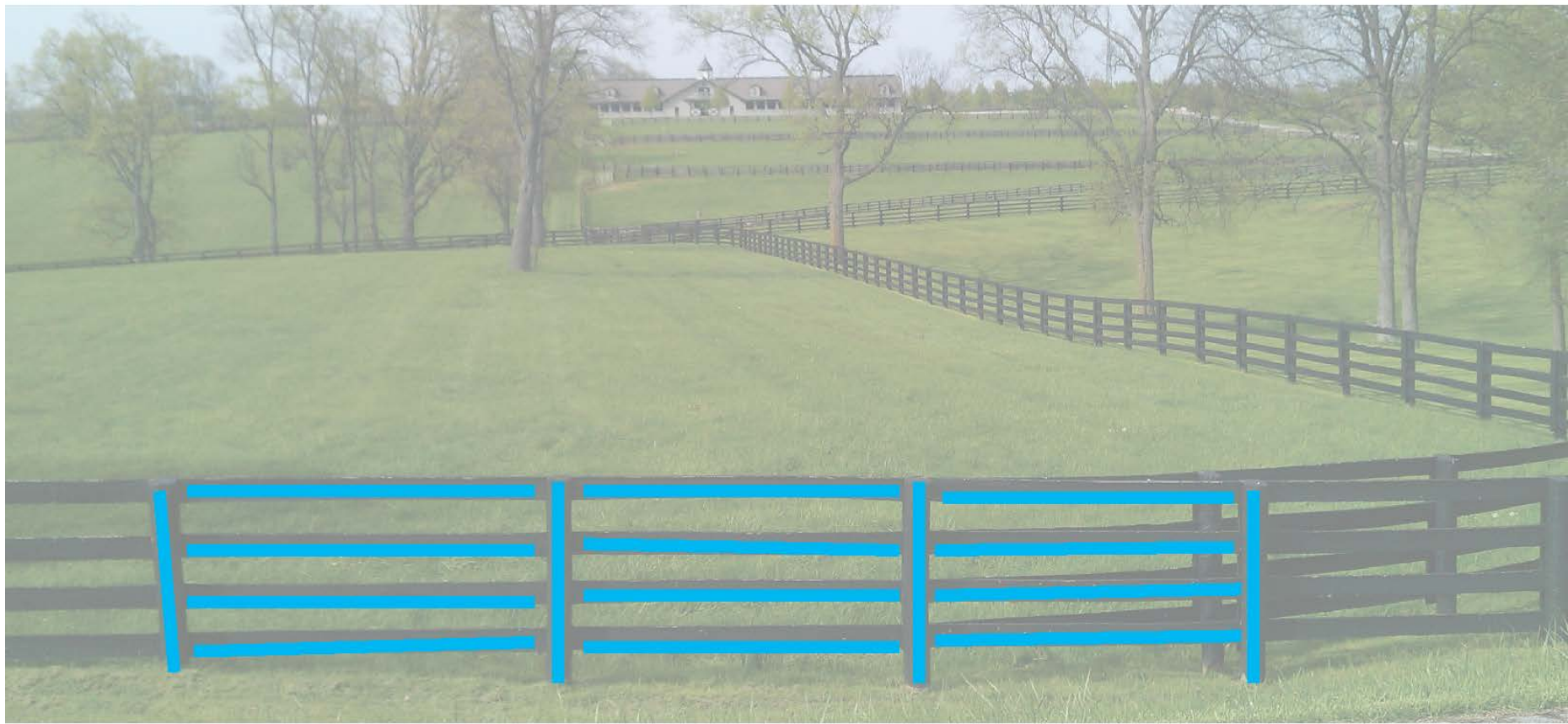
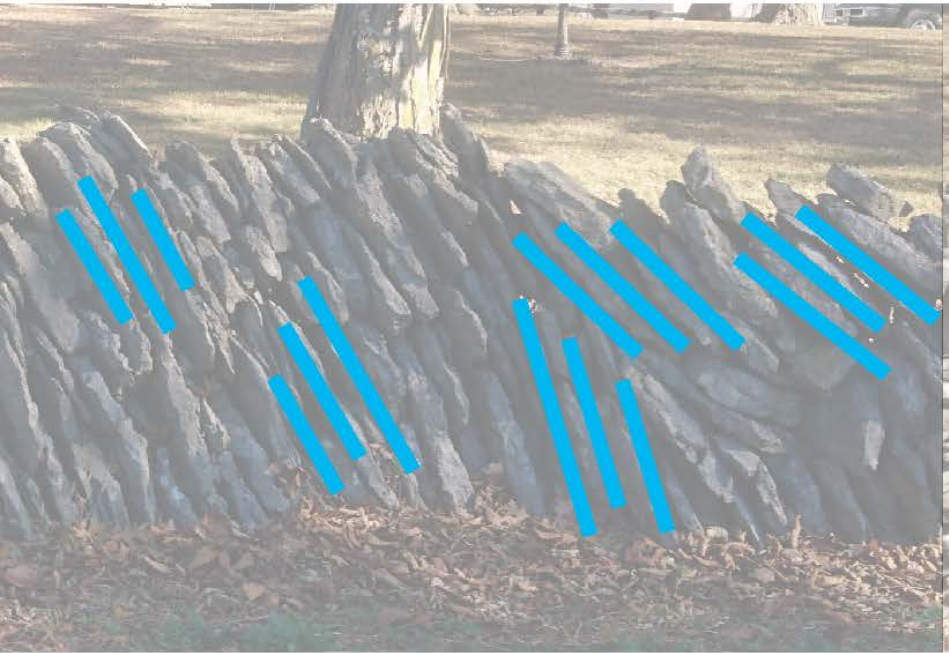
ROADWAY BEFORE



ROADWAY AFTER

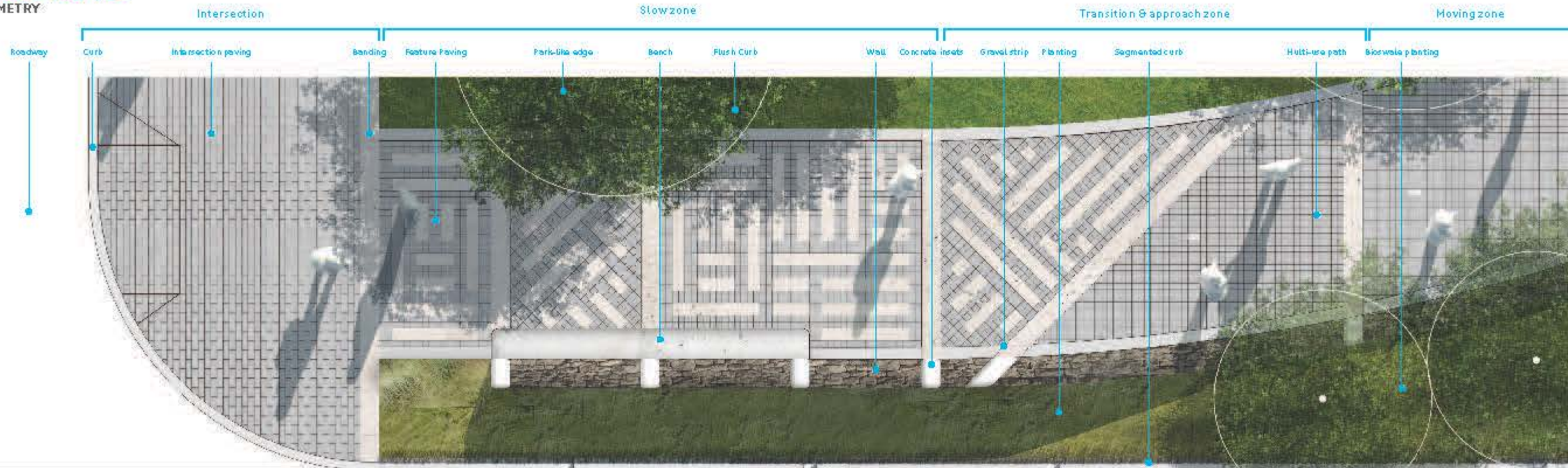






MIDLAND

GEOMETRY



DRAFT - 02.06.2017

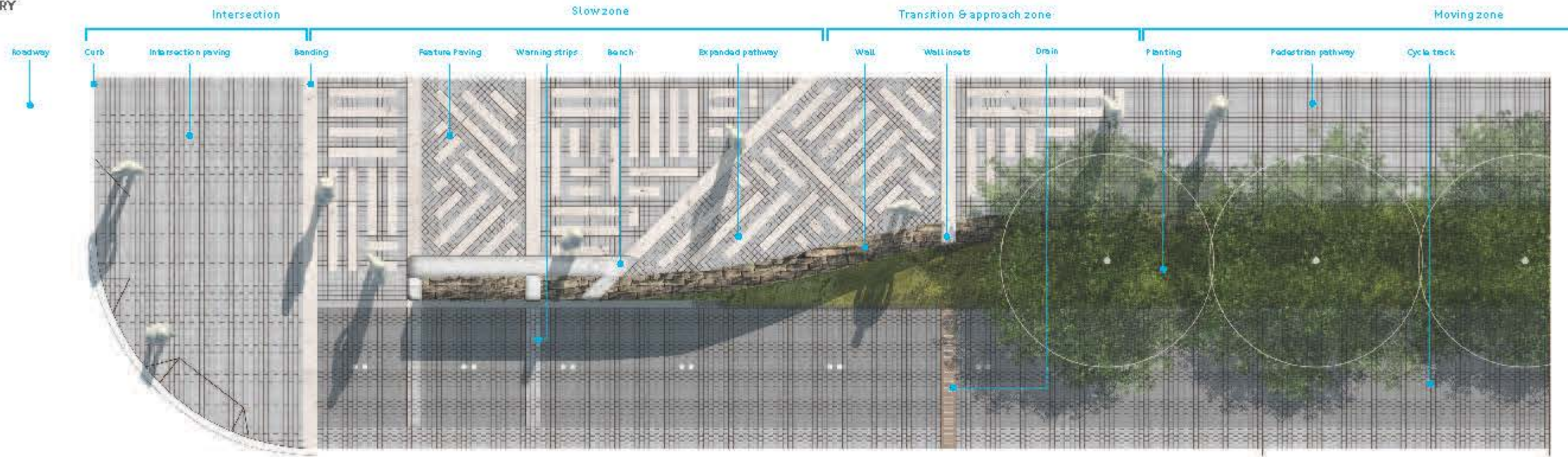
SCAPE

DRAFT - 02.06.2017

SCAPE

DOWNTOWN

GEOMETRY

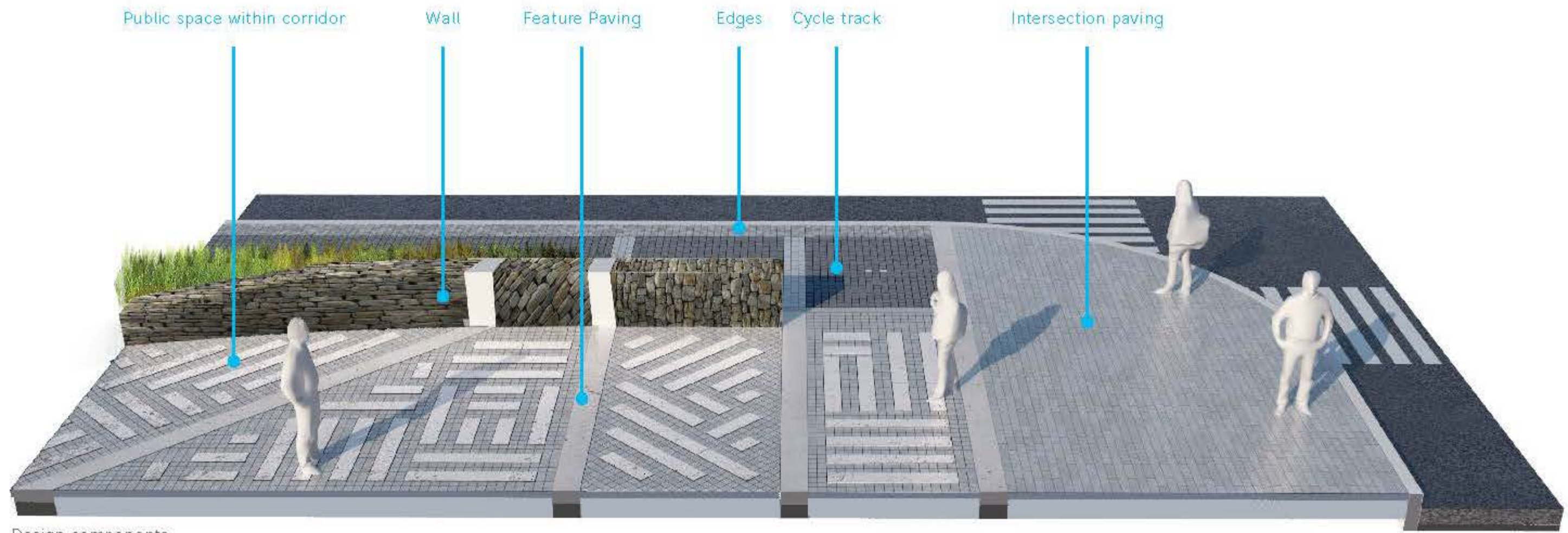


DRAFT - 02.06.2017

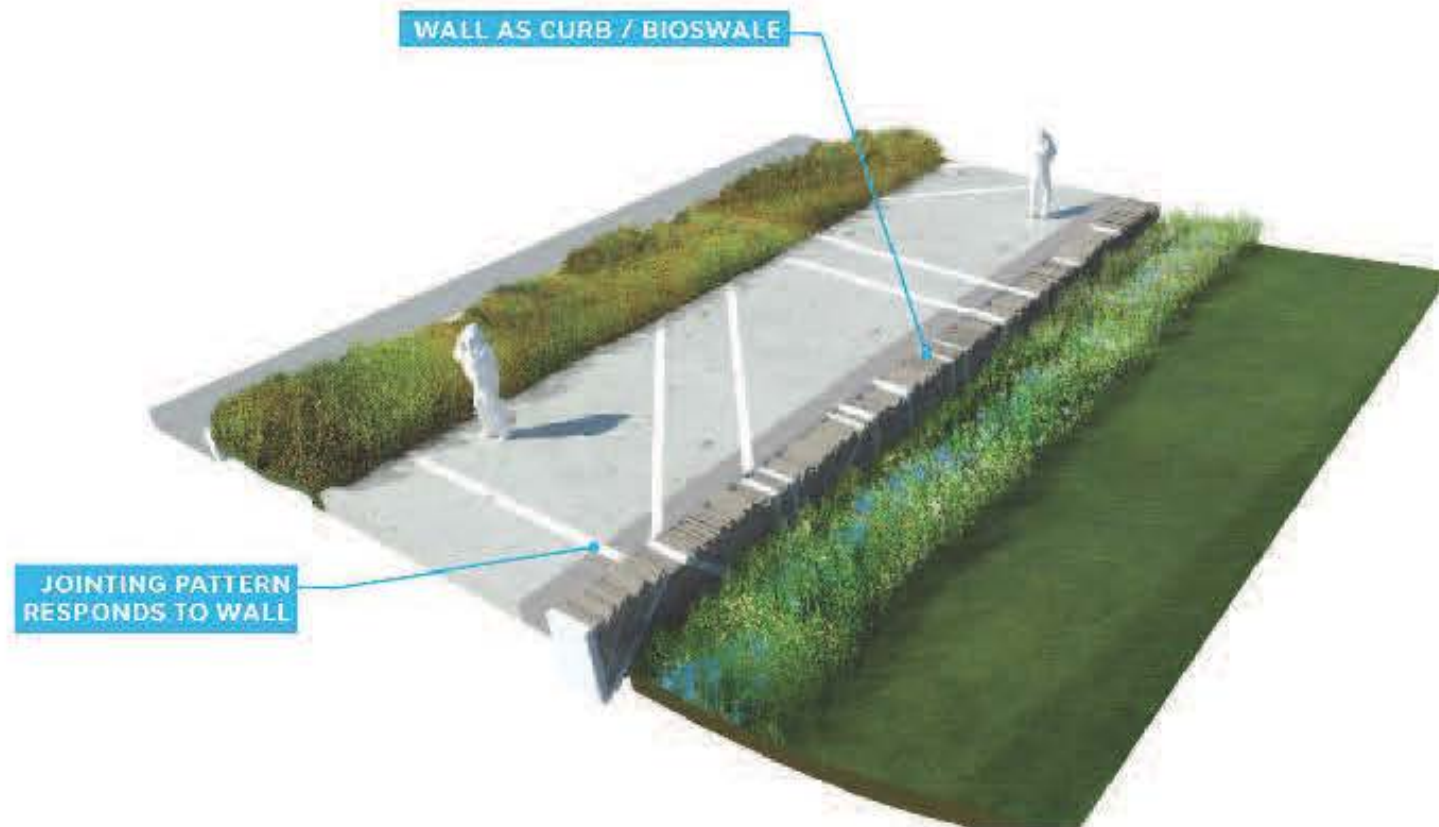
SCAPE

DRAFT - 02.06.2017

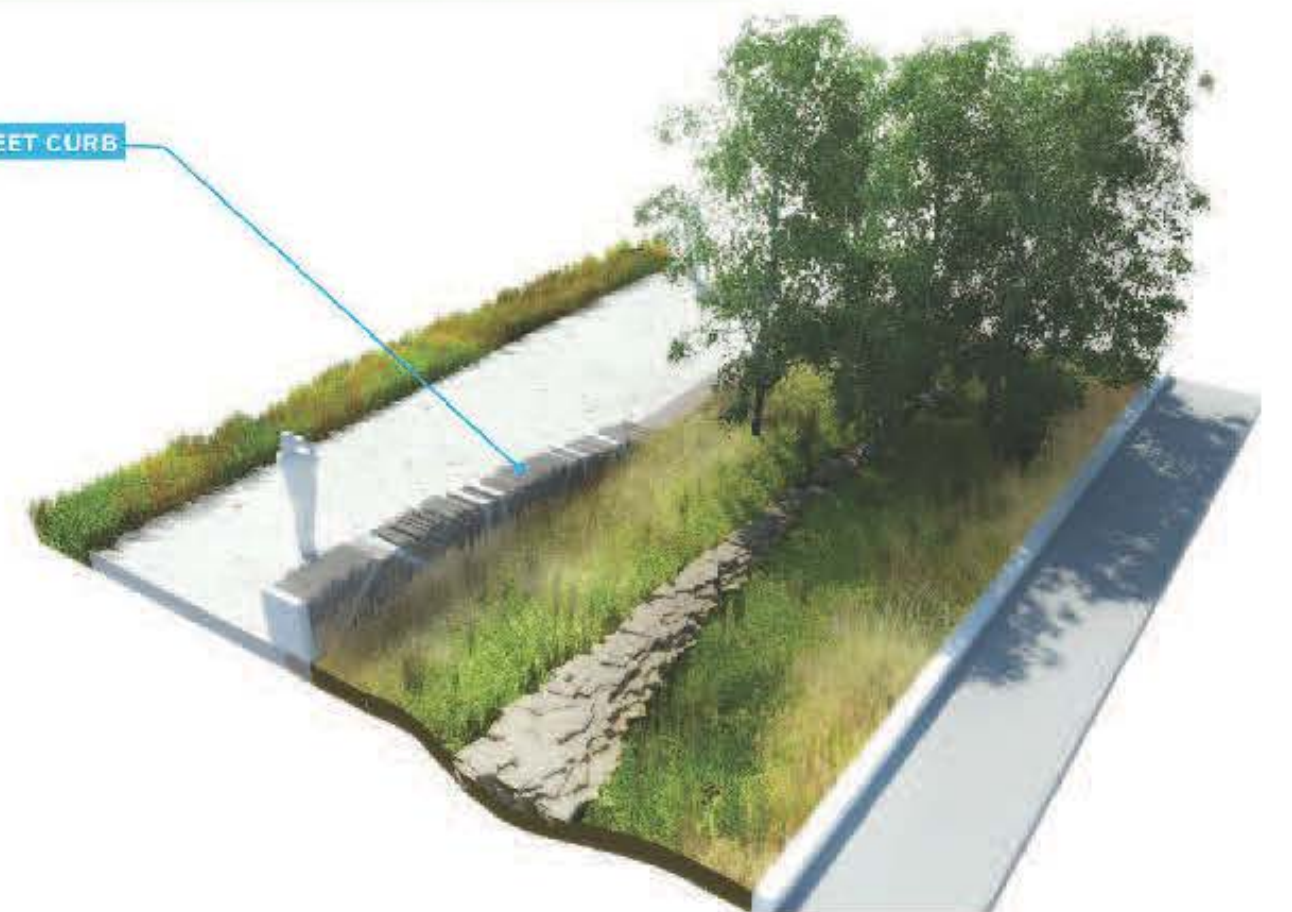
SCAPE



WALL ELEVATION- LEGIBLE FROM STREET AND PATH



WALL ELEVATION- LEGIBLE FROM STREET AND PATH



VINE ST. - BEFORE



VIEW LOOKING WEST NEAR QUALITY STREET

VINE ST. - BEFORE



VIEW LOOKING WEST NEAR QUALITY STREET

MANAGING & MANIFESTING WATER

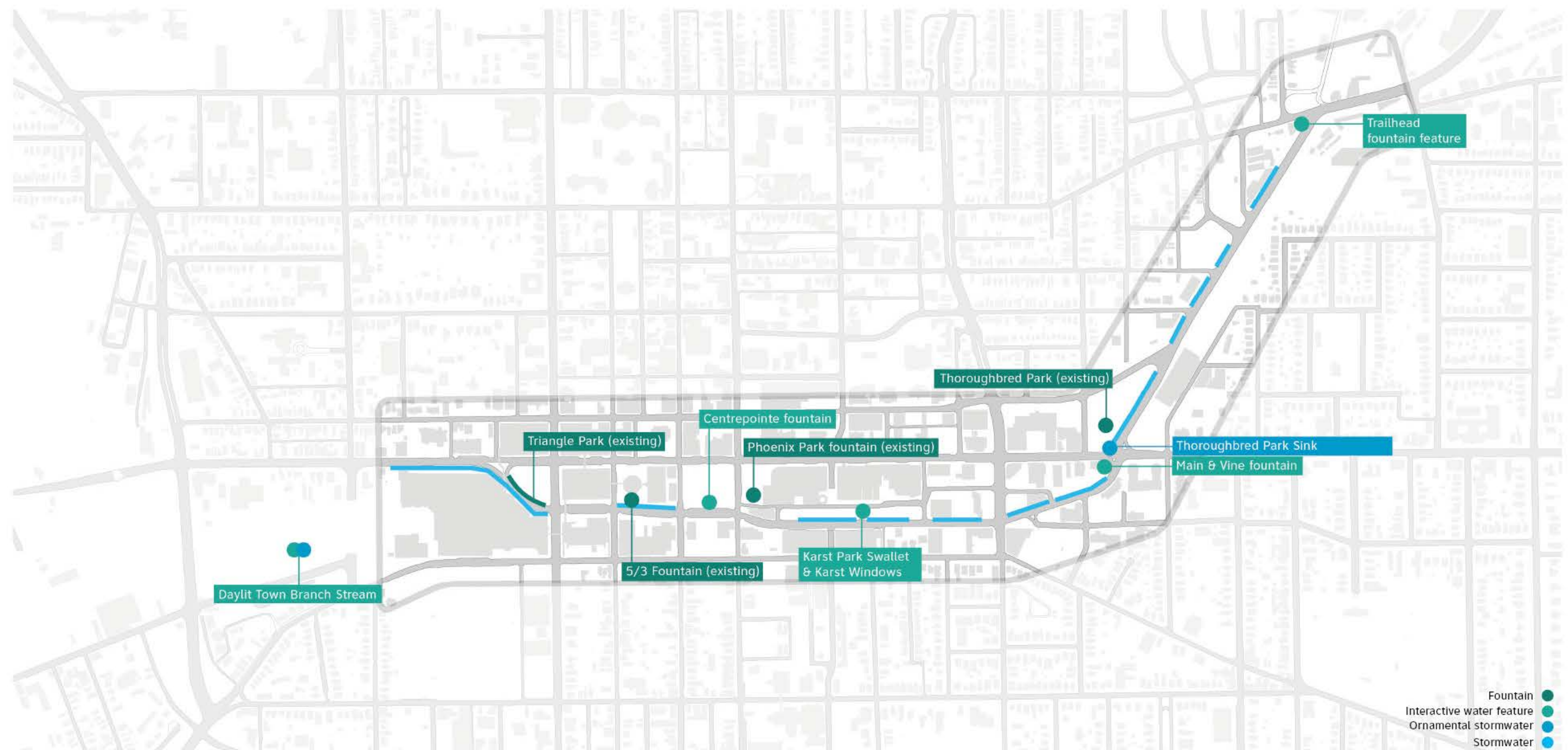
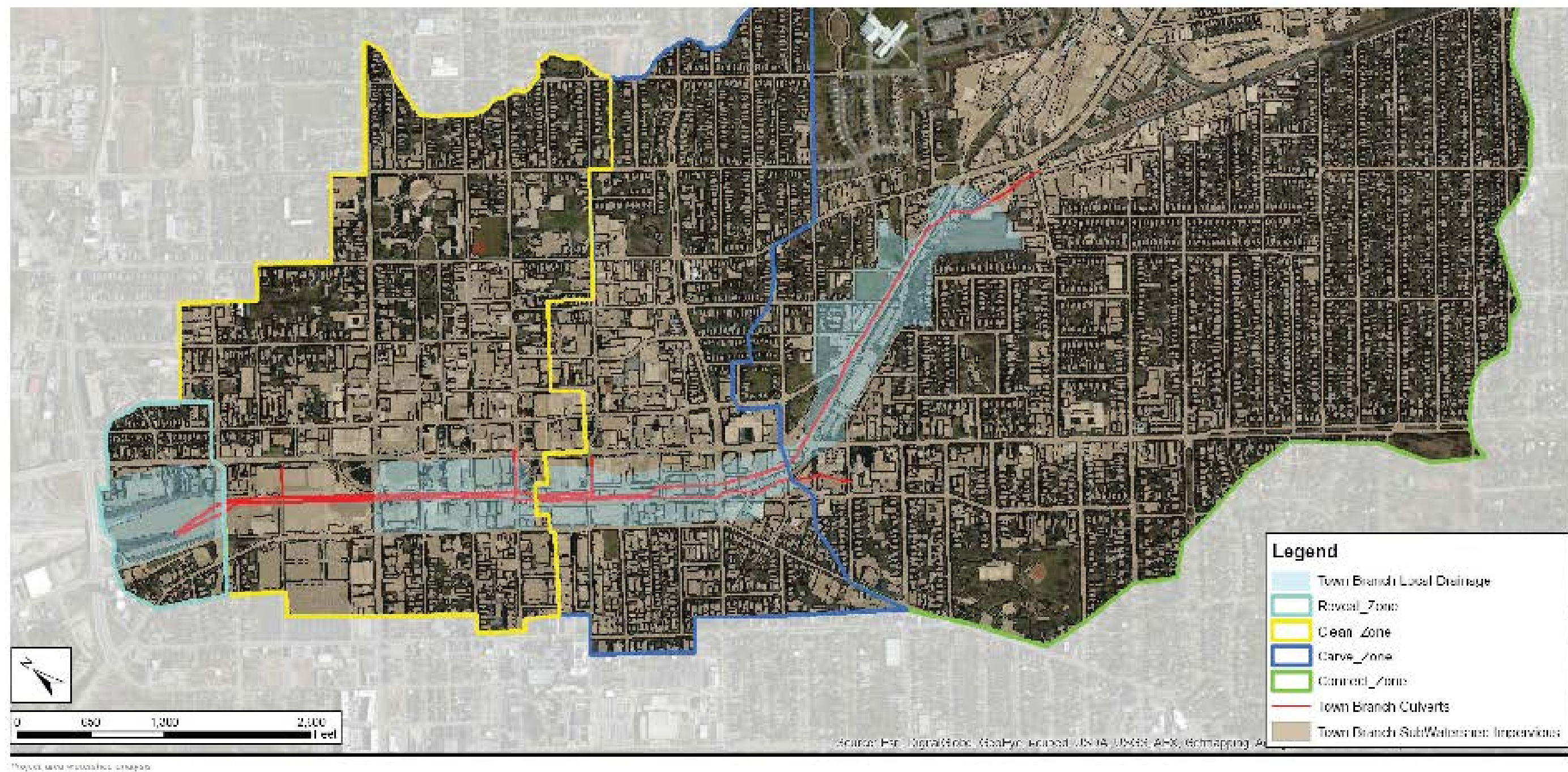


Diagram of types and locations of water features in or near Town Branch Commons



MIDLAND / EAST END



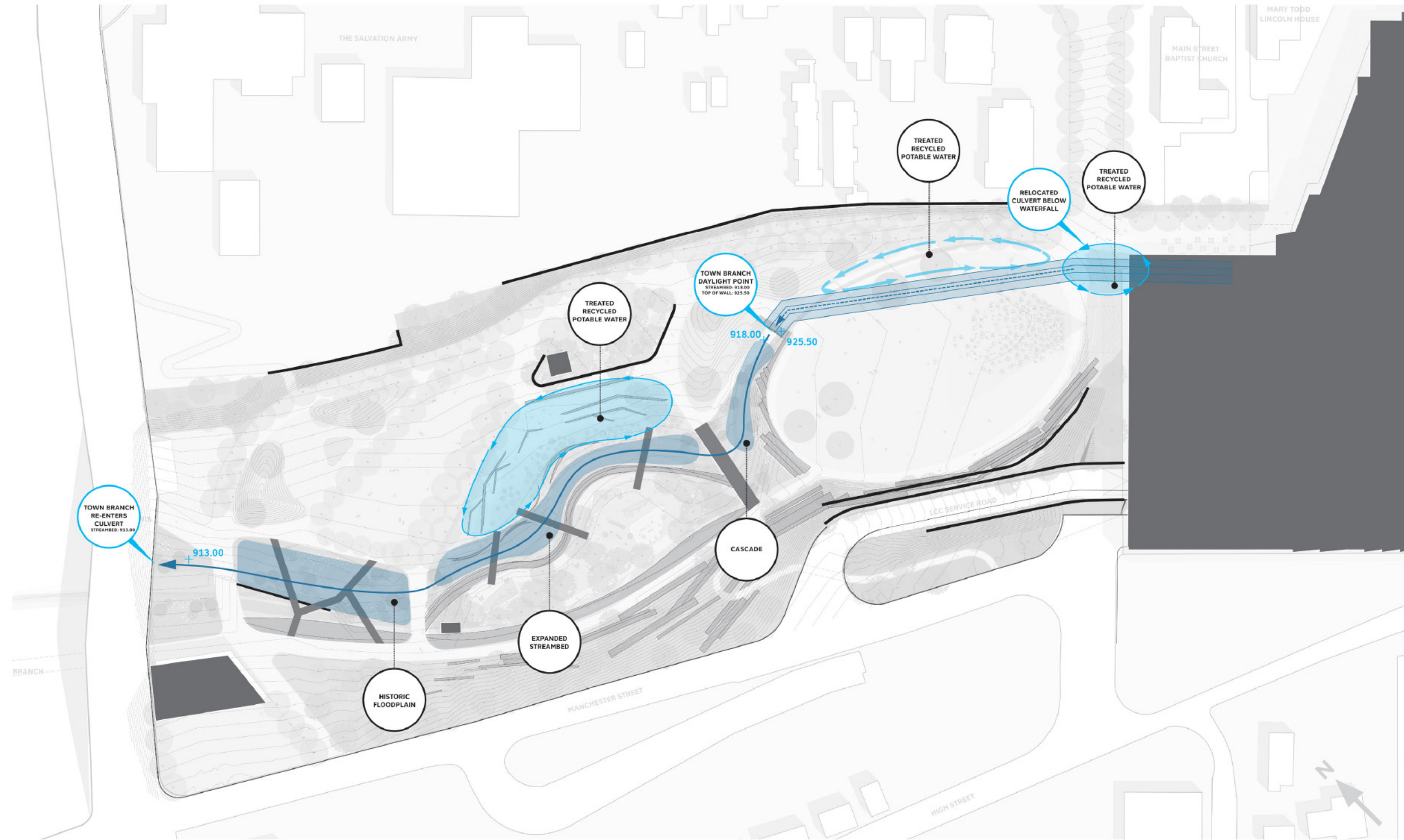
VIEW LOOKING EAST BETWEEN LEWIS AND 3RD STREET

MIDLAND / EAST END



VIEW LOOKING EAST BETWEEN LEWIS AND 3RD STREET







Open space is part of resilience
leveraging risk reductions projects for community benefits

Resilience Park, Ohio Creek Watershed Project

Norfolk, VA

THE OHIO CREEK WATERSHED PROJECT



A NETWORK OF PROJECTS TO
INCREASE THE RESILIENCE OF
THE CHESTERFIELD HEIGHTS AND
GRANDY VILLAGE NEIGHBORHOODS

THE RESILIENCE PARK IN THE LARGER PROJECT



**A NEIGHBORHOOD PARK THAT
SHOWCASES RESILIENCY WITHIN
THE PROJECT NETWORK**

A PARK THAT ...



PROTECTS

- + from costal flooding
- + from stormwater flooding

CONNECTS

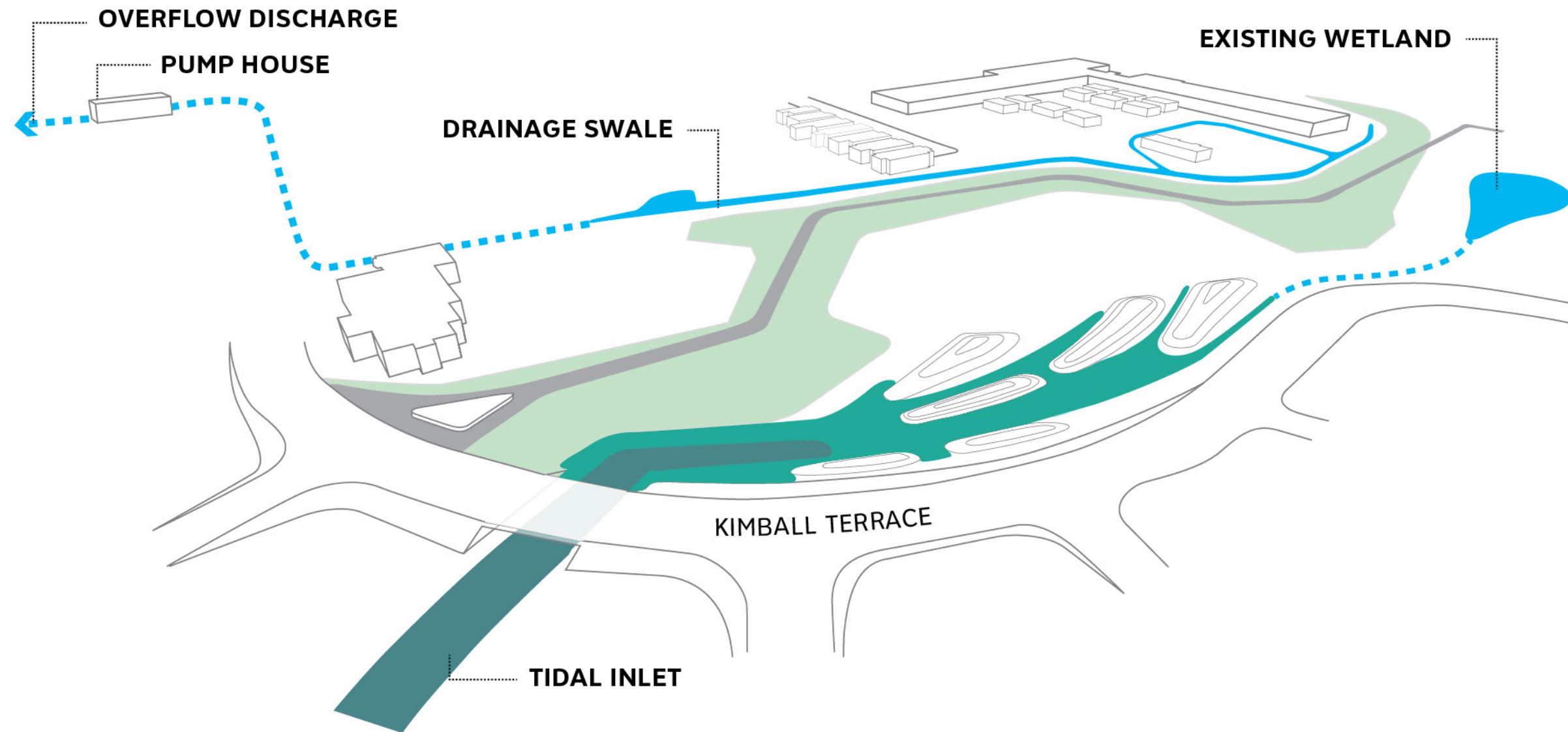
- + neighborhoods
- + people with people
- + people to nature

ENGAGES

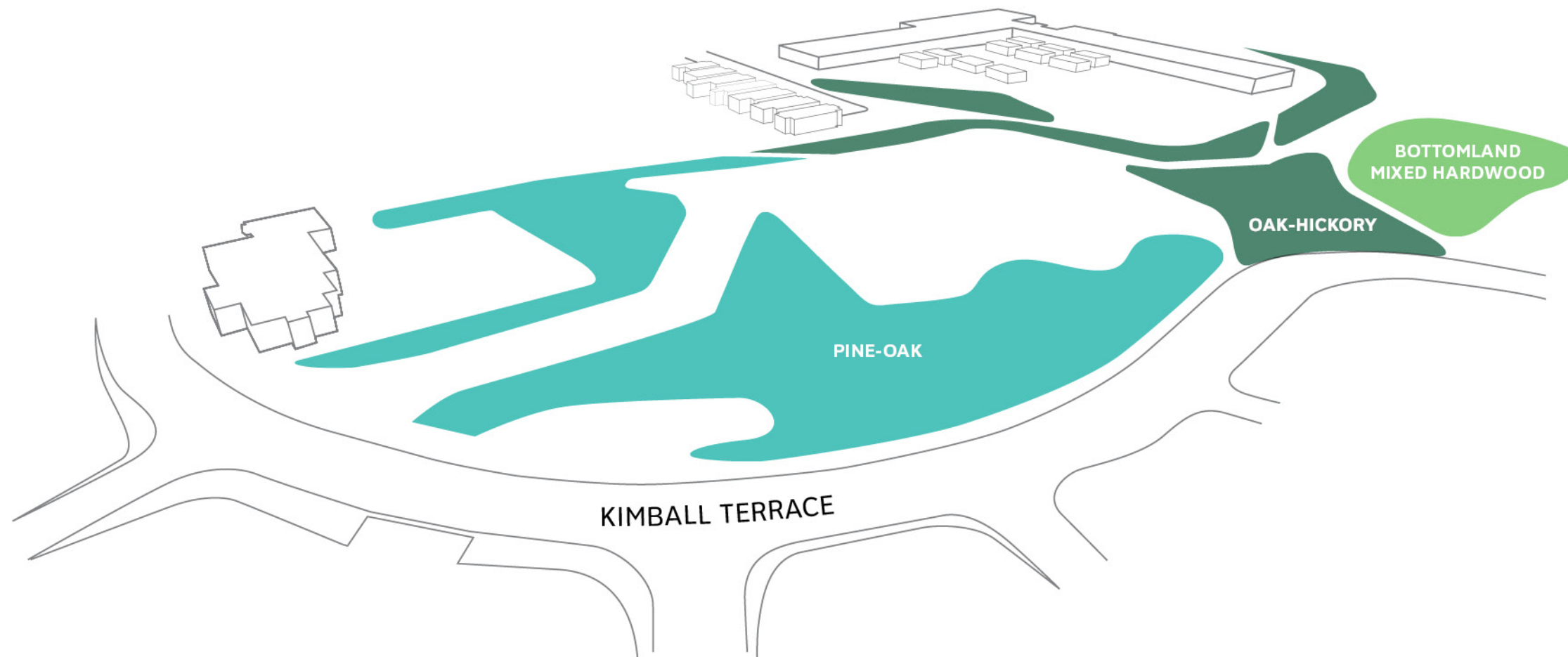
- + people in place that is uniquely norfolk
- + people in healthy activities
- + people in learning about local ecology and resilience



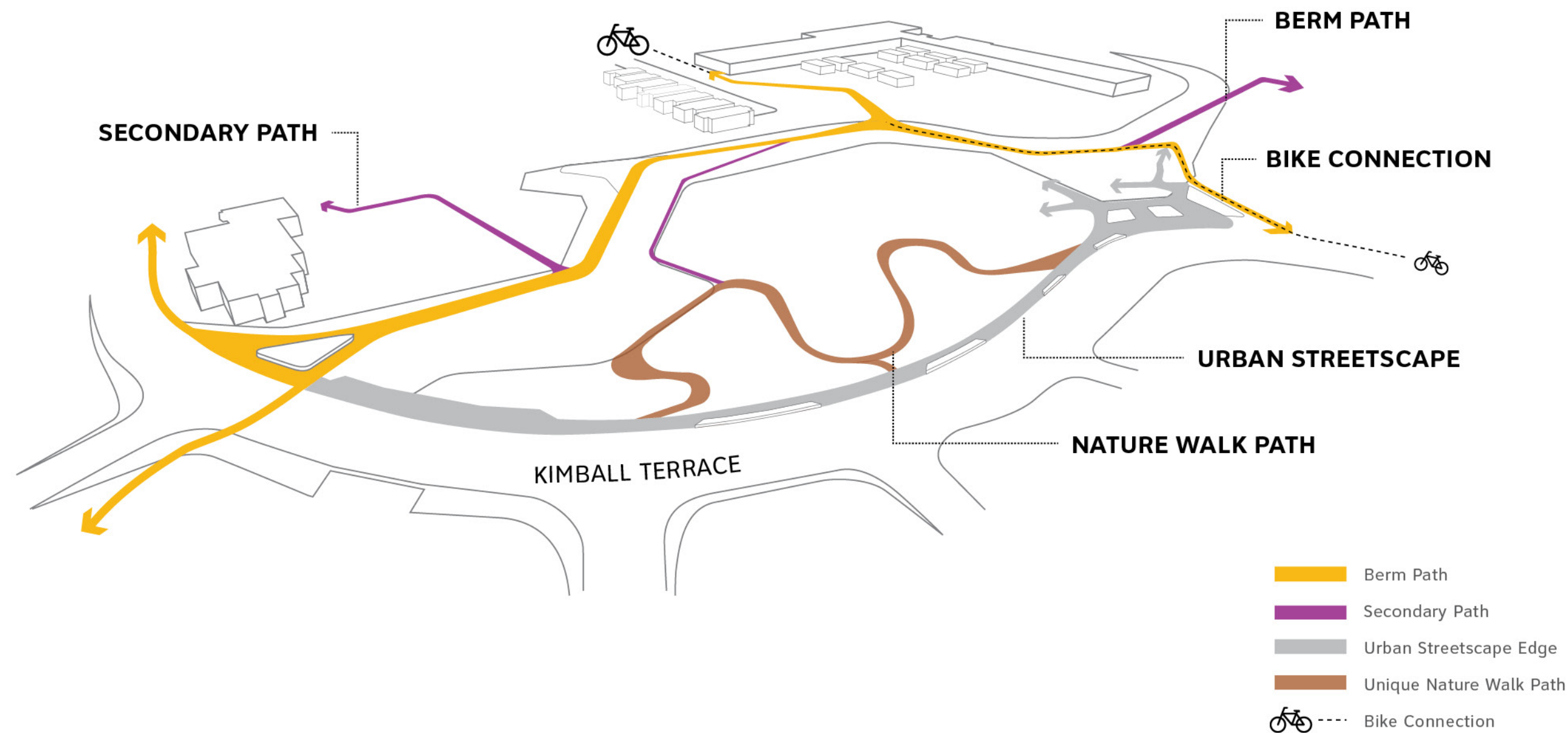
TOPOGRAPHY: FLOOD PROTECTION + DRAINAGE



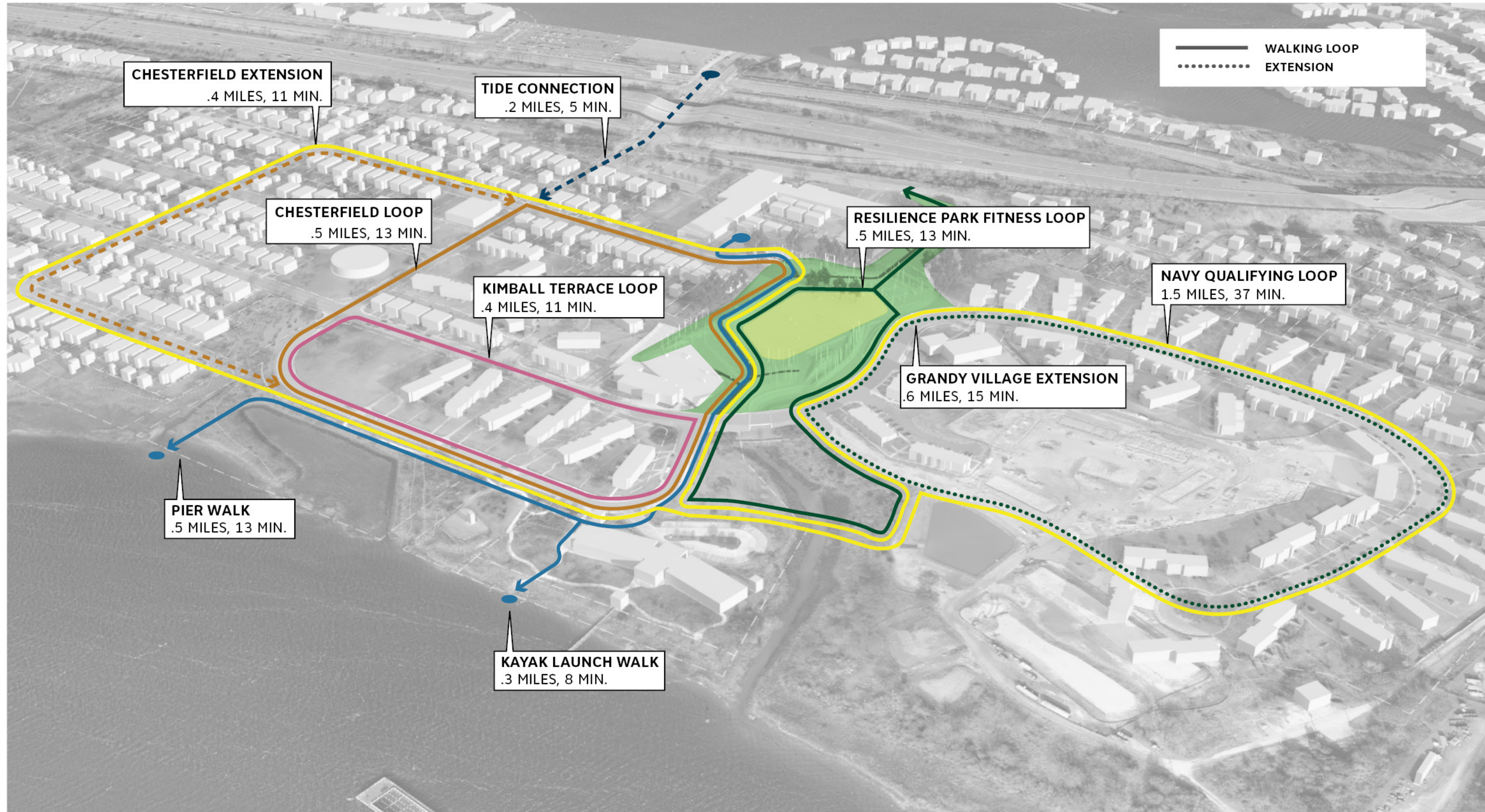
PLANTING: NATIVE PLANT COMMUNITIES



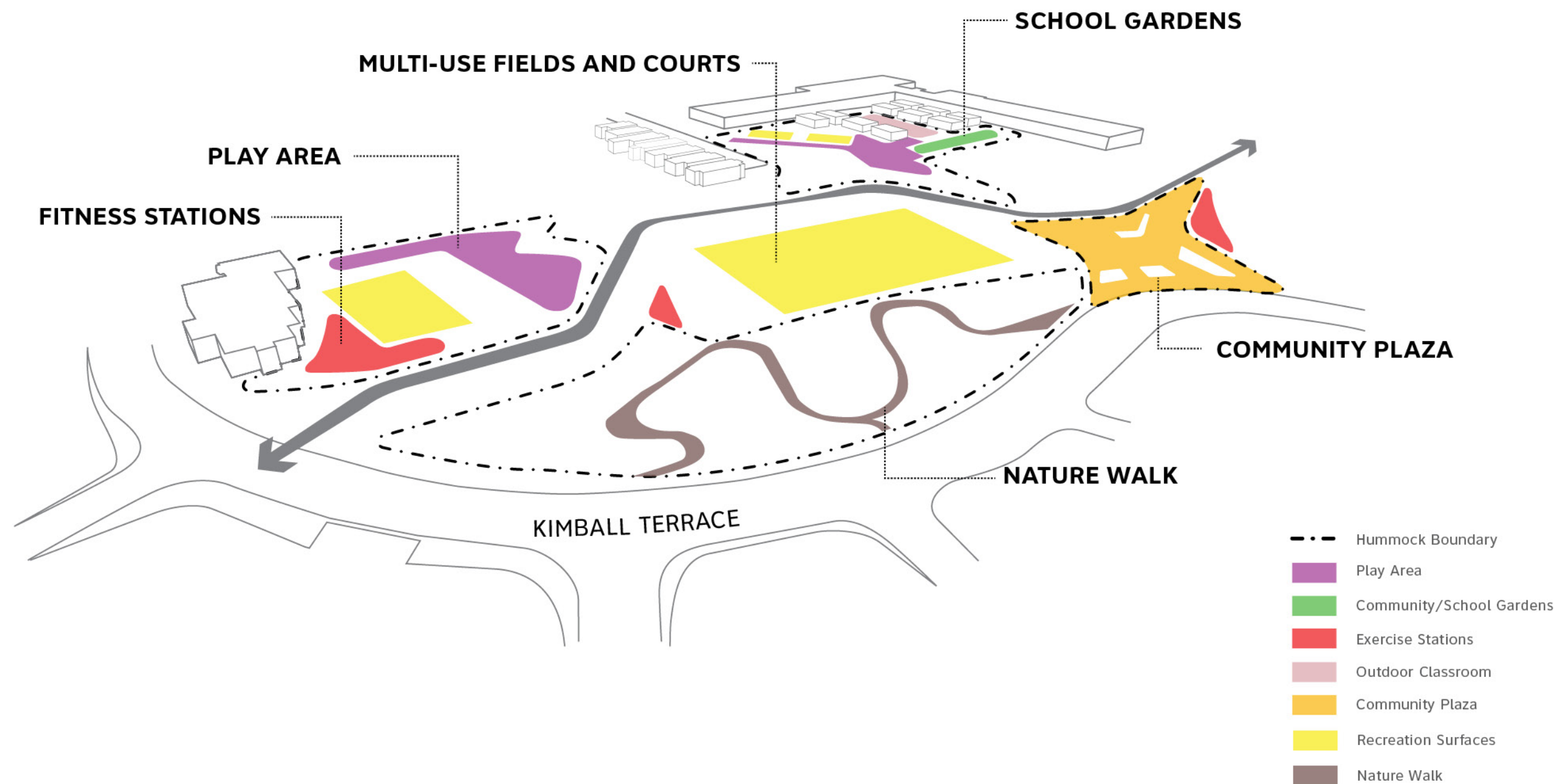
CIRCULATION: COMMUNITY CONNECTIONS + CORRIDORS



CIRCULATION: NEIGHBORHOOD CONNECTIONS



PROGRAM: AMENITIES



11/8 GRADIN VILLAGE (OH)

EXPERIENCE: THE LOOK & FEEL OF ... SHOULD BE ...

	WATER	PLANTING	SURFACES	+ 1
1ST CHOICE				
2ND CHOICE				

NOTES + COMMENTS

WE WANT TO SEE... WATER PLAY IS FUN FOR KIDS. THEY HAVE TO GO OTHER PLACES FOR WATERING. SCHOOL POOL... MULTI-USE PIER - HAS TO GO FARTHER INTO RIVER THAN... VEGETABLE GARDENING... FOR SENIORS + CHILDREN... EXP DOCK FOR FISHING. INCLUDES BOATS... SURFACE USED FOR MORE THAN ONE THING

WE DON'T WANT TO SEE... Hammock new by town... ARTIFICIAL TURF.



PROGRAM YOUR PARK



PICTURE YOUR PARK

11/8 G.V. (VS)

ACTIVITIES: PEOPLE SHOULD BE ABLE TO ...

	PLAY	LEARN	RELAX	+ 1
1ST CHOICE				
2ND CHOICE				
NO				

play space for little little kids

WE DON'T WANT TO SEE...

WHO TALKED WITH US



GRANDY VILLAGE
RESIDENTS



CHESTERFIELD ACADEMY
PARENTS + STAFF



CITY AGENCIES



CHESTERFIELD HEIGHTS
RESIDENTS



NON-PROFITS

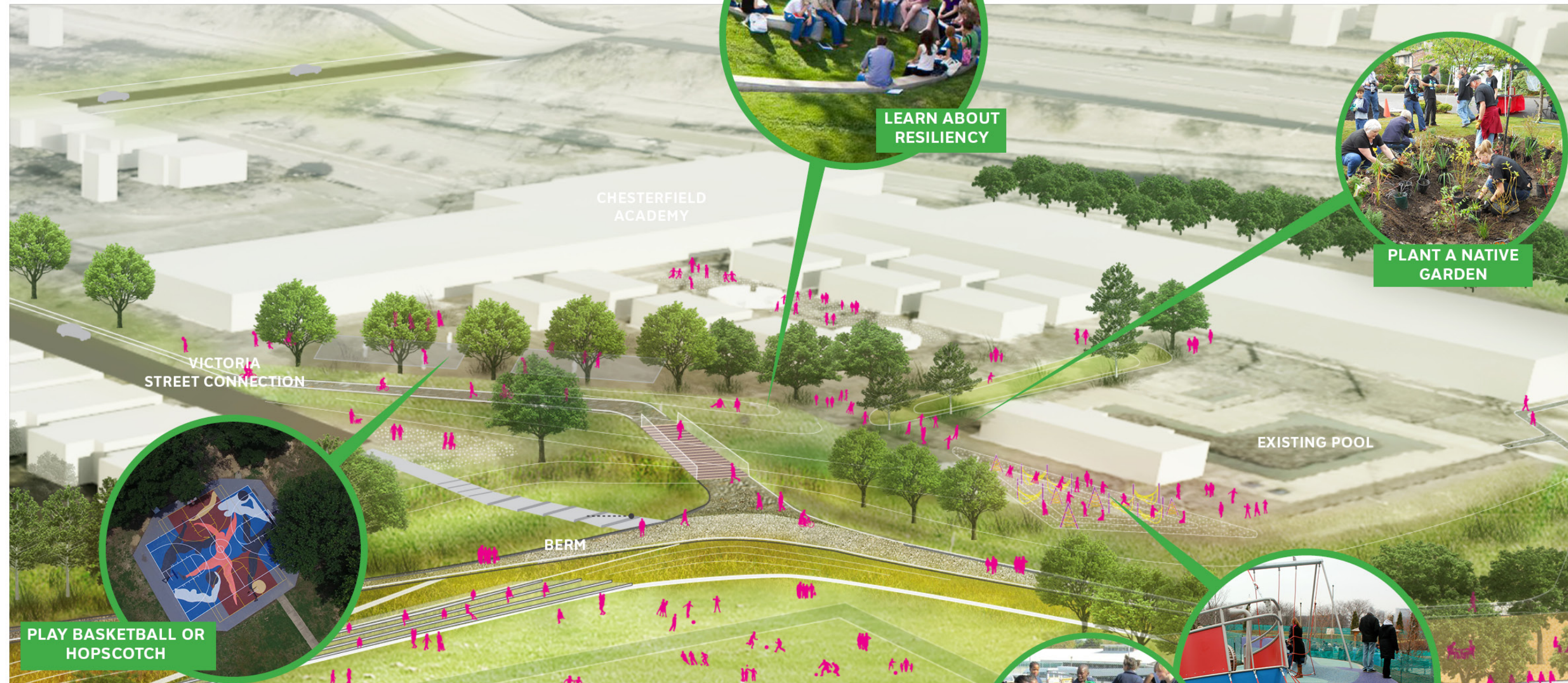


CHESTERFIELD ACADEMY
STUDENTS



NRHA

ACADEMY GROUNDS

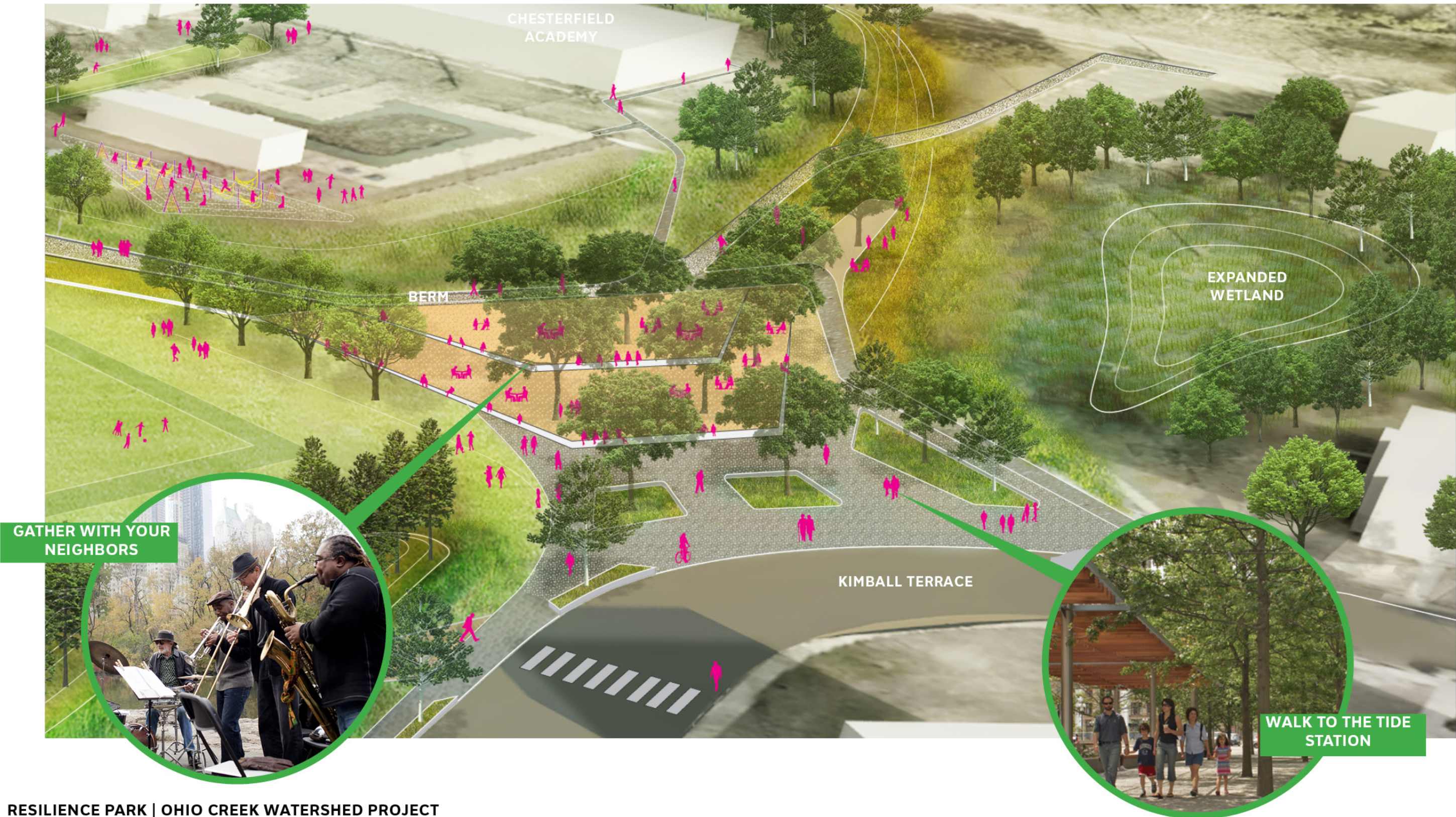


CONCEPT: Bring learning outdoors through the design of outdoor classroom spaces, shaped by the new berm topography. Emphasize opportunities for education on stormwater and community gardens.

RESILIENCE PARK | OHIO CREEK WATERSHED PROJECT
2018

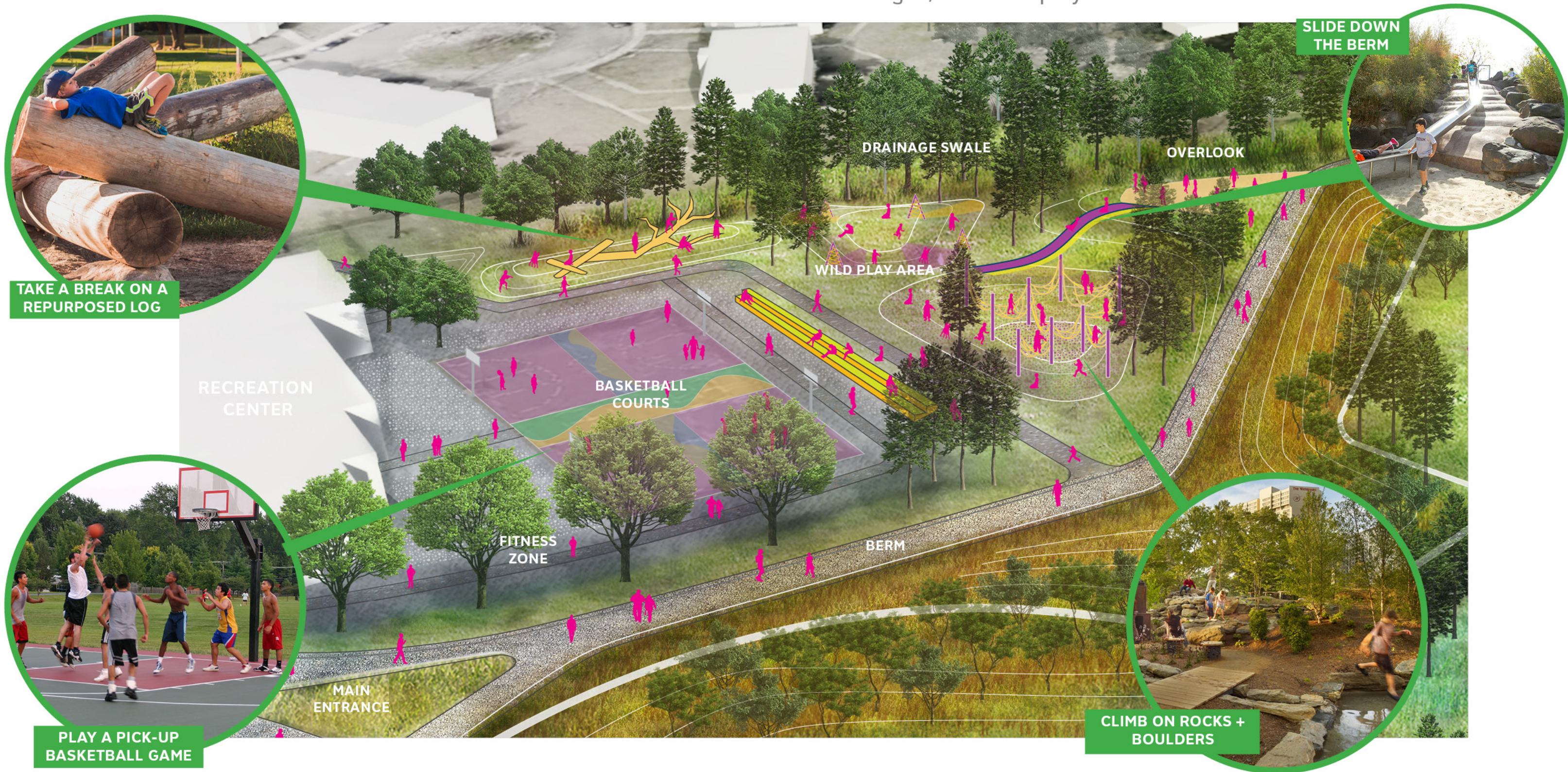
COMMUNITY TERRACE

CONCEPT: Provide an area for communities to come together to relax, play, eat, and chat. Connect neighborhoods and enable fluid circulation between Victoria Avenue and Kimball Terrace.



HILLSIDE PLAYSCAPE

CONCEPT: Create play spaces for the “nature smart” kid in an outdoor, nature-focused play space where exploration, nature challenges, and wild play are valued.



CENTRAL FIELD

CONCEPT: Create an open grassy lawn that can be used by the community for different sports and events. Design the field so that it drains properly and is useable after rain events.



INTEGRATE SEATING
INTO THE BERM

USE FIELD FOR A VARIETY
OF ACTIVITIES



Resilience happens at all scales
integrating resilience into scalable community projects

Blake Hobbs Play-za

New York, NY

MATURE EXISTING TREE CANOPY PROVIDES SHADE

UNFRIENDLY EDGE

100% PAVED

BEFORE REOVATION
BLAKE HOBBS PLAYGROUND
NEW YORK, NY

SCAPE / LANDSCAPE
ARCHITECTURE PLLC



100% OF TREES PRESERVED

PLANTED EDGE

20,000SF OF IMPERVIOUS ASPHALT REMOVED
REPLACED WITH POROUS SAFETY SURFACE,
OPEN-JOINT PAVERS AND UNDERSTORY PLANTS

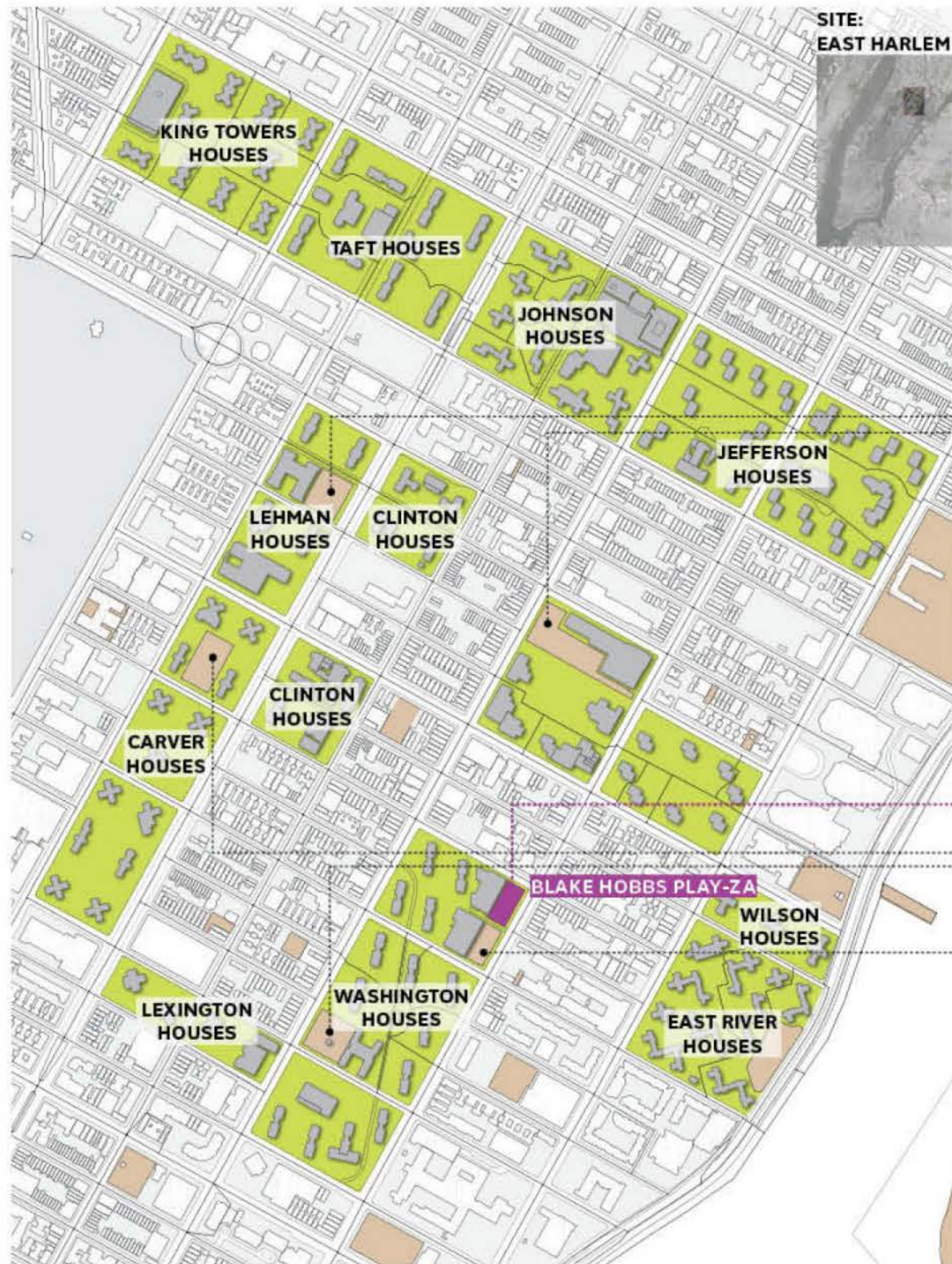
BLAKE HOBBS PLAYGROUND
NEW YORK, NY











LEHMAN HOUSES



POOR RICHARD'S PLAYGROUND



BLAKE HOBBS PLAY-ZA



MAE GRANT PLAYGROUND



WASHINGTON HOUSES



WASHINGTON HOUSES

Institutionalizing adaptation and resilience
generating guidelines for resilient design / investment

DDC Resilient Design Guidelines

New York, NY



Mayor's Office of
Recovery and Resiliency

#ONENYC

April 2018
Version 2.0

CLIMATE RESILIENCY DESIGN GUIDELINES

The Climate Resiliency Design Guidelines (“Guidelines”) provide step-by-step instructions on how to supplement historic climate data with specific, regional, forward-looking climate change data in the design of City facilities. **Resilient design is intended to become an integral part of the sequential project planning process for agencies and their designers.** All new projects should assess their climate change risks in the context of the project’s purpose, specific site location and funding, and then determine the appropriate design strategies.



THANK YOU!

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SHOCKS & STRESSES

ADAPTIVE LANDSCAPES / ADAPTIVE PRACTICE

Pippa Brashear & Chris Barnes | SCAPE
City of St. Augustine Resiliency Strategy Workshop
May 08, 2018

WHAT IS RESILIENCE?

Resilience is the capacity of any entity—an individual, a community, an organization, or a natural system—to prepare for disruptions, to recover from **shocks** and **stresses**, and to adapt and grow from a disruptive experience.

- *Judith Rodin, 'The Resilience Dividend'*

WHAT ARE OUR GOALS?

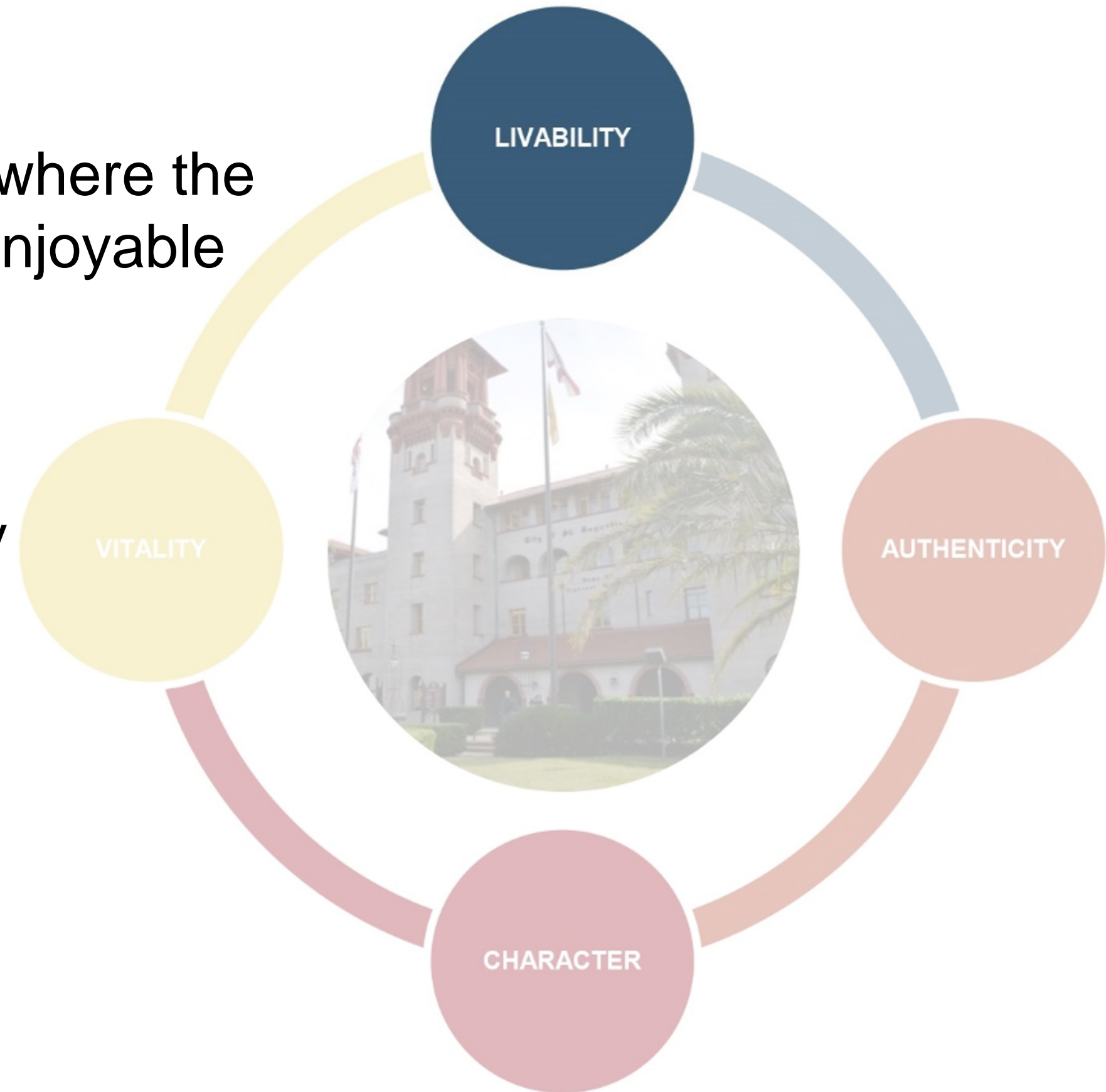
St. Augustine will be a diverse, **livable**, **authentic** waterfront city that builds upon its rich history and environment to create a distinctive community character founded on a healthy and **vibrant economy**, a diverse mix of people and experiences and a valuing of its natural assets.

-2017 Strategic Plan. City of St. Augustine



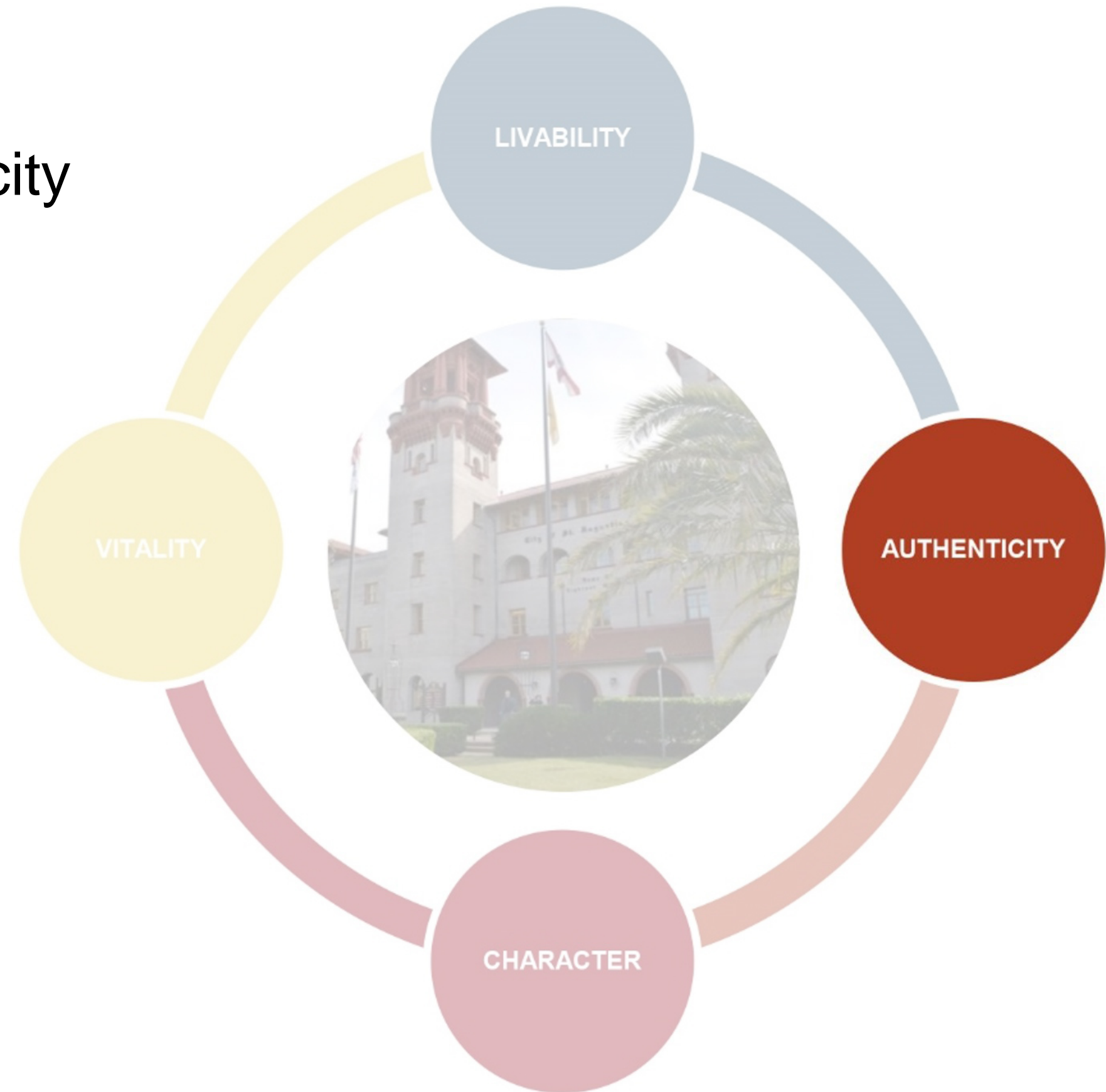
LIVABILITY

- Create a safe and pleasant place to live where the experiences and services that make life enjoyable and rewarding are accessible.
- A desirable place to live by offering a full range of experiences that make a city highly livable.
- Increased mobility and Access.



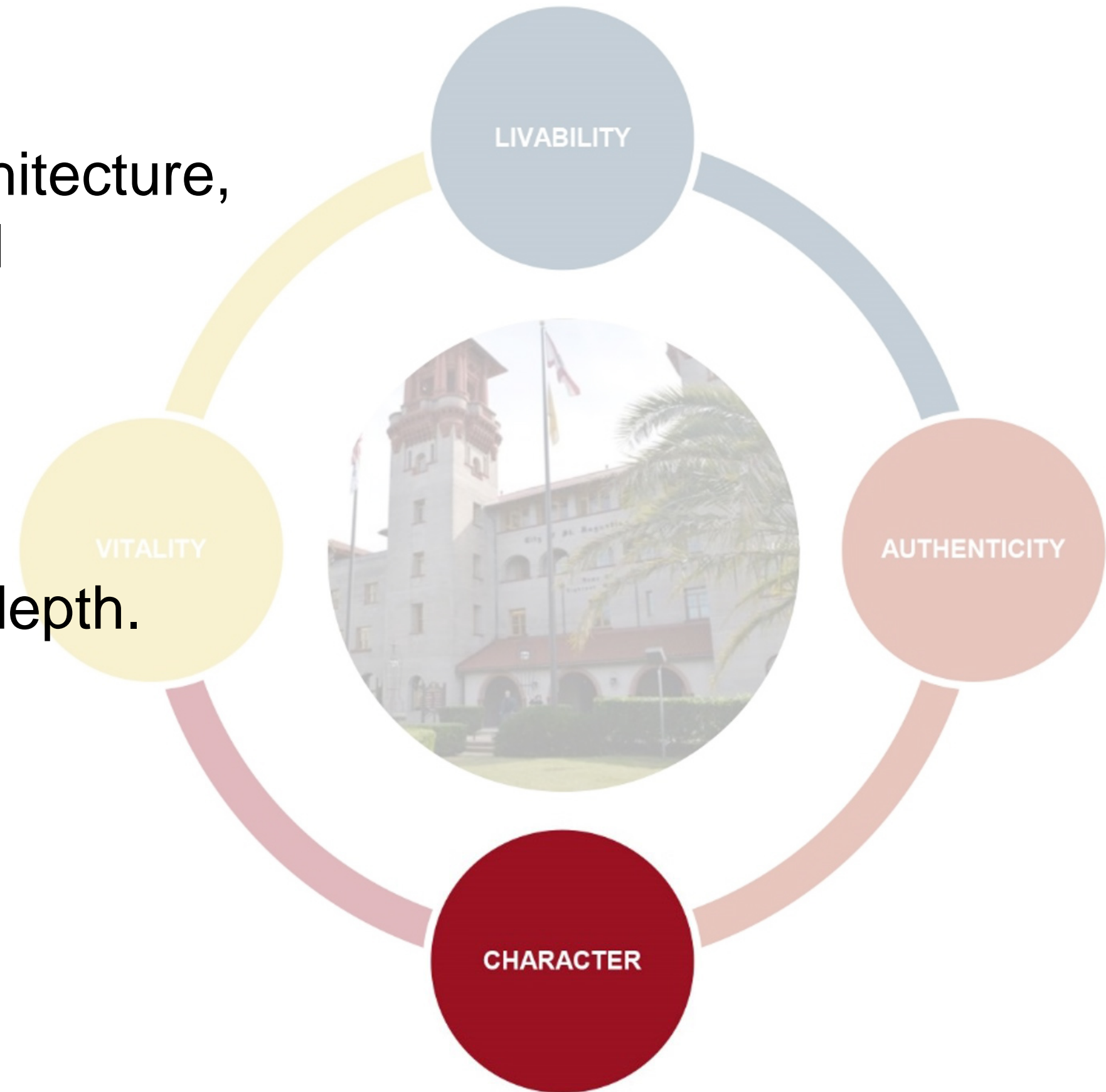
AUTHENTICITY

- St. Augustine remains a work, live, play city that is multi-generational and culturally diverse.
- The City has protected its rich layers of history while adding to those layers as a living and dynamic community.



CHARACTER

- Historic Physical character including Architecture, intensity and density of uses, and natural environment.
- Cultural character through arts and Culture Culinary destination, and a small town of both historical and architectural depth.
- St. Augustine is a historic and distinctive community.



VITALITY

- Enhance the level of economic activity in the City of St. Augustine.
- Develop diverse existing and new entrepreneurial economic drivers, maintain and restore a rich and healthy physical eco system and support a diverse group.



**WHAT THREATENS ST AUGUSTINE'S ABILITY TO
ACHIEVE THESE GOALS?**

ACUTE SHOCKS

“An acute natural or human-made event or phenomenon threatening major loss of life, damage to assets, and a city’s ability to function and provide basic services, particularly for poor or vulnerable populations.”

CHRONIC STRESSORS

“A chronic (ongoing or cyclical) natural or human-made event or phenomenon that renders the city less able to function and provide basic services, particularly for poor or vulnerable populations.”

- Rockefeller Foundation, 100 Resilient Cities, UN-Habitat, UNIDSR

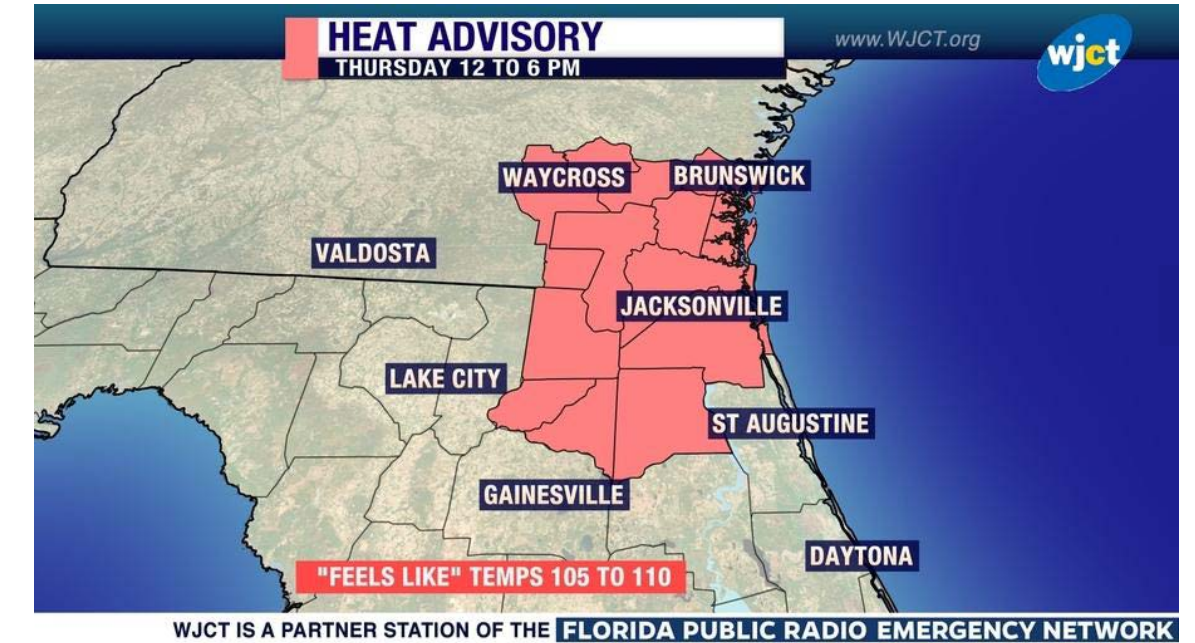
ACUTE SHOCKS



STORM SURGE



SEVERE STORMS



HEATWAVES



DISEASE OUTBREAK

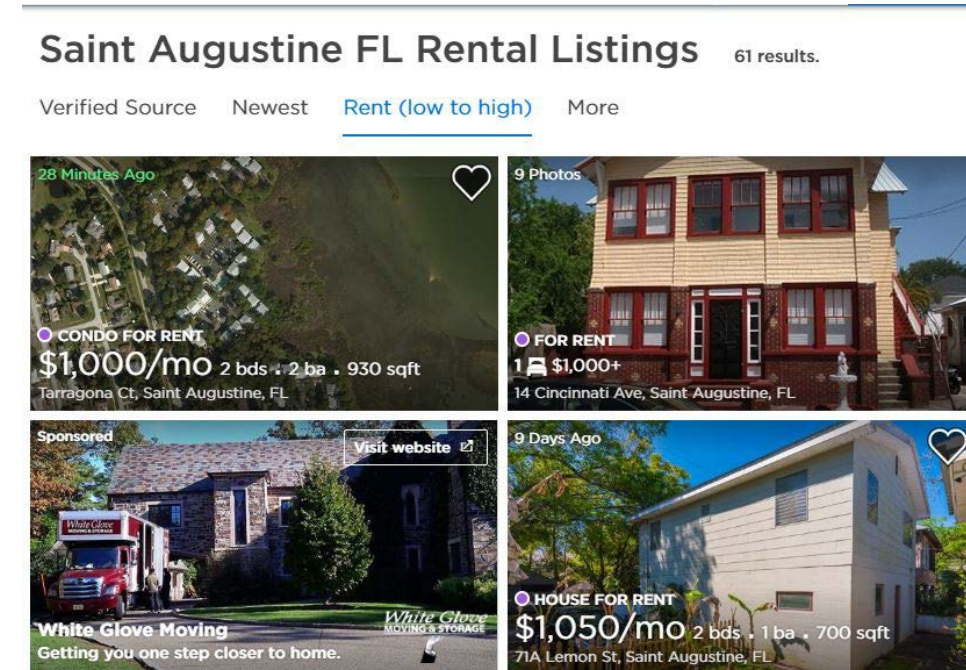


**INFRASTRUCTURE /
BUILDING FAILURE**

CHRONIC STRESSORS



SEA LEVEL RISE /
KING TIDE



LACK OF AFFORDABLE
HOUSING



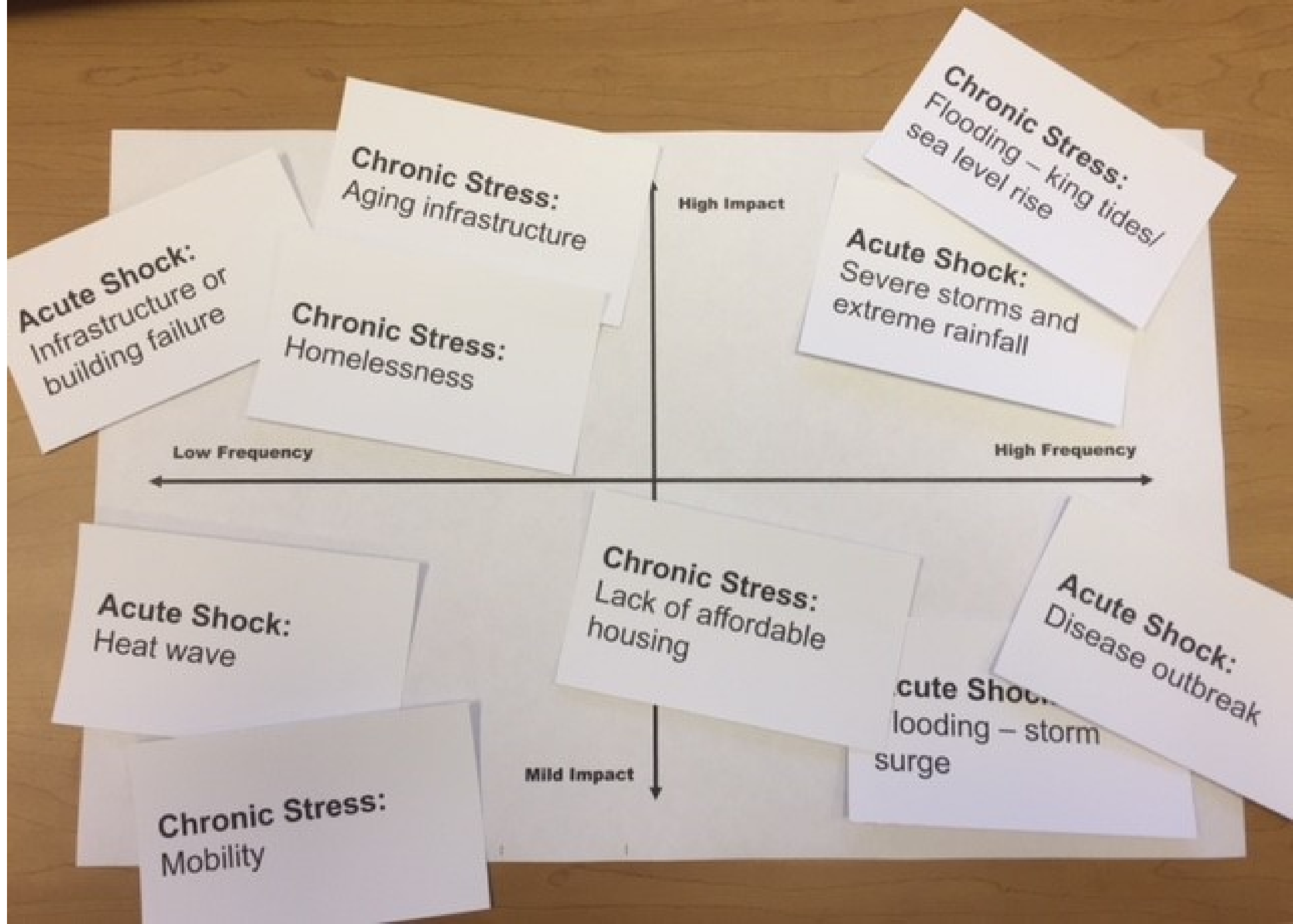
MOBILITY



HOMELESSNESS



AGING INFRASTRUCTURE



ACUTE SHOCKS

STORM SURGE

SEVERE STORMS

HEATWAVES

DISEASE OUTBREAK

**INFRASTRUCTURE /
BUILDING FAILURE**

CHRONIC STRESSES

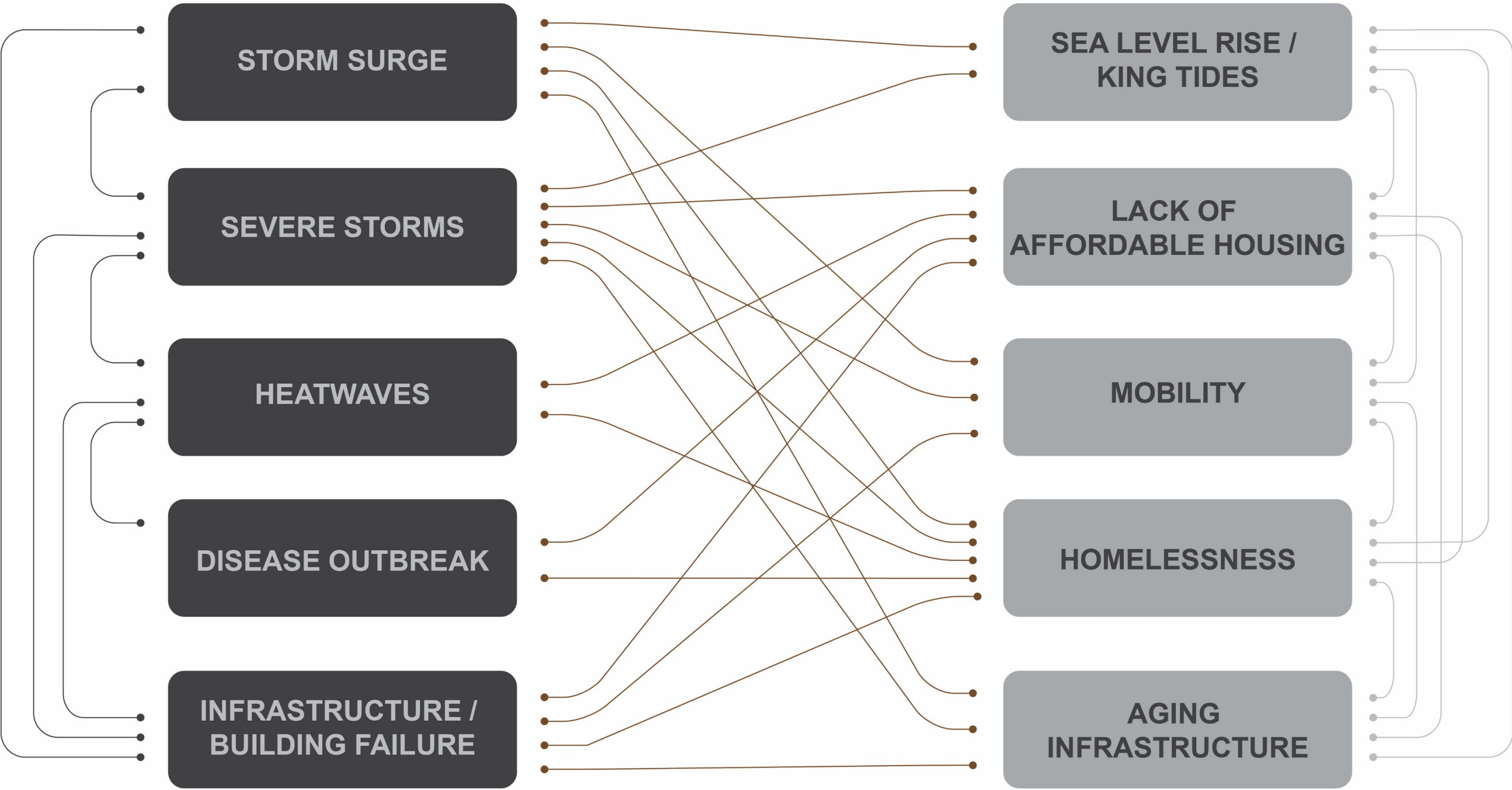
**SEA LEVEL RISE /
KING TIDES**

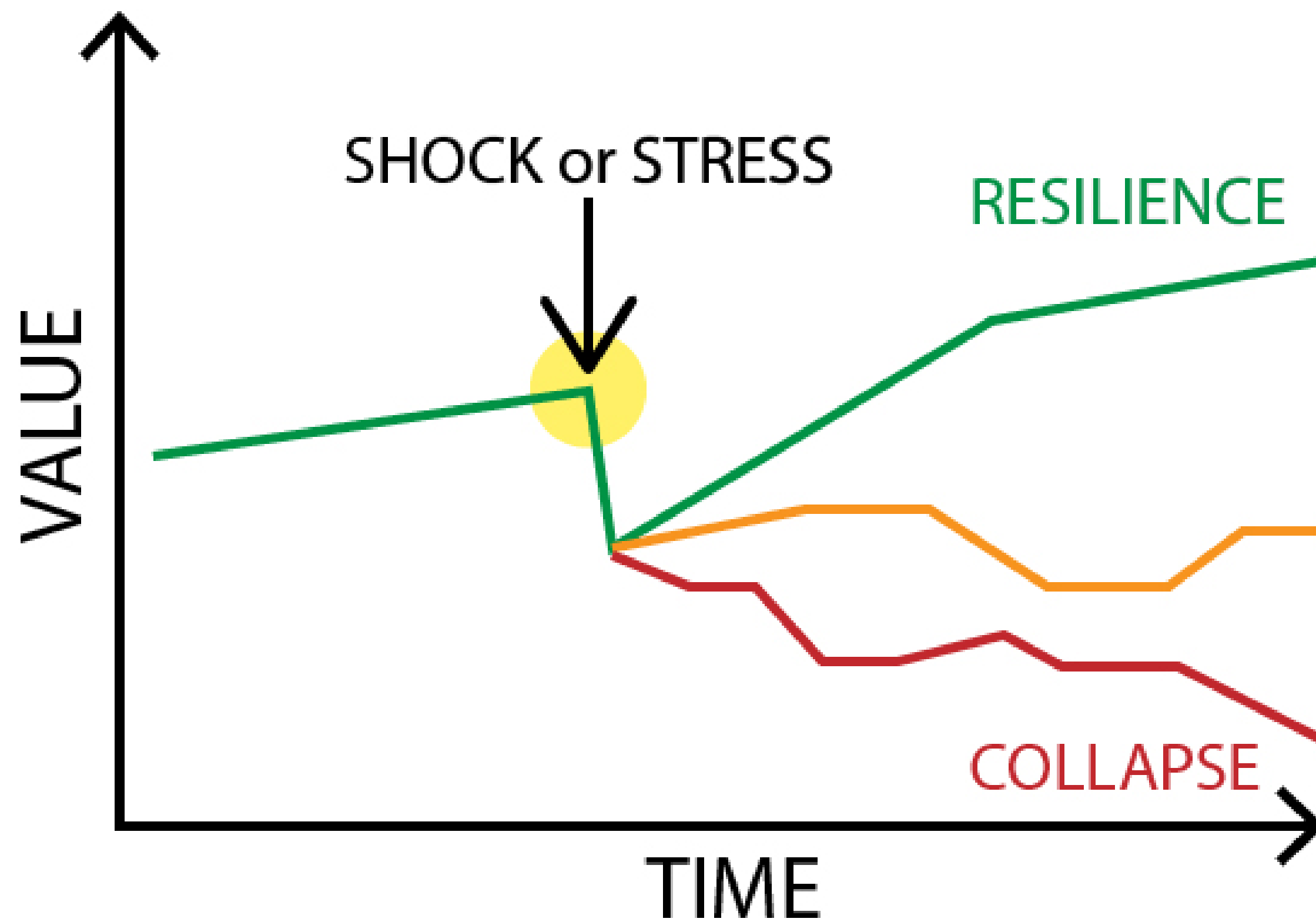
**LACK OF
AFFORDABLE HOUSING**

MOBILITY

HOMELESSNESS

**AGING
INFRASTRUCTURE**





A successful resilience strategy is one that provides **co-beneficial** outcomes, **reduces costs** over the life of the asset wherever possible and avoids **negative indirect impacts** to other systems.

Resilient design should not exist in a silo, but rather be a **well-integrated** part of existing processes and address other goals of the City.

-Climate Resiliency Guidelines.

NYC Mayor's Office of Recovery and Resiliency

VISION

Where do we want to be in the future?

ASSETS

What are the people, infrastructure, and other assets that help us achieve that vision?

SHOCKS AND STRESSES

What threatens that vision & these assets?

RESILIENCE

How to we achieve this vision despite these shocks and stresses?



THANK YOU!

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