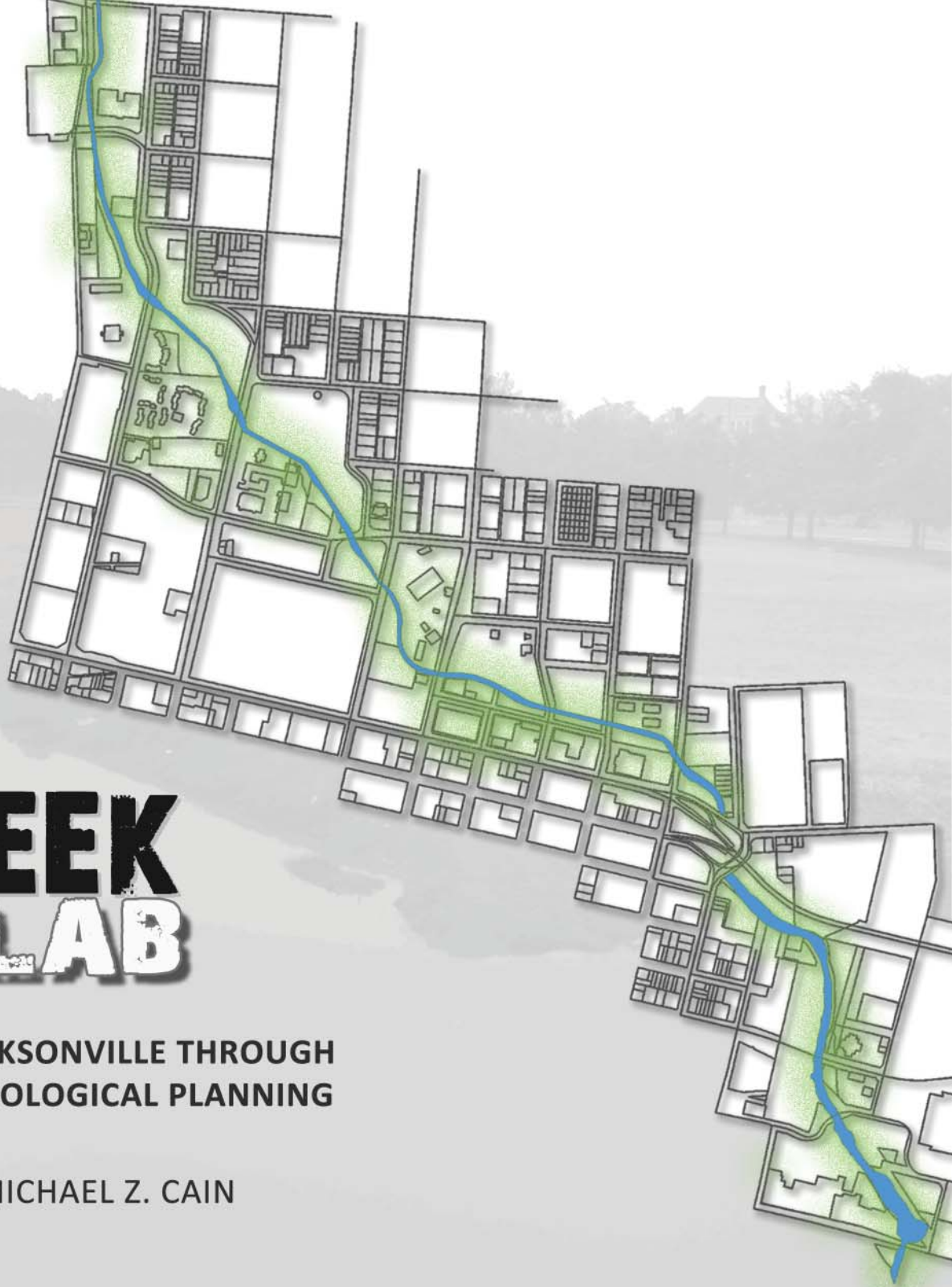

HOGANS CREEK
THE LIVING LAB

SUSTAINING DOWNTOWN JACKSONVILLE THROUGH STORMWATER AND ECOLOGICAL PLANNING

MICHAEL Z. CAIN

HOGANS CREEK: THE LIVING LAB

SUSTAINING DOWNTOWN JACKSONVILLE THROUGH ECOLOGOICAL AND STORMWATER PLANNING

MICHAEL CAIN

SPRING SEMESTER 2012

UNIVERSITY OF FLORIDA
COLLEGE OF DESIGN, CONSTRUCTION AND PLANNING
DEPARTMENT OF LANDSCAPE ARCHITECTURE & PLANNING
BACHELOR OF LANDSCAPE ARCHITECTURE

CAPSTONE ADVISOR - LES LINSCOTT

"Greenways are terribly important in the urban environment because they provide an edge, which means you have more people connected to the greenway itself, to the system of connections. Also, they're practical. In many areas, we can't get more 'big fat guys' - parks in the traditional sense. But by restoring rivers and other corridors, we can save the skinny ones."

- William Spitzer
former Acting Assistant Director, National Recreation Programs, National Park Service, 1998

ACKNOWLEDGEMENTS

I would like to dedicate this to my Lord and Savior, Jesus Christ, for giving me a life that is full of the countless blessings in which He has provided me. For also giving me a new opportunity to know who I am, what I want to do and how You work in my life through the people around me.

I would like to thank my fiance, Kelly Ann, for being the real trooper and encouraging me through even the hardest of times and stress. You are a real blessing to my life and I know we will both guide one another and encourage one another to be the best we can be through life. I love you.

I would like to express to my brother that I appreciate the support and love from you more than ever. Through all the encouragement and direction you have shown, I hope you know how appreciated you are and how I enjoy being your brother. You have made me proud in the steps you have taken and where you want to go.

To my parents, with all the love and support you have shown me throughout my life. You both have exemplied what it means to be successful and how to appreciate what we have in this world. I love you both very much.

To my family, I love you and thank you for all your prayers and support.

To my fellow classmates, the studio adventures have come to a close but that should not stop us from being in touch wherever we go. We have all encouraged one another in some way and have provided many enjoyable memories. I wish you all the best.

To the Department of Landscape Architecture & Planning, thank you for giving me the opportunity to grow and learn from each of you.

Go Gators!

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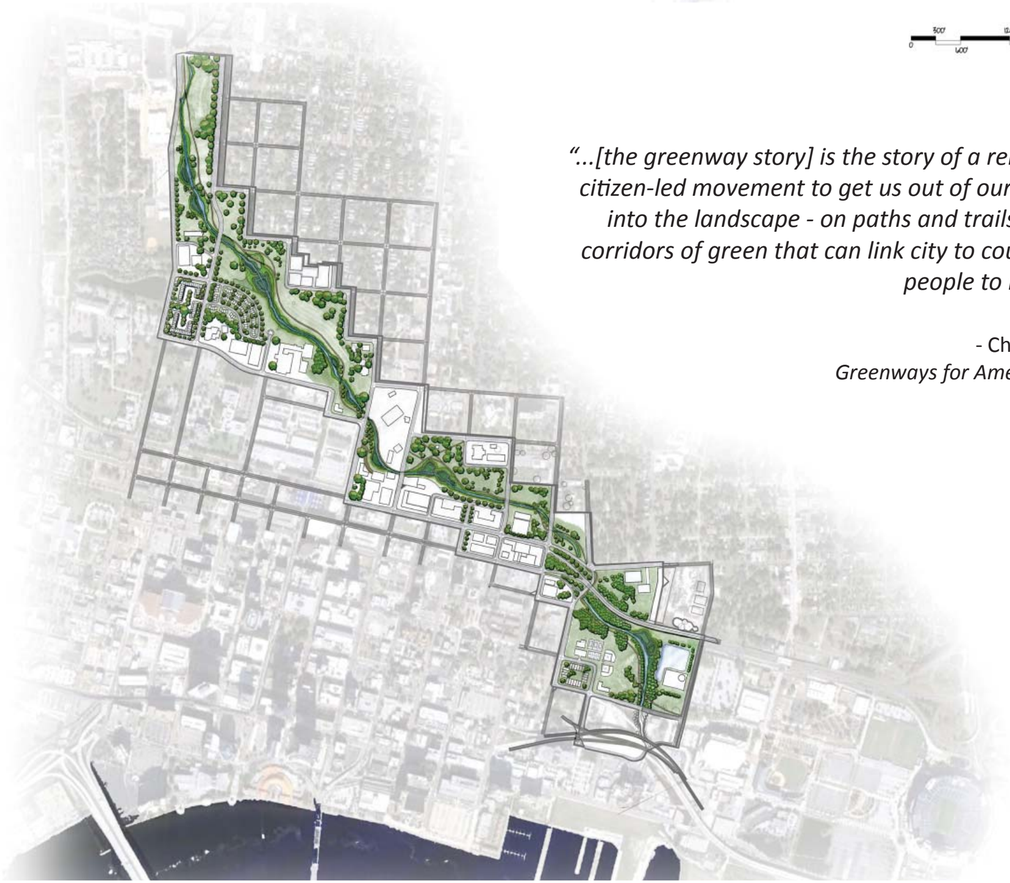


"...[the greenway story] is the story of a remarkable citizen-led movement to get us out of our cars and into the landscape - on paths and trails through corridors of green that can link city to country and people to nature..."

- Charles Little
Greenways for America, 1990

HOGANS CREEK: THE LIVING LAB

PROJECT SUMMARY

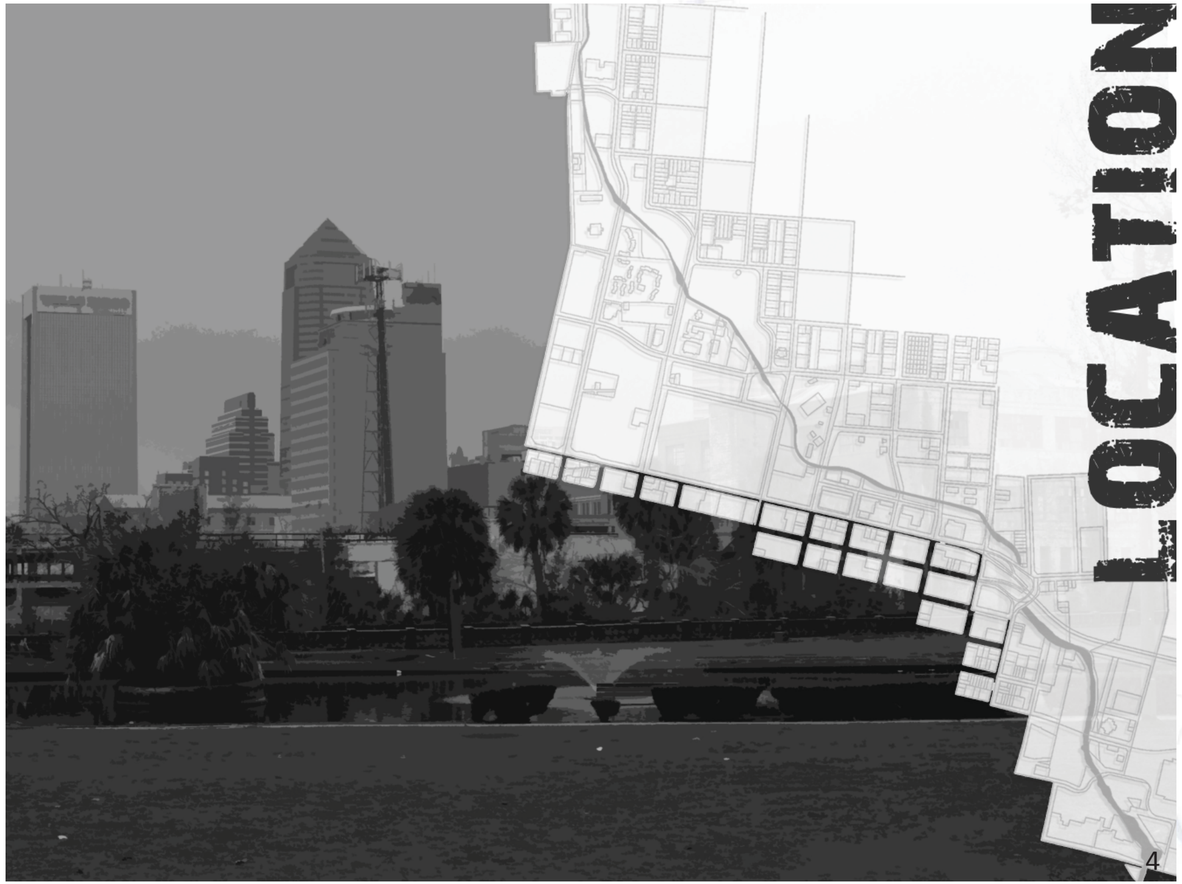
Hogans Creek: The Living Lab is a visionary ecological capstone that aims to strategically resolve the large areas of urban runoff and waste adjacent to Hogans Creek in downtown Jacksonville, Florida. Through ecological planning practices and stormwater guidelines, the one and a half mile creek corridor will be transformed into a naturally-aesthetic recreational greenway.

NARRATIVE

The focus of this capstone project is a combination of stormwater management, public health, environmental awareness and historic preservation. During the early twentieth century, a vision in turning Hogans Creek into an urban greenway park was an ultimate goal for architect Henry Klutho. By 1929, he had designed wetland areas to accommodate stormwater as well as the site furnishings that still barely exist today. With help by the Springfield Historic District, Hogans Creek has been maintained over several decades; however, there has been a strong push for development since Jacksonville early urban growth. This growth pattern has affected the runoff and the concentration of water to a point that the urban runoff covers approximately one square mile around Hogans Creek.

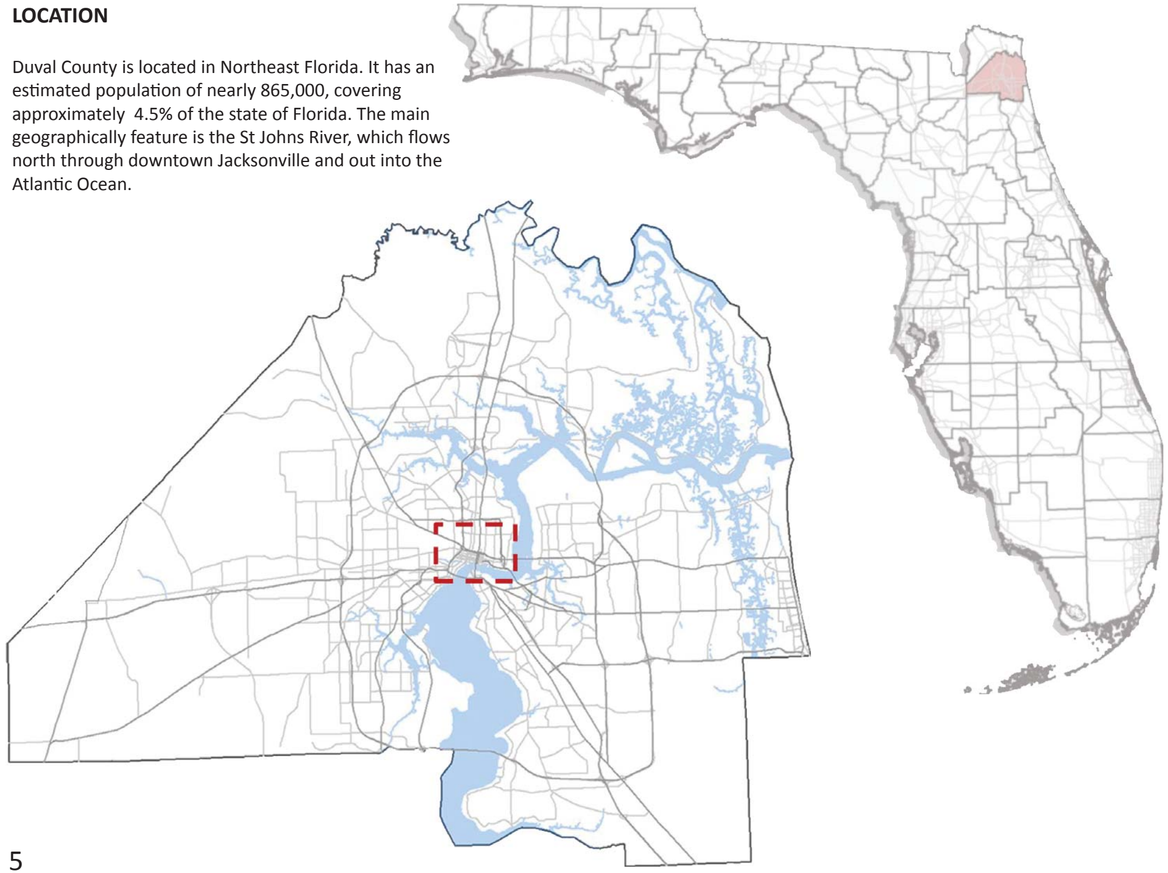
The waters of Hogans Creek have collected various toxins, waste and other contaminates that environmentalists, biologists and city officials have to call Hogans Creek as the “living lab” of downtown Jacksonville. The city’s research as well as the Environmental Protection Agency have proven that over the past years there has been a gradually rise in *fecal coliform*. This struck a major concern for the city, labeling the waters as “impaired” and a potential health hazard to anyone enjoying its existing recreational value.

By designing wetlands, trails and providing guidelines from stormwater practices, the potential in developing a highly sustainable site will allow Jacksonville to grow even more than they expect in their comprehensive plans. The main goal of this project is to develop an overall master plan that highlights various solutions to managing stormwater issues, public health and environmental awareness along Hogan’s Creek. This urban greenway project has the greatest opportunity in connecting the Springfield Historic District to Downtown Jacksonville as well as all other surrounding context. Historic elements on site will be highly recognized and be in favor of restoration solutions. Both the City of Jacksonville and the Springfield District will see the potential in a highly interactive greenway that attracts a wide variety of daily users.



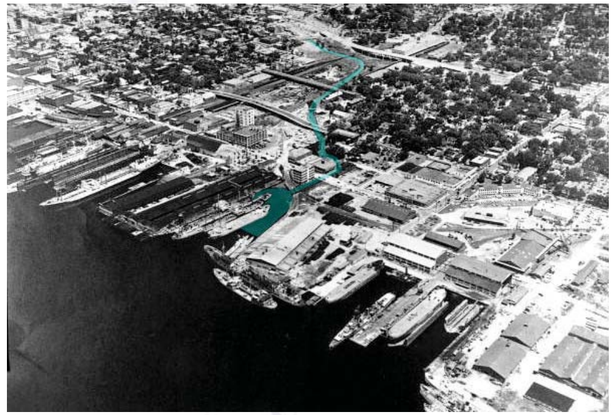
LOCATION

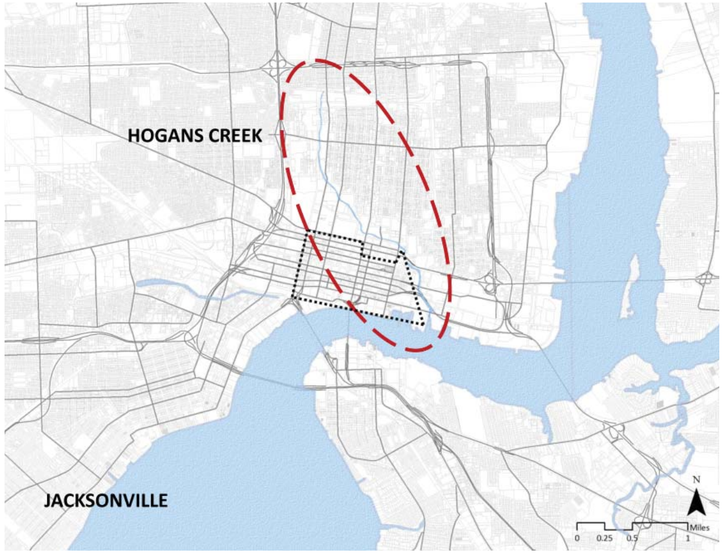
Duval County is located in Northeast Florida. It has an estimated population of nearly 865,000, covering approximately 4.5% of the state of Florida. The main geographically feature is the St Johns River, which flows north through downtown Jacksonville and out into the Atlantic Ocean.

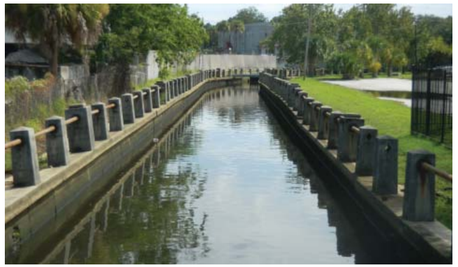


THE CITY OF JACKSONVILLE

Jacksonville is often considered as being Duval County because of effects from sprawl, creating just one large metropolitan city within Duval County. Statistics prove that sprawl is very apparent in Duval County, considering persons per square mile in 2010 accounted for 1,133.9, whereas 350.6 persons per square mile was the state average. The population of Jacksonsille continues to grow, as noted between 2000 to 2010, by an increase of 11%, just below the average state level. The City of Jacksonville has developed multiple comprehensive plans to accommodate the developing growth of the city. Various elements highlighted in these comprehensive include incorporating a variety of housing types as well as expanding natural and recreational areas throughout the city.







JACKSONVILLE'S URBAN CREEK

Hogans Creek is located in downtown Jacksonville along the St Johns River and at the heart of Duval County. The urban creek is 1.5 miles long with a variety of land use parcels adjacent to the creek's corridor. The existing parks along the creek serve as active recreational spaces for people to play various sports and enjoy leisure activities. The size of the proposed project is approximately 100 acres. Most of the parcels are owned by the City of Jacksonville and the Springfield Historic District.

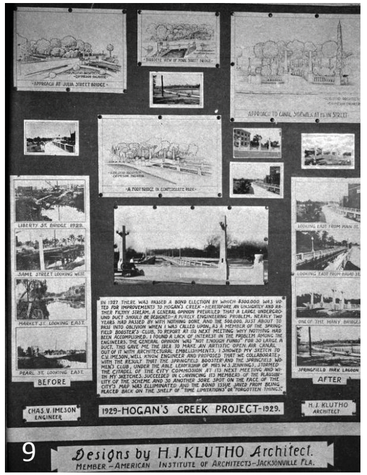
CONTEXT

CONTEXT

THE HISTORY OF DOWNTOWN JACKSONVILLE

The history of Jacksonville dates back to the early inhabitants of the ancient Timucua city, Ossachite. It existed over 1,000 years ago until taken by the Spanish government during the 18th century. Oassachite was bordered by two creeks, known today as McCoy's and Hogans creeks, as well as the St Johns River. Many of the people built their homes along the edges of both creeks. After the Spanish government reign in the eighteenth century, the early settling of Jacksonville began taking shape; however, one significant event plays a major role in making Hogans Creek famous. In 1901, as Jacksonville was developing into an established city, a spark started in a mattress factory, eventually destroying 2,368 buildings and leaving 10,000 people homeless and killing seven residents. Jacksonville spent the next several decades rebuilding all the demolished buildings. Throughout the 20th century, Jacksonville grew even more in being a port city, using the St Johns River as means of trade.

PEOPLE EVACUATING THE CITY DURING THE 1901 GREAT FIRE



JACKSONVILLE'S HISTORIC CREEK

During the years of rebuilding after the 1901 Great Fire, the city of Jacksonville purchased additional land along Hogans Creek to begin creating a series of greenspaces along the northern edge of downtown. By 1928, the city wanted to improve the condition of the creek. Architect Henry J. Klutho developed a plan, adopted by the City Commission, and by 1929, his design was completed. This plan involved diverting the creek channel and creating two overflow retention ponds to mitigate high tides. The construction of bulkheads, vehicular bridges, three pedestrian bridges, sidewalks and lighting fixtures were all essential features of the Hogans Creek Improvement Plan.

Today, Hogans Creek has been viewed as one of the primary focuses for generating future growth and potential for Jacksonville. In order to draw more attention to the downtown environment, the linear corridor has great opportunities to connect the surrounding neighborhoods to Downtown Jacksonville.

DISPLAY PRESENTATION OF HENRY J. KLUTHO DESIGNS FOR HOGANS CREEK

NEIGHBORHOODS

Hogans Creek is surrounded by a diverse group of urban neighborhoods. From the historic neighborhoods to downtown setting, the entire urban area is vastly unqiue. The architecture and the people from one neighborhood to the next gives each area an identity and culture. With Eastside being heavily focused on the professional sports and entertainment industrises to the industrial factories in Nixon Town, the urban puzzle of Jacksonville still remains to be missing the connecting pieces. Those pieces being the opportunities to link each neighborhood together and define the real urban edge of downtown Jacksonville.

4 HOGANS CREEK PEDESTRIAN PATHS

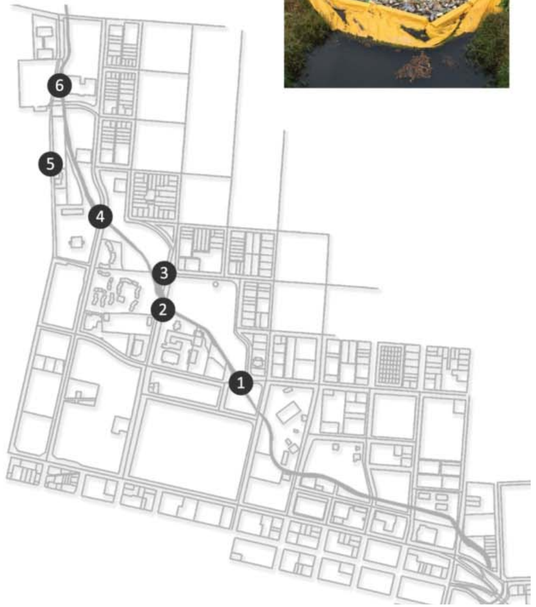
5 HISTORIC PEDESTRIAN BRIDGE

6 WASTE RUNOFF

3 HOGANS CREEK

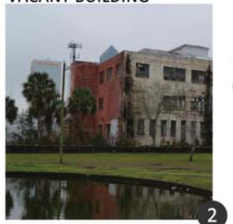
1 TRASH

2 ULTILITY PIPES

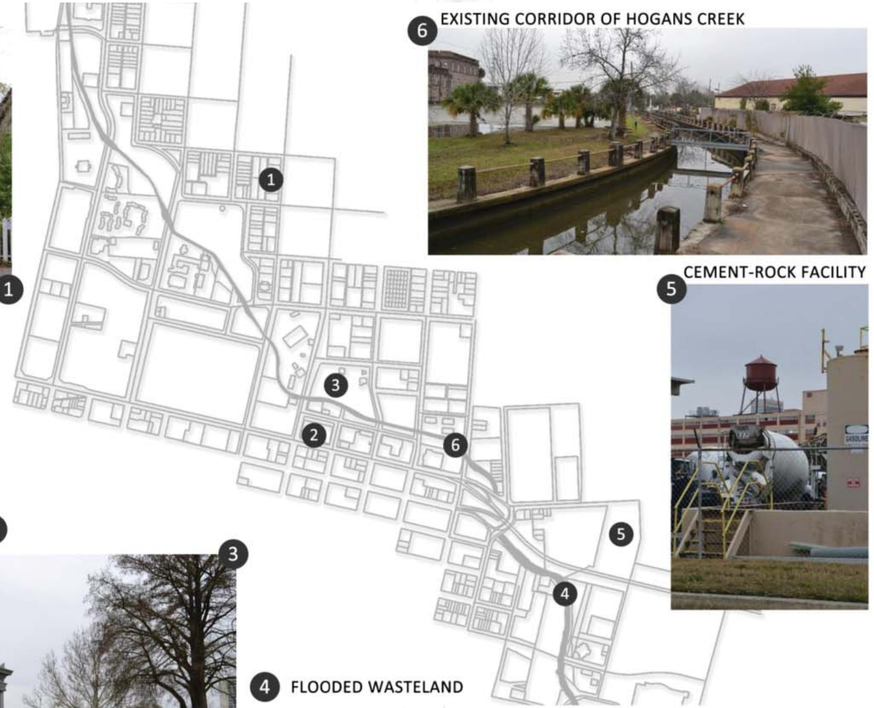


HISTORIC SPRINGFIELD

VACANT BUILDING



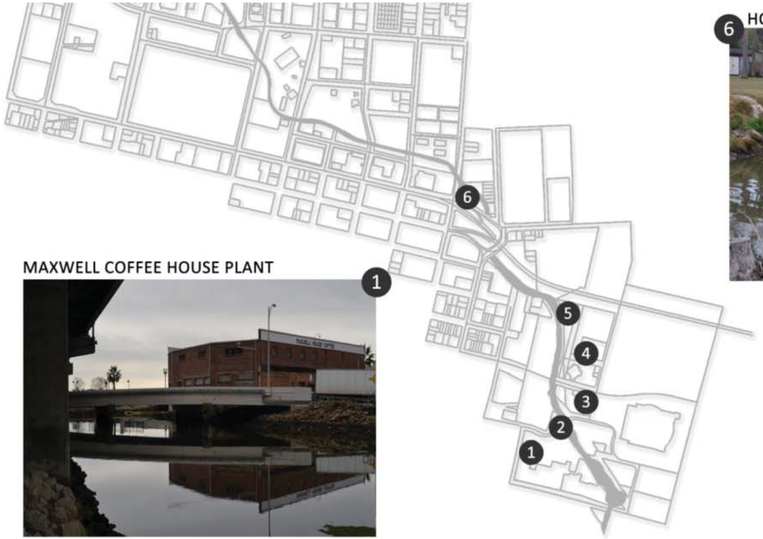
CONFEDERATE PARK



6 EXISTING CORRIDOR OF HOGANS CREEK

5 CEMENT-ROCK FACILITY

4 FLOODED WASTELAND



6 HOGANS CREEK TRASH

MAXWELL COFFEE HOUSE PLANT 1

5 NATURAL CORRIDOR OF HOGANS CREEK

HART BRIDGE EXPRESSWAY 2

3 OLD ST. LUKE'S HOSPITAL

4 WATER TREATMENT FACILITY

THE CURRENT CONDITION OF HOGANS CREEK

The sense of abandonment is apparent when walking through the Hogans Creek neighborhood. Vandalism and the destruction to several of the historic features are just a few visible examples of how the historic environment is being treated. Even the lack of maintenace goes to show as erosion and sediment build-up are some the natural processes that have affected the appearance of the creek. However, the most noticeable problem that largely affects the creek is the amount of waste, trash and other containments, that is seen throughout the site. The current conditions of the Hogans Creeks have received local news coverage and even community participation organizations, giving people direct insight to knowing how filthy the creek is in the neighborhood environment.

RESEARCH

URBAN ENVIRONMENT ISSUES

Hogans Creek has been studied multiple times by the City of Jacksonville and the Environmental Protection Agency. These studies have been mainly focusing on the composition of the waters in Hogans Creek. Within the past few years, Hogans Creek was declared in having “impaired” waters, which means that the water in Hogans Creek is a strong health hazard to all people that come in contact with the creek.

The Environmental Protection Agency issued a grant proposal to any urban green infrastructure that would like to be considered. The grant’s scope for any restoration to a wetland, creek or waterbody includes both improving the water quality and supporting community revitalization.

With the deadline having passed, the opportunity to at least give a visionary plan to the City of Jacksonville and the EPA can help them seek out other greenway opportunities.

MEETING WITH THE EPA AND CITY OF JACKSONVILLE FOR A PRESENTATION ON URBAN CREEKS

The Dirt

Feeds: Posts Comments

CONNECTING THE BUILT & NATURAL ENVIRONMENTS

AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS

« You Create Bluebrain’s Landscape Soundtracks

UN Climate Summit Moved Goal Post »

E.P.A. Offers $1.8 million in Urban Green Infrastructure Grants

12/21/2011 by asladirt

The U.S. Environmental Protection Agency (E.P.A.) is offering up to $1.8 million in new grants for urban green infrastructure projects that both improve water quality and support community revitalization. Projects that support the restoration of canals, rivers, lakes, wetlands, aquifers, estuaries, bays and oceans qualify.

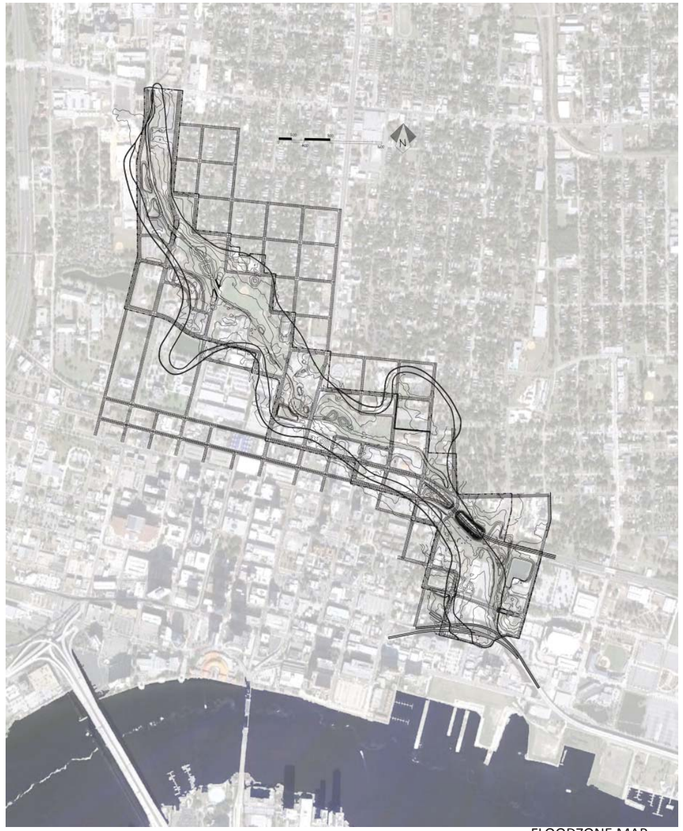
Categories

Active Design Agriculture Campus Planning Climate Change Ecosystem Restoration Ecosystem Services Education Environment Exhibits Forests Gardens Green Buildings Green Roofs Historic Preservation Land Art Landscape Architecture Memorials National Mall Opportunities Policy and Regulation Public Spaces Real Estate Development Renewable Energy Residential Design Security Design Smart Growth Sustainable Design Sustainable Materials Sustainable Transportation Technology Urban Design Urban Revitalization Waste Water Management Wildlife

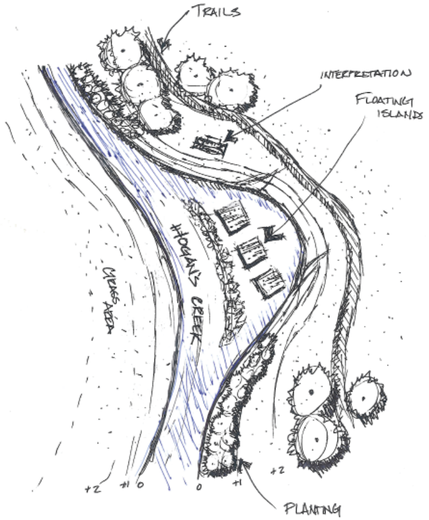
Recent Comments

Carrie on Frederick Law Olmsted Is Holding Us Back (There. I Said It.)

Carrie on Frederick Law Olmsted Is Holding Us Back



FLOODZONE MAP



CONCEPTUAL DRAWING DURING EPA MEETING

URBAN RUNOFF

The EPA and the City of Jacksonville are aware of the urban runoff situtation (floodzone depicted right) and how serious it is to restore several of Jacksonville's urban creeks. While downtown Jacksonville is in the current process of revitalizing the urban environment, new improvement projects are being proposed and implemented with the intention of sustaining Jacksonville.

FLOODING ISSUES

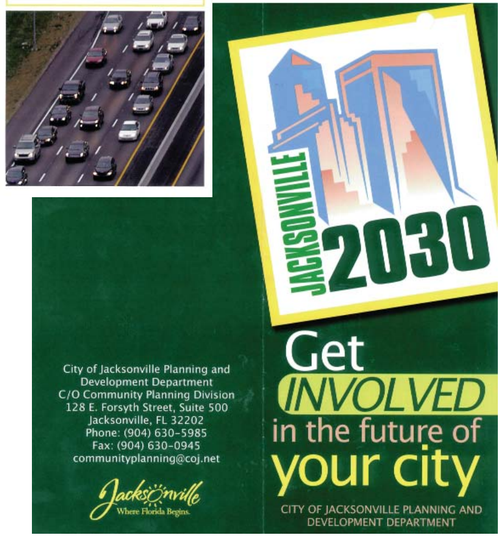
The current stormwater situtation in Hogans Creek is channeled by concrete barriers through majority of the site (see cross-section on page 12). The problem during heavy rains is that once sediments build up along the creek creating traps where water cannot flow through; therefore, causing heavy flooding. One of the other reasons for flooding issues is that since majority of Jacksonville is comprised of imperious surfaces, most of the soils in and around the Hogans Creek area are compacted urban soils. These soils do not allow water to infiltrate and drain properly.

Jacksonville is growing rapidly and city planners estimate that by 2030 our city will grow by more than 230,000 residents.

To accommodate additional growth, the city's Planning and Development Department is looking at ways to preserve and improve our current quality of life and support future development.

THE FUTURE OF JACKSONVILLE

The City of Jacksonville has dreamed of a vision, a vision that many see as being vibrant and sustainable for the urban environment. The city has always reflected its life on the waters of the St Johns River and celebrated its history as a growing city since the early establishment along the river.
For the past decades, comprehensive and vision plans have been created to give Jacksonville an opportunity to prepare itself for the future. In a 2030 Downtown Jacksonville vision plan, four objectives were noted as to improve the walkabilty, to make downtown a destination, to make downtown a neighborhood, and to ensure a framework for sustainable success. The quality of life existing today for Jacksonville is fading quickly and if the intentions for designing a sustainable future, then the action of implementing these plans needs to happen sooner than later. The City of Jacksonville is in need of a sustainable greenway project to begin the process of greening their future.



THE SUSTAINABLE IDENTITY - JACKSONVILLE'S 2030 COMPREHENSIVE PLANS

With all the goals, objectives and policies that are outlined in the future comprehensive plans for Jacksonville, the city is ready to begin implementing sustainable practices to finally give the city a push to grow a positive identity. The city wants to purchase more land for park purposes, providing a variety of recretional facilities, both active and passive. There are high intentions of proposing more greenway trial systems including new park development and the expansion of natural areas such as waterfronts, park lands, and open spaces. One of the major recreational objectives involves "acquring and preserving major stream valley corridors plus adjacent vital resources such as wetlands, wooded areas, and conservation areas when deemed necessary for watershed protection" (Recreation and Open Space Element - 2030 Comprehensive Plan, 10).
While protecting natural areas, the city aims to protect cultural and historic elements that are vital to Jacksonville. Hogans Creek is highly considered in being an integral piece for implementing the 2030 Comprehensive Plans, especially in developing a functional greenway corridor. The potential of having a strong greenway will boost the economic value of most properties, especially businesses and residential homes along the creek.

EXAMPLES OF GREENWAYS AND URBAN CREEK PROJECTS

From Mountain House Creek in California to the Tanghe River Park in China, examples of greenway and urban waterway projects similar to the future of Hogans Creek are all available resources. During the early 20th century as Klutho was designing for the Hogans Creek Improvement Project, the idea of connecting McCoy's Creek and Hogans Creek together by creating this "Emerald Necklace" around the downtown was an intriguing vision for the city. The Boston Back Bay Fens has been an influentical case study for the City of Jacksonville. Jacksonville's Emerald Necklace would connect the neigbhorhoods to the river and through various greenspaces. The opportunity to create that kind of environment is not applicalbe today as it was a hundred years ago. With today's conditions in both the economic and land value, the opportunity to at least incorporate ecological and stormwater planning is essential in reducing of urban runoff around Hogans Creek.

Some Examples of Greenway and Urban Creek projects include:

- Mountain House Creek, California

- The Red Ribbon - Tanghe River Park, China

- Back Bay Fens, Boston

- Shanghai Houtan Park, China

- Hogtown Creek, Gainesville

- Indianapolis Canal, Indiana

- San Antonio Riverwalk, Texas

MOUNTAIN HOUSE CREEK

Project Details: Located in California
Scope of Project: Planning, Landscape Architecture
Size: 4,700 acres

Mountain House Creek was designed by the SWA Group with other planners and engineers working right alongside them. With using Smart Growth initiatives, the intial design was to create "a better way to manage growth and agriculture". The creek is approximately 15,700 feet long. The project also included the addition of stormwater retention and filtration ponds. Prior to the project, the creek was used for irrigation, a water source for livestock and a drainage ditch. The restored corridor averages 20 feet wide with a native planting palette that creates green spaces, native wildlife habitat, and recreational facilities

Water quality, stormwater management practices and research involved treating runoff from rest of development with combination of the creek waters.

Stormwater Management Program (available online)

THE RED RIBBON: TANGHE RIVER PARK

Project Location: Qinhuangdao City, China

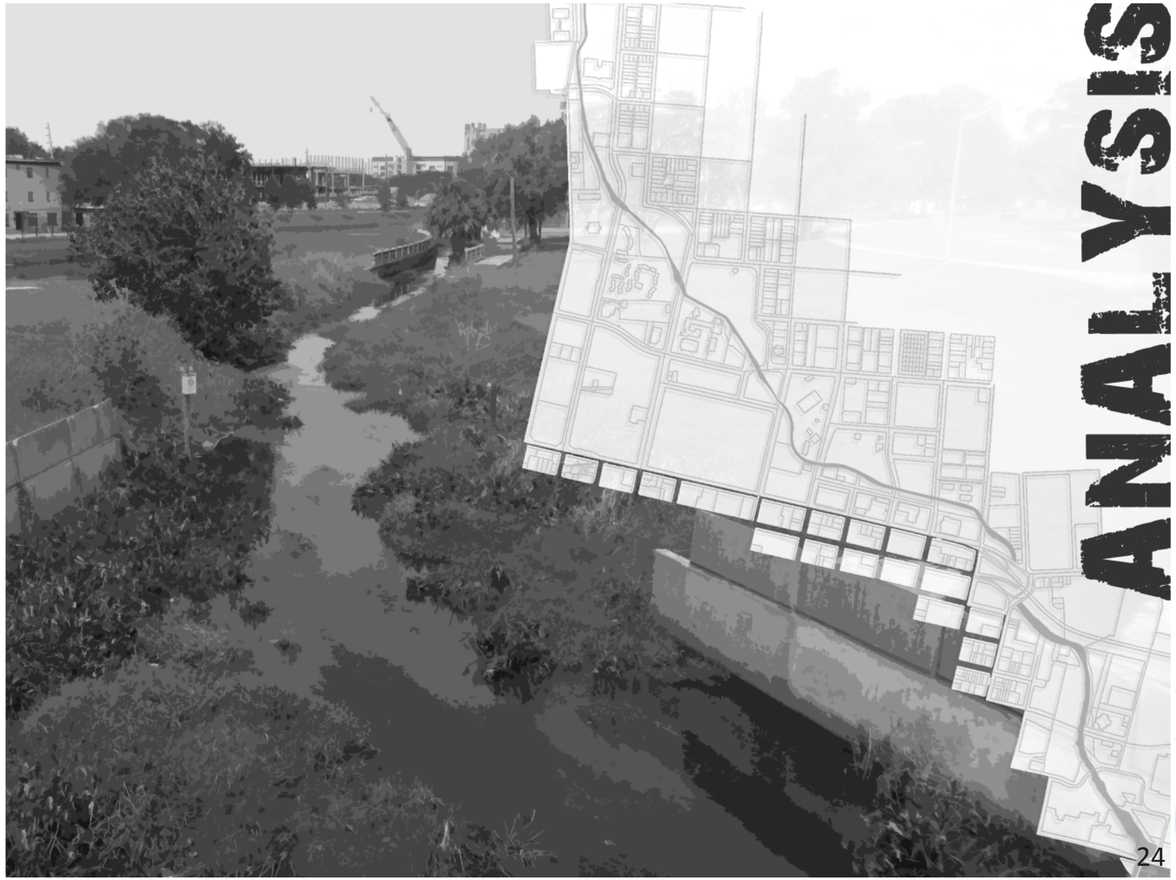
Project Size: 49.4 acres
Completed in 2008
Received 2007 ASLA Professional Award for General Design Honor Award

"A celebration integrating artistic elements into a natural landscape in an ingenious way. Very dramatic, yet highly functional. It's transformative and curative" - 2007 Professional Awards Jury Comments (The Red Ribbon – Tanghe River Park).

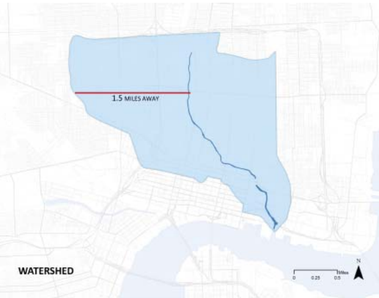
The Red Ribbon site is a linear river corridor that preserves the natural habitats while also allowing new urban uses of recreation and education to drawn people closer to the natural environment. The design solution was to create this "red ribbon" which stretches 500 meters long and creates the riverbank, the integrated boardwalk, lighting and seating, and lastly environmental interpretation. The red color gives a sense of identity to the vegetated site and draws people to it both day and night.

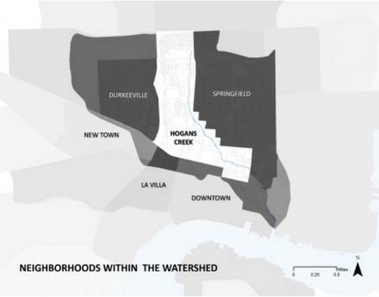
All information is found on the ASLA website (see Bibliogrpahy)

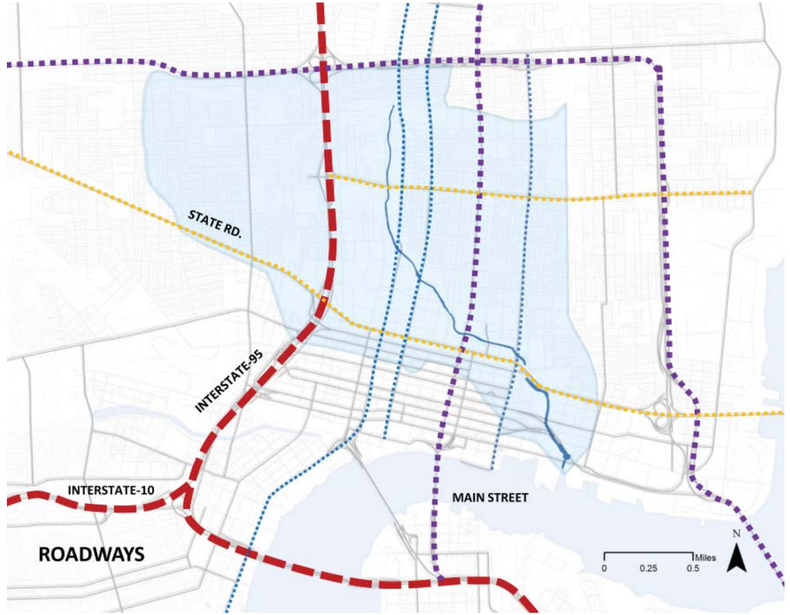
056-01 The site plan



ANALYSIS

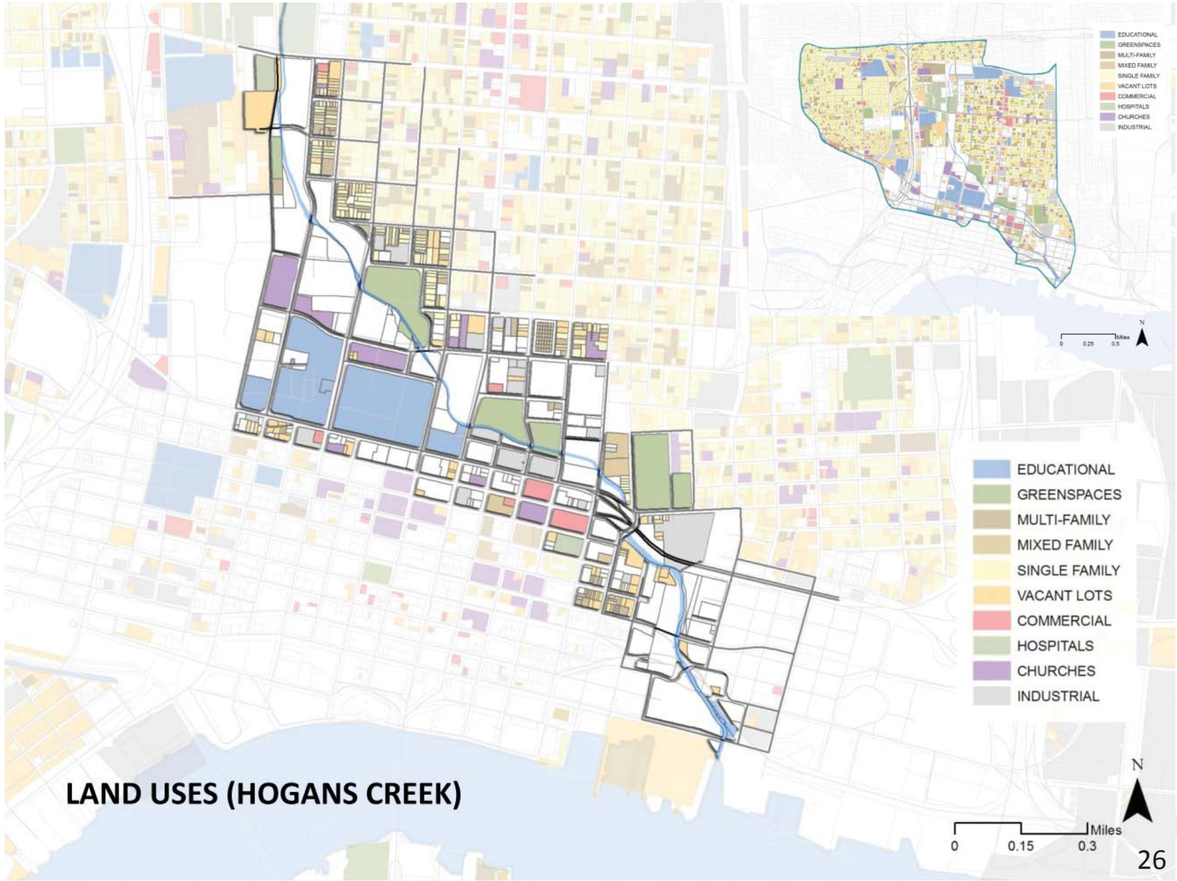






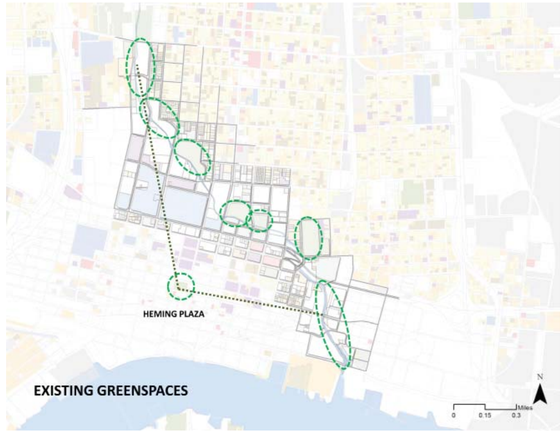
WATERSHED AND CIRCULATION

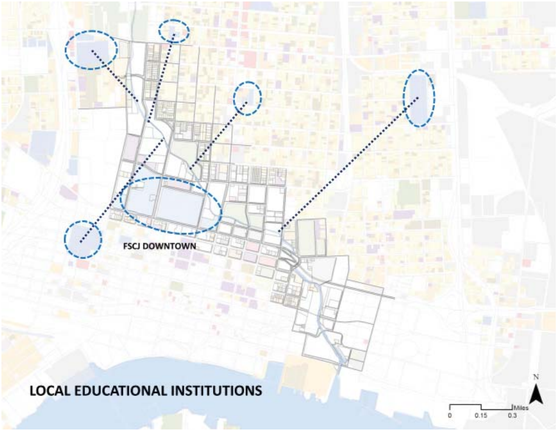
The watershed of Hogans Creek covers over a square mile of the Jacksonville's urban context. Within the watershed, a few adjacent neighborhoods, especially Springfield, affect the concentration of water as well as major roadways. Interstate 95 cuts through the western edge of downtown Jacksonville, providing easy accessibilty in and out of the downtown area. Main Street is the major roadway corridor to get out of downtown Jacksonville to access the Hogans Creek neighborhood.



EXISTING LAND USE

The downtown area of Jacksonville is mainly comprised of residential land uses, from mobile homes, elderly towers to duplexes and mixed uses. The average listing for a house in the Hogans Creek neighborhood is around $134,143; however, that number has been on the decline of several thousands of dollars due to the economy. All other land uses are mainly commercial, educational and industrial uses because of the urban area.
The lack of greenspaces in the downtown area is apparent and the city struggles to provide it. The nearest natural areas are along the eastern coastline of Duval County. To incorporate a strong greenway throug the heart of Duval County will bring a real educational setting for people to learn more about the natural environment. Several of the educational institutions in downtown Jacksonille are adjacent or near to Hogans Creek. By designing an environment for students to understand various natural processes and enhance the learning environment as well as become passionate about the outdoors.





GOALS

PRIMARY GOAL

DESIGN AN **ECOLOGICAL CORRIDOR** ALONG HOGANS CREEK THAT ENRICHES THE GROWTH OF DOWNTOWN JACKSONVILLE AND THE SURROUNDING CONTEXT BUT ADDITIONALLY CREATES AN *IDENTITY* FOR ITS CONTEXT

- DEFINE THE HOGANS CREEK EDGE AND WIDEN THE CORRIDOR BY MEANS OF ECOLOGICAL RESTORATION AND STORMWATER

- CREATE AN EDUCATIONAL INTERPRETATION TRAIL ALONG THE CREEK TO ALLOW USERS TO BECOME MORE AWARE OF THE NATURAL ENVIRONMENT

- CREATE NATURALLY-AESTHETIC VIEWSHEDS THAT WILL FRAME DOWNTOWN

- PROPOSE ADJACENT STREETSCAPE DESIGN IN ORDER TO DRIVE OF SUSTAINABILITY TOWARDS SPRINGFIELD AND DOWNTOWN

- ALLOW USERS TO INTIMATELY EXPERIENCE HOGANS CREEK BY DESIGNING AN ARRAY OF ACTIVE AND PASSIVE RECREATIONAL AREAS

SECONDARY GOAL

INCORPORATE SEVERAL **STORMWATER MANAGEMENT** PRACTICES THAT WILL RESOLVE THE *FLOODING* AND *IMPAIRED WATERS* OF HOGANS CREEK AND THE *URBAN RUNOFF* OF DOWNTOWN JACKSONVILLE

- FOCUS ON CREATING PUBLIC EDUCATION OPPORTUNITIES IN WAYS TO REDUCE WATER POLLUTION - EPA GRANT

- PROMOTE LOCAL WATER QUALITY AND COMMUNITY REVILTAIZATION GOALS - EPA GRANT

- DESIGN PARCELS ALONG HOGANS CREEK TO HAVE SUITABLE POTENTIAL FOR WETLAND DEVELOPMENT BASED ON THE TOPOGRAPHY OF HOGANS CREEK NEIGHBORHOOD

- INCORPORATE PHYTOREMEDIATION PRACTICES THAT CAN MITIGATE THE CONTAIMINATED AND IMPAIRED WATERS OF THE CREEK

- PROVIDE AREA OF EXPERIENCE STORMWATER EDUCATION TO ALL USER GROUPS THROUGHOUT SITE

TERTIARY GOAL

CREATE A **FUTURE LAND USE PLAN** OF HOGANS CREEK AND DOWNTOWN JACKSONVILLE THAT HIGHLIGHTS THE POTENTIAL *ECONOMIC* AND *RESIDENTIAL* GROWTH WHILE COINCIDING WITH THE CITY OF JACKSONVILLE COMPREHENSIVE PLANS

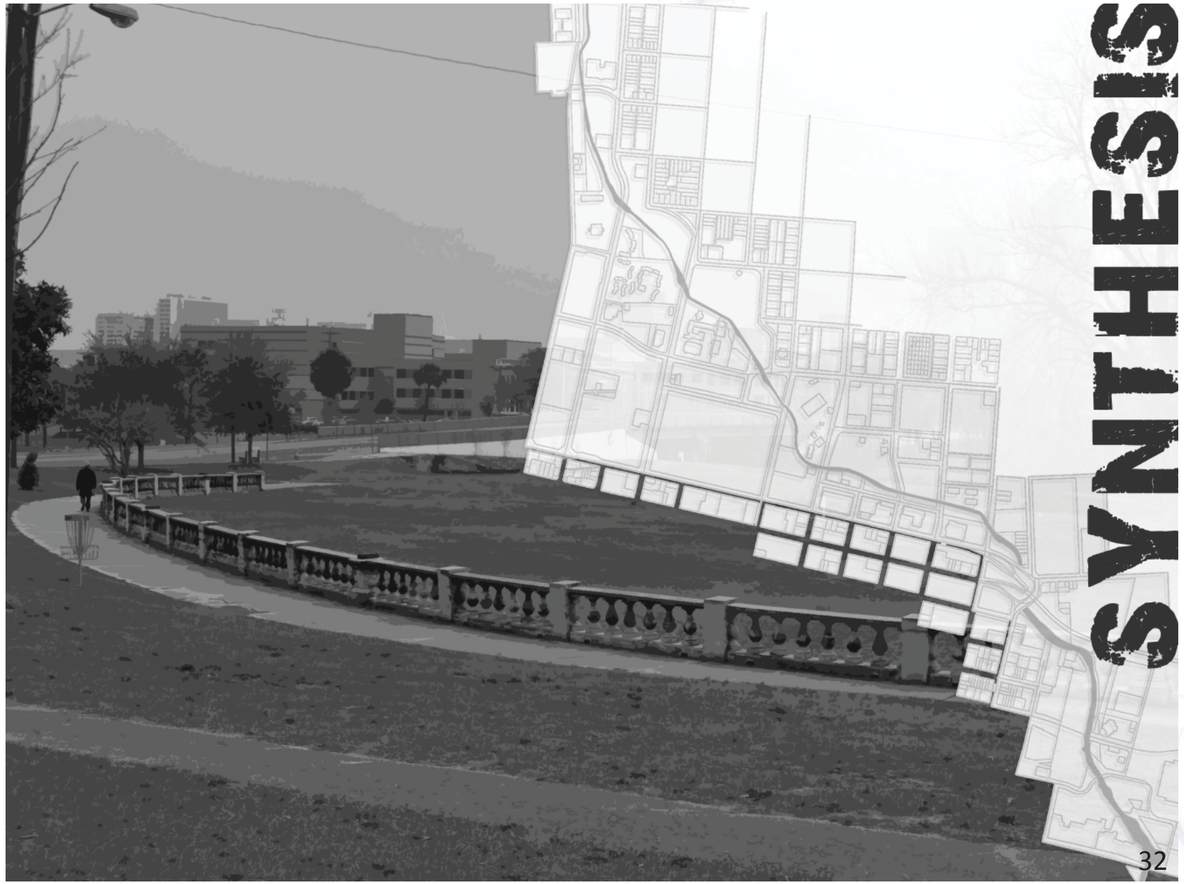
- IDENTIFY PARCELS SUCH AS PARKING AND VACANT LOTS THAT CAN BE REDEVELOPED INTO NEW COMMERCIAL AND RESIDENTIAL OPPORTUNITIES

- CONNECT TO ALL EXISTING EDUCATIONAL INSTITUTIONS AND OPEN SPACES

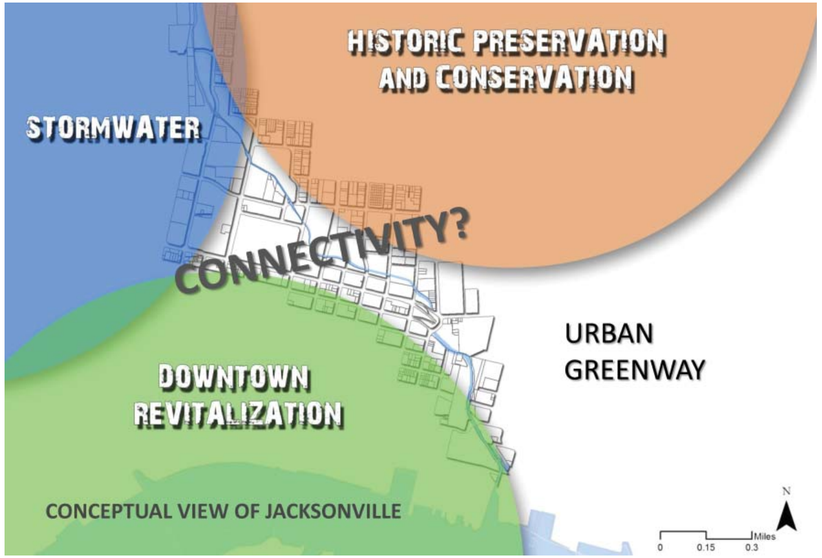
- PROPOSE THE IMPACT OF A FUTURE LAND USE PLAN AND HOW IT WILL STITCH TOGETHER ALL ADJACENT NEIGHBORHOODS

- ALLOW ALL NEW LAND USES TO HIGHLIGHT SUSTAINABLE PRACTICES

- ULTIMATELY CONNECT SPRINGFIELD HISTORIC DISTRICT TO DOWNTOWN AND USE MAIN STREET TO DRIVE ECONOMIC AND RESIDENTIAL GROWTH

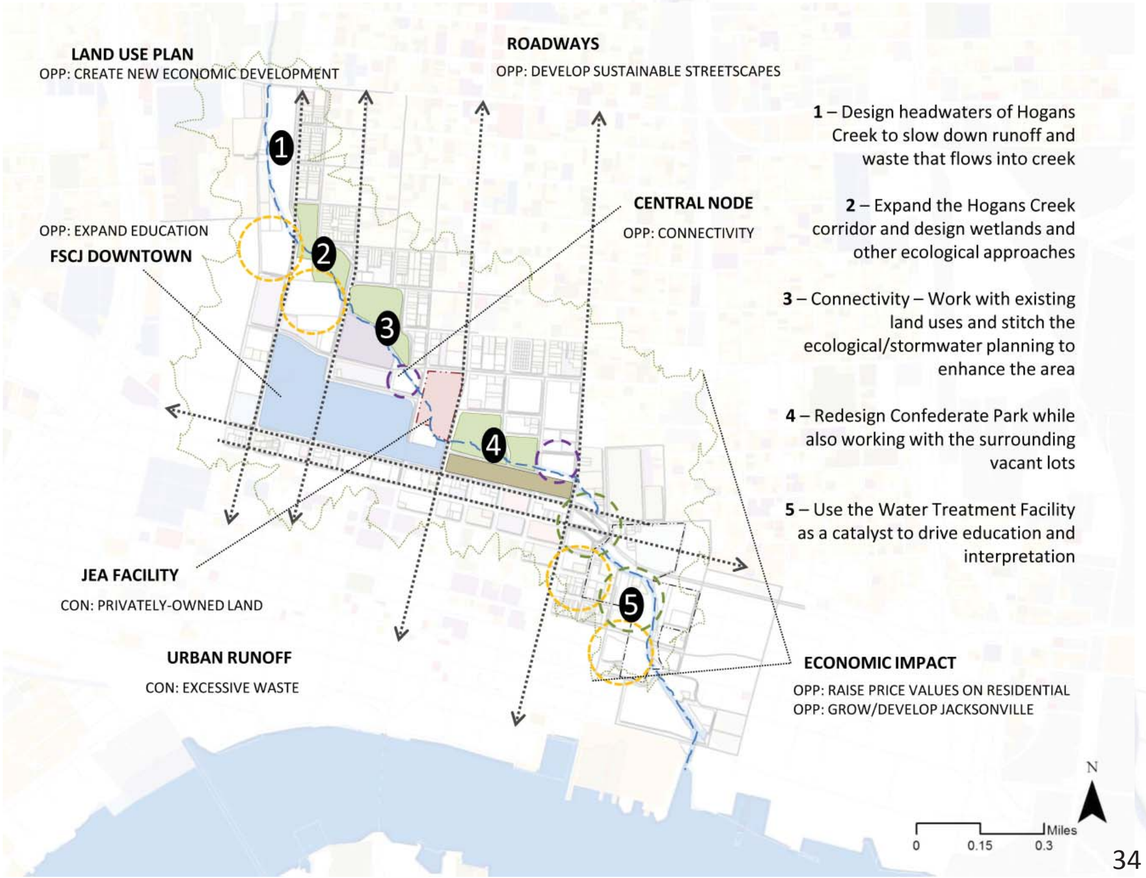


SYNTHESIS

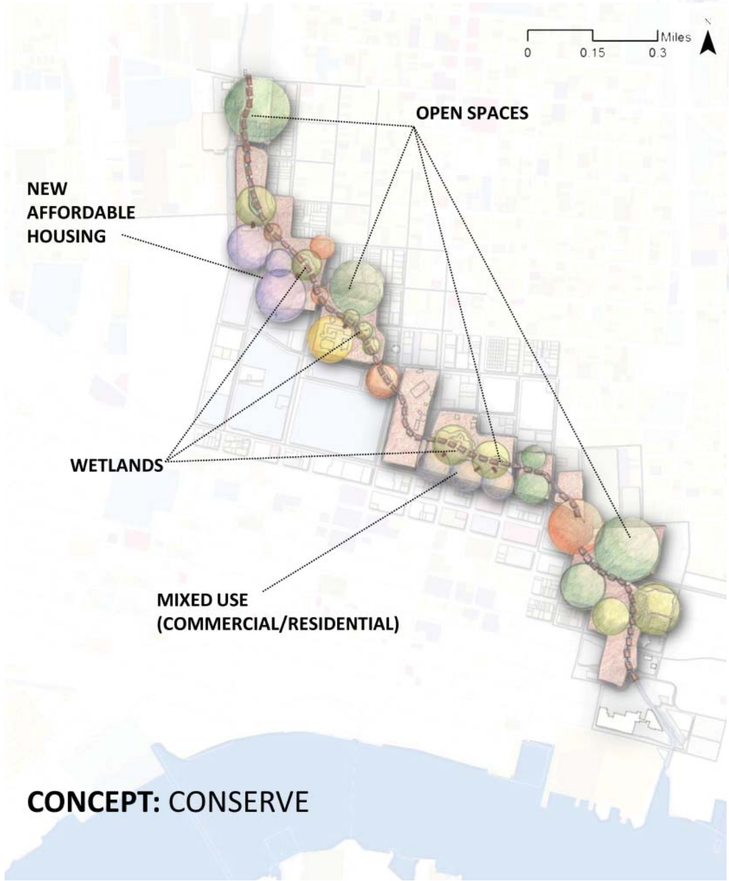


THE OPPORTUNITY TO INITIATE SUSTAINABLE GROWTH

The City of Jacksonville has developed numerous comprehensive plans that the city is ready to implement. The underlying problem is when funding comes into play in order to intitate this downtown revitalization with sustainable growth. The Environment Protection Agency is always in search of opportunities to preserve the natural environment especially with the grant they proposed last year. There are other alternatives to search for funding or volunteering as donations and community participation are just a few examples.
The important factor to the Hogans Creek project is to get the community to actively participate in giving their opinion to what Jacksonville can do to the historic creek. Community revitalization is at the heart of connectivity and by implementing an urban greenway through downtown Jacskonville is just the beginning for sustaining the future.



CONCEPTS



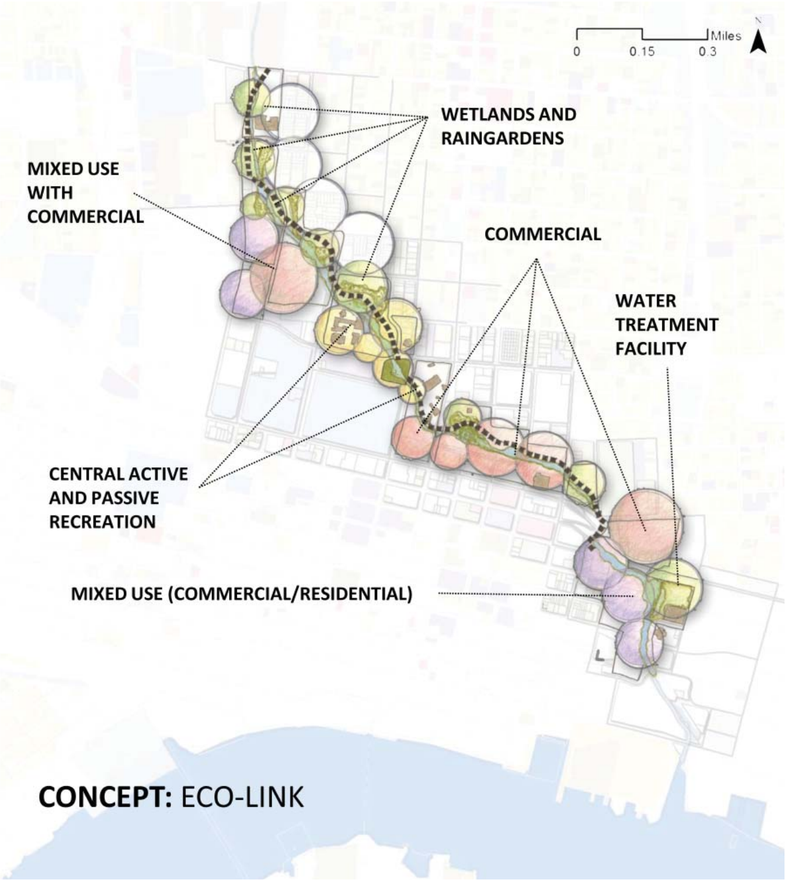
About Concept *"CONSERVE"*...

Concept "Conserve" involves the idea of conserving the existing historic features on site as well as the other furnishings. The intent would be to restore the value of these meaningful pieces as to manage existing into the future. The dashed line through the concept highlights the improved interpretative trail, given that this would only be a restoration to the paths currently existing throughout Hogans Creek. The trail will be more user-friendly with the intentions of providing information about Hogans Creek and Downtown Jacksonville. This trail will also connect to the new S-Line Trail that is being constructed just west of Shands Hospital.

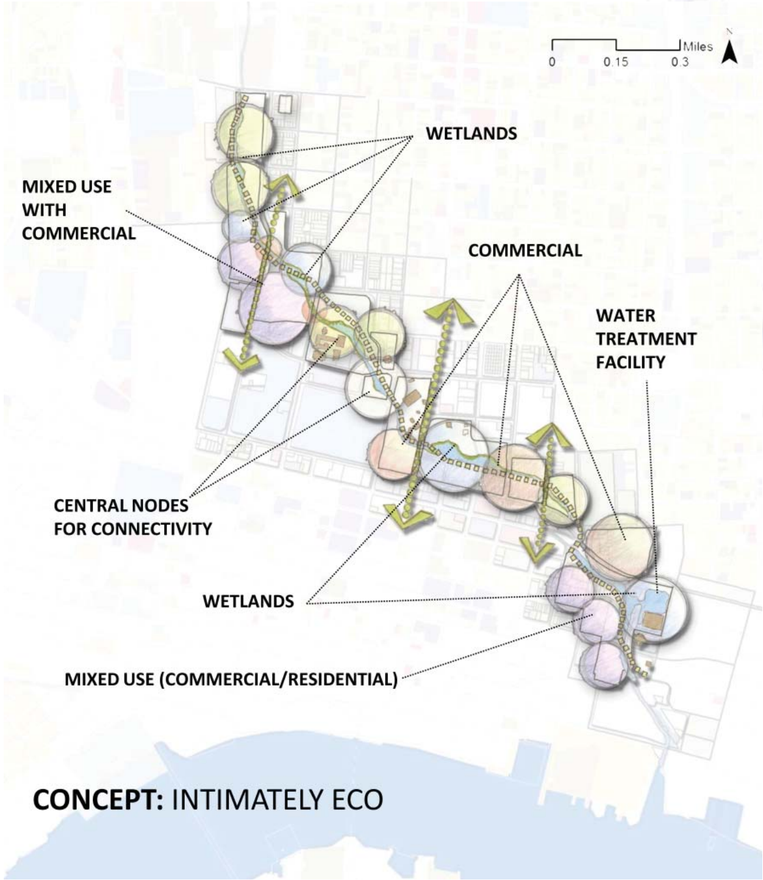
This concept is mainly designated for the Springfield Historic District because of the focus being heavily weighed on preserving the historic bridges and other site amenities. Most of the existing land uses will stay the same other than the vacant lots that are scattered throughout the site. New affordable housing/mixed use building will become integrated into the area along with larger open space areas and wetlands.

About Concept *"ECO-LINK"*...

Concept "Eco-Link" is a completely different approach in striving to bring as much economic growth to the Hogans Creek area. More commercial opportunities are set to take place while also having a strong ecological link from one place to another along the creek. There is a high emphasis on the central location of the creek where people can recognize the Hogans Creek environment and feel more connected to using the creek for both passive and active recreation.
Scattered throughout the conceptual plan are eco-park that have large wetland opportunities for phytoremediation and bioremediation in cleansing the impaired waters. The trail system designed in this concept is to guide people through a natural environment in an urban context while also having an intimate connection to understanding the value of stormwater and ecological planning. The design of several large wetlands in a linear park located in the northwest area of Hogans should generate potential residential growth in and around the Springfield neighborhood.



CONCEPT: ECO-LINK



CONCEPT: INTIMATELY ECO

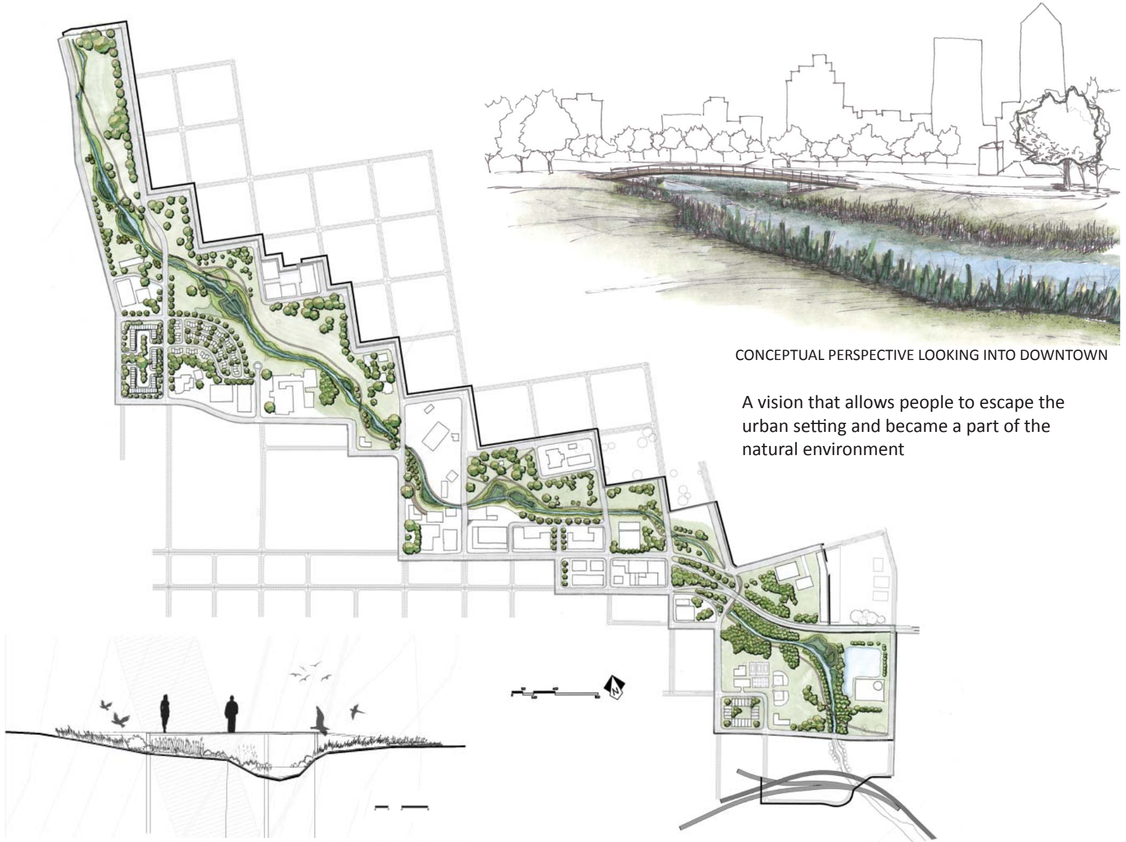
About Concept *"INTIMATELY ECO"*...

Concept "Intimately Eco" is a combination of the two previous concepts with the main intention to connect and unite Springfield and Downtown together. The expansion of streetscapes and a future land use plan indicates the potential sustainability for residential, commercial and environmental growth. Guidelines for reducing imperious surfaces and incorporating more user-friendly spaces are just some the methods to creating a more sustained environment.
The trail system on this concept allows people to cross the creek multiple times and creates a eco-friendly environment for both wildlife and humans. This allows people to feel as attached to the natural environment in an urban setting. All new and existing land uses will have opportunities to explore stormwater planning practices. By means to slow the urban runoff in the downtown area, proposing guidelines to reduce the amount of impervious surface will be especially essential for Jacksonville. This concept also draws attention for more commercial growth and business by means to connect Springfield to Downtown.

DESIGN

THE FUTURE OF HOGANS CREEK...

Through stormwater and ecological planning, Hogans Creek will benefit in sustaining the future of downtown Jacksonville. Some of the various planning practices involved the creation of wetlands, the expansion of the creek's corridor, phytoremediation, and sensitive-design approaches. With the lack of connectivity existing today, this plan will give the downtown Jacksonville the opportunity to become strongly connected to the surrounding context. The potential to draw more people into the urban environment and improved identity to the city.



CONCEPTUAL PERSPECTIVE LOOKING INTO DOWNTOWN

A vision that allows people to escape the urban setting and became a part of the natural environment

TRAIL SYSTEM CROSSING OVER HOGANS CREEK

THE LINEAR PARK

When the city purchased more land after the Great Fire of 1901, the implementation of creating a linear park was underway with Klutho's 1929 Hogans Creek Project. Along the linear park, Klutho's intentions were to have overflow retention ponds directly adjacent to the creek's edge while also creating a strong corridor ecosystem. These retention ponds would serve as overflow for high tides and provide an ecosystem for wildlife. People also had the opportunity to experience the natural environment hands on and become intimate with understanding the creek.

Over time, the development of the neighborhoods along with recreational spaces for basketball and tennis courts pushed the creek aside and narrowed its corridor. In order to create strong natural aesthetics but also apply a cleansing process for the waters of Hogens Creek, the widening of the creek's corridor would allow for heavily vegetated buffers.

Instead of being confided to concrete barriers, the creek has a natural appeal to the environment and creates an ecosystem for wildlife.

CONCEPTUAL PERSPECTIVE OF THE VEGETATED EDGE

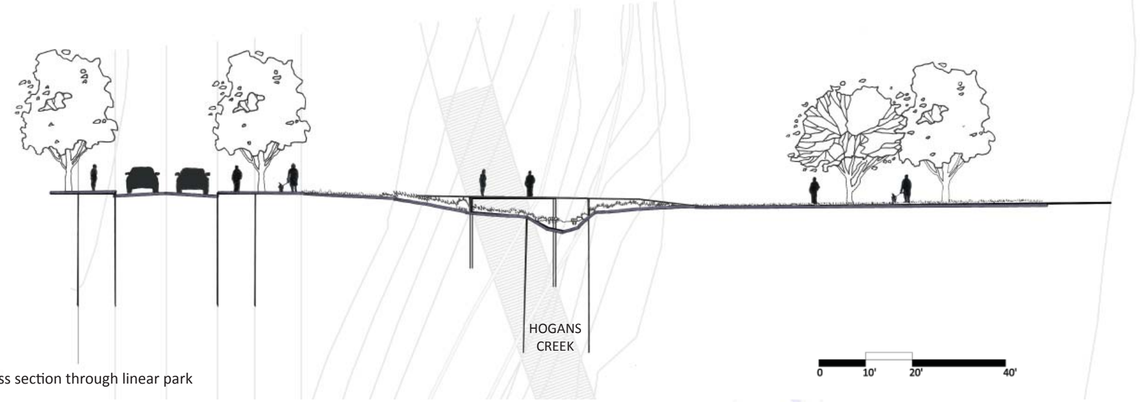
WETLANDS ALONG THE LINEAR PARK

Stormwater wetlands are designed to maximize the removal of polluants from stormwater runoff. Several natural processes include the microbial breakdown of pollutants, plant uptake, retention and infiltration. The design of stormwater wetlands involves creating small pools to capture the runoff from the main stream allowing plants to “extract soluble carbon and nutrients and potentially reduce biochmeical oxygen demand and fecal coliform levels concentration”
(Constructed Wetlands - Stormwater Wetlands, 3-228).
Being designed specifically for flood control, the stormwater wetlands along Hogans Creek have great potential to mitigate the flooding after heavy rains.

ADVANTAGES TO HAVING STORMWATER WETLANDS

- Improvements in downstream water quality
- Settlement of particulate pollutants
- Reduction of oxygen-demanding substances and bacteria from urban runoff
- Biological uptake of pollutants by wetland plants
- Flood attenuation
- Reduction of peak discharges
- Enhancement of vegetation diversity and wildlife habitat in urban areas
- Aesthetic enhancement and valuable addition to community green space
- Relatively low maintenance costs

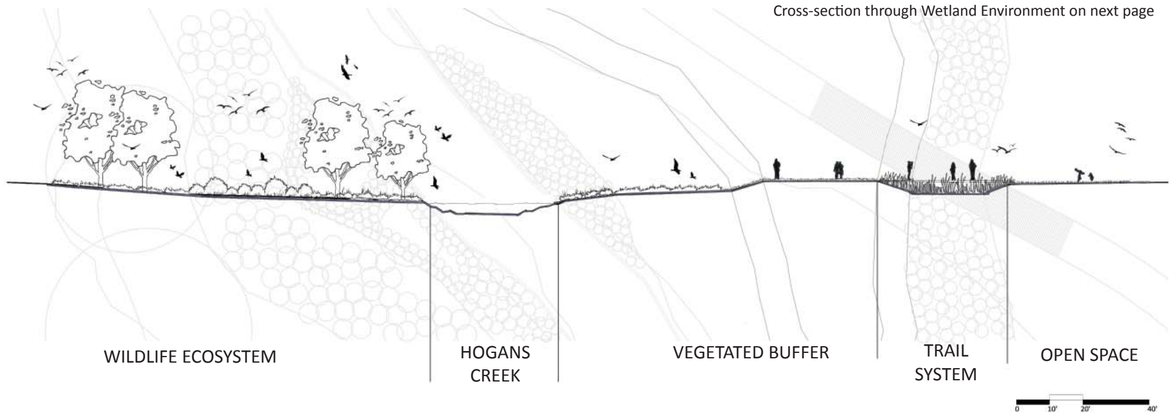
(Constructed Wetlands - Stormwater Wetlands)



Cross section through linear park

Cross section through a wetland in central space

Cross-section through Wetland Environment on next page



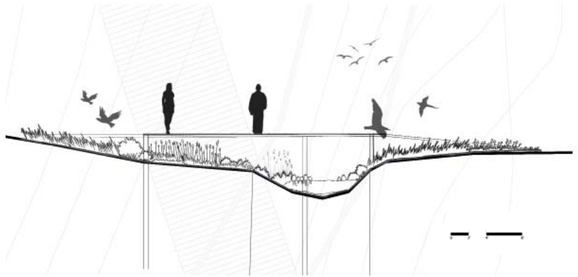
The vegetated buffer along the creek's edge allows for an active environment, creating experiences for both humans and wildlife. By creating a place for natural experience and processes, people can understand how the environment works. In redefining Hogans Creek's edge, improvement projects will need to be implemented to give an attractive new look to the new linear corridor (see perspective below).

HOGANS CREEK WETLANDS

While the trail continues its route, meandering along the creek's edge, the intimate experience of being in an wetland gives opportunity to see nature first hand. In the master plan, depicted right, the existing contours were vital in the development of this wetland near the center of the creek system. In planting cypress trees along the edge of the existing creek, especially in the lower pools, creates a strong filtering process for the impaired waters. Along with the cypresses, various types of recommended aquatic plants and wetland plants will be diversely planted to try enhancing the wildlife habitat and also an even more effective filtering process.

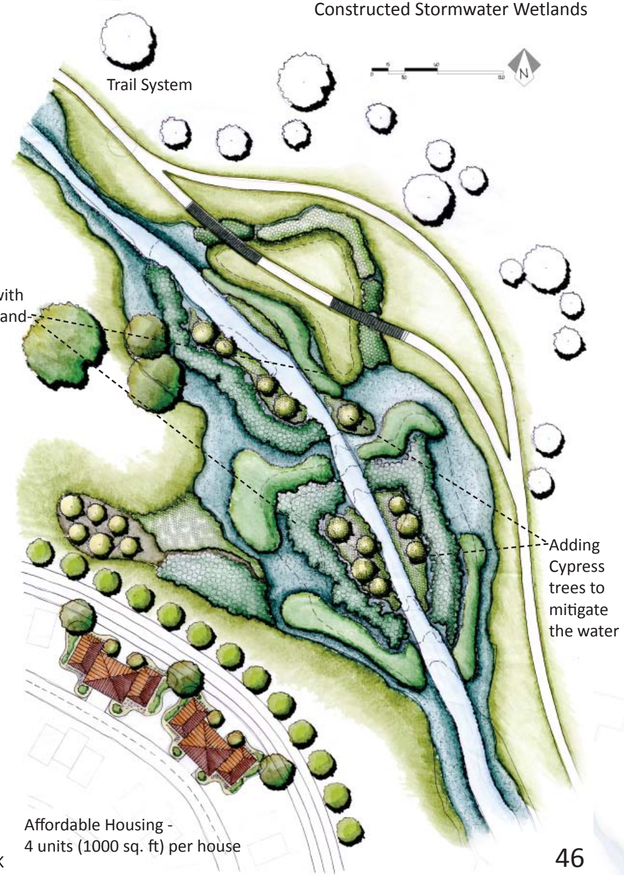
FUTURE HOUSING

The City of Jacksonville states that they would like to create a wide variety of housing types through the downtown area. By altering the affordable housing existing on site and directing it as to protect the creek, the development of new socio-economic houses will be constructed. Each of these houses is 1000 sq. ft. and four units per whole will be implemented. Each house will have to follow a sustainable xeriscape palette.



TRAIL SYSTEM CROSSING OVER HOGANS CREEK

Constructed Stormwater Wetlands



VACANT BUILDINGS

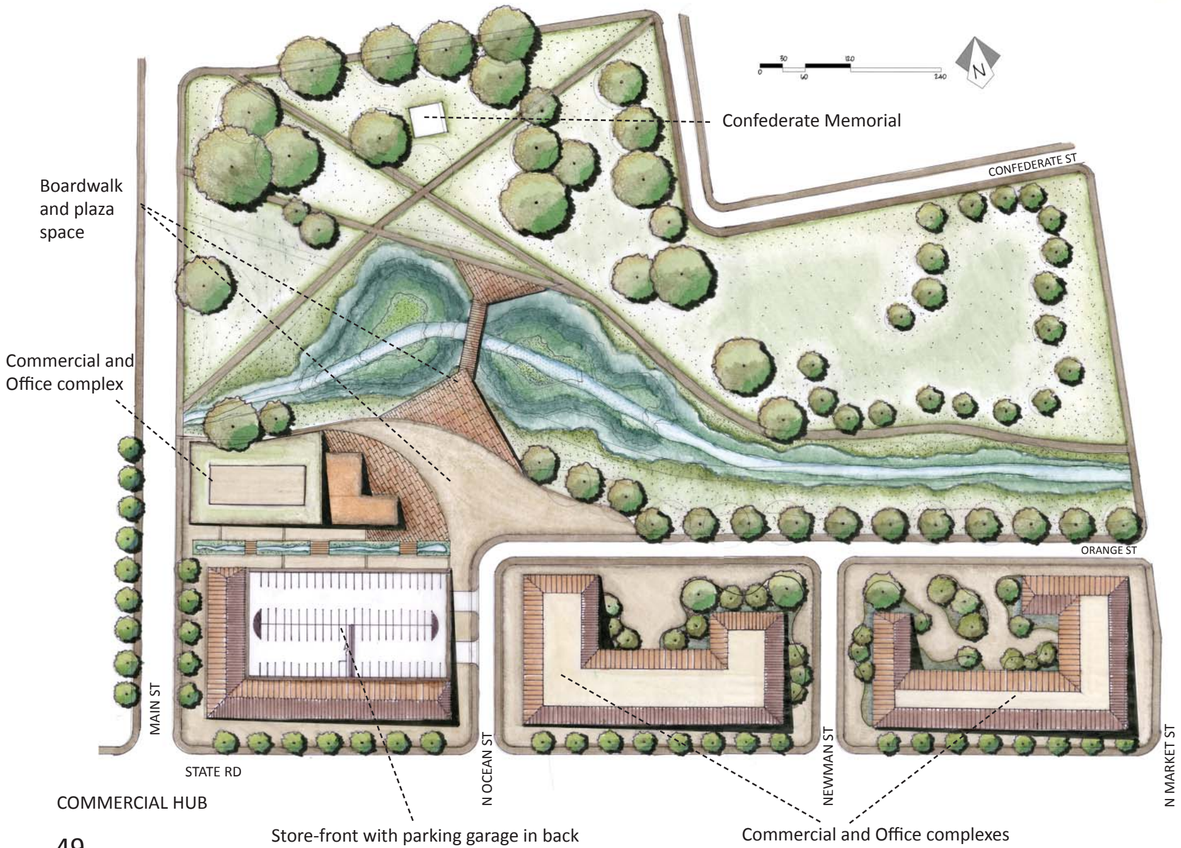
COMMERCIAL HUB

Near the center of Hogans Creek and directly adjacent to downtown will be the new commercial hub. The potential in using adaptive use practices and applying it to several of the depicted vacant buildings would allow for beneficial mixed use complexes, mainly comprised of office and commercial spaces. This would ultimately define the edge of downtown but also enhance the Main Street roadway corridor, typing it completely to the Springfield Historic District. New improvements to the facades and applying sustainable rehabilitation processes, these vacant buildings will create new business and retail opportunities. The City of Jacksonville is revitalizing areas in downtown to accommodate mixed use practices and variety of work places.

BEFORE

The location of the commerical hub is most suitable in the designated area because of the major roadways adjacent to the area. Both State and Union roads are the two east-to-west roadways that bring people from Interstate 95 into downtown Jacksonville.
With the project being heavily focused on the creek corridor, the rehabilitation of these adjacent building would create an eco-friendly environment for people to come and enjoy. A large wetland will take the place of the existing pond that would created in Klutho's plan by means to harvest stormwater. The new environment would draw more attention from locals as well as establishing a new ecosystem for wildlife.

AFTER



AFTER

Commercial Hub perspective

BEFORE

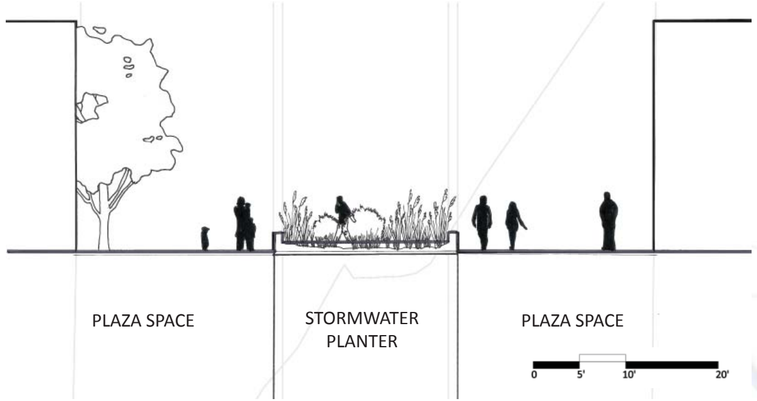
SUSTAINABLE FACADE IMPROVEMENTS

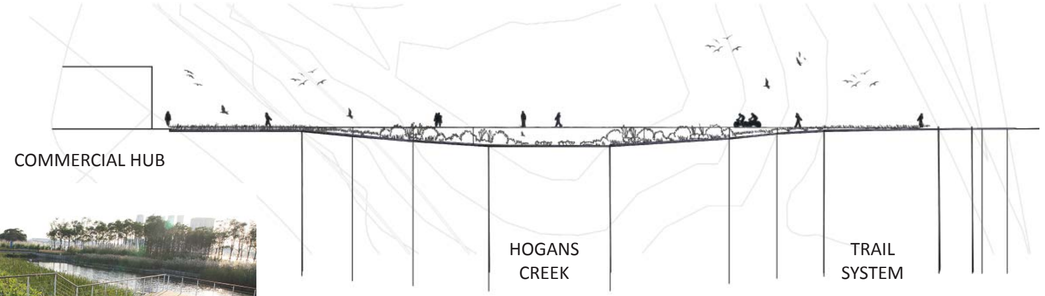
VEGETATING THE CREEK'S EDGE

AQUATIC PLANTS

STORMWATER PLANTER

The new commercial hub will highlight some of the stormwater practices that will reduce the urban runoff in the downtown area. Such practices include creating stormwater planters that allow water runoff to be directed from rooftops to a planter filled with aquatic and wetland plants. Several of these planters will be incorporated to also be aesthetically draw attention to the Hogans Creek environment.



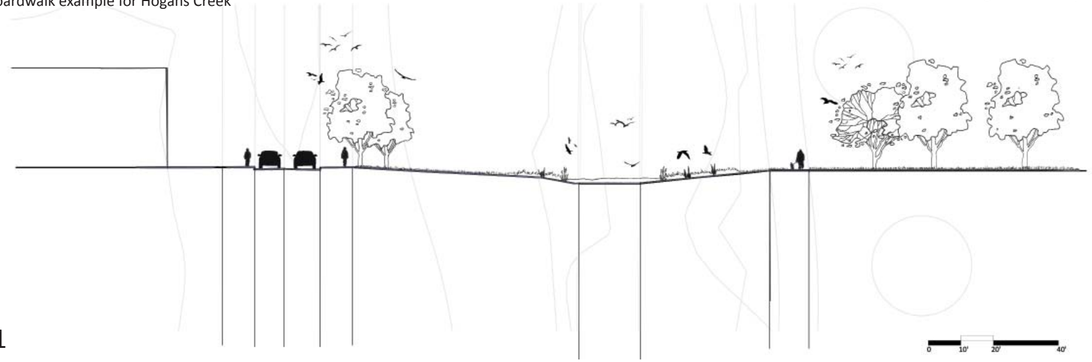


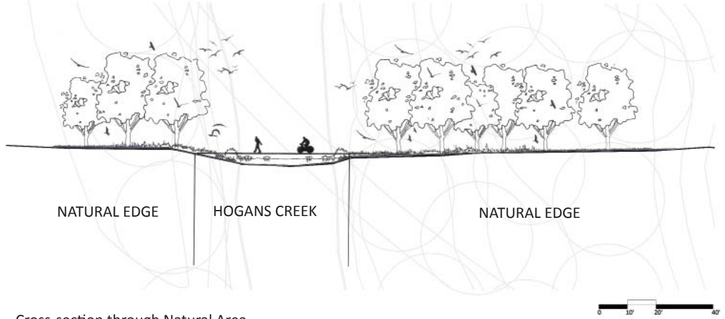
Cross-section through Community Hub Wetland Area

Boardwalk example for Hogans Creek

The Commercial Hub will be linked to Confederate Park by a boardwalk that will be integrated within the wetland environment. An example of this type of boardwalk is depicted left, where it is eco-sensitive to the surrounding area.

Cross-section through Community Hub



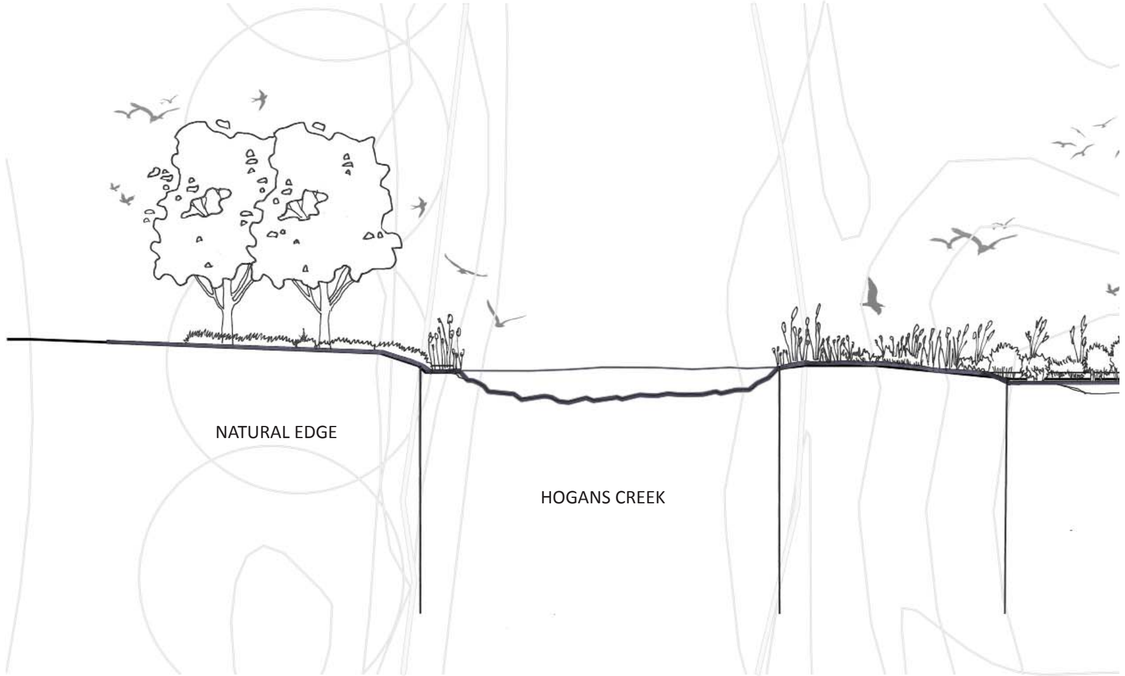


Cross-section through Natural Area

AFTER

KEEPING IT NATURAL

The southeast location of Hogans Creek already exists as the natural environment, giving the impression that this was original nature of Hogans Creek. The impact from development and construction has created some issues; however, there is an opportunity to create wetlands and widen the existing edge. The process of filtering the imparied waters will have a longterm effect on the St Johns River. With the amount of urban runoff from east downtown, the reduction in urban runoff with be essential in sustaining the downtown environment.



THE WETLANDS EXPERIMENT

Depicted above is one of the several wetland environments that will play a major role in the reduction of urban runoff and the cleansing process for Hogans Creek. Each wetland in the plan offers a functional way to infiltrate water but also filters the toxins and contaminates through phytoremediation and wetland pools. In a heavy rain event, given that the section above illustrates a particular wetland area, water will flood over and settle into the wetland. If the rains continue, the water will be filtered and have an opportunity to continue downstream and out into the St Johns River. Some of the other designed wetlands along the creek are design to allow Hogans Creek to

flow right through the middle of the wetland environment. This will allow for water to retain itself and be filtered by various aquatic and wetland plants before continue downstream. The greenway process involved buffering the creek's corridor by 100 and 200 feet to where future land development would not encroach upon the proposed creek edge. By developing a greenway corridor for natural aesthetics and wildlife restoration, the opportunity to link the downtown area to a natural environment will have a maximum potential in creating an ecological identity for Jacksonville.

CONCLUSION

The City of Jacksonville has envisioned itself as a future sustainble city that celebrates its history but also the natural environment upon which it established itself several centuries ago. The St Johns River is what people mainly associate the downtown area with but it should not stop there. All the tributaries, streams and creeks that filter out into the river play an essential role in celebrating the river in Jacksonville. Hogans Creek directly takes part in this celebration for not only its history but also its proximity in the urban area.
For Jacksonville to begin the sustaining revitalization of the downtown setting, a restoration to Hogans Creek by means of creating a greenway system will only drive the city to start implementing strong connections and linkages to the surrounding context.
Hogans Creek: The Living Lab project is presented as a visionary ecological plan for Jacksonville, giving opportunities to established itself as a future green city. Many cities today are incorportating sustainable practices in order to sustain their future but also drawn people's attention back to the urban environment. Through ecological planning, the new Hogans Creek will create an identity that thrives on original nature of downtown Jacksonville and the St Johns River. By incorporating stormwater practices through wetland development and stormwater planters, the opportunity to educate people on the importance of water and runoff will become vital for the community.
Lastly, the future growth of downtown and the surrounding areas is in need of practicing sustainability. When the opportunity presents itself for the city to begin implementing these practices, Hogans Creek should be considered as the first step in movitating people moving back to the urban context as well as providing various recreational spaces for people to escape the urban hardscape.
Both the City of Jacksonville and the surrounding neighborhoods can begin visioning a highly interactive greenway that attracts a wide range of daily users. There is active community participation in downtown Jacksonville and the community revitalization process will be one of the many future benefits that will connect all surrounding neighborhoods after the implementation of this greenway project.

PERSONAL CONCLUSION

As landscape architects, we are responsible for creating experiences where humans interact with the natural environment. There are so many benefits to enjoying the natural environment emotionally, physically and mentally (and spiritually for some people). The enjoyment in designing these spaces for people gives a sense of knowing that the spaces will be used for community revitalization, participation and connectivity. However, I am disappointed to see the impact of sprawl and clear-cut development that has ruined the natural environment.

The idea of sustaining a city or place should be practiced everywhere; therefore, I had chosen my capstone project on Hogans Creek for a couple of reasons:

(1) In my future career as a professional Landscape Architect, I want to work on restoring natural systems especially within the urban context. I felt this project helped me acquire useful knowledge as an environmental designer and will further my skill set for the professional career.

(2) Stormwater management practices and public health are areas that I just recently began learning about, particularly because sustainability and health issues have been heavily focused on for the past several decades.

(3) The absence of connectivity between the Springfield Historic District and the city of Jacksonville shows the lack of interest and preserving historic sites and structures within the urban context. The value of restoring the history and creating the original natural environment of Hogan's Creek will bring a strong connectivity to the city.

(4) The Florida Department of Environmental Protection and the City of Jacksonville are interested in learning how they can interpret the importance of Jacksonville's natural environment. This project will lead to creating outreach programs and an educational laboratory environment for all people.

(5) Lastly, I wanted to create a place where people could ultimately get away from the urban setting and experience the natural environment. Every day, we push ourselves to a point of needing a place to go and find peace and rest. The natural environment somehow allows us to reflect and enjoy what we have in this world.

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Kongian Yu, and Cao Yang. Red ribbon runs across a former garbage dump and has a strong contrast with the native wolftail grass. 2007. Photograph. American Society of Landscape ArchitectsWeb. 05 Feb 2012. <http://www.asla.org/awards/2007/07winners/images/popup/056-09.jpg>.

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Kongian Yu, and Cao Yang. The site plan. 2007. Photograph. American Society of Landscape ArchitectsWeb. 05 Feb 2012. <http://www.asla.org/awards/2007/07winners/images/popup/056-01.jpg>.

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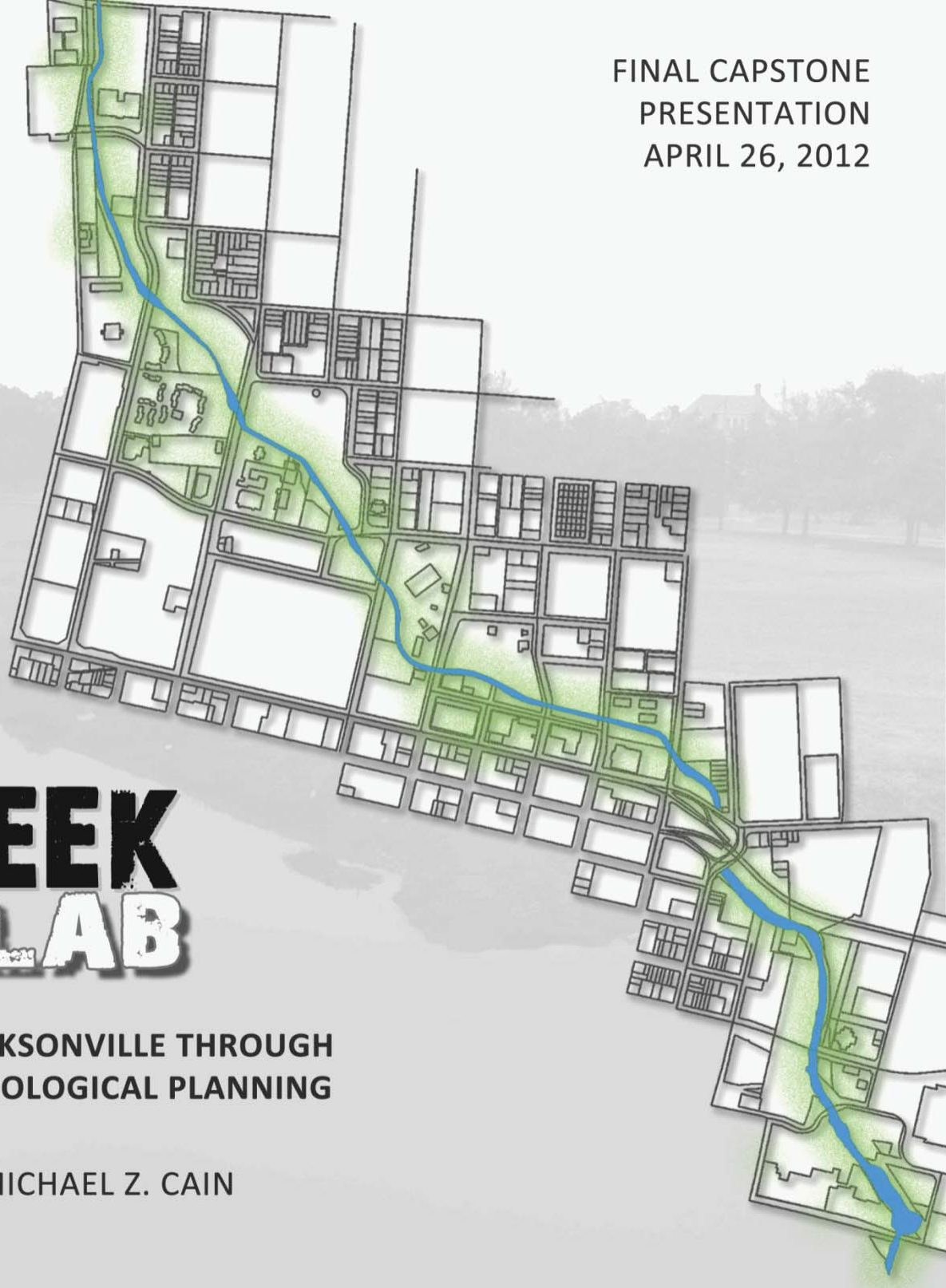
All other photos were taken by Michael Cain

FINAL CAPSTONE
PRESENTATION
APRIL 26, 2012



HOGANS CREEK
THE LIVING LAB

SUSTAINING DOWNTOWN JACKSONVILLE THROUGH STORMWATER AND ECOLOGICAL PLANNING

MICHAEL Z. CAIN

PRESENTATION AGENDA

PROJECT INTRODUCTION

- Location of Hogans Creek
- Hogan's Creek History
- Surrounding Context

RESEARCH

- Environmental Protection Agency
- Urban Waterway Issues
- Jacksonville's Comprehensive Plans

ANALYSIS

- Watershed, Accessibility and Roadways
- Land Use and Greenspace

GOALS

- Objectives

SYNTHESIS

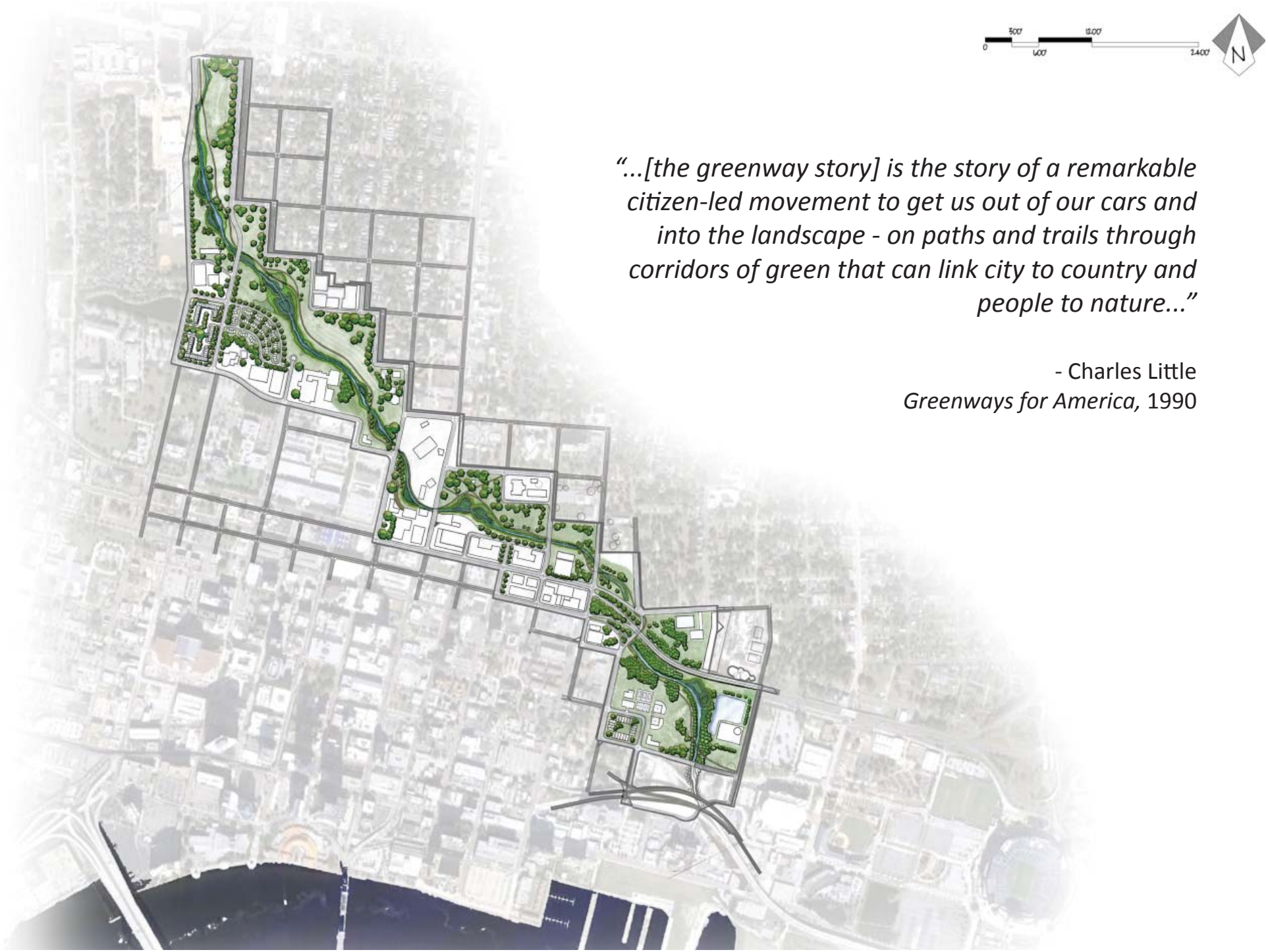
- Opportunities for Sustainable Growth and Connectivity

DESIGN

- Master Plan
- Linear Park
- Wetland Development
- Commercial Hub
- Guidelines

CONCLUSION

PROJECT



"...[the greenway story] is the story of a remarkable citizen-led movement to get us out of our cars and into the landscape - on paths and trails through corridors of green that can link city to country and people to nature..."

- Charles Little
Greenways for America, 1990

HOGANS CREEK: THE LIVING LAB

PROJECT SUMMARY

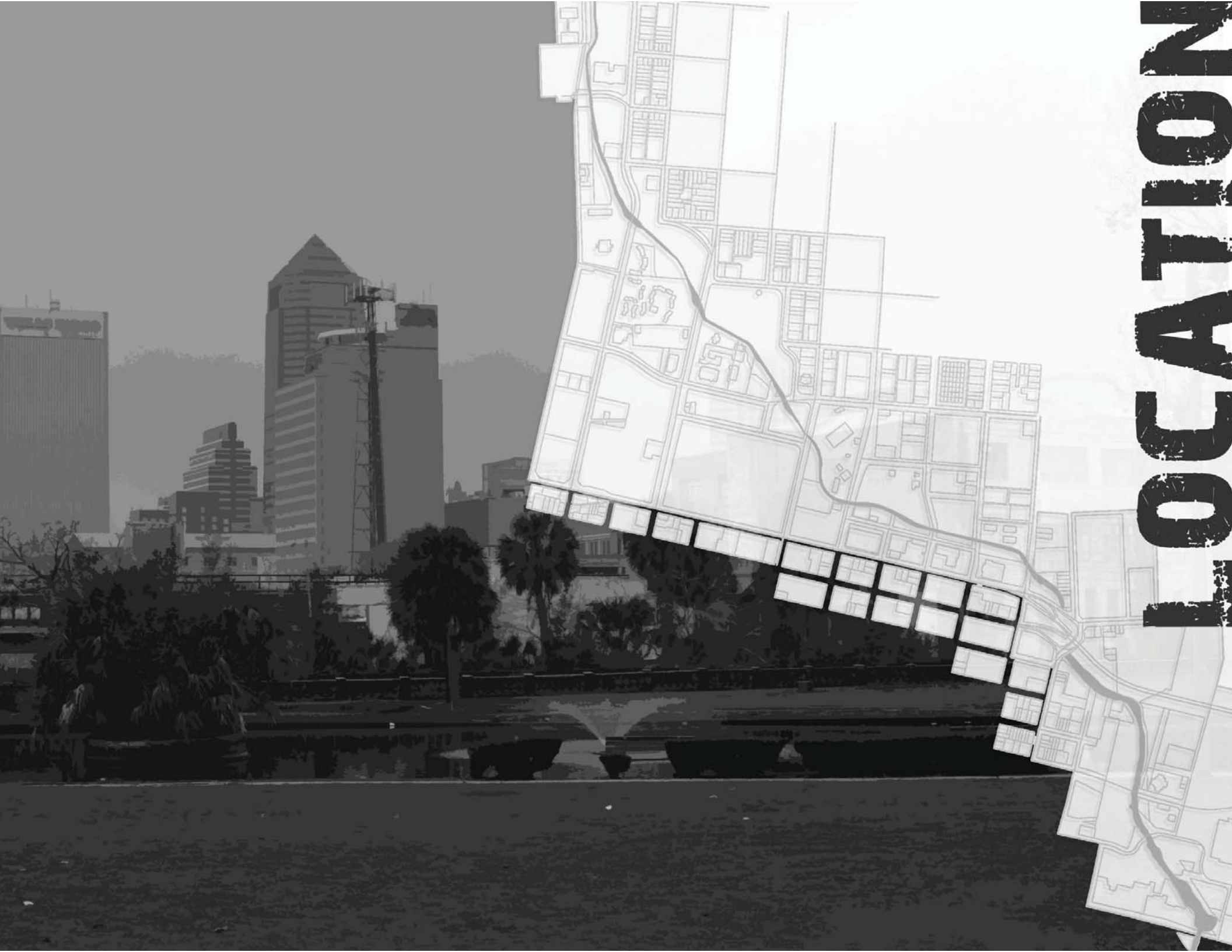
Hogans Creek: The Living Lab is a visionary ecological capstone that aims to strategically resolve the large areas of urban runoff and waste adjacent to Hogans Creek in downtown Jacksonville, Florida. Through ecological planning practices and stormwater guidelines, the one and a half mile creek corridor will be transformed into a naturally-aesthetic recreational greenway.

NARRATIVE

The focus of this capstone project is a combination of stormwater management, public health, environmental awareness and historic preservation. During the early twentieth century, a vision in turning Hogans Creek into an urban greenway park was an ultimate goal for architect Henry Klutho. By 1929, he had designed wetland areas to accommodate stormwater as well as the site furnishings that still barely exist today. With help by the Springfield Historic District, Hogans Creek has been maintained over several decades; however, there has been a strong push for development since Jacksonville early urban growth. This growth pattern has affected the runoff and the concentration of water to a point that the urban runoff covers approximately one square mile around Hogans Creek.

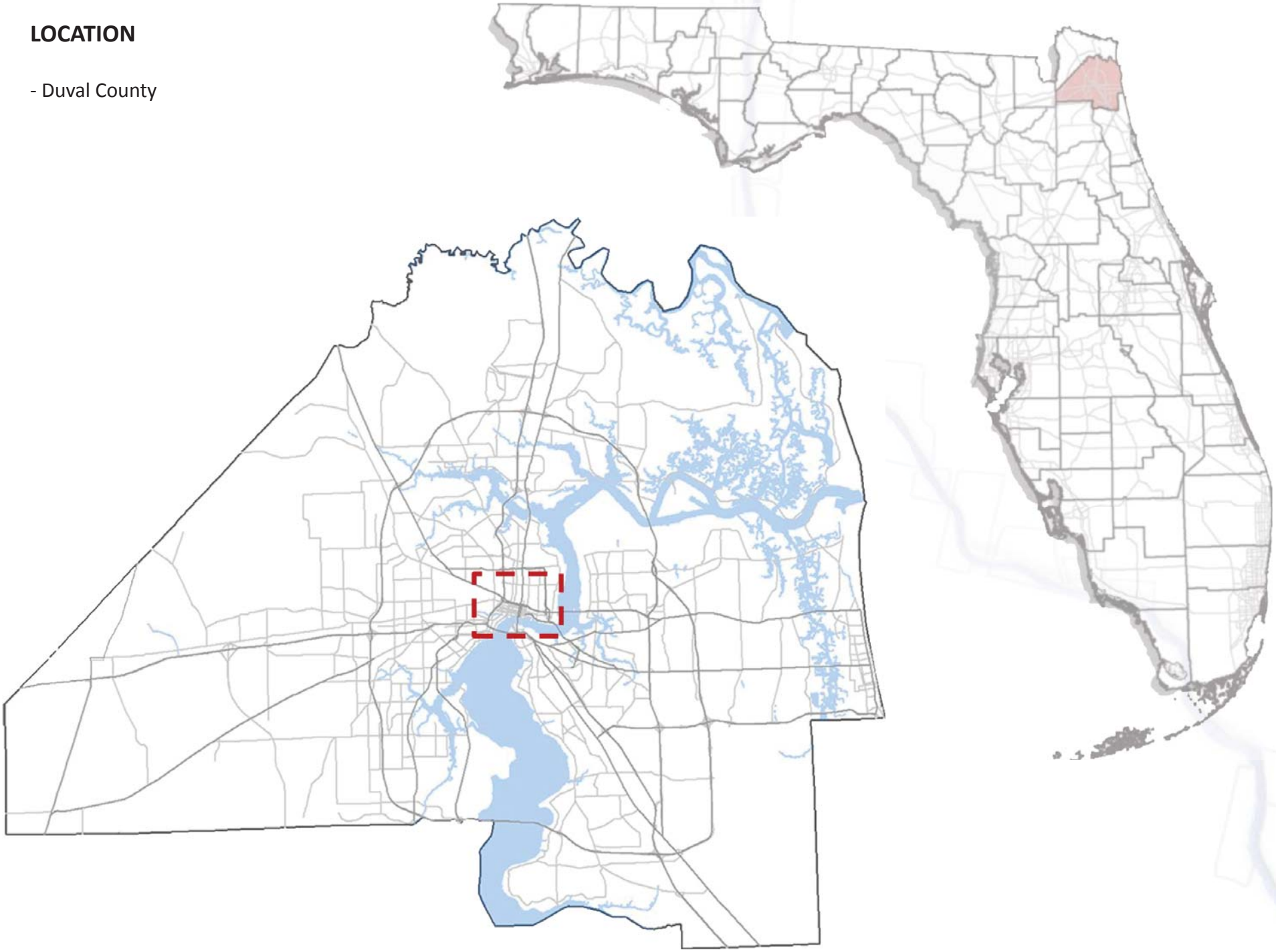
The waters of Hogans Creek have collected various toxins, waste and other contaminates that environmentalists, biologists and city officials have to call Hogans Creek as the “living lab” of downtown Jacksonville. The city’s research as well as the Environmental Protection Agency have proven that over the past years there has been a gradually rise in *fecal coliform*. This struck a major concern for the city, labeling the waters as “impaired” and a potential health hazard to anyone enjoying its existing recreational value.

By designing wetlands, trails and providing guidelines from stormwater practices, the potential in developing a highly sustainable site will allow Jacksonville to grow even more than they expect in their comprehensive plans. The main goal of this project is to develop an overall master plan that highlights various solutions to managing stormwater issues, public health and environmental awareness along Hogan’s Creek. This urban greenway project has the greatest opportunity in connecting the Springfield Historic District to Downtown Jacksonville as well as all other surrounding context. Historic elements on site will be highly recognized and be in favor of restoration solutions. Both the City of Jacksonville and the Springfield District will see the potential in a highly interactive greenway that attracts a wide variety of daily users.


LOCATION

LOCATION

- Duval County

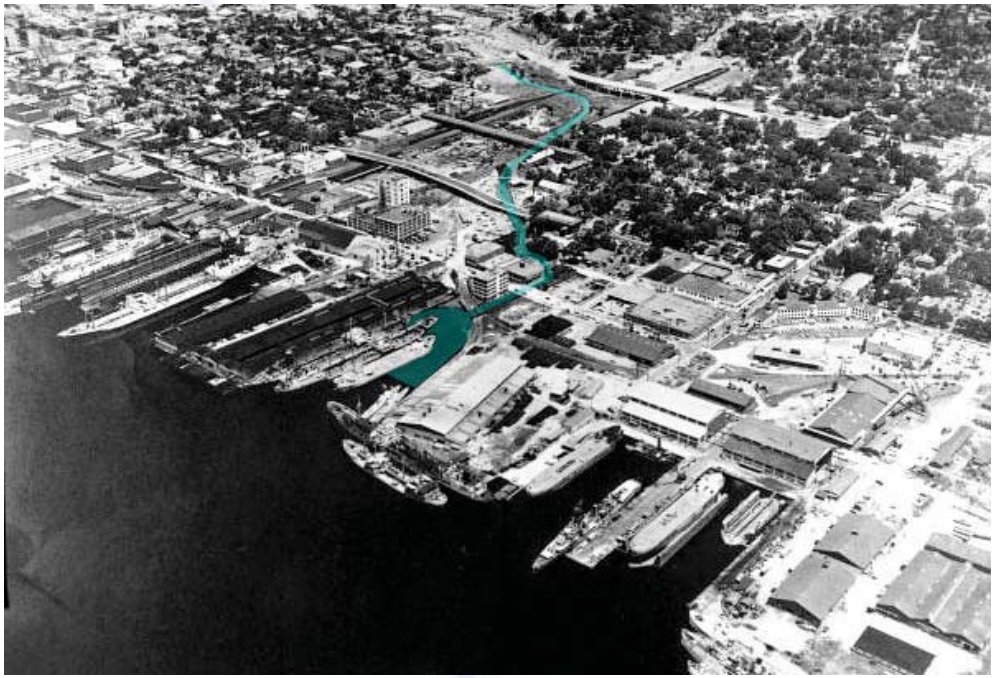


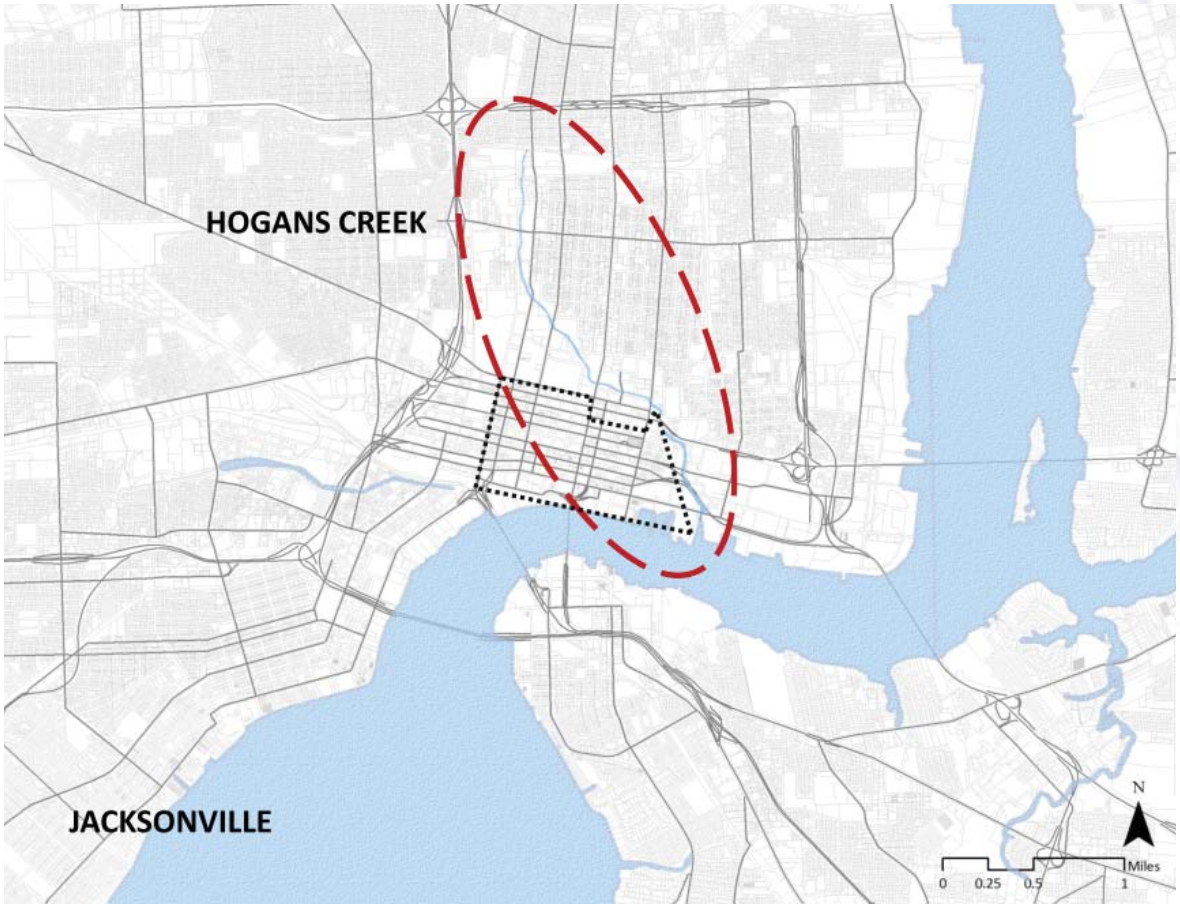
THE CITY OF JACKSONVILLE

- Jacksonville is Duval County!

- The population of Jacksonsille continues to grow, as noted between 2000 to 2010, the population increased by 11%, just below the average state level

- Developing multiple comprehensive plans





JACKSONVILLE'S URBAN CREEK

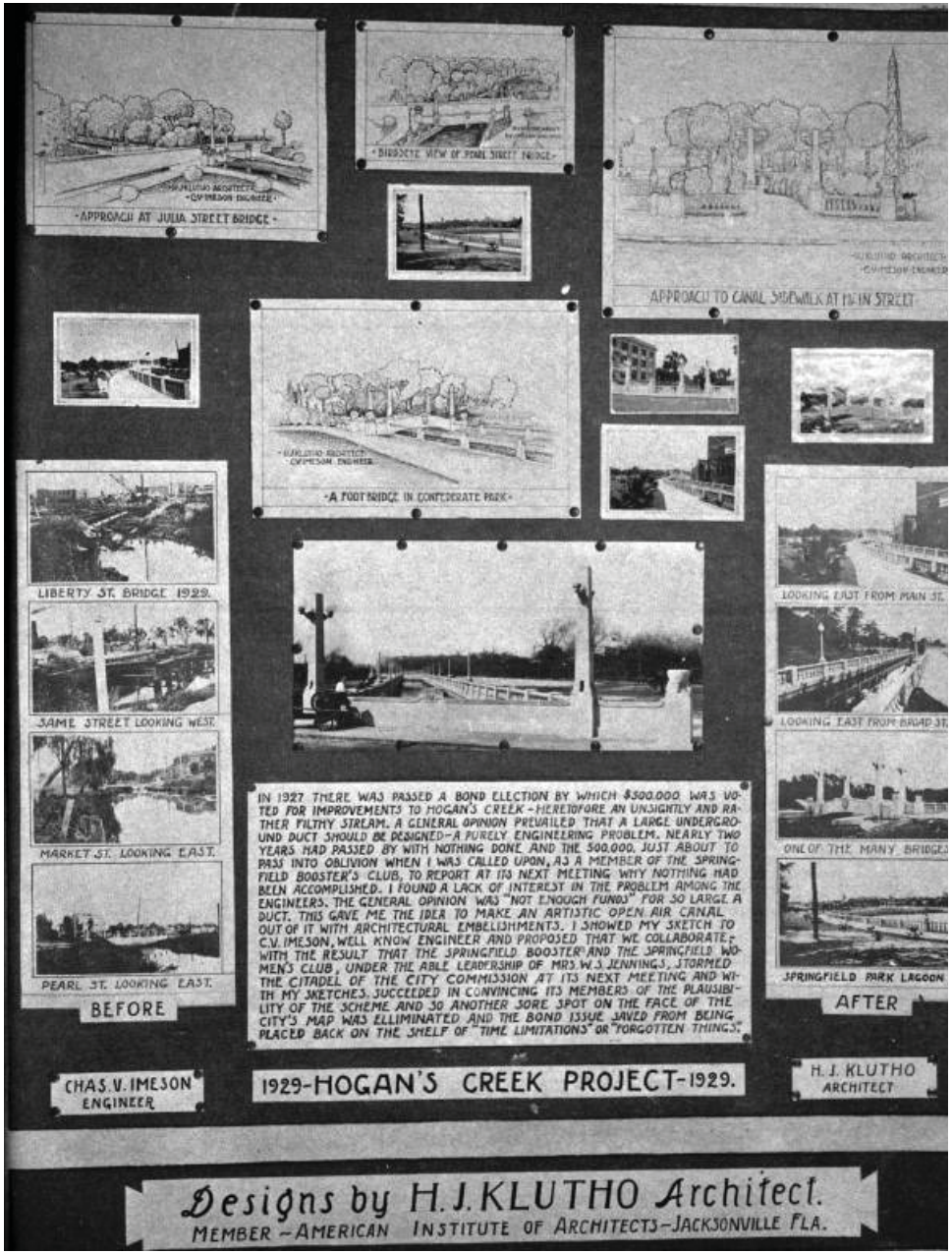
- Hogans Creek is 1.5 miles long

- Existing parks along the creek serve as active recreational spaces

- Size of the proposed project is approximately 100 acres

- Parcels are owned by the City of Jacksonville and the Springfield Historic District

CONTEXT



DISPLAY PRESENTATION OF HENRY J. KLUTHO DESIGNS FOR HOGANS CREEK

PEOPLE EVACUATING THE CITY DURING THE 1901 GREAT FIRE

HISTORY OF JACKSONVILLE AND HOGANS CREEK

- Ancient Timucua city, Ossachite
- Spanish government rule
- **1901 Great Fire**
  - Destroyed 2,368 buildings and 10,000 people were left homeless – 7 residents were killed
  - Hogans Creek saved the eastside of city
- Parks Movement
- **1929 Hogans Creek Improvement Project designed by architect Henry J. Klutho**
- Many environmental studies and research have been done on Hogans Creek


MONCHEF PARK
29TH & CHASE
BRENTWOOD
MID-WESTSIDE
PHOENIX
FAIRFIELD
DURKEEVILLE
SPRINGFIELD
COLLEGE GARDEN
NEW TOWN
HOGANS CREEK
EASTSIDE
MIXON TOWN
LA VILLA
DOWNTOWN
NORTH RIVERSIDE
BROOKLYN
NEIGHBORHOODS
SOUTHSIDE
SAN MARCO
N
Miles
0
0.25
0.5

4 HOGANS CREEK PEDESTRIAN PATHS

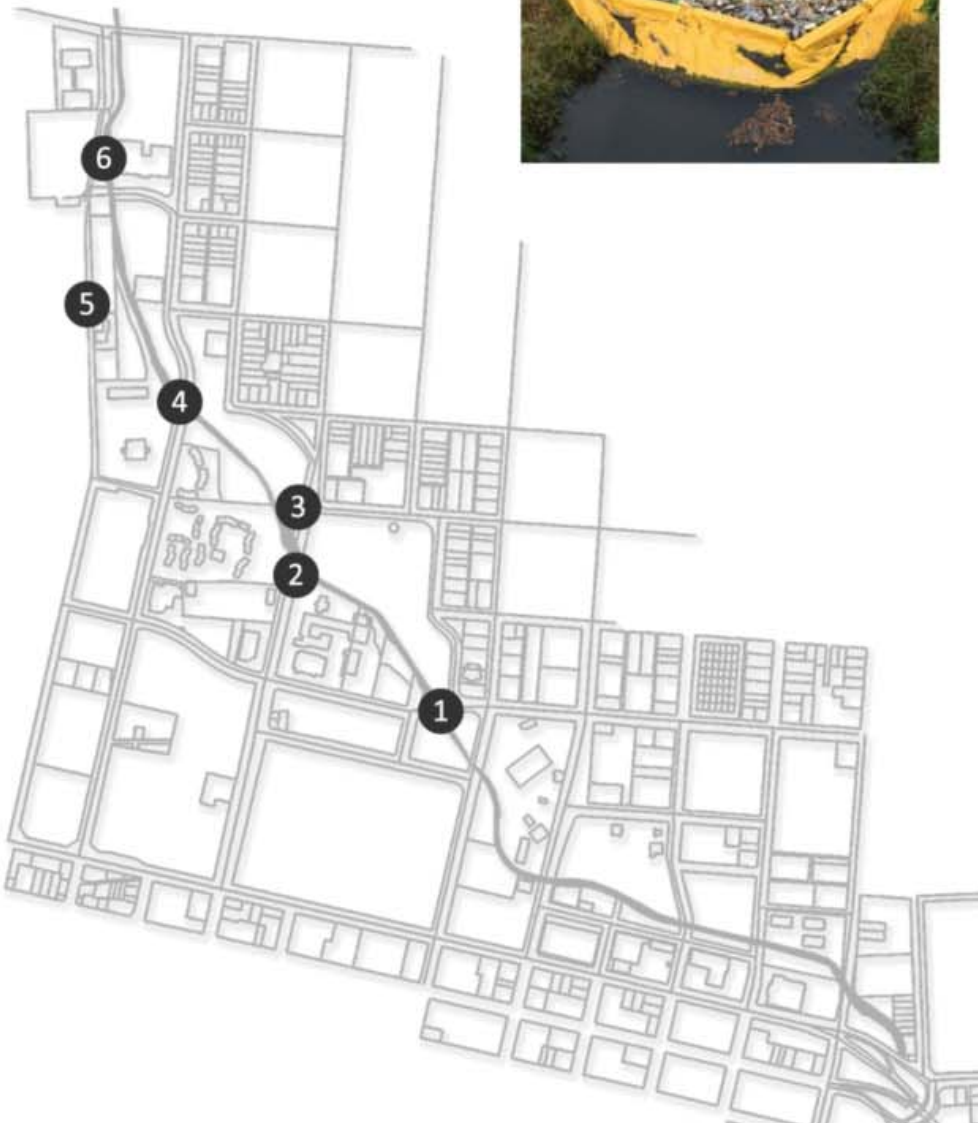
5 HISTORIC PEDESTRIAN BRIDGE

6 WASTE RUNOFF

3 HOGANS CREEK

1 TRASH

2 ULTILITY PIPES



HISTORIC SPRINGFIELD

1

VACANT BUILDING

2

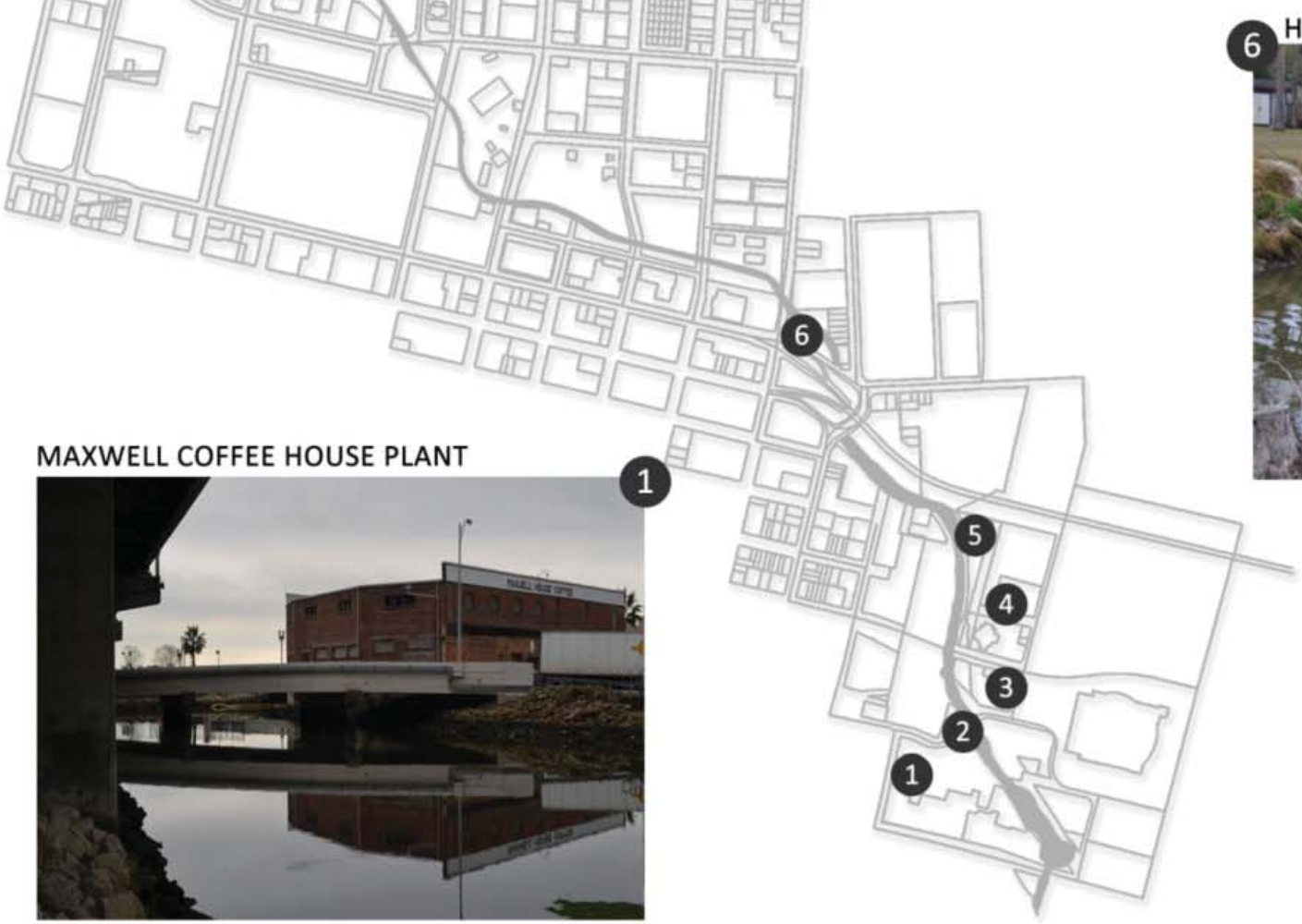
CONFEDERATE PARK

3

6 EXISTING CORRIDOR OF HOGANS CREEK

5 CEMENT-ROCK FACILITY

4 FLOODED WASTELAND



6 HOGANS CREEK TRASH

MAXWELL COFFEE HOUSE PLANT 1

5 NATURAL CORRIDOR OF HOGANS CREEK

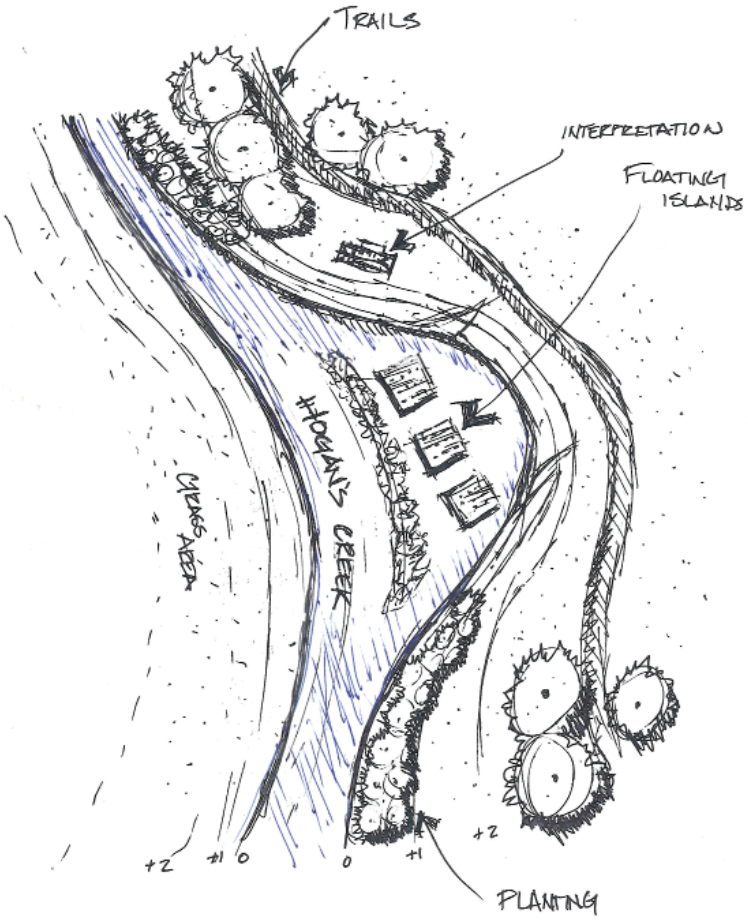
HART BRIDGE EXPRESSWAY 2

3 OLD ST. LUKE'S HOSPITAL

4 WATER TREATMENT FACILITY

RESEARCH

MEETING WITH THE EPA AND CITY OF JACKSONVILLE FOR A PRESENTATION ON URBAN CREEKS



The Dirt

Feeds: Posts Comments

CONNECTING THE BUILT & NATURAL ENVIRONMENTS

AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS

« You Create Bluebrain's Landscape Soundtracks

UN Climate Summit Moved Goal Post »

E.P.A. Offers $1.8 million in Urban Green Infrastructure Grants

12/21/2011 by asladirt

The U.S. Environmental Protection Agency (E.P.A.) is offering up to $1.8 million in new grants for urban green infrastructure projects that both improve water quality and support community revitalization. Projects that support the restoration of canals, rivers, lakes, wetlands, aquifers, estuaries, bays and oceans qualify.

Categories

Active Design Agriculture Campus Planning Climate Change Ecosystem Restoration Ecosystem Services Education Environment Exhibits Forests Gardens Green Buildings Green Roofs Historic Preservation Land Art Landscape Architecture Memorials National Mall Opportunities Policy and Regulation Public Spaces Real Estate Development Renewable Energy Residential Design Security Design Smart Growth Sustainable Design Sustainable Materials Sustainable Transportation Technology Urban Design Urban Revitalization Waste Water Management Wildlife

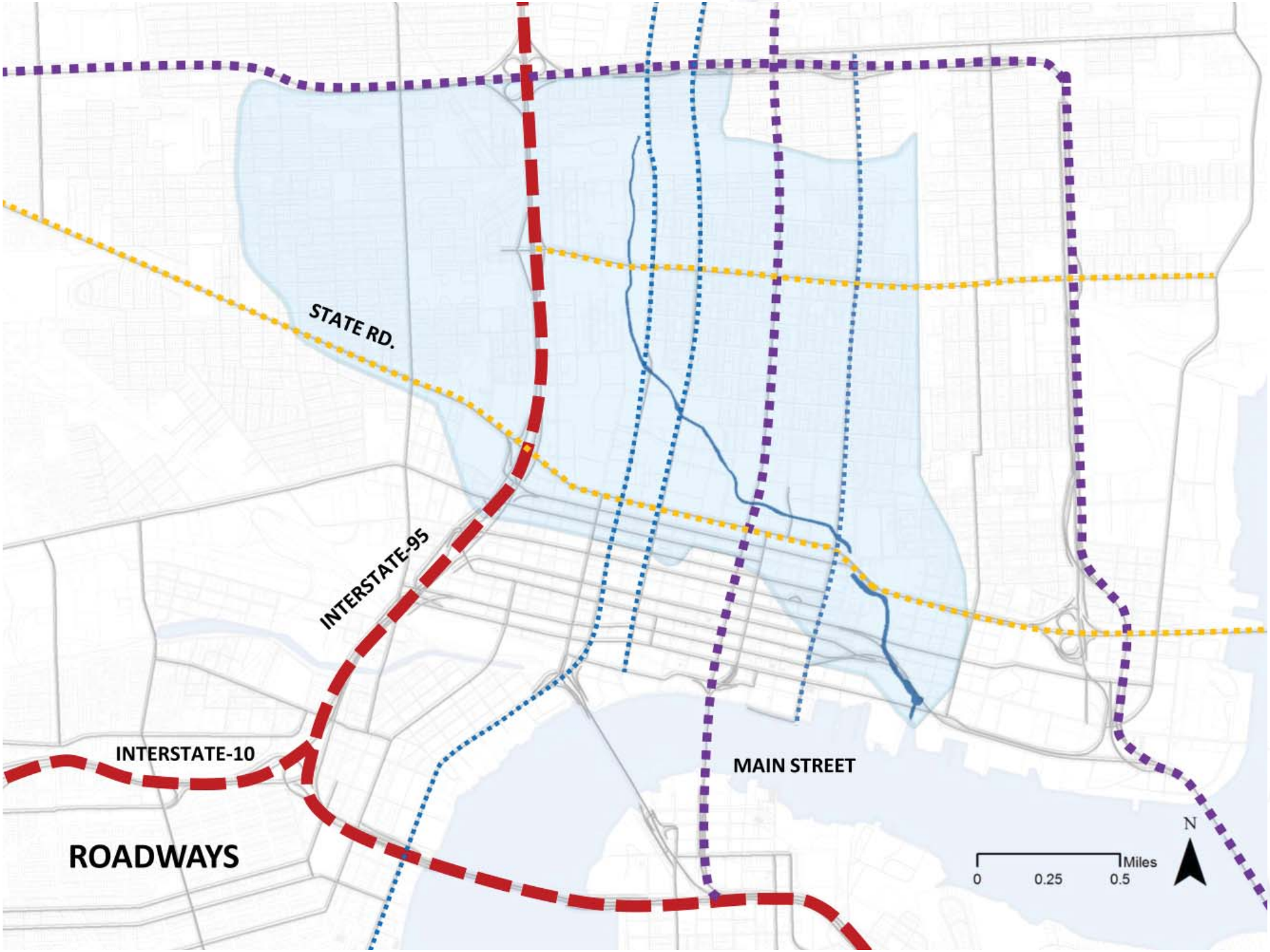
Recent Comments

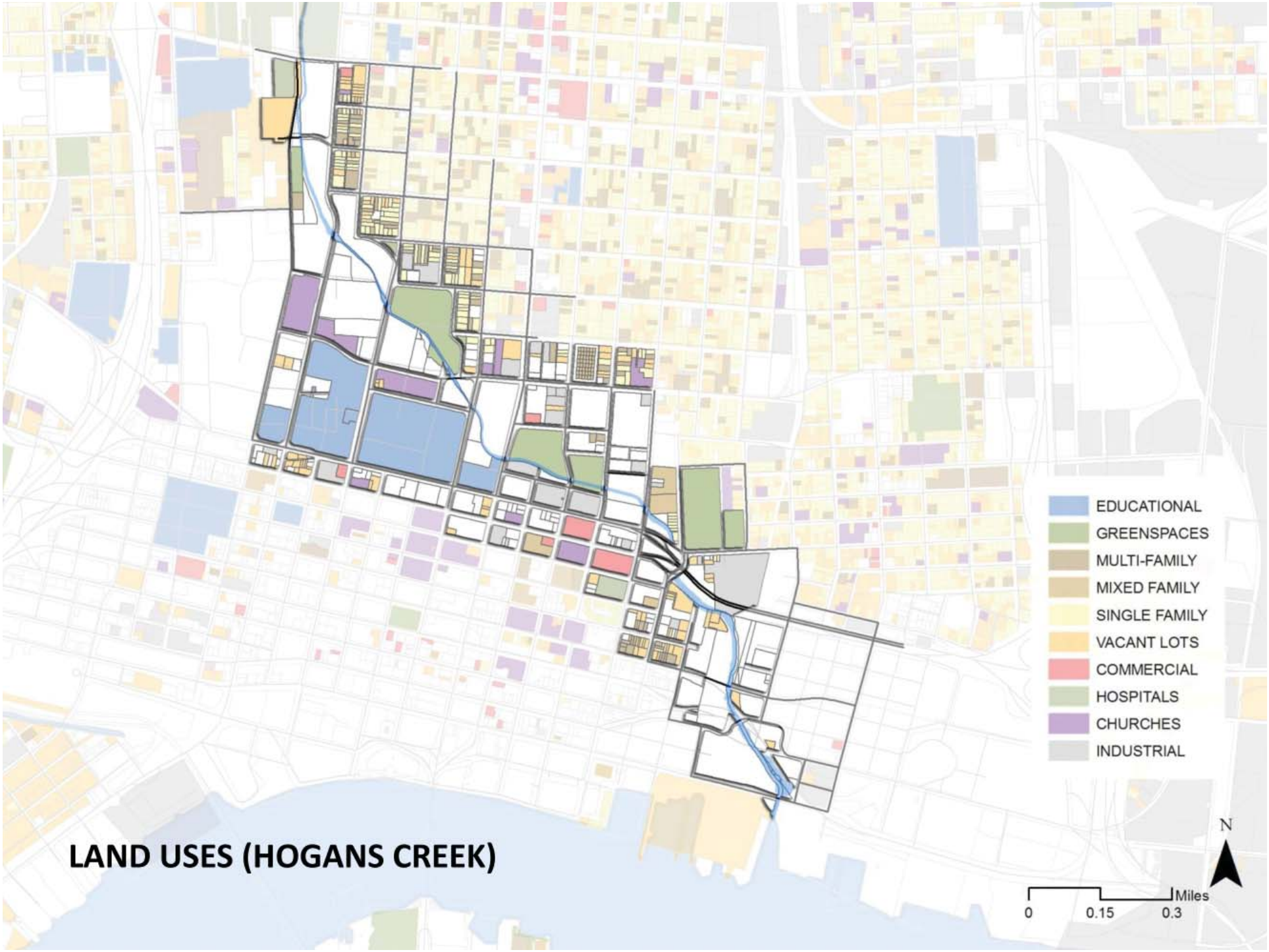
Carrie on Frederick Law Olmsted Is Holding Us Back (There. I Said It.)

Carrie on Frederick Law Olmsted Is Holding Us Back

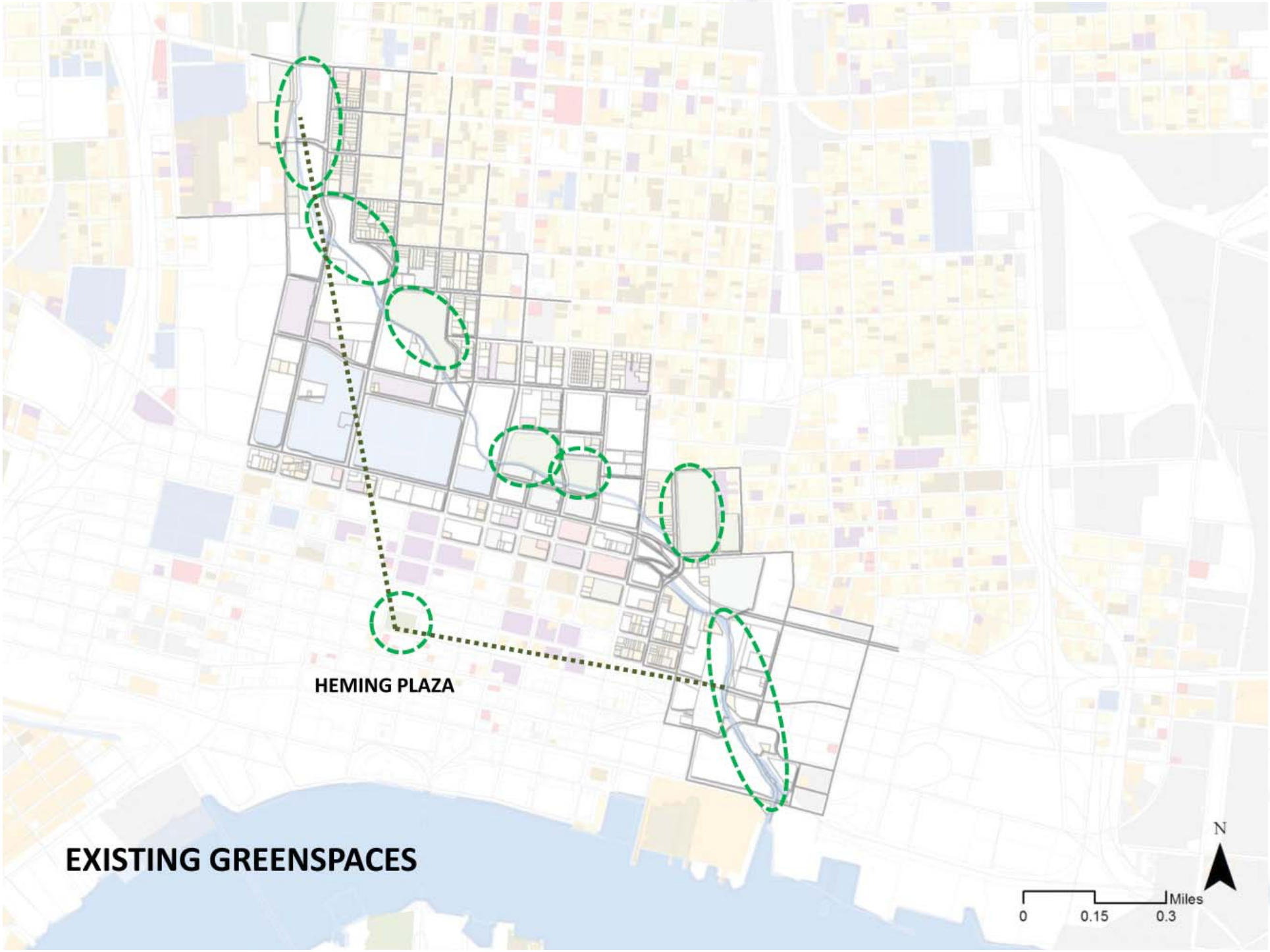

CURRENT FLOODZONE FOR HOGANS CREEK
N

ANALYSIS


STATE RD.
INTERSTATE-95
INTERSTATE-10
MAIN STREET
ROADWAYS
N
Miles
0
0.25
0.5



LAND USES (HOGANS CREEK)


HEMING PLAZA
EXISTING GREENSPACES
N
Miles
0
0.15
0.3

GOALS

PRIMARY GOAL

DESIGN AN **ECOLOGICAL CORRIDOR** ALONG HOGANS CREEK THAT ENRICHES THE GROWTH OF DOWNTOWN JACKSONVILLE AND THE SURROUNDING CONTEXT BUT ADDITIONALLY CREATES AN *IDENTITY* FOR ITS CONTEXT

- DEFINE THE HOGANS CREEK EDGE AND WIDEN THE CORRIDOR BY MEANS OF ECOLOGICAL RESTORATION AND STORMWATER

- INCORPORATE A TRAIL SYSTEM THAT PROVIDES AN EDUCATIONAL EXPERIENCE ALLOWING ALL USERS TO BECOME MORE AWARE OF THE NATURAL ENVIRONMENT

- CREATE NATURALLY-AESTHETIC VIEWSHEDS THAT WILL FRAME DOWNTOWN

- PROPOSE SUSTAINABLE STREETSCAPE DESIGN IN ORDER PUSH SUSTAINABILITY TOWARDS SPRINGFIELD AND DOWNTOWN

- ALLOW USERS TO INTIMATELY EXPERIENCE HOGANS CREEK BY DESIGNING AN ARRAY OF ACTIVE AND PASSIVE RECREATIONAL AREAS

SECONDARY GOAL

INCORPORATE SEVERAL **STORMWATER MANAGEMENT** PRACTICES THAT WILL RESOLVE THE *FLOODING* AND *IMPAIRED WATERS* OF HOGANS CREEK AND THE *URBAN RUNOFF* OF DOWNTOWN JACKSONVILLE

- FOCUS ON CREATING PUBLIC EDUCATION OPPORTUNITIES IN WAYS TO REDUCE WATER POLLUTION - EPA GRANT

- PROMOTE LOCAL WATER QUALITY AND COMMUNITY REVILTAIZATION GOALS - EPA GRANT

- DESIGN PARCELS ALONG HOGANS CREEK TO HAVE SUITABLE POTENTIAL FOR WETLAND DEVELOPMENT BASED ON THE TOPOGRAPHY OF HOGANS CREEK NEIGHBORHOOD

- INCORPORATE PHYTOREMEDIATION PRACTICES THAT CAN MITIGATE THE CONTAIMINATED AND IMPAIRED WATERS OF THE CREEK

- PROVIDE AREAS FOR EXPERIENCING STORMWATER THROUGH DIFFERENT METHODS

TERTIARY GOAL

CREATE A **FUTURE LAND USE PLAN** FOR HOGANS CREEK AND DOWNTOWN JACKSONVILLE THAT HIGHLIGHTS THE POTENTIAL *ECONOMIC* AND *RESIDENTIAL* GROWTH WHILE COINCIDING WITH THE CITY OF JACKSONVILLE COMPREHENSIVE PLANS

- IDENTIFY PARCELS SUCH AS PARKING AND VACANT LOTS THAT CAN BE REDEVELOPED INTO NEW COMMERCIAL AND RESIDENTIAL OPPORTUNITIES

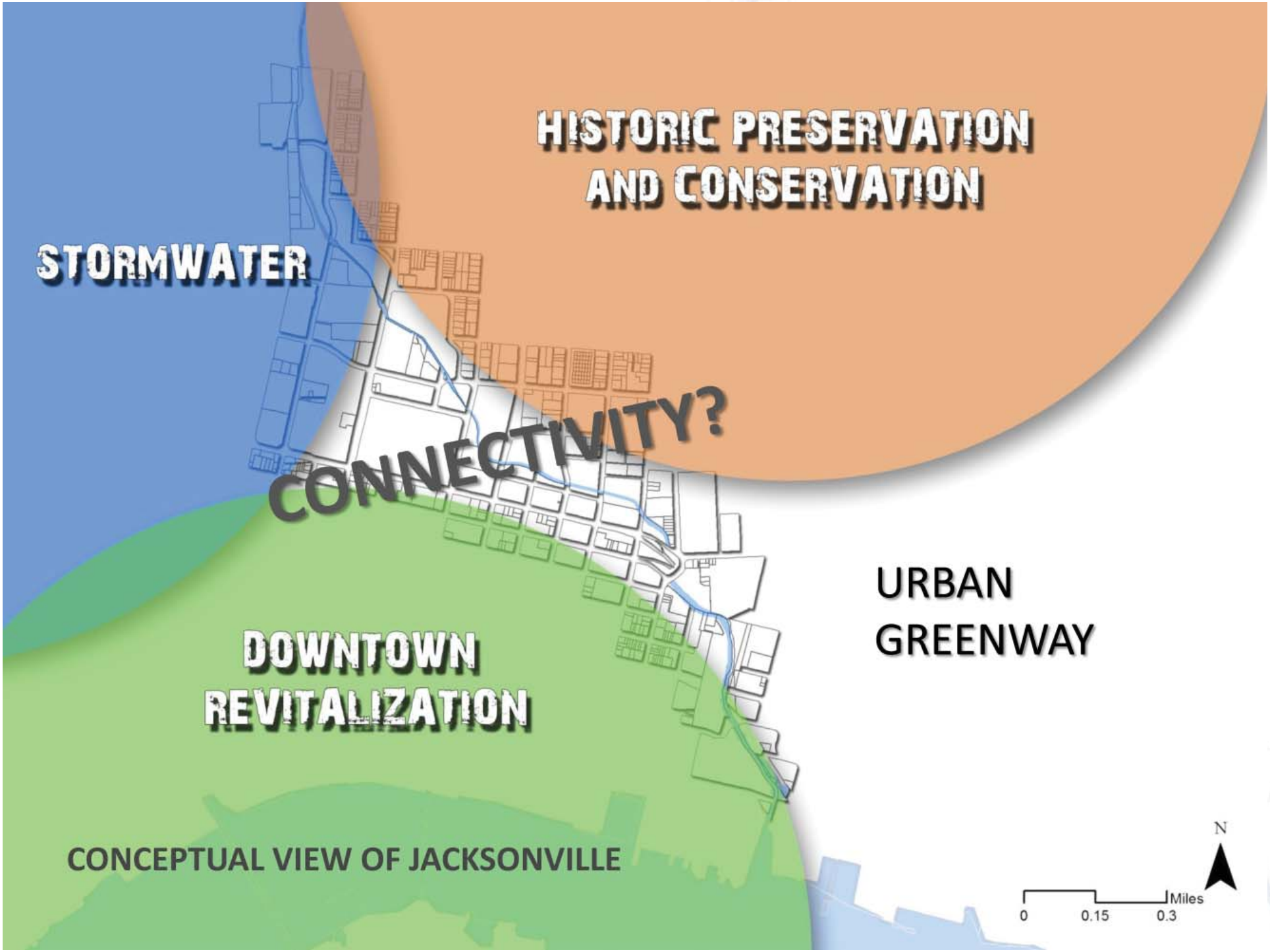
- CONNECT TO ALL EXISTING EDUCATIONAL INSTITUTIONS AND OPEN SPACES

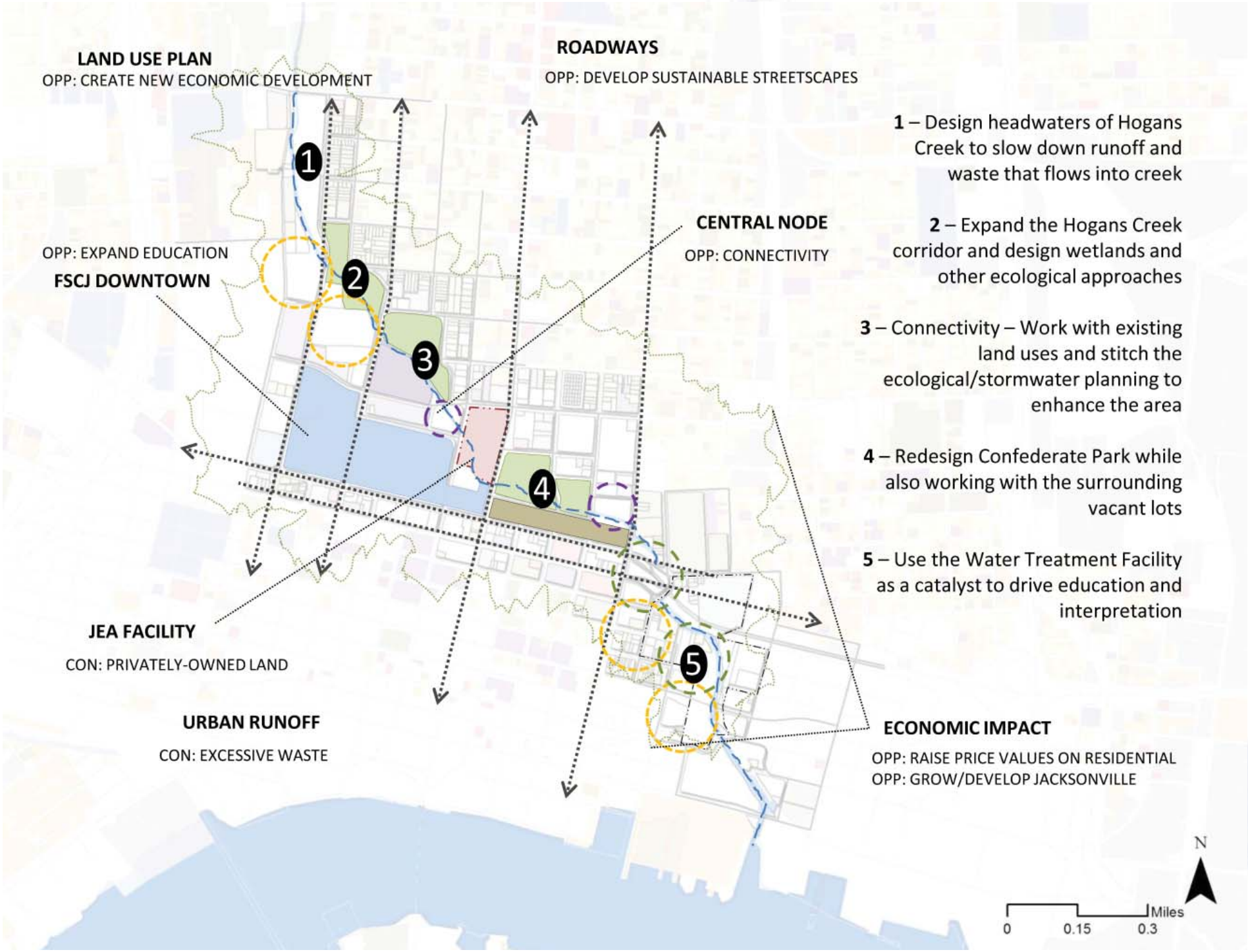
- DESIGN A VARIETY OF HOUSING TYPES TO OFFER A LARGER SELECTION FOR VARIOUS SOCIO-ECONOMIC PEOPLE

- MAKE ALL NEW LAND USES HIGHLIGHT SUSTAINABLE PRACTICES

- ULTIMATELY CONNECT SPRINGFIELD HISTORIC DISTRICT TO DOWNTOWN AND USE MAIN STREET TO DRIVE ECONOMIC AND RESIDENTIAL GROWTH

SYNTHESIS


HISTORIC PRESERVATION AND CONSERVATION
STORMWATER
CONNECTIVITY?
URBAN GREENWAY
DOWNTOWN REVITALIZATION
CONCEPTUAL VIEW OF JACKSONVILLE
N
Miles
0
0.15
0.3



1 – Design headwaters of Hogans Creek to slow down runoff and waste that flows into creek

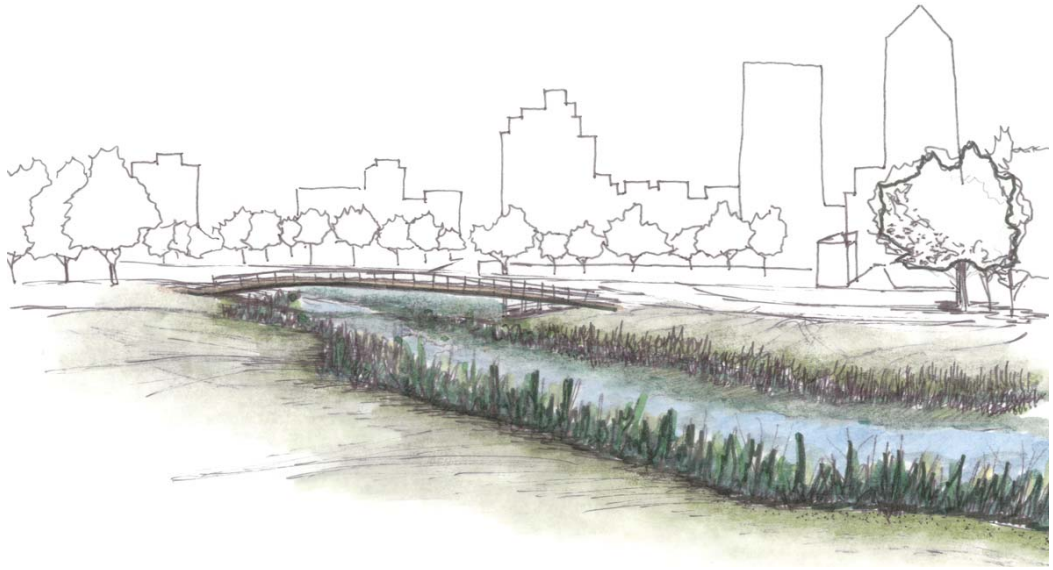
2 – Expand the Hogans Creek corridor and design wetlands and other ecological approaches

3 – Connectivity – Work with existing land uses and stitch the ecological/stormwater planning to enhance the area

4 – Redesign Confederate Park while also working with the surrounding vacant lots

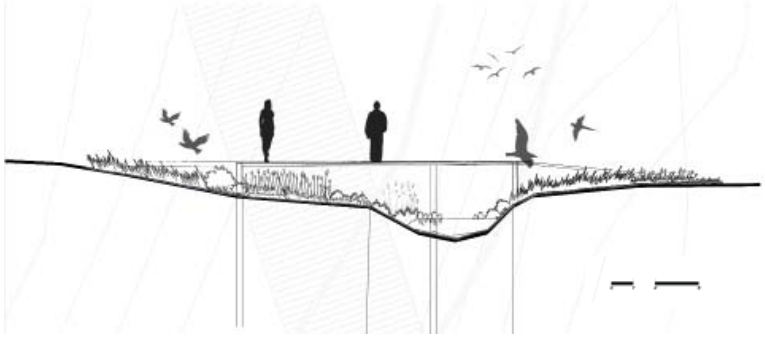
5 – Use the Water Treatment Facility as a catalyst to drive education and interpretation

DESIGN



CONCEPTUAL PERSPECTIVE LOOKING INTO DOWNTOWN

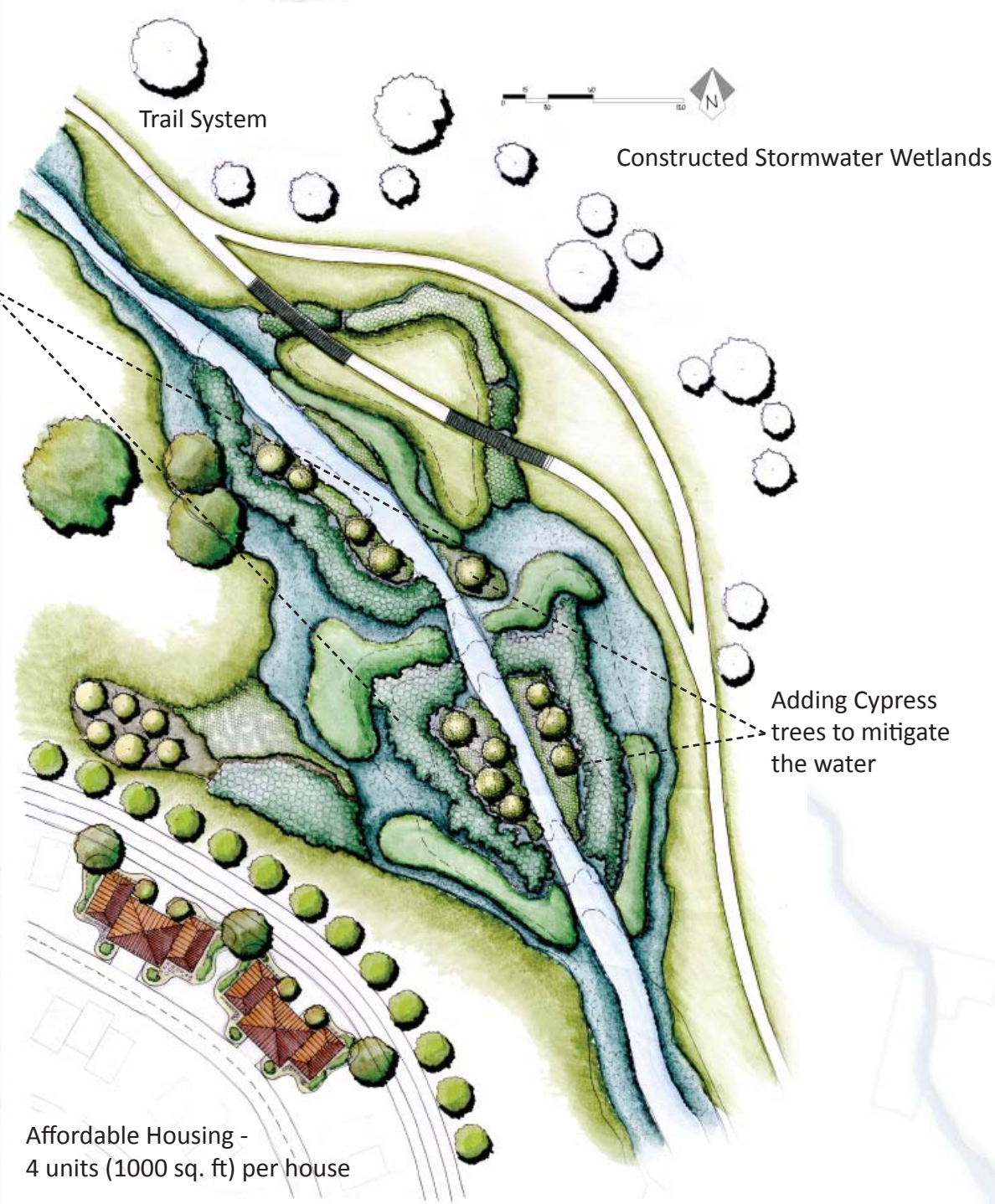
A vision that allows people to escape the urban setting and became a part of the natural environment



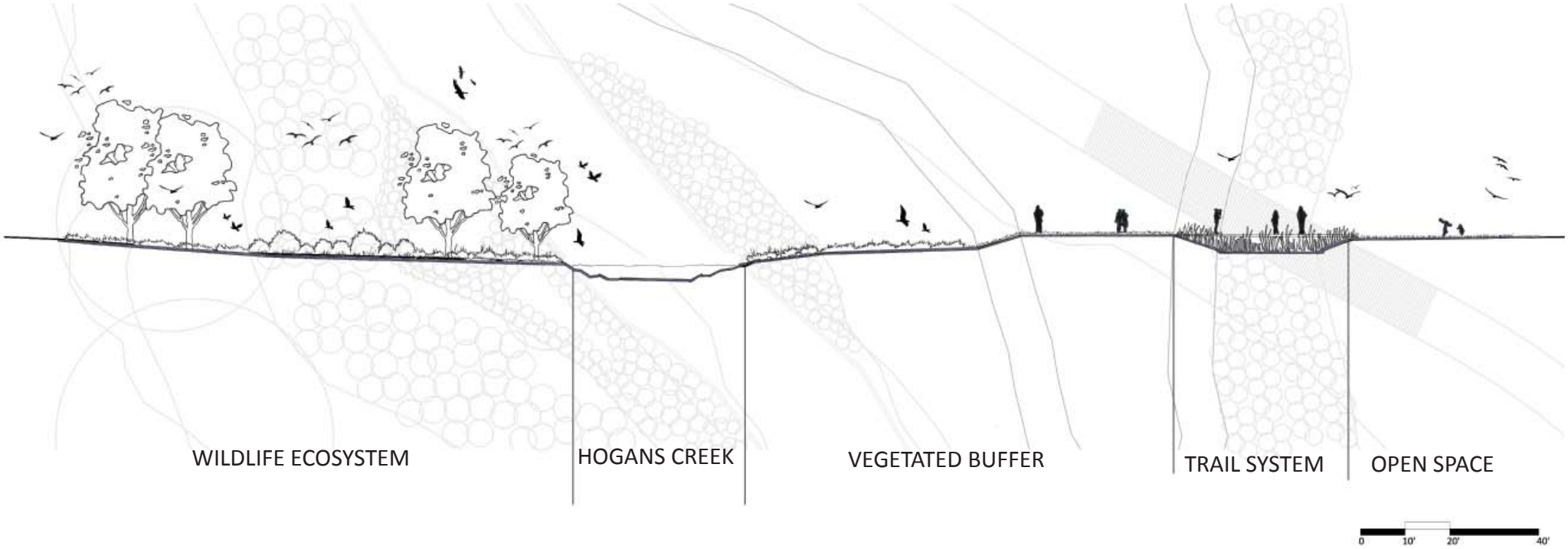
TRAIL SYSTEM CROSSING OVER HOGANS CREEK

PERSPECTIVE LOOKING NORTHWEST ON TOP OF BRIDGE

POTENTIAL BRIDGE IMPROVEMENT PROJECT



see Cross-section of Wetland Environment



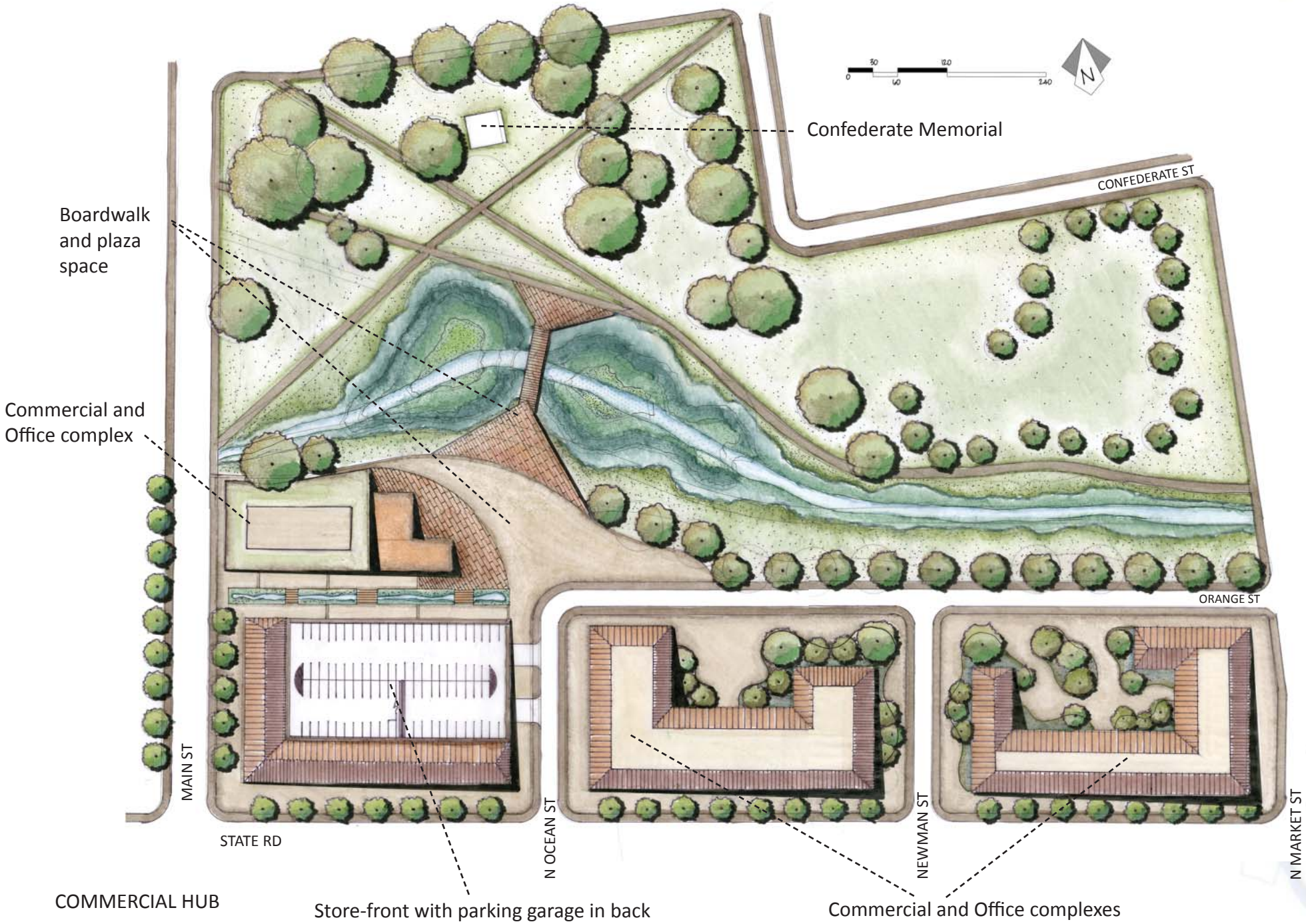
Cross-section through Wetland Environment on previous page


VACANT BUILDINGS


BEFORE


AFTER


Commercial Hub
New Recreational Facility
Hart Bridge Expressway
N


Confederate Memorial
CONFEDERATE ST
Boardwalk and plaza space
Commercial and Office complex
ORANGE ST
MAIN ST
STATE RD
N OCEAN ST
NEWMAN ST
N MARKET ST
COMMERCIAL HUB
Store-front with parking garage in back
Commercial and Office complexes

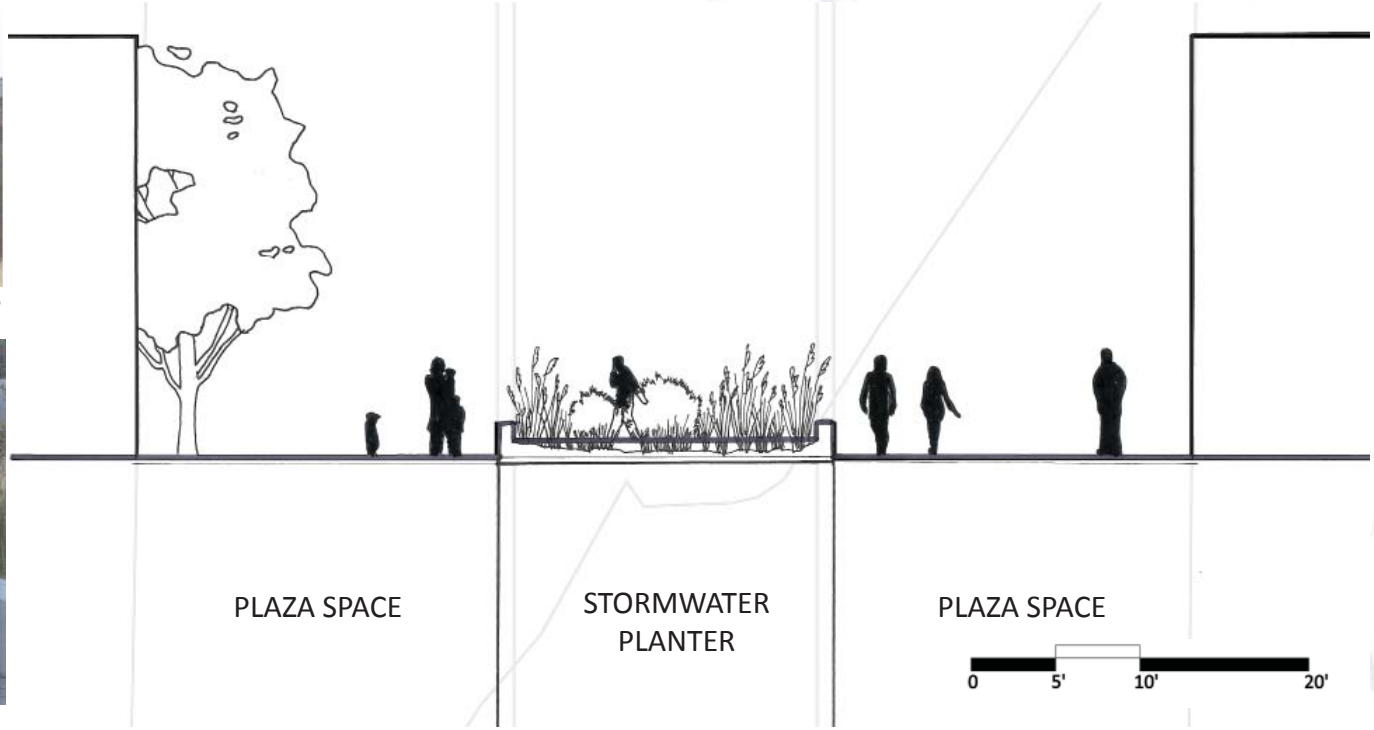
AFTER

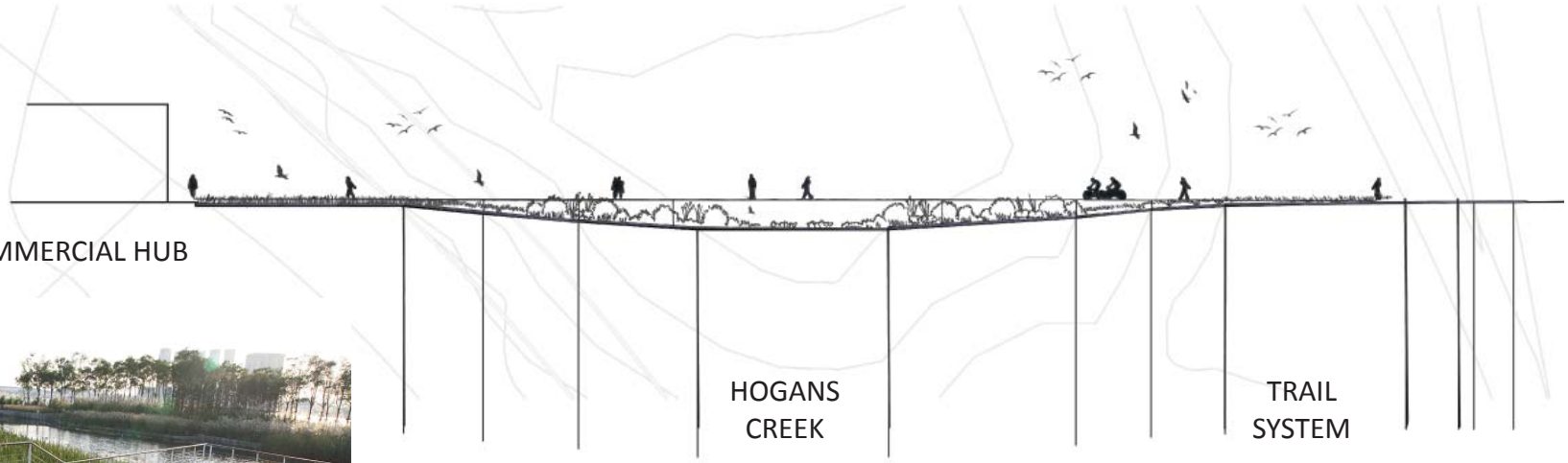
Commercial Hub perspective

BEFORE

SUSTAINABLE FACADE IMPROVEMENTS

STORMWATER PLANTER



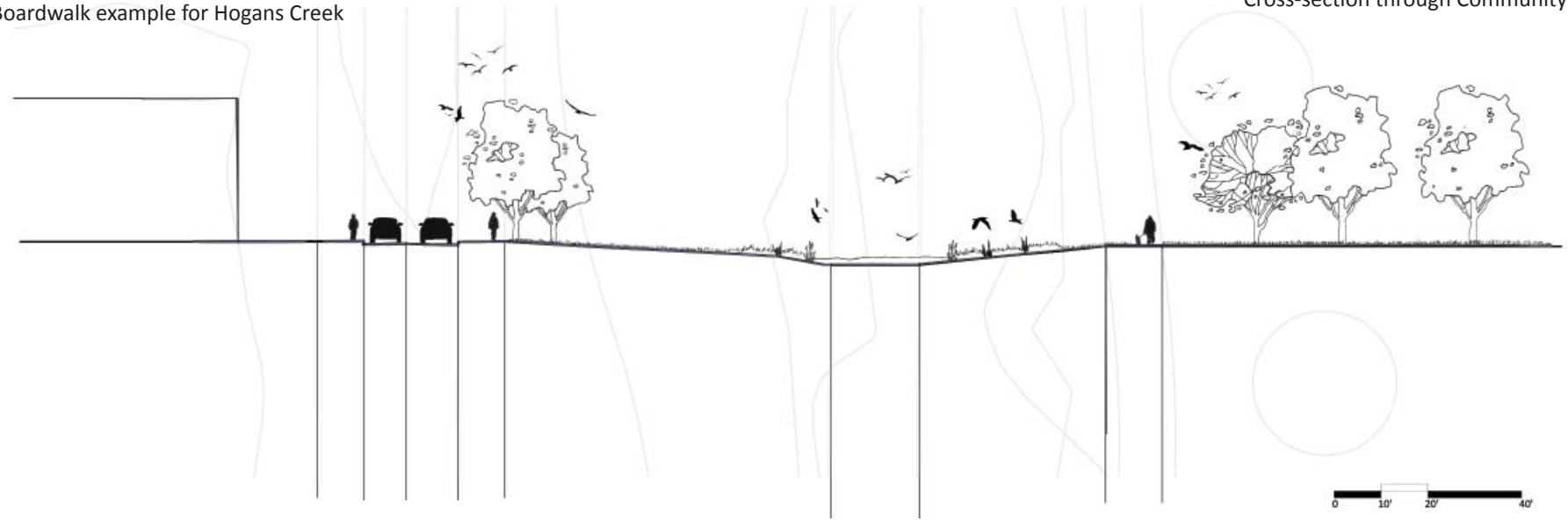


Boardwalk example for Hogans Creek

Vegetated edge for Hogans Creek

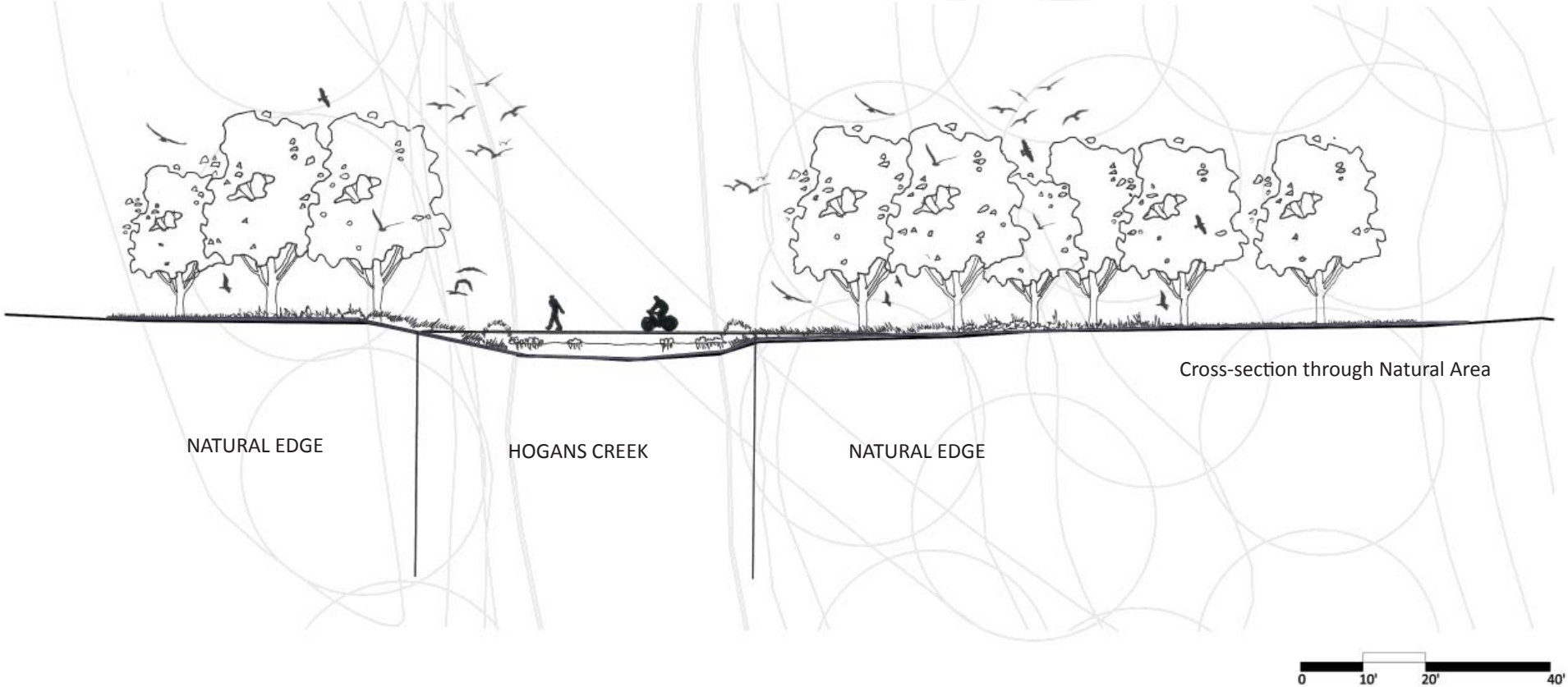
Cross-section through Community Hub Wetland Area

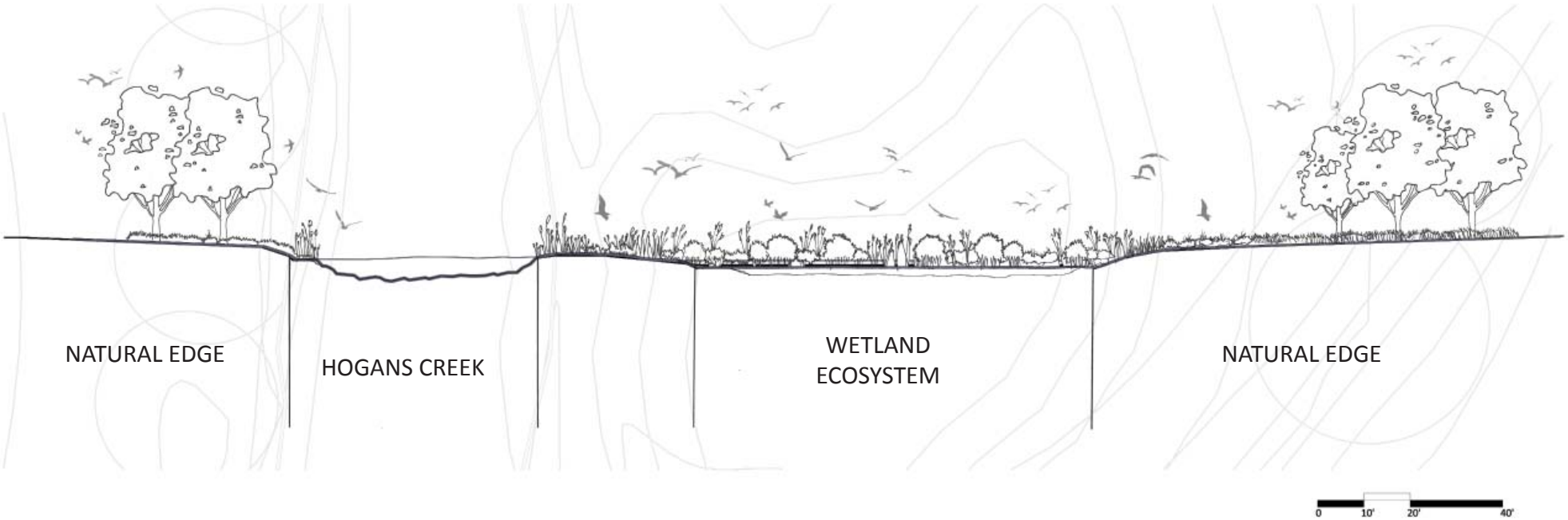
Cross-section through Community Hub




BEFORE


AFTER


NATURAL EDGE
HOGANS CREEK
NATURAL EDGE
Cross-section through Natural Area
0
10'
20'
40'



CONCLUSION:

What does this mean for downtown Jacksonville?

What does this mean for Hogans Creek?