



City of New Orleans Gentilly Resilience District

City of New Orleans

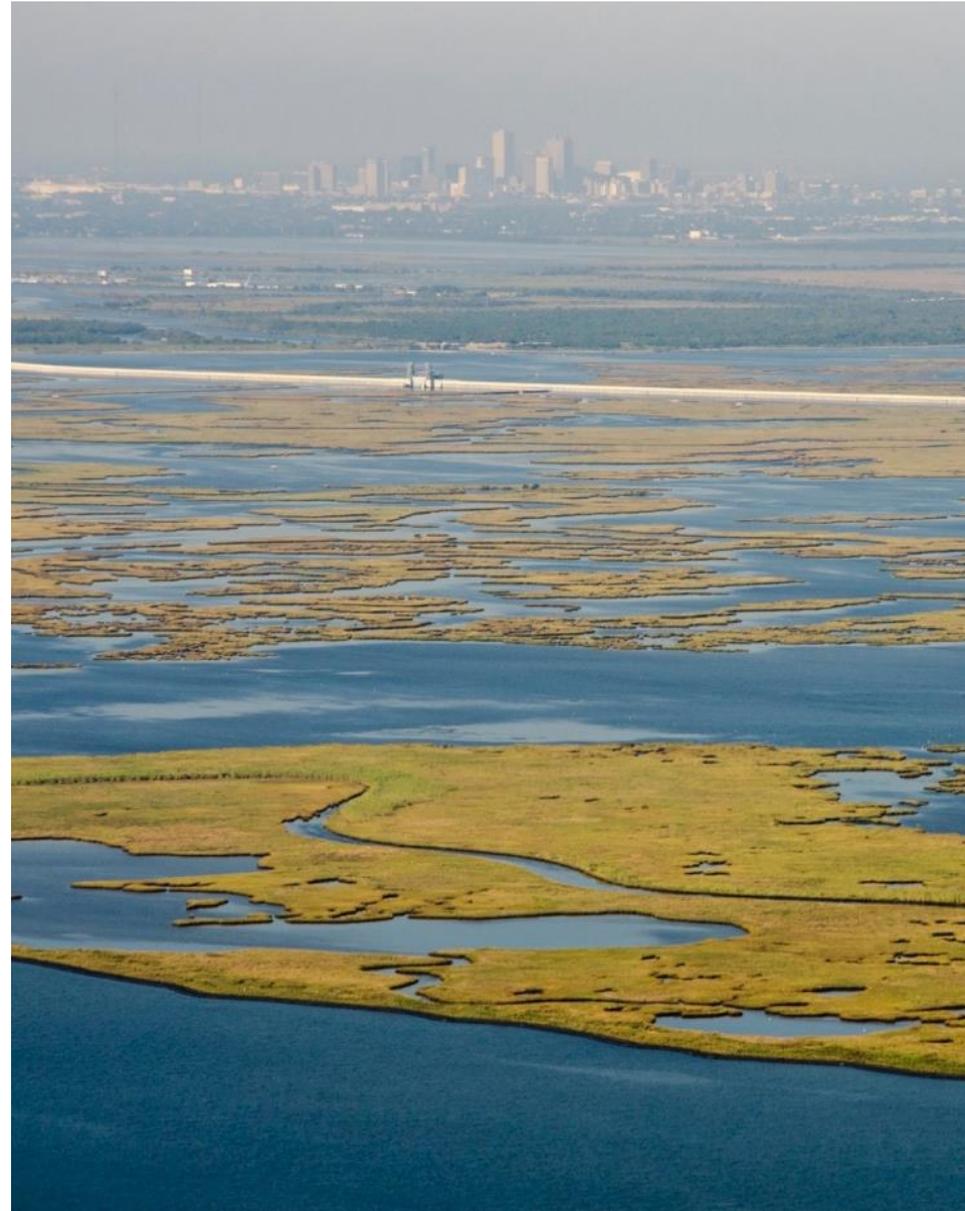
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Stormwater Management

Surrounded by water and protected by levees, New Orleans collects stormwater in an underground drainage system and then pumps water out. As a 300-year old city, most of the land is developed. Short of replacing all the City's pumps, how New Orleans manage our stormwater and flooding in the face of increasingly intense storms?

The answer lies in how we live with water – incorporating stormwater storage into our green spaces, streets, and in our homes and yards. Through both the Hazard Mitigation and Disaster Resilience programs, the City is using green infrastructure to manage flooding and support public health.



FEMA Hazard Mitigation

Proportional to a City's total award after a disaster, FEMA makes funding available for Hazard Mitigation – funding to prevent damage from future disasters. These projects must also show a 1:1 benefit to cost ratio. All costs to design and build project must be less than the predicted cost of future damage if the project was not built. These awards address different types of risk:

- Stormwater Management
- Home Elevation
- Wind Retrofits for structure hardening.

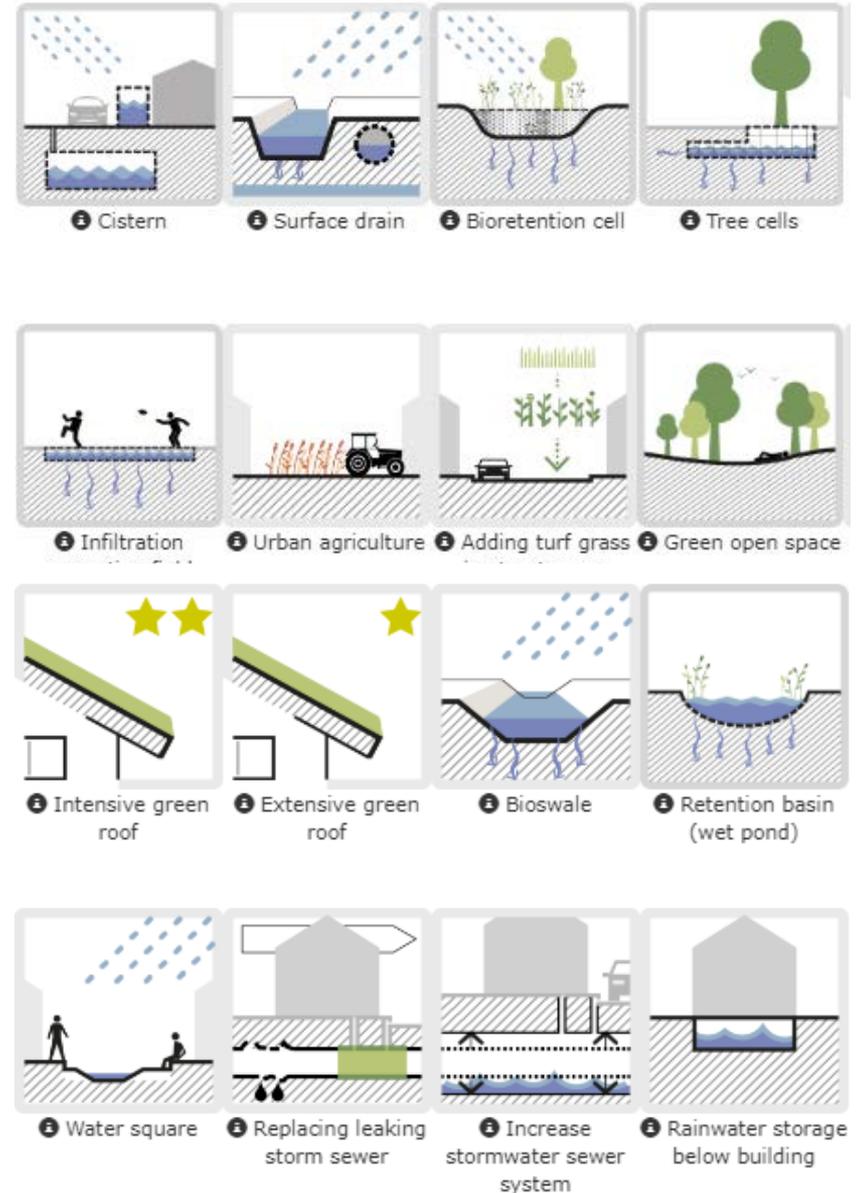


Types of Green Infrastructure



Solutions for Streets, Parks and Homes

- Stormwater Lots and Parks
 - Pontilly Stormwater Network
 - St. Anthony Green Streets
- Pervious Pavement
 - Mirabeau Water Garden
- Bioswales
 - St. Anthony Green Streets
 - St. Bernard Neighborhood
- Rain Gardens
 - Community Adaptation Program
- Retention Basin
 - Mirabeau Water Garden
 - Blue and Green Corridors
- Underground Storage
 - St. Bernard Neighborhood Storage



National Disaster Resilience Competition

New Orleans was awarded \$141M to establish the first-ever Resilience District with several integrated initiatives that will turn Gentilly into a national model for retrofitting post-war suburban neighborhoods into resilient, safe, and equitable communities of opportunity.

Initiatives include planning, community engagement, government policies, and construction projects

- Transforming water from a threat into an asset in the public realm,
- Adapting private property for stormwater management,
- Enhancing energy grid reliability, and
- Training residents in water infrastructure.

Performance of the District is measured in the acres of green space constructed, numbers of households within 0.5 miles of improved public spaces, number of jobs created, number of people trained, and number of permits for new construction.



Gentilly Resilience District

The District will be unified by stormwater management projects, placemaking efforts, community engagement, financial planning, and public health research.

- Seven Urban Water projects
 - Mirabeau Water Garden
 - St. Bernard Neighborhood Campus
 - Blue and Green Corridors
 - St. Anthony Green Streets
 - Milne Campus
- Placemaking
 - Orleans Canal Placemaking
 - Dwyer Canal Placemaking
- Planning and Research
 - District Planning
 - Technical Assistance
 - Financial Planning
 - Species Monitoring
 - Repetitive Loss Area Analysis
 - Climate Smart Cities Tool



Residents touring Pontchartrain Park, the city's first subdivision for African-American residents, 1955. Photo: New Orleans Library

Gentilly Resilience District: Urban Water & Community Adaptation Activities



Parks & Playgrounds



Vacant Lots



Streets & Corridors



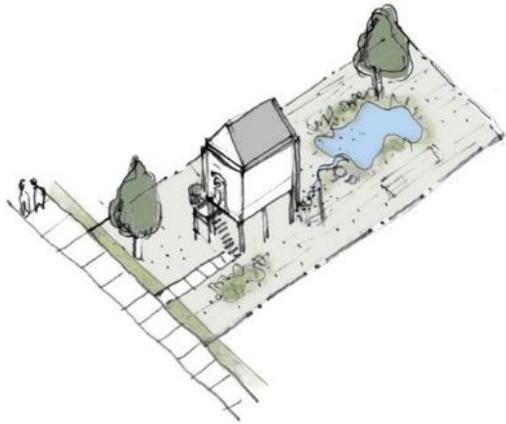
Open Spaces



Home & Property Improvements

Why a District?

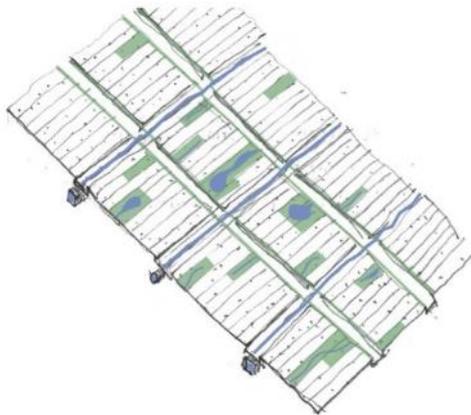
- Focus interventions geographically: impact visible and largest collective benefit
- Replicability: scalable model for the rest of the city, region, and world
- Projects developed at multiple scales:



1. House and Garden



2. Block



3. Neighborhood



4. District

Design for Multiple Benefits and Equitable Outcomes



Urban Water Projects



Supporting Leverage Projects

The Gentilly Resilience District includes FEMA Hazard Mitigation (HMGP) projects as supporting leverage. Proportional to a City's total award after a disaster, FEMA makes funding available for Hazard Mitigation – funding to prevent damage from future disasters. These projects must also show a 1:1 benefit to cost ratio. All costs to design and build project must be less than the predicted cost of future damage if the project was not built. These awards address different types of risk:

- Stormwater Management
- Home Elevation
- Wind Retrofits for Structure Hardening

The leverage HMGP projects for the Gentilly Resilience District are Pontilly Stormwater Management, SWBNO Power House Upgrades, and Mirabeau Water Garden.



Supporting Leverage Projects

The Gentilly Resilience District includes FEMA Public Assistance funds as supporting leverage. This funding includes roadway repairs, and utility replacements. These projects replace infrastructure damaged in a disaster up to the level of service at the time of the disaster.

Improvements beyond the prior level of service are not funded by this program. To coordinate the roadway repairs and utility repairs, the Department of Public Works and SWBNO created the Joint Infrastructure Road Repair (JIRR) program. JIRR funds cover roadway resurfacing and utility replacements for some streets in Gentilly, following worksheets preapproved by FEMA.

The NDR projects with JIRR leverage are St. Anthony Green Streets, Blue and Green Corridors, and St. Bernard Neighborhood Campus.



Mirabeau Water Garden

The Mirabeau Water Garden is a public works project that will transform a 25-acre open site into a recreational and educational amenity that reduces flood risk. The land was donated to the City of New Orleans by the Congregation of St. Joseph for the enhancement of the neighborhood.



- **Project Goals**

- Divert and temporarily store up to 10 million gallons of water from street drainage pipes into a site detention pond to mitigate flooding
- Infiltrate water into the site's sand layer to allow organic soils to stabilize and limit subsidence
- Clean water of pollutants through a series of constructed filtration wetlands to improve water quality and allow visitor interaction
- Educational and recreational facilities and programming on sustainable water management and local ecology
- **Budget: \$16.6M HMGP; \$11.5M NDR**
- **Construction bid: QTR 1 2019**

Milne Campus: History of Serving Youth



Milne Campus

Enhances an existing historic site with green infrastructure features and recreational facilities that reduce the risk of flooding and subsidence in the surrounding neighborhood and further the site's existing mission of youth development.



- Project Goals
 - Improve stormwater management and reduce flood risk and subsidence
 - Enhance and add value to existing and future programs of the site, including NORDC, NOLA FOR LIFE, and water-focus education and economic opportunity activities, with a focus on youth programming.
 - Engage the city's youth, especially teens, in important topics for the city's future, including: water management, environmental stewardship, community development, and economic opportunity.
- Estimated Construction Budget: \$6.04M
- Construction Bid: July 2020

Pontilly Project History

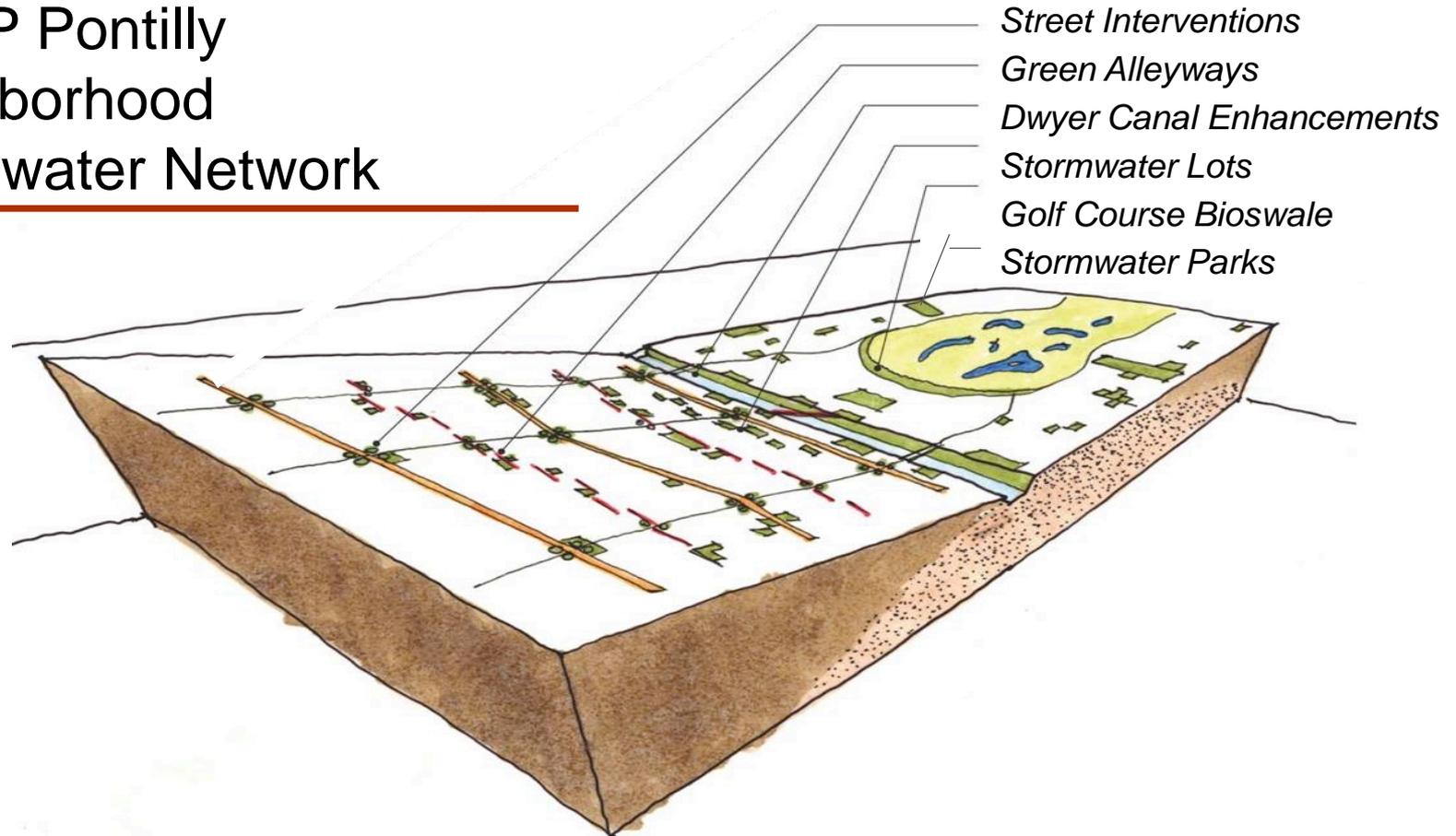
Dwyer Canal acts as barrier between two historically segregated neighborhoods developed in the 1950s: Pontchartrain Park to the north and Gentilly Woods to the south



Pontchartrain Park and Gentilly Woods residents approached NORA in 2008 with a vision for a redesign of the Dwyer Canal and other spaces in the neighborhood to reduce flooding and to make the community more beautiful and walkable.



HMGP Pontilly Neighborhood Stormwater Network



Drainage improvements to the Dwyer Canal combined with green infrastructure features at vacant lots, streets, and alleyways designed to capture stormwater and beautify the Pontchartrain Park and Gentilly Woods neighborhoods

- Budget: \$13.5M FEMA HMGP Leverage Activity
- HMGP Construction start: March 2019

HUD NDR Dwyer Canal Public Space Improvements

Public space and placemaking amenities along and near the Dwyer Canal that connect the Gentilly Woods and Pontchartrain Park neighborhoods and enhance the 100% designed FEMA-funded green infrastructure and drainage improvements



- Project Goals
 - Improve walkability, connectivity, and recreational opportunities within and across the Pontchartrain Park and Gentilly Woods neighborhoods
 - Provide spaces for social cohesion and expressions of neighborhood identity and history
 - Promote environmental learning and education of green infrastructure
 - Beautify the Dwyer Canal and adjacent neighborhoods
- Estimated Construction Budget: \$2.1M NDR
- Construction Bid: March 2020

Blue-Green Corridors

Transforms major boulevards in Gentilly into a series of blue and green corridors that reduce flood risk and subsidence while facilitating safe and comfortable spaces to travel and recreate. This project serves as the framework that connects other Gentilly Resilience District projects, setting an innovative model for urban adaptation practices in delta communities.



- Project Goals
 - Increase stormwater storage and available green space
 - Increase high quality multimodal facilities in and across neighborhoods
 - Create new and enhanced civic spaces
 - Enrich social cohesion through community engagement, awareness, and participation
 - Catalyze neighborhood investment and economic vitality
 - Forge a distinct identity for Gentilly
- Budget: \$45.2 M NDR

St. Anthony Green Streets

Seeks to establish a new standard for neighborhood streets and neighborhood parks that incorporates stormwater management as a key component. With this project, the City will improve upon existing strategies implemented across New Orleans and test new strategies for block-level environmental adaptation across the city.



- Project Goals
 - Improve stormwater management and reduce flood risk and subsidence
 - Empower residents to participate in adapting their block and neighborhood parks to manage water and build resilience.
 - Enhance social cohesion and community well-being
 - Develop a replicable model for block-by-block strategies for stormwater management and community resilience across the city.
- Budget: \$21.1M NDR, \$10M FEMA PA Leverage
- Construction bid: January 2020

St. Bernard Campus

Enhances an existing academic site with green infrastructure features and recreational facilities that reduce the risk of flooding and subsidence in the surrounding neighborhood. Improves the connectivity between social service facilities with green infrastructure and stormwater management features.

- Project Goals
 - Improve stormwater management and reduce flood risk
 - Create new and enhanced recreational space – examples may include plazas, seating areas, multi-purpose places, and play areas
 - Improve access and neighborhood connections to Bayou St. John and City
 - Promote environmental and health education opportunities
- Budget: \$11.3 NDR
- Construction bid: May 2020



Dillard Wetlands

Enhance a 27-acre urban forest by removing invasive species and routing stormwater through wetland to enhance water quality. This second growth forest, cut in the 1940s, contains some live oaks 100 years in age but has been compromised by invasive species such as Chinese tallow, reducing its ability to support native species.



Photo: Richard Campanella

- Project Goals
 - Detain and filter stormwater from surrounding neighborhood
 - Create outdoor classroom and recreational asset
 - Protect urban forest and reduce invasive and vector species
- Budget: \$5.9M NDR
- Construction bid: August 2020

Community Adaptation Program

Adds stormwater management features to private residences through grants managed by the New Orleans Redevelopment Agency (NORA). Residents choose the feature (rain gardens, permeable surfacing, rain barrels, to be installed and the contractor to perform the work. NORA qualifies the contractors and submits invoices for reimbursement.

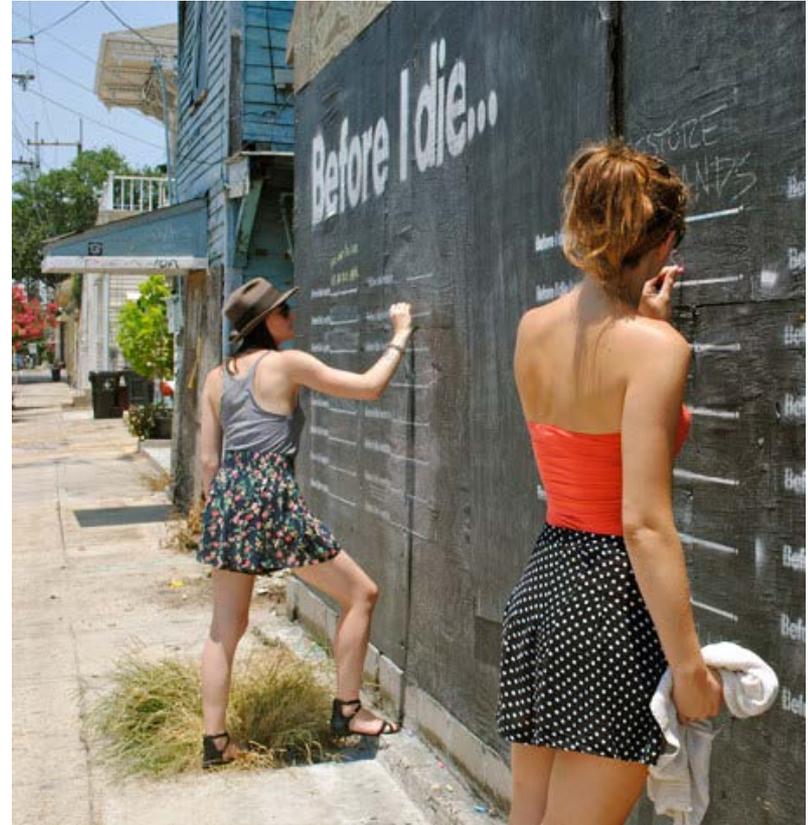


- Project Goals
 - Divert and detain stormwater runoff on over 200 properties with an average grant award between \$10,000 and \$25,000
 - Involve residents in stormwater management
 - Protect and beautify the home of low- to moderate-income individuals
- Budget: \$5.9M NDR
- Construction bid: May 2019

London Canal Placemaking

Placemaking is the improvement or construction of public space assets such as parks, benches, foundations, or public art, creating opportunities for residents who would not typically interact with each other to meet, ex. a walking path may be used by both retirees and young mothers with children.

- Arts Council London Canal Placemaking
 - Engage New Orleans youth in the design and selection of public art
 - Add public art to London Canal and other drainage features to enhance resident's understanding of flood risk and "living with water"



Planning and Project Delivery

- Mosquito and Bird Surveys - Tulane University
- Repetitive Loss Area Analysis – University of New Orleans
- District Planning –Waggoner & Ball
- Technical Guidance – GCR & Associates
 - HR&A Associates – Financial Plan for District
- Climate Analysis Tools- Trust for Public Land





Questions?

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