

David Waggoner

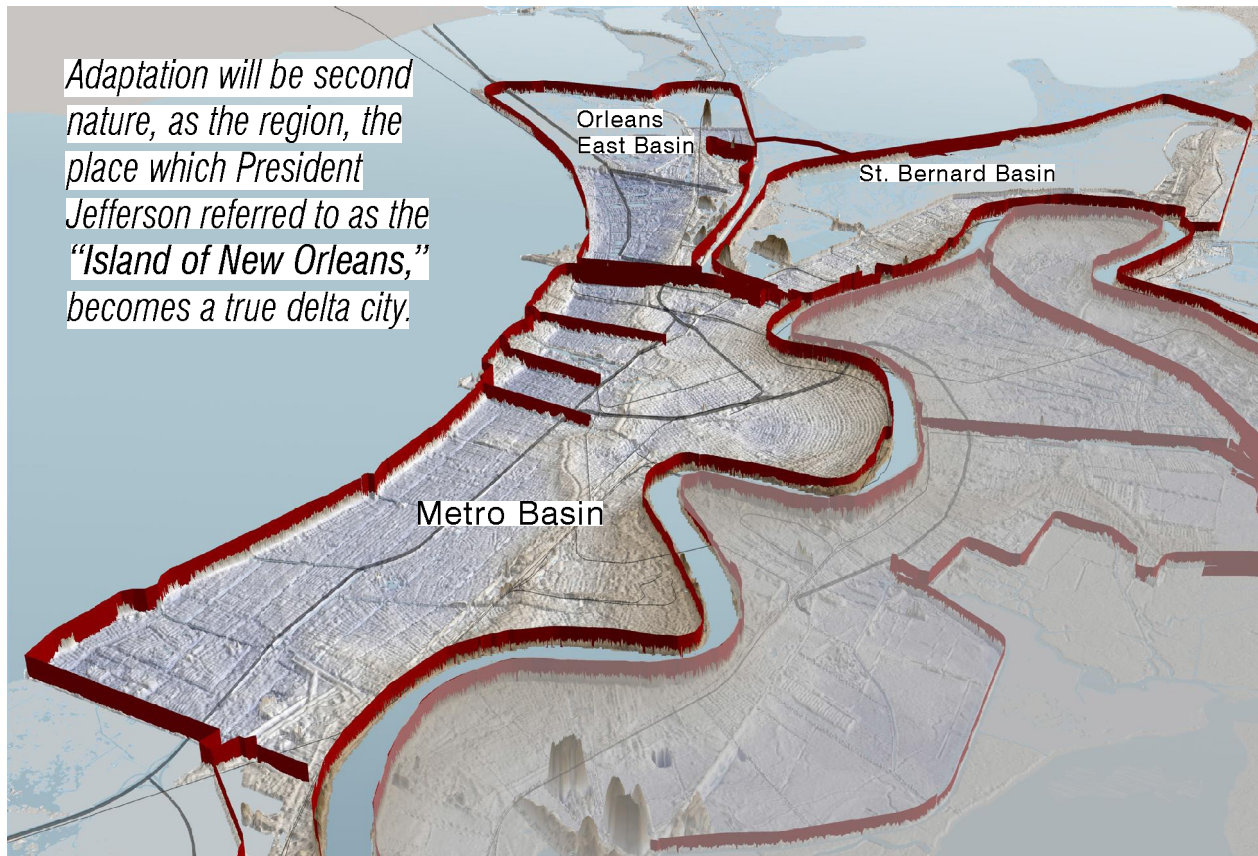
Waggoner & Ball Architects

GREEN SOLUTIONS FOR RESILIENT DELTA CITIES

LESSONS FROM LOUISIANA

GREATER NEW ORLEANS URBAN WATER PLAN
LIVING IN A BASIN

Adaptation will be second nature, as the region, the place which President Jefferson referred to as the "Island of New Orleans," becomes a true delta city.



NEW ORLEANS
LINES OF DEFENSE



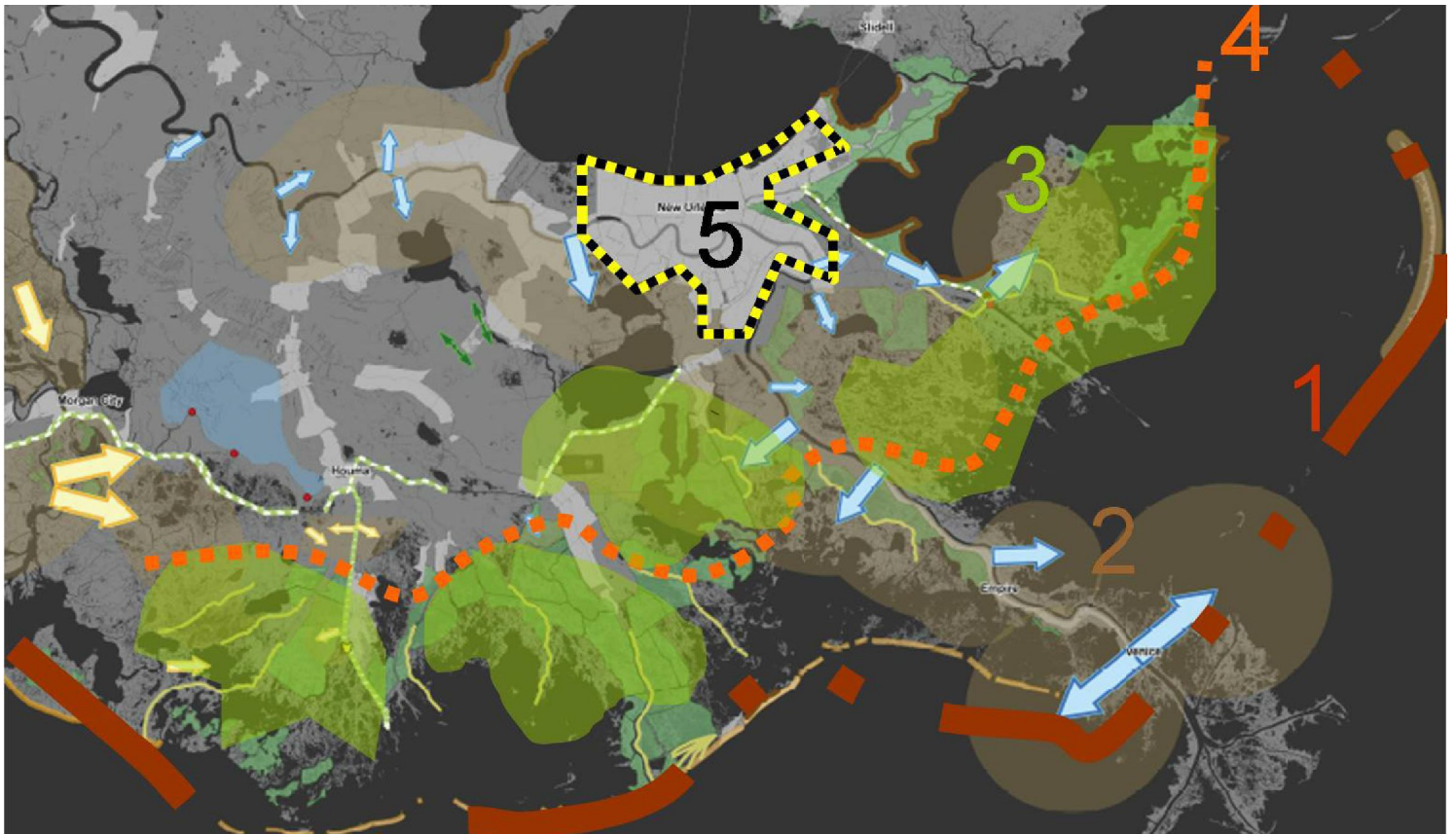
NEW ORLEANS
LINES OF DEFENSE



NEW ORLEANS
LINES OF DEFENSE



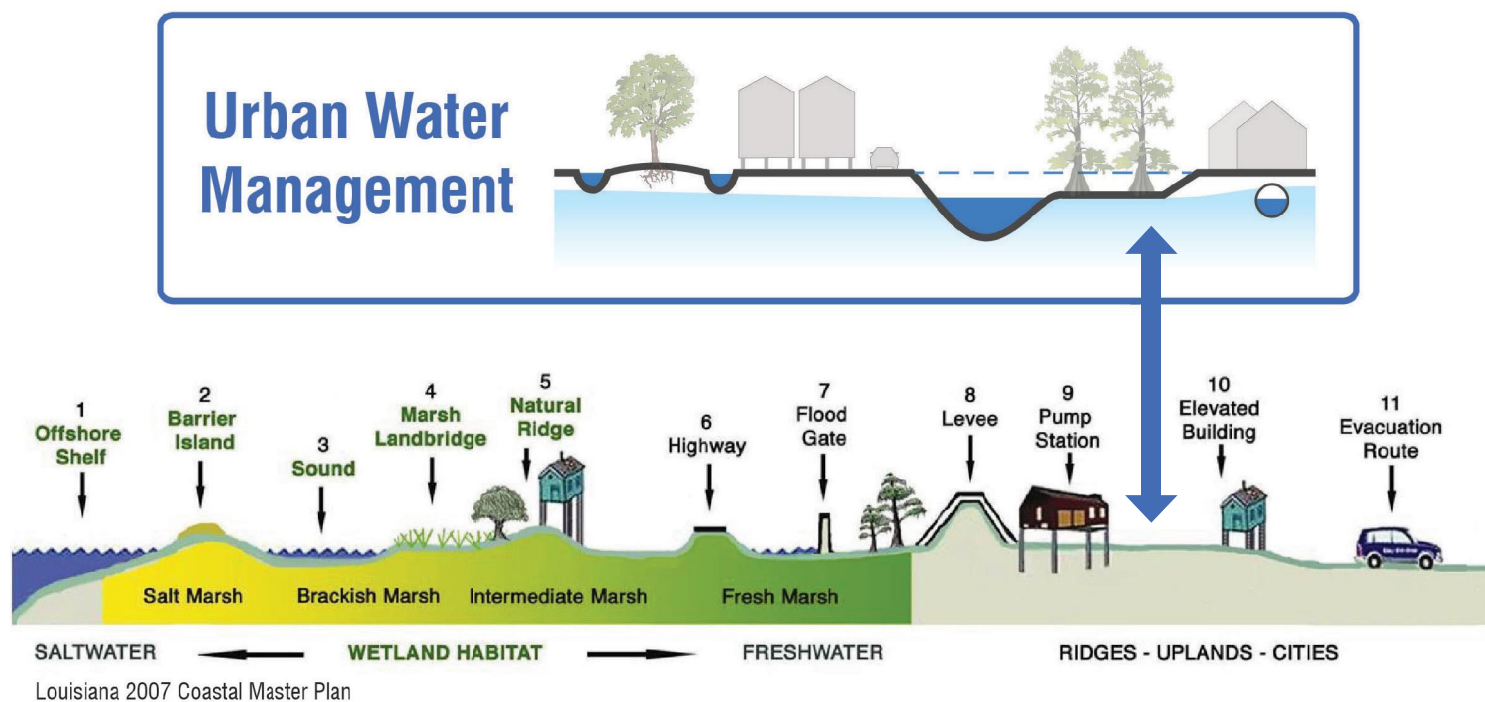
DUTCH DIALOGUES
LIVING LINES OF DEFENSE



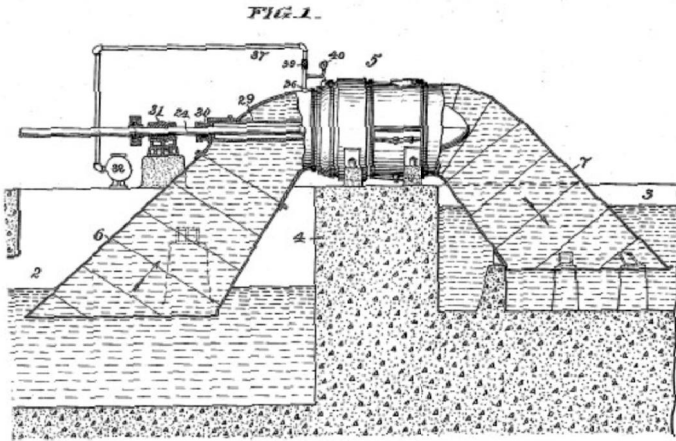
LINES OF DEFENSE
ADAPTABLE



NEW ORLEANS
MULTIPLE LINES OF DEFENSE



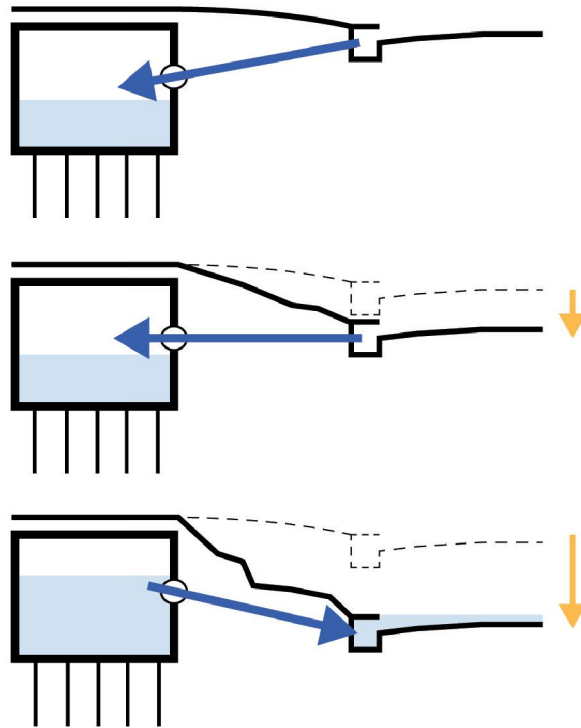
NEW ORLEANS
A. BALDWIN WOOD PUMP



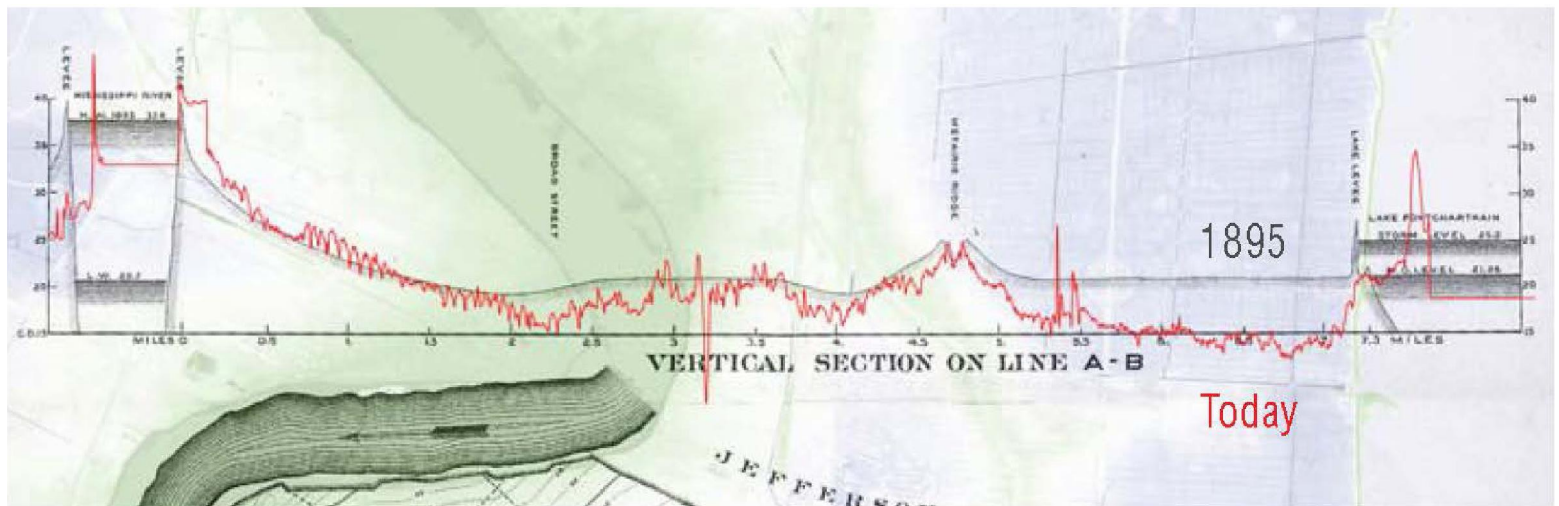
NEW ORLEANS
DRAINAGE SYSTEM



NEW ORLEANS
SUBSIDENCE OVER TIME



NEW ORLEANS
SUBSIDENCE OVER TIME

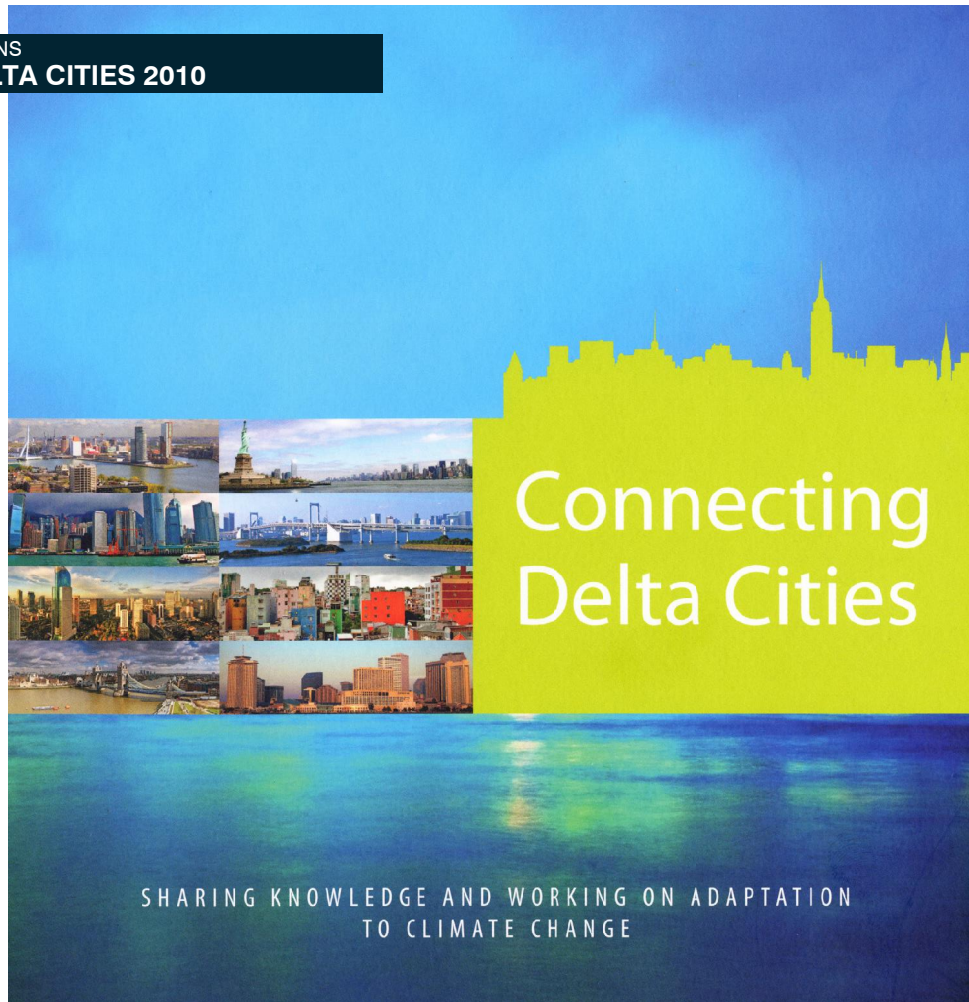


ARCHITECTURE
MADAME JOHN'S LEGACY



CULTURE
MARDI GRAS PARADE

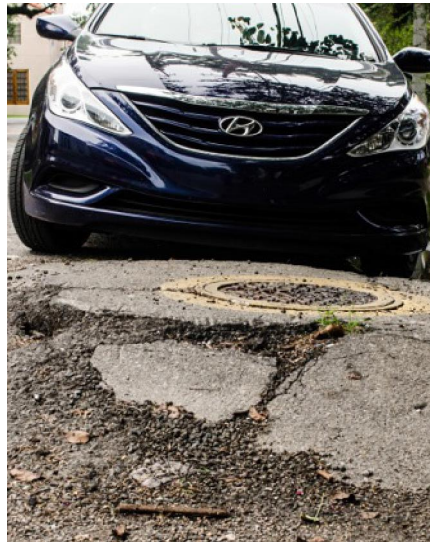




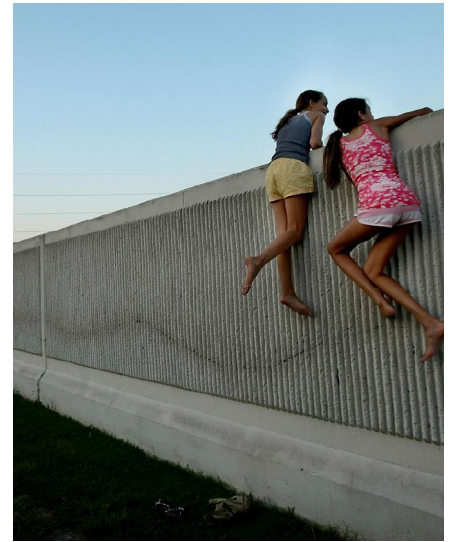
GREATER NEW ORLEANS URBAN WATER PLAN
PROBLEMS IDENTIFIED



1 Drainage systems are regularly overwhelmed by too much runoff, causing flooding

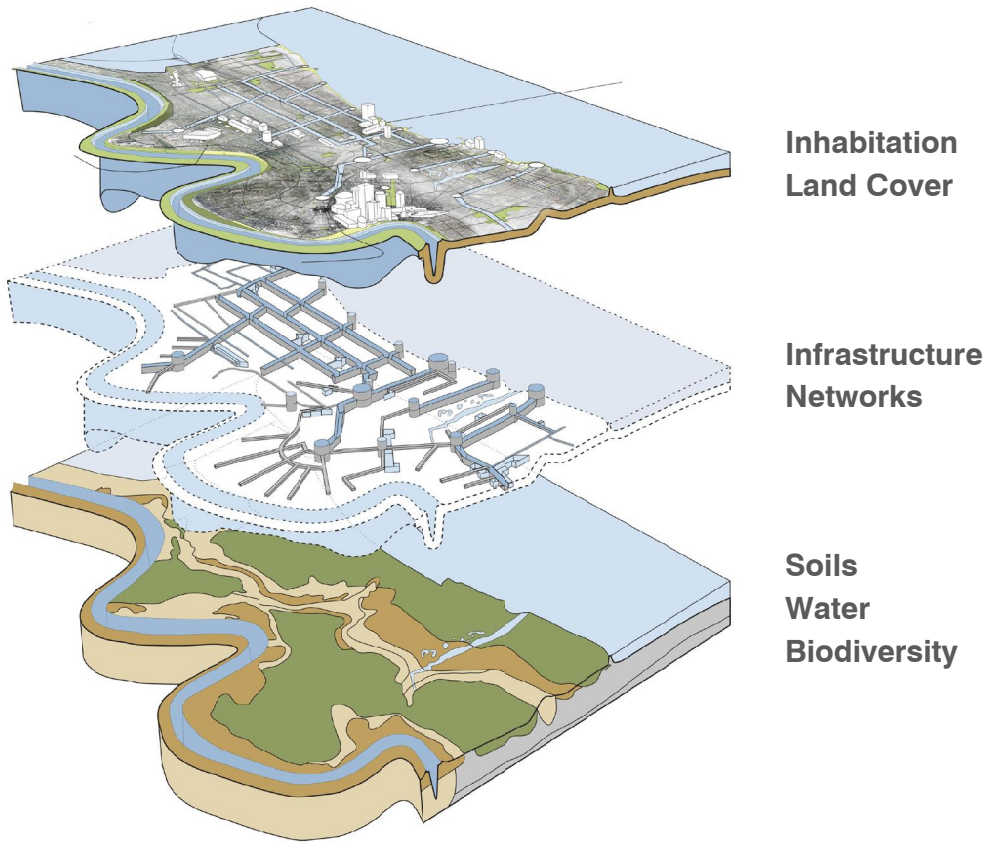


2 Excessive pumping causes the land to sink by lowering groundwater levels



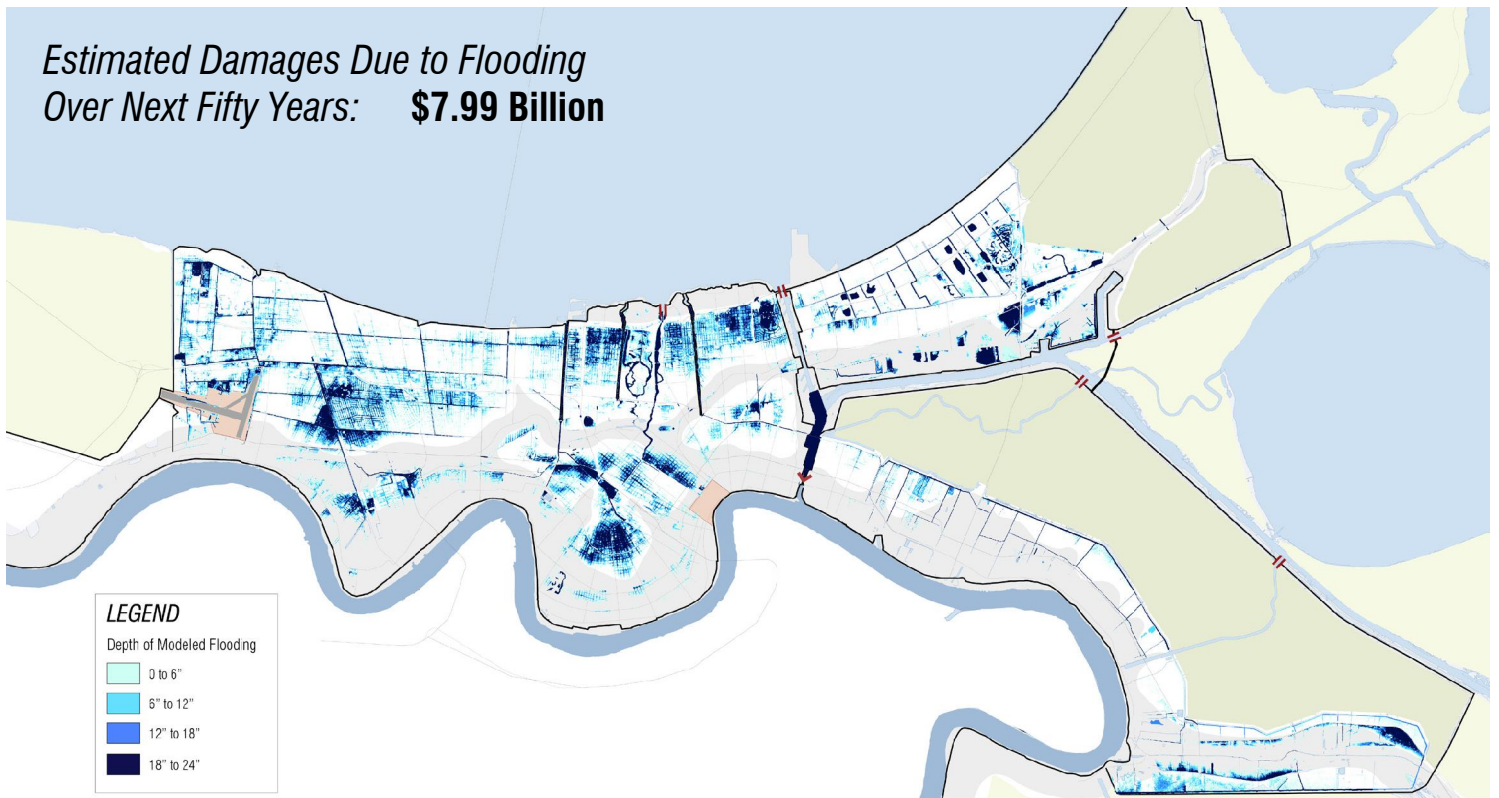
3 Critical water assets are wasted, hidden behind walls, buried underground, or pumped out of the city

LIVING WITH WATER
PLANNING APPROACH



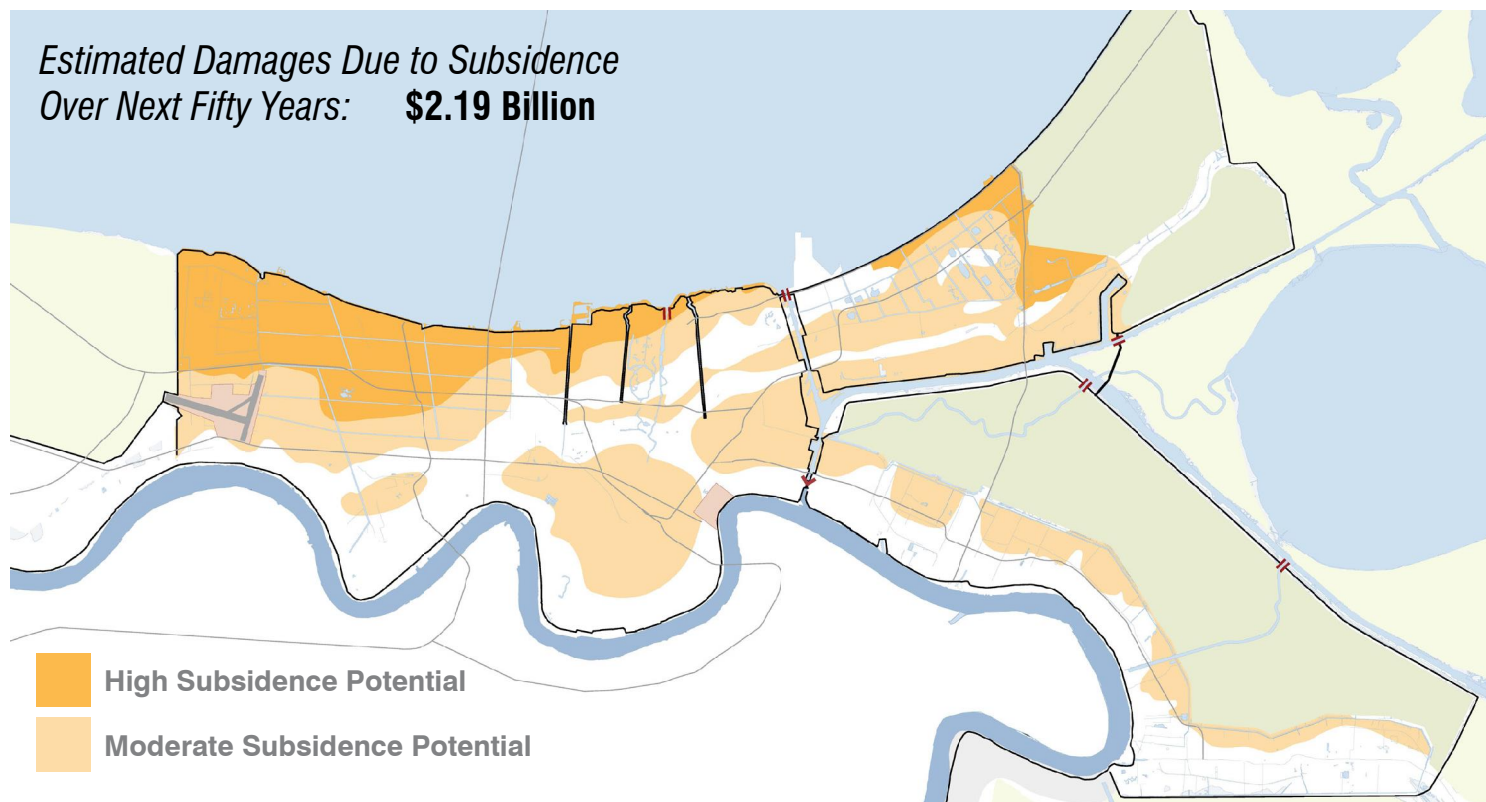
GREATER NEW ORLEANS URBAN WATER PLAN
AVOIDABLE COSTS: FLOODING

*Estimated Damages Due to Flooding
Over Next Fifty Years: **\$7.99 Billion***

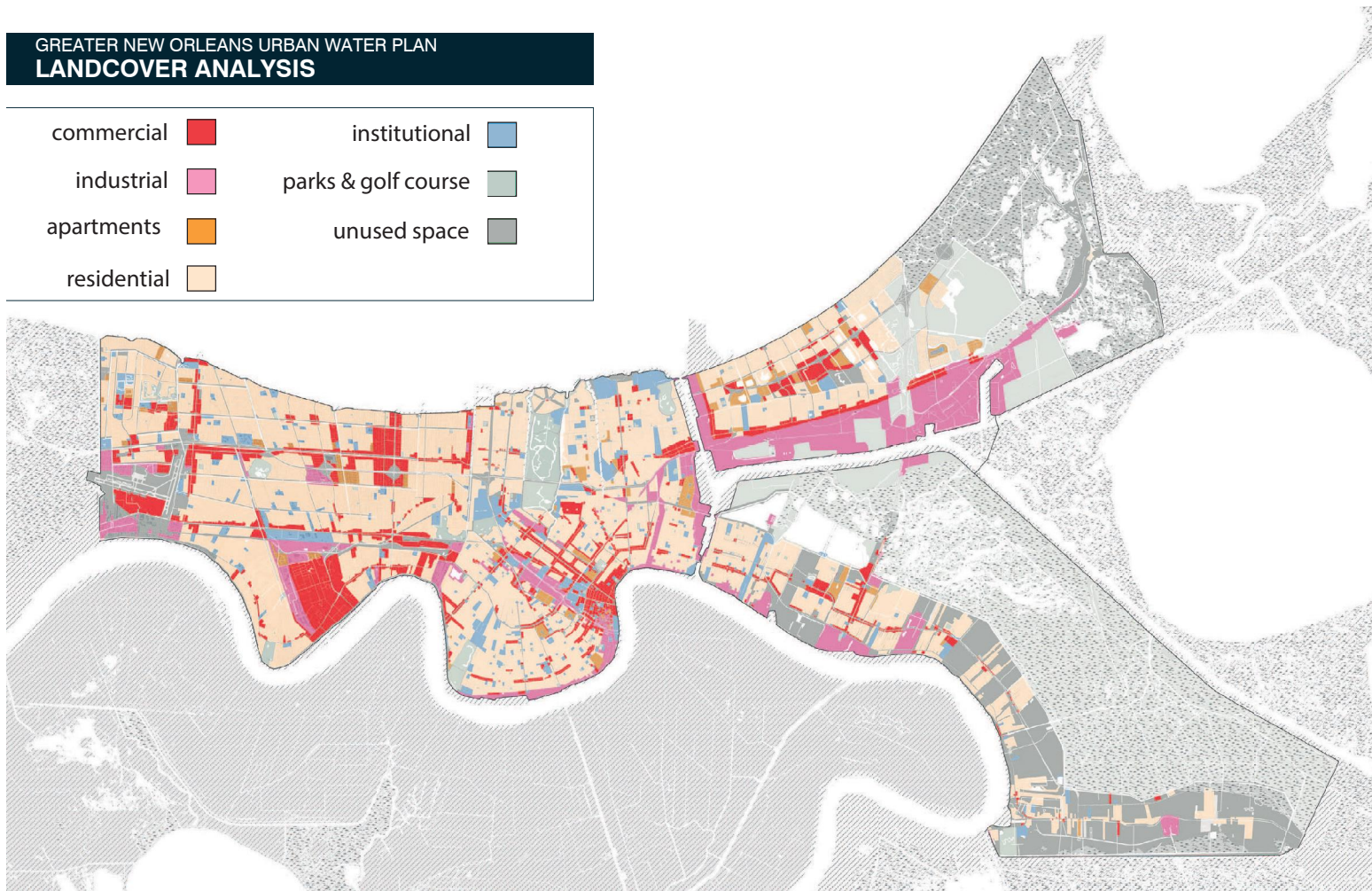


GREATER NEW ORLEANS URBAN WATER PLAN
AVOIDABLE COSTS: SUBSIDENCE

*Estimated Damages Due to Subsidence
Over Next Fifty Years: **\$2.19 Billion***



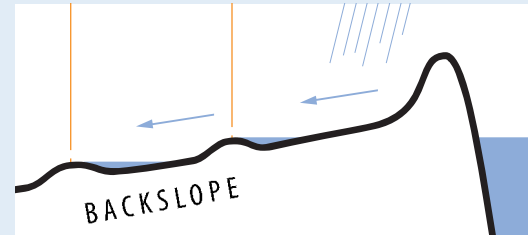
GREATER NEW ORLEANS URBAN WATER PLAN
LANDCOVER ANALYSIS



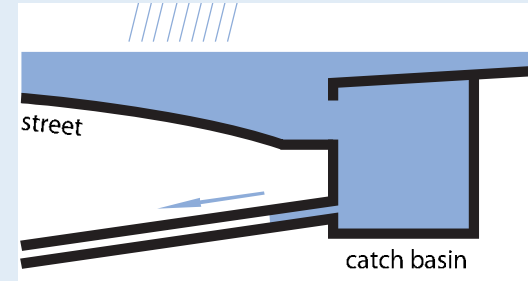


Topographic conditions and point sources

Street flooding results from a combination of topographical conditions and overwhelmed drainage systems.

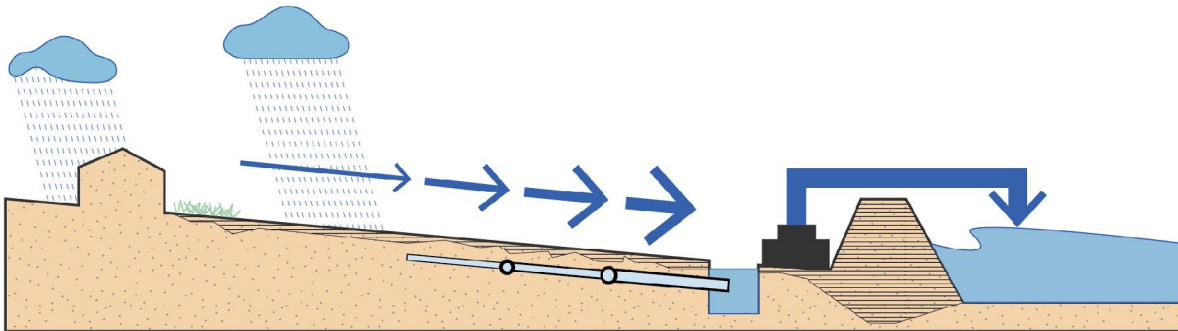


Ridges, created by features like streetcar lines, railways, and roadways, trap runoff that flows from areas upslope.

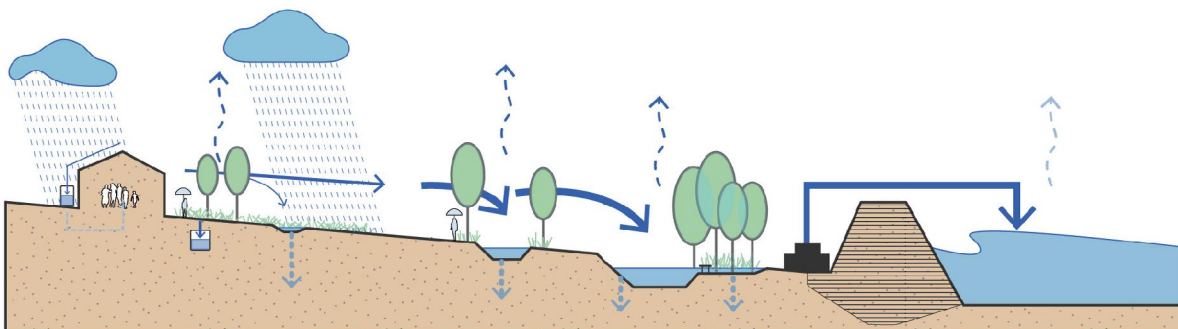


Water also backs up where catch basins are clogged or outflow pipes are undersized ("point sources").

Replacing pipes and drains with larger pipes and drains can solve some flooding problems, but these solutions are far more expensive than retention features and other measures to reduce runoff, and they yield few corollary benefits.



Pipe - Pump - Drain

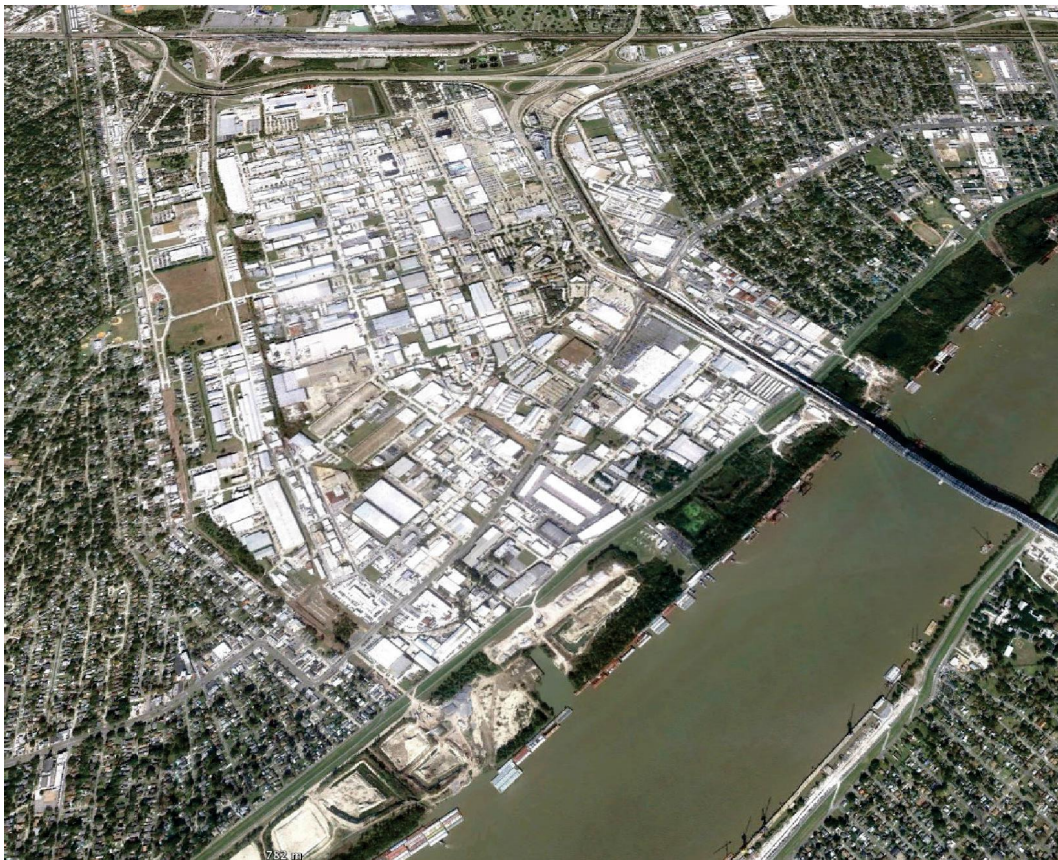


Slow

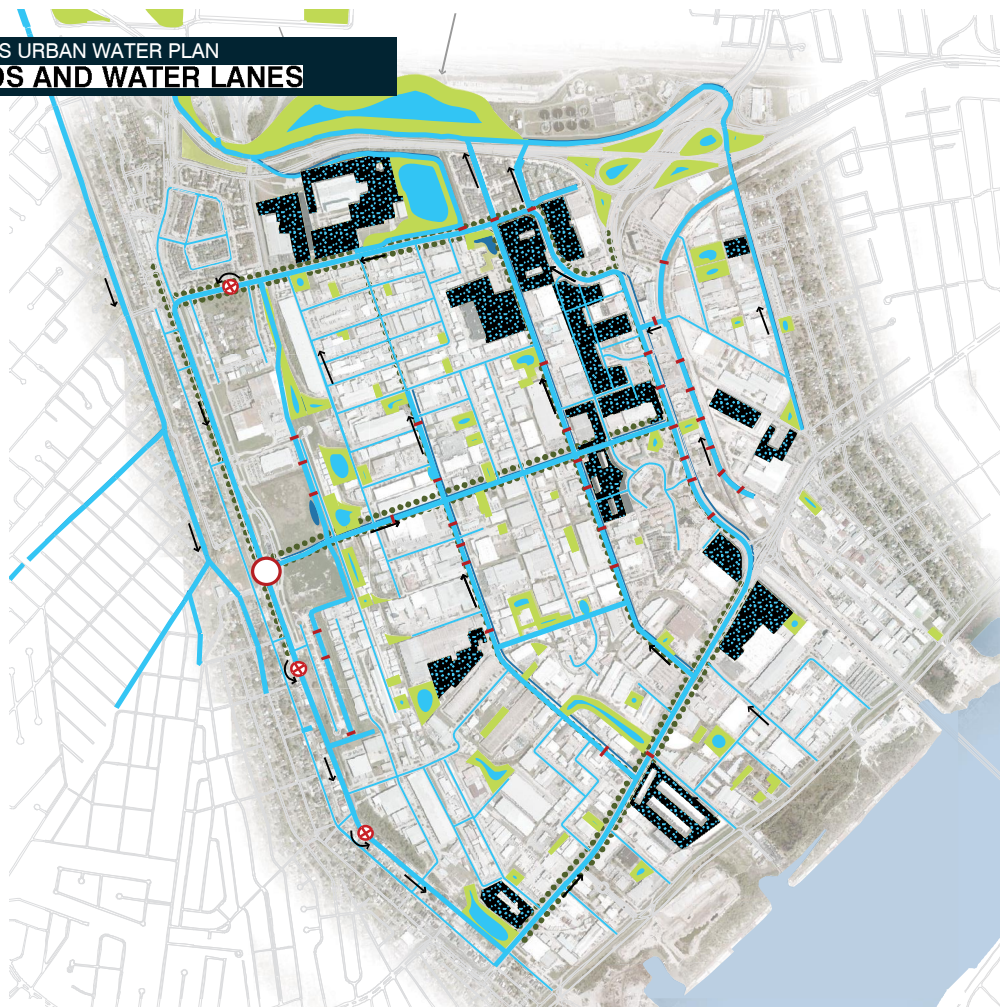
Store

Drain

GREATER NEW ORLEANS URBAN WATER PLAN
LANDING ON THE LILY PAD



GREATER NEW ORLEANS URBAN WATER PLAN
ELMWOOD FIELDS AND WATER LANES



GREATER NEW ORLEANS URBAN WATER PLAN
ELMWOOD FIELDS AND WATER LANES



GREATER NEW ORLEANS URBAN WATER PLAN
ELMWOOD FIELDS AND WATER LANES



GREATER NEW ORLEANS URBAN WATER PLAN
ELMWOOD FIELDS AND WATER LANES

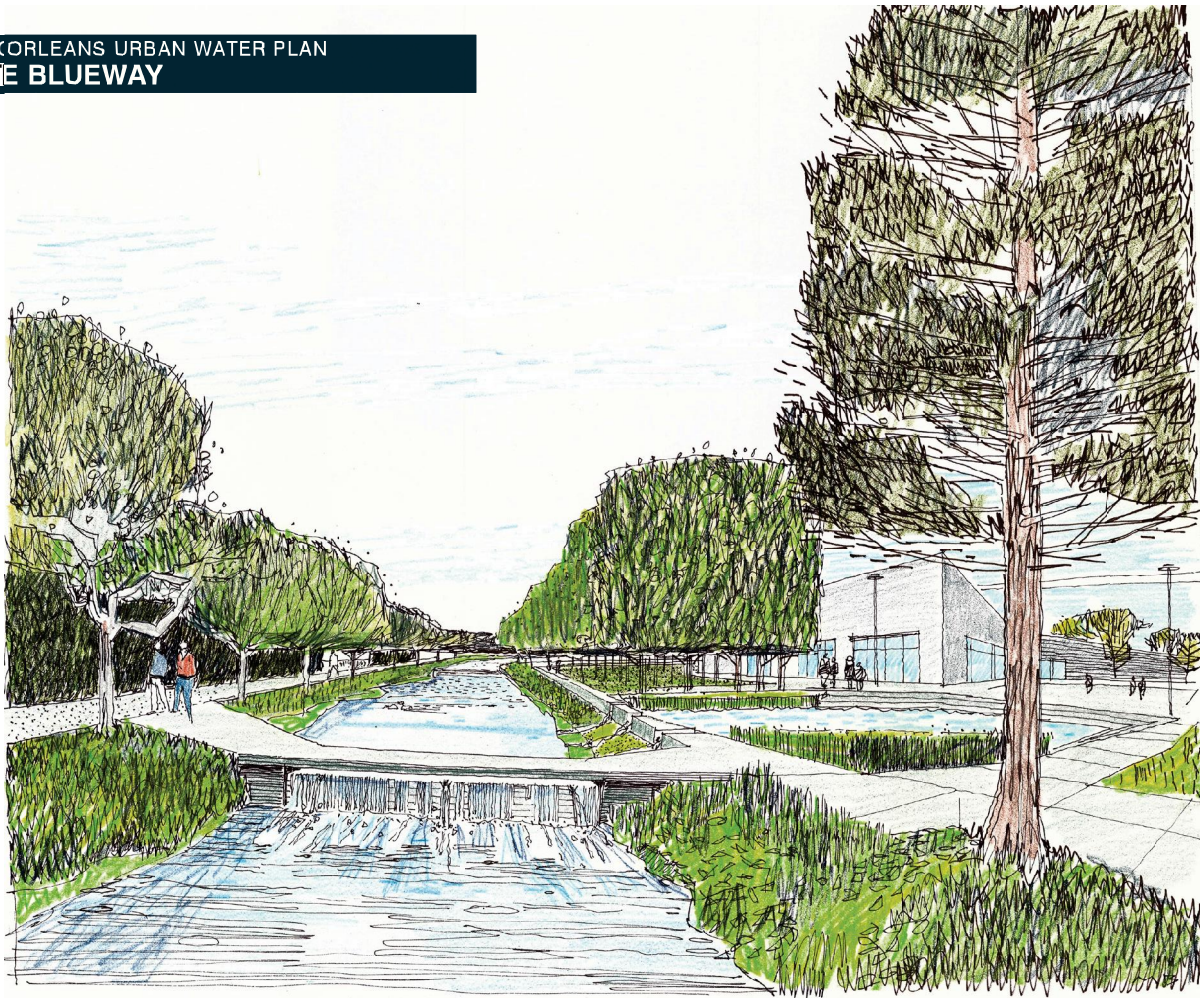


GREATER NEW ORLEANS URBAN WATER PLAN
LOWLAND CANALS: TYPICAL CONDITION

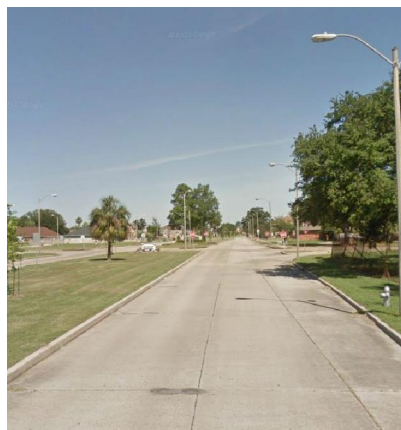




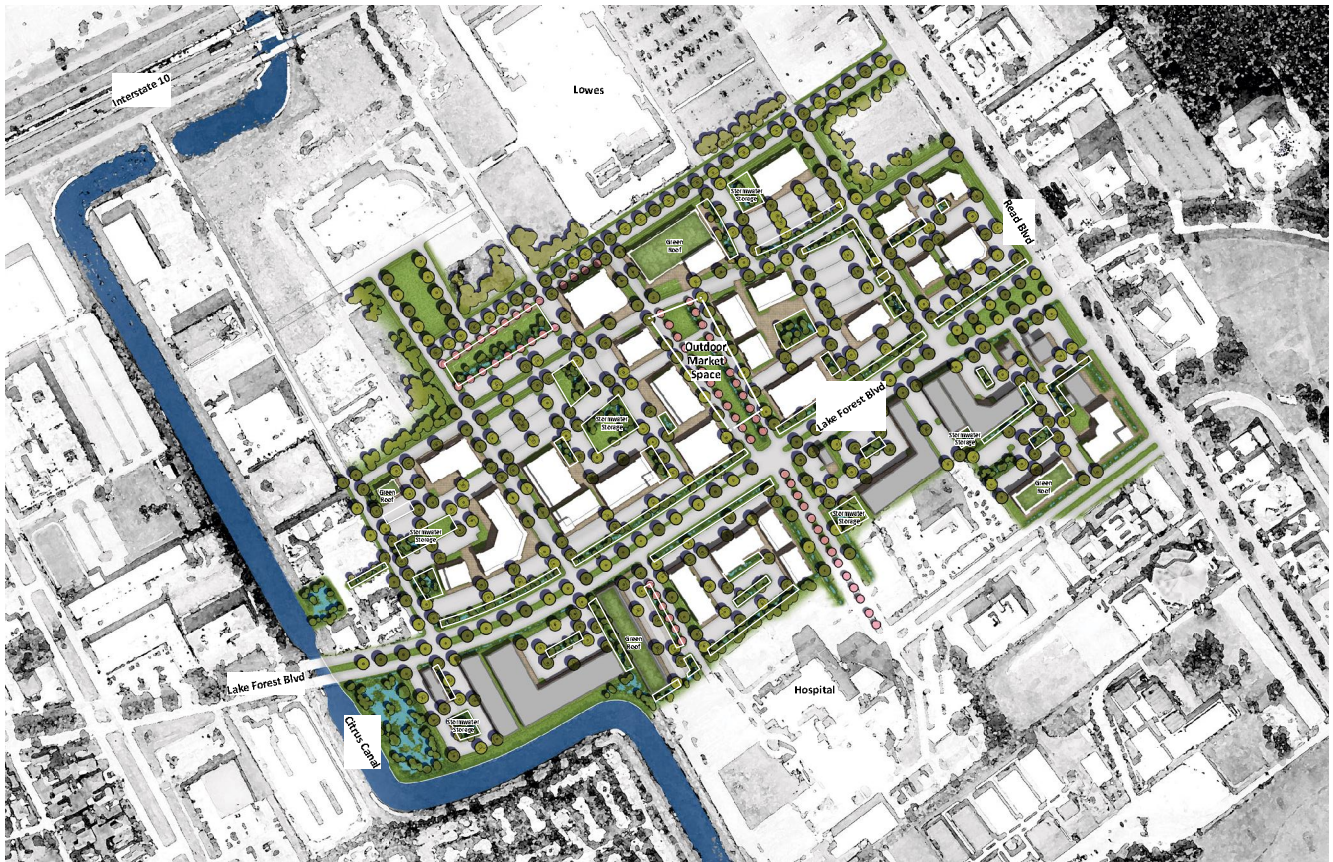
GREATER NEW ORLEANS URBAN WATER PLAN
CHALMETTE BLUEWAY



GREATER NEW ORLEANS URBAN WATER PLAN
NEW ORLEANS EAST EXISTING



GREATER NEW ORLEANS URBAN WATER PLAN
NEW ORLEANS EAST



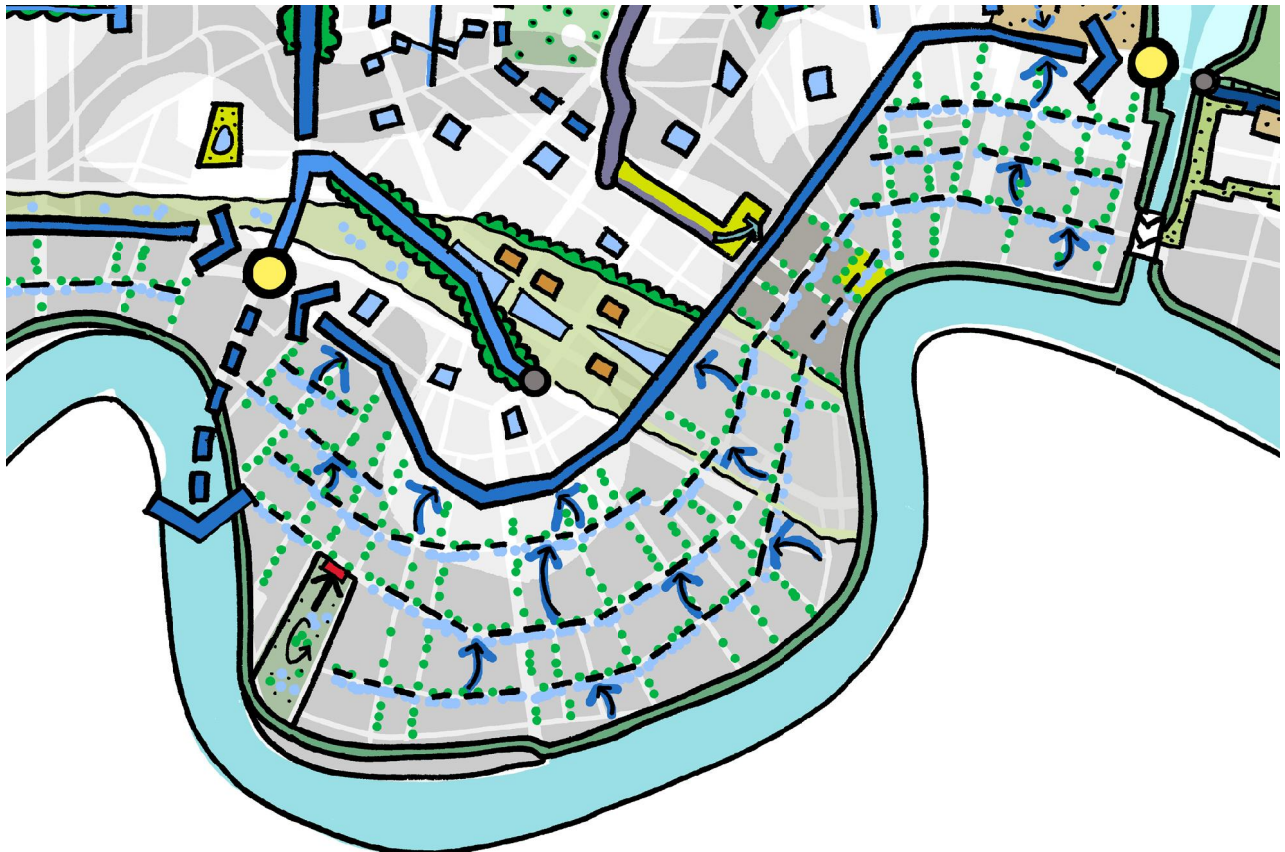
GREATER NEW ORLEANS URBAN WATER PLAN
NEW ORLEANS EAST



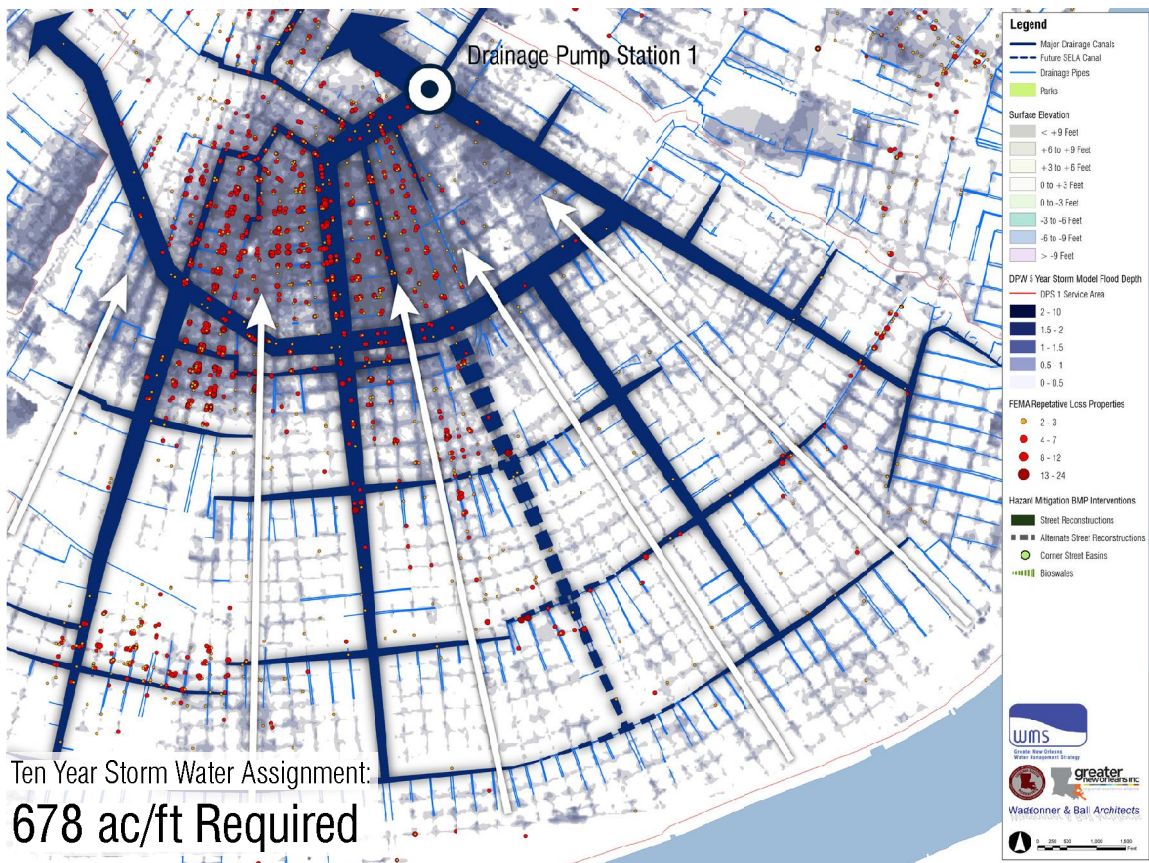
GREATER NEW ORLEANS URBAN WATER PLAN
NEW ORLEANS EAST



GREATER NEW ORLEANS URBAN WATER PLAN
BACKSLOPE STREETS



GREATER NEW ORLEANS URBAN WATER PLAN
BACKSLOPE STREETS



GREATER NEW ORLEANS URBAN WATER PLAN
BACKSLOPE STREETS



GREATER NEW ORLEANS URBAN WATER PLAN
BACKSLOPE STREETS



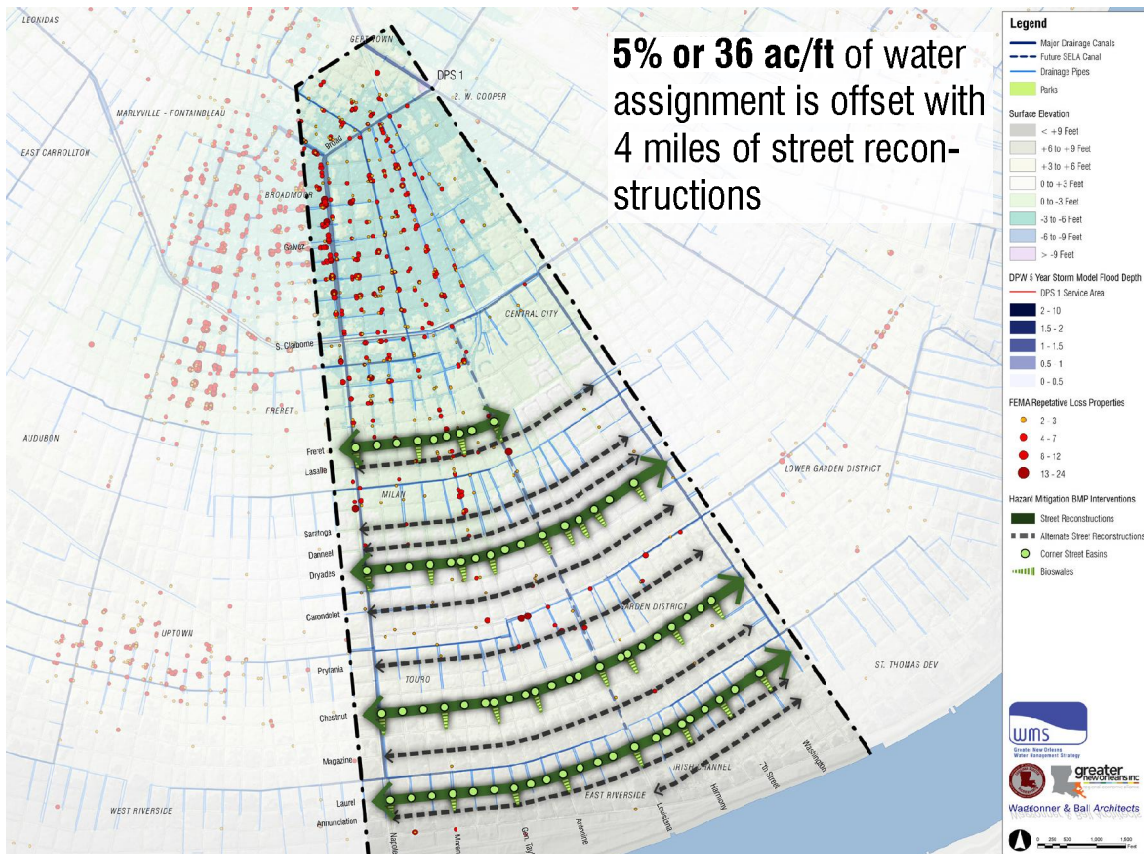
GREATER NEW ORLEANS URBAN WATER PLAN
BACKSLOPE STREETS EXISTING



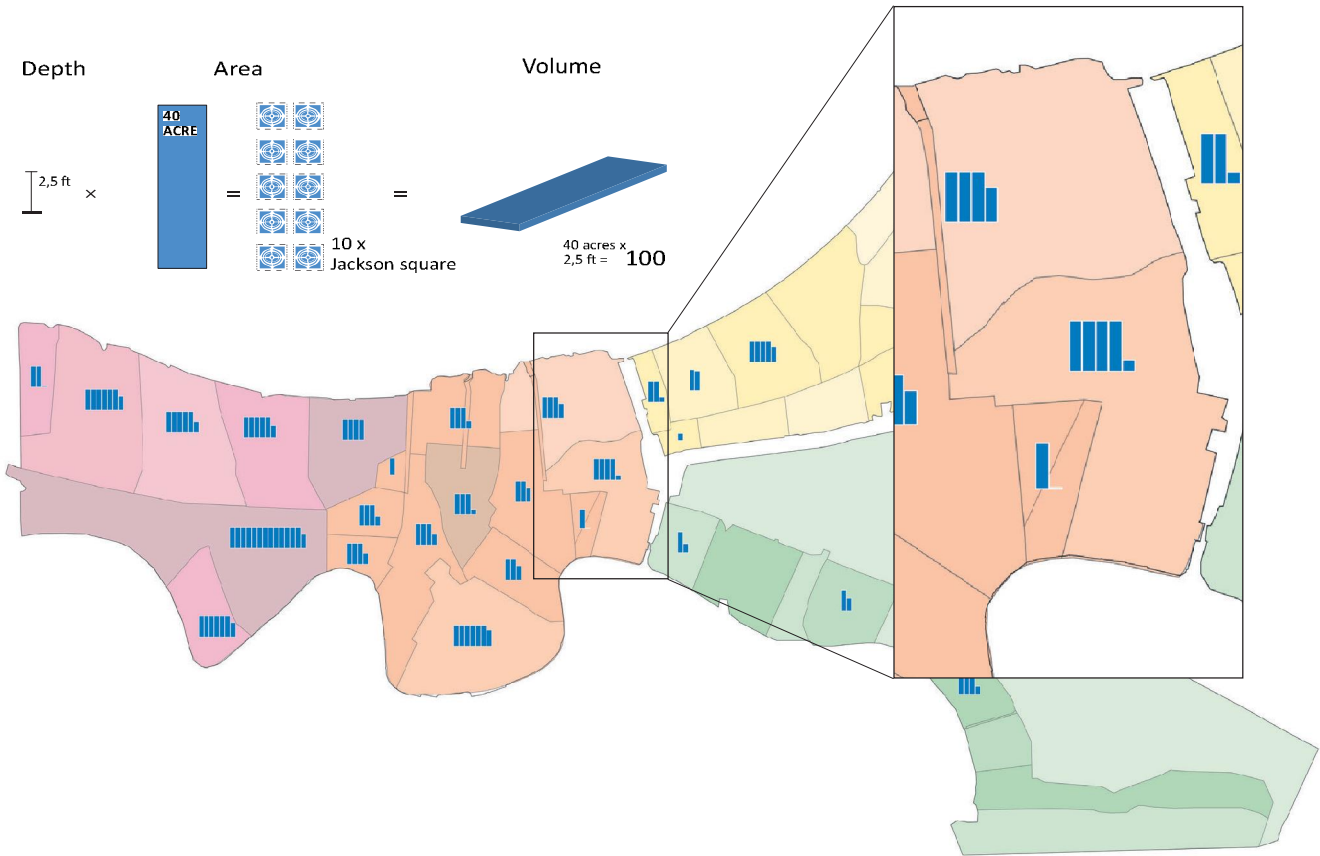
GREATER NEW ORLEANS URBAN WATER PLAN
BACKSLOPE STREETS



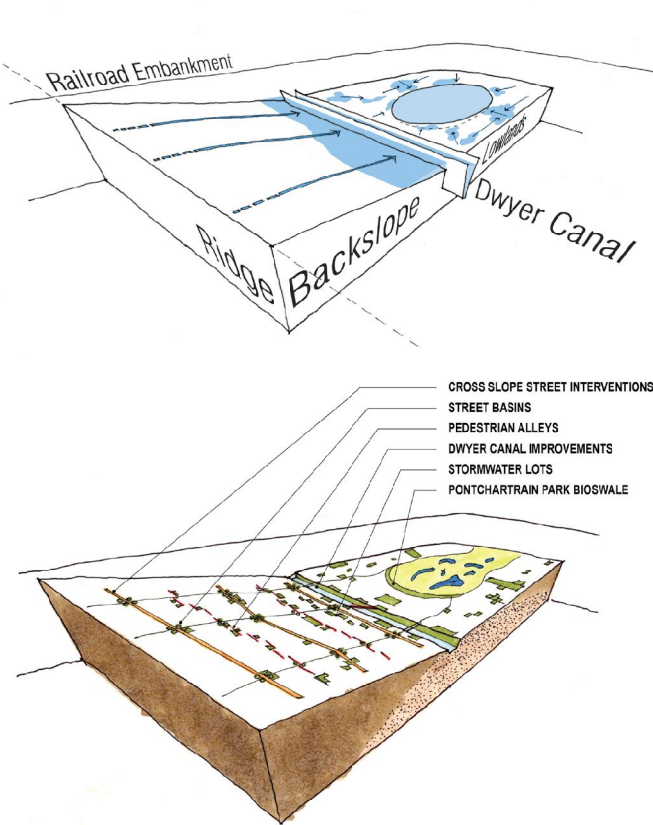
GREATER NEW ORLEANS URBAN WATER PLAN
BACKSLOPE STREETS



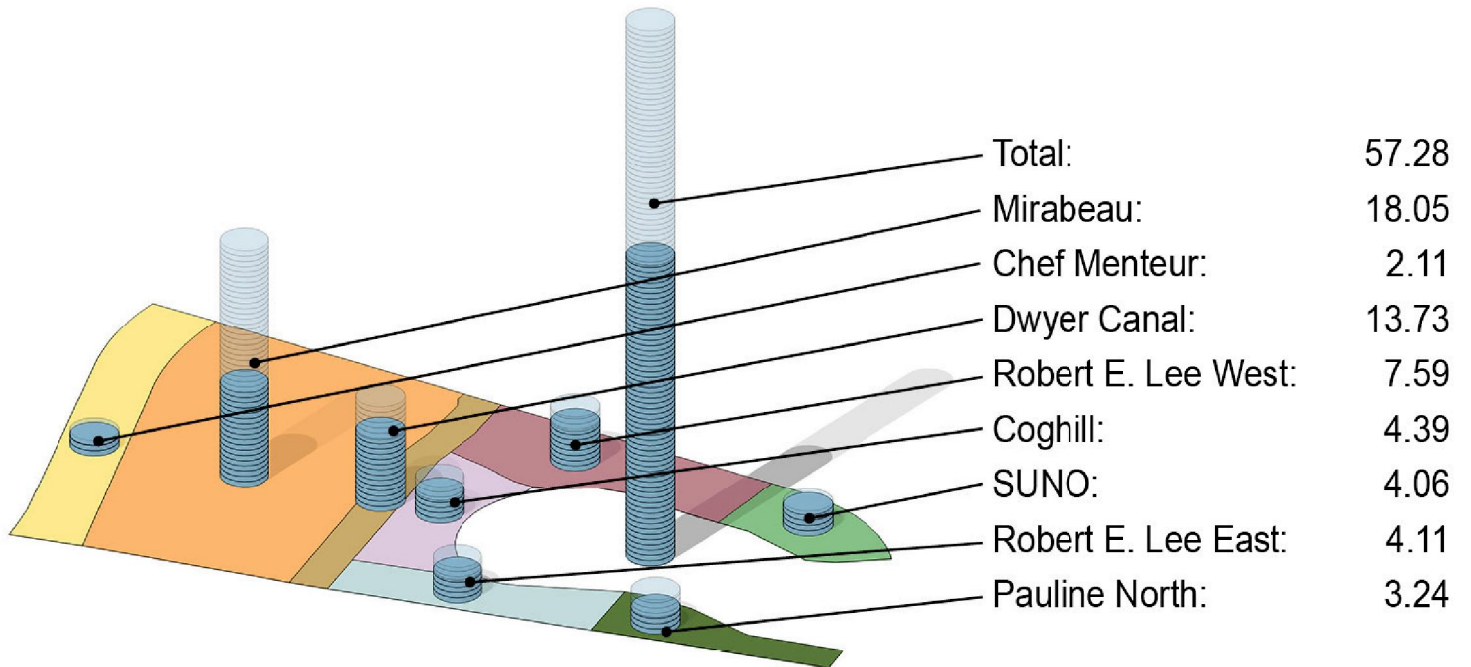
10 YEAR STORM
WATER ASSIGNMENT



PONTILLY HAZARD MITIGATION GRANT
BACKSLOPE MANAGEMENT



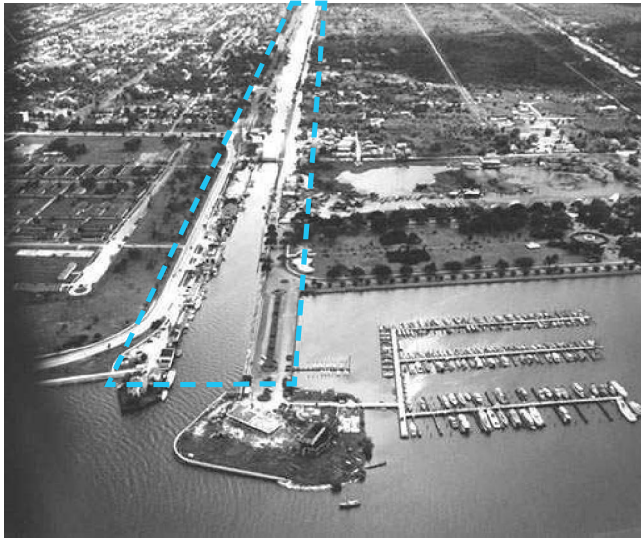
PONTILLY HAZARD MITIGATION GRANT
MANAGEMENT BENEFIT



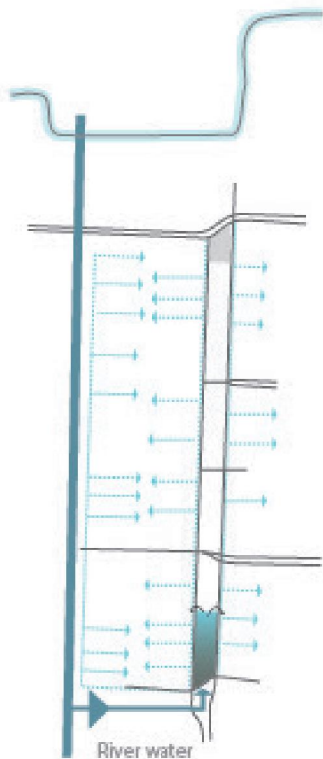
PONTILLY HAZARD MITIGATION GRANT
URBAN NETWORK



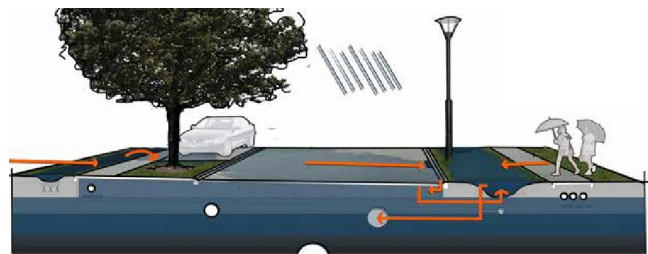
GREATER NEW ORLEANS URBAN WATER PLAN
LAKEVIEW WATER SYSTEM



GREATER NEW ORLEANS URBAN WATER PLAN
LAKEVIEW FLOATING STREETS



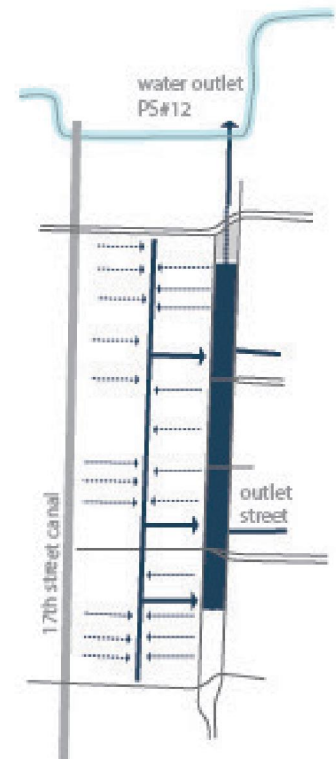
Inlet during dry times



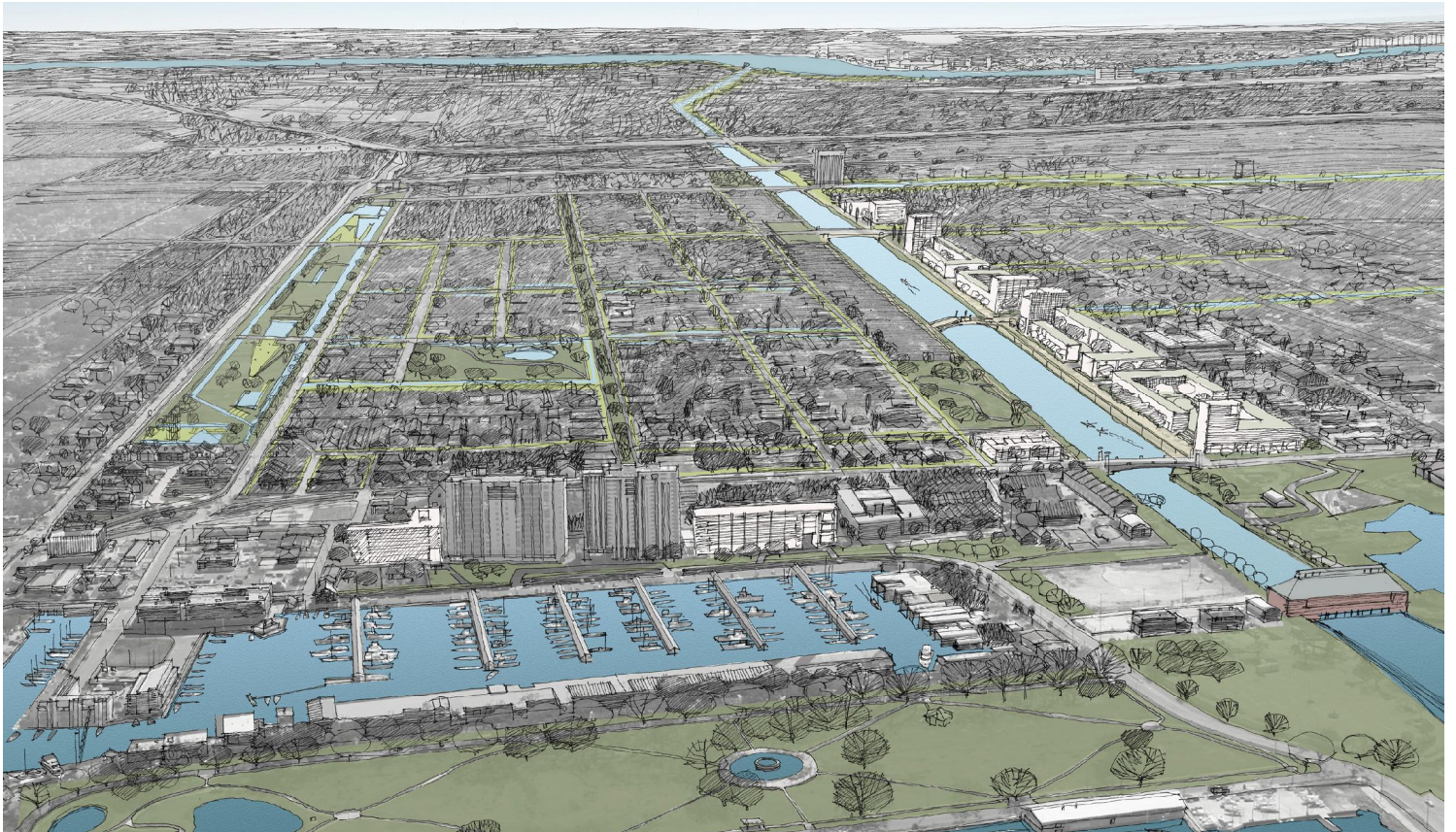
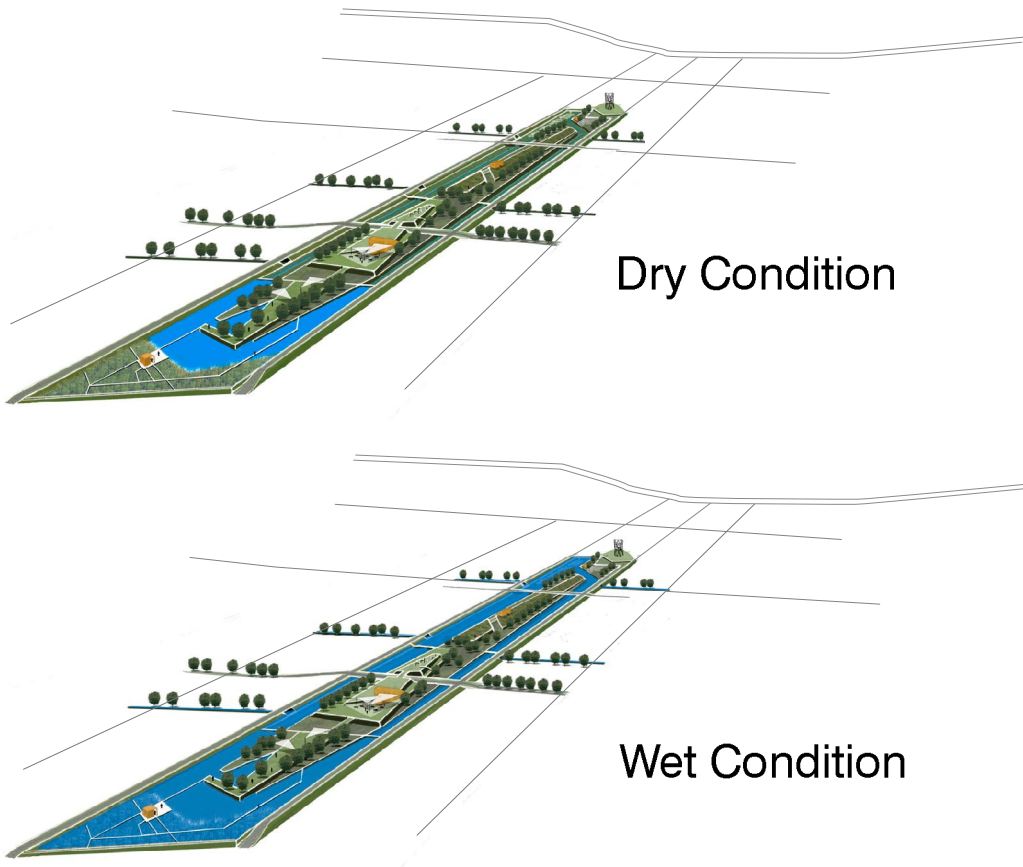
Wet



Dry



Outlet during heavy rain events







ARTICLE 23. LANDSCAPE, STORMWATER MANAGEMENT, & SCREENING

- 23.1 PURPOSE
- 23.2 ENFORCEMENT OF LANDSCAPE PROVISIONS
- 23.3 LANDSCAPE AND STORMWATER MANAGEMENT PLANS
- 23.4 SELECTION, INSTALLATION, AND MAINTENANCE OF PLANT MATERIALS
- 23.5 GENERAL LANDSCAPE DESIGN STANDARDS
- 23.6 BUILDING FOUNDATION LANDSCAPE AND LANDSCAPE YARDS
- 23.7 PARKING LOT LANDSCAPE
- 23.8 BUFFER YARDS
- 23.9 REQUIRED LANDSCAPE ILLUSTRATION
- 23.10 TREE PRESERVATION
- 23.11 PARKWAY TREES
- 23.12 STORMWATER MANAGEMENT REQUIREMENTS
- 23.13 SCREENING REQUIREMENTS

EXECUTIVE SUMMARY



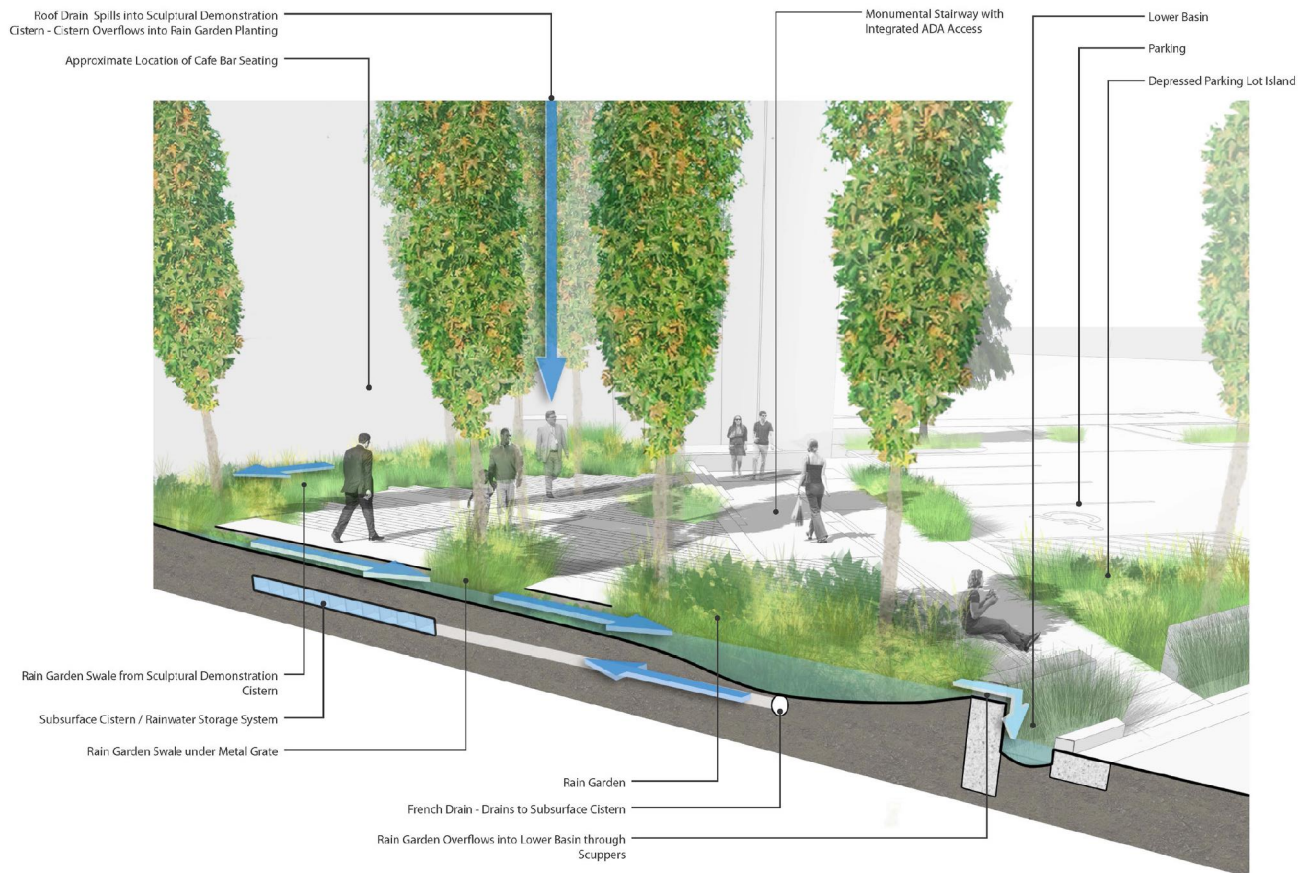
23.1 PURPOSE

The landscape, stormwater management, and screening requirements established by this Article are intended to:

- A. Assist in the development of a sustainable New Orleans by encouraging sustainable practices for landscape design, construction and landscape maintenance.

ARCHITECTURE **GREATER NEW ORLEANS FOUNDATION**

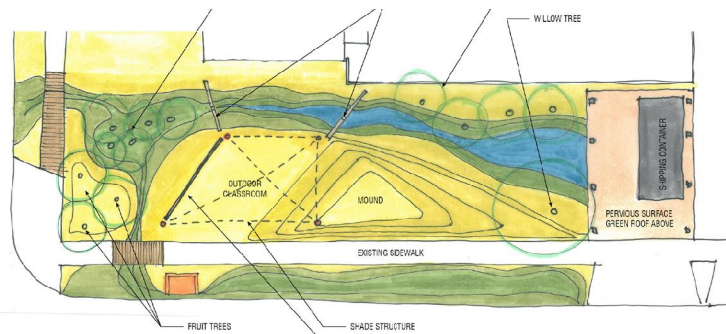




Section Perspective 2
Greater New Orleans Foundation Headquarters
New Orleans, LA
June 20, 2014



GROUNDWORK CAFFIN EARTHLAB S&WB GRANT





SEWERAGE & WATER BOARD GRANT
RIPPLE EFFECT

Ripple Effect

At the core of our project is a three-part collaboration between teachers, design experts and water experts.

- **Teachers contribute knowledge of curriculum design and implementation.**
- **Design professionals and educators contribute knowledge of visual, hands-on, and experiential learning.**
- **Water experts contribute content expertise in international and local water issues.**



WATER COLLABORATIVE

**ADVOCACY · COMMUNITY EDUCATION · K-12 EDUCATION
BUILDERS & DESIGNERS · RESEARCH & POLICY**

APA Louisiana · Bayou Land RC&D · Blue Crab Labs · CDM Smith · City of New Orleans DPW · City Park · City Porch Realty Committee for a Better New Orleans · Common Ground Relief · Concordia · Cry You One · CSED · Dana Brown and Associates · DisasterMap.net · EcoUrban · Energy Wise Alliance · Evans + Lighter · Feldmeier Galyean · Friends of Lafitte Corridor · Future Proof · Global Green USA · GNO Inc. · Greater New Orleans Foundation · Green Light New Orleans · Groundwork New Orleans · Gulf Restoration Network · Hike for Katreena · Hollygrove Greenline · Historic Treme Faubourg Treme · Horizon Initiative · Imago Collective · KIPP Central City School · KSI Environmental Consultants · Lake Pontchartrain Basin Foundation · Land Trust for Louisiana · LEAAF · Levees.org · Life City · Longue Vue House and Gardens · Louisiana Economic Development · LSU Coastal Sustainability Studio · National Wildlife Foundation · Neighborhood Partnership Network · NEWCITY · New Orleans Food & Farm Network · Nola Bamboo · NOMAR Green Committee · Nunez Community College · WWNO NPR · Parkway Bakery & Tavern · Parkway Partners · RIDE New Orleans · Regional Planning Commission · Sankofa · Sewerage & Water Board · Sierra Club · Spackman Mossop Michaels · Thomas Strategies LLC · Tulane City Center · Tulane Institute on Water Resources Law and Policy · UNO Pontchartrain Institute of Environmental Sciences · UNO Transportation Institute · Urban Conservancy · Urban Institute US Green Building Council Louisiana · Waggoner & Ball · Waldemar S. Nelson · Water Works · Villavaso & Associates



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