



Jaime Ramiro Diaz

Waggoner & Ball Architects

2013 Smart Growth Summit

H2O Overview: How to Learn from the New Orleans Urban Waters Partnership

Katrina



LIVING WATER, BUOYANT LAND

Katrina

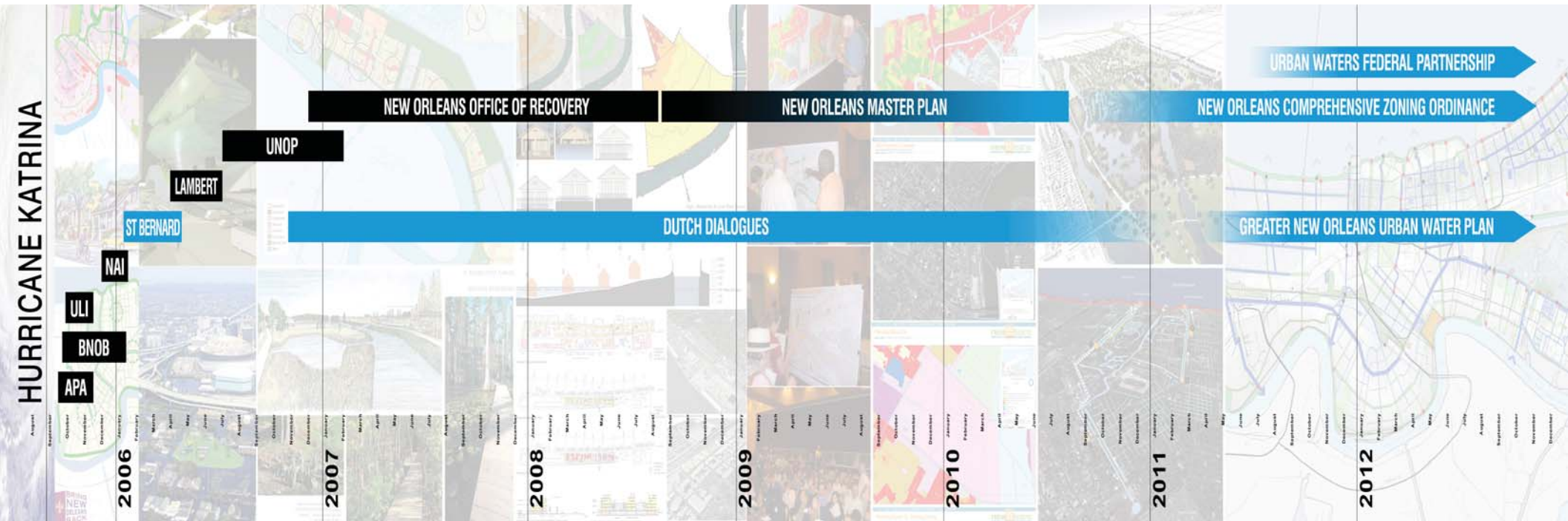


LIVING WATER, BUOYANT LAND

1953 Flood



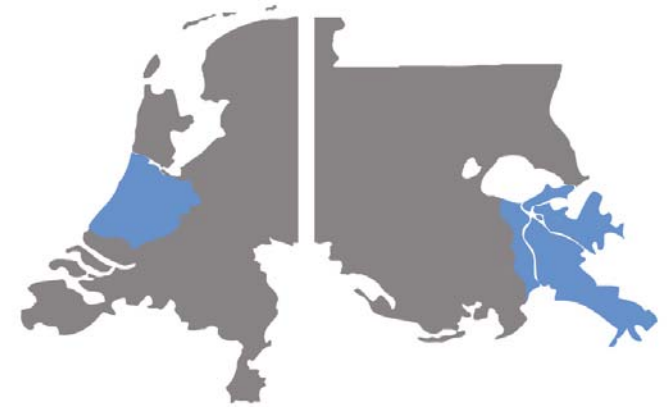
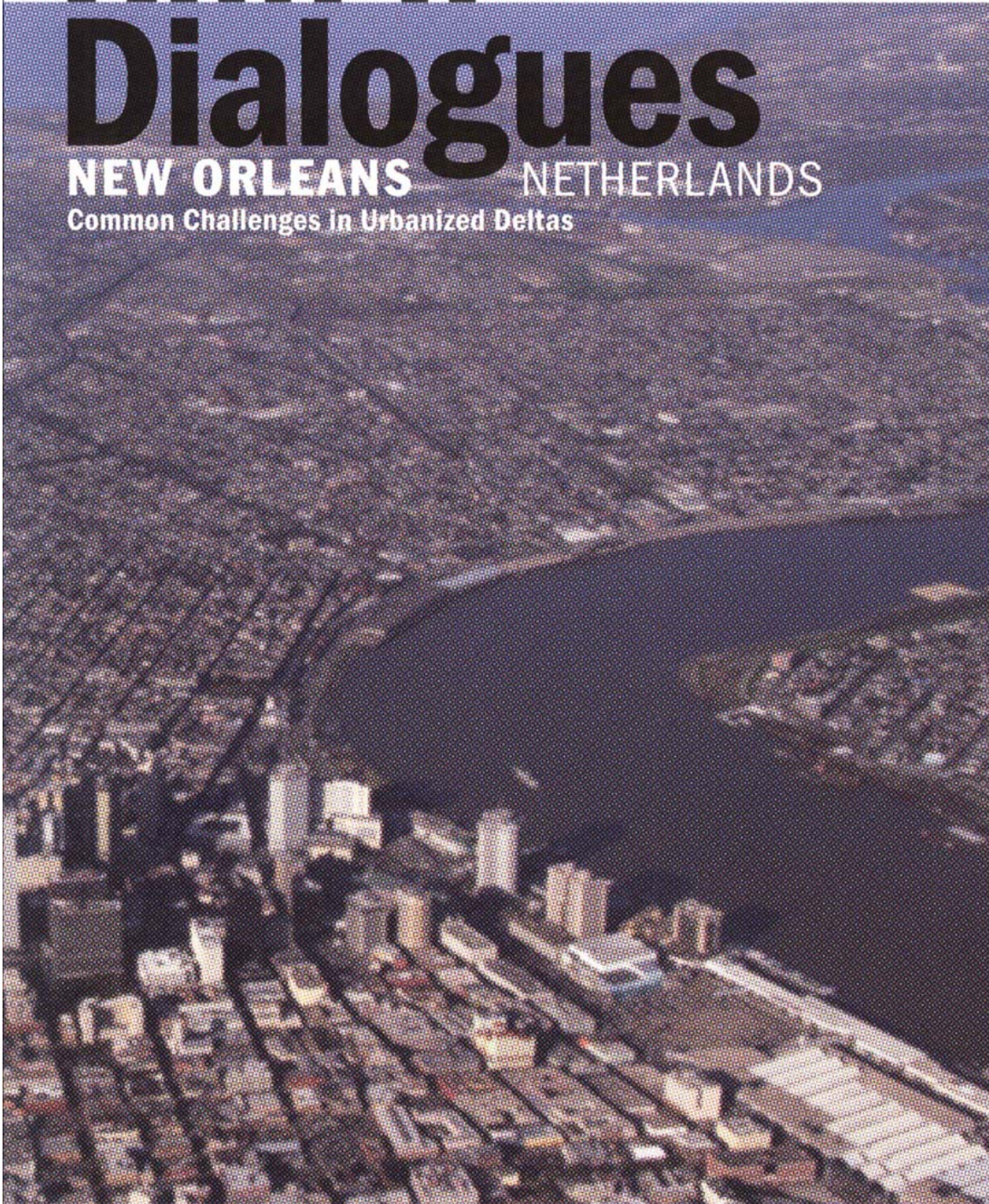
Post Katrina Planning Timeline



Dutch Dialogues

NEW ORLEANS NETHERLANDS

Common Challenges in Urbanized Deltas



Kingdom of the Netherlands

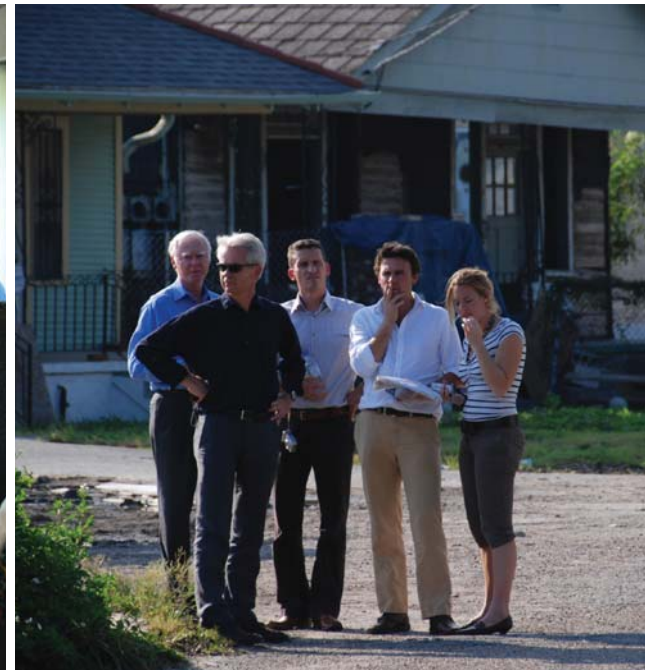
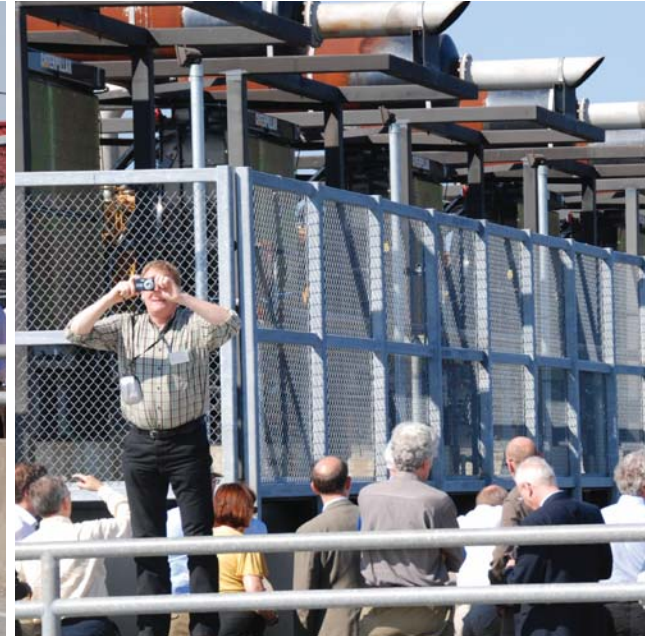


American Planning Association

Making Great Communities Happen

LIVING WATER, BUOYANT LAND

Dutch Dialogues



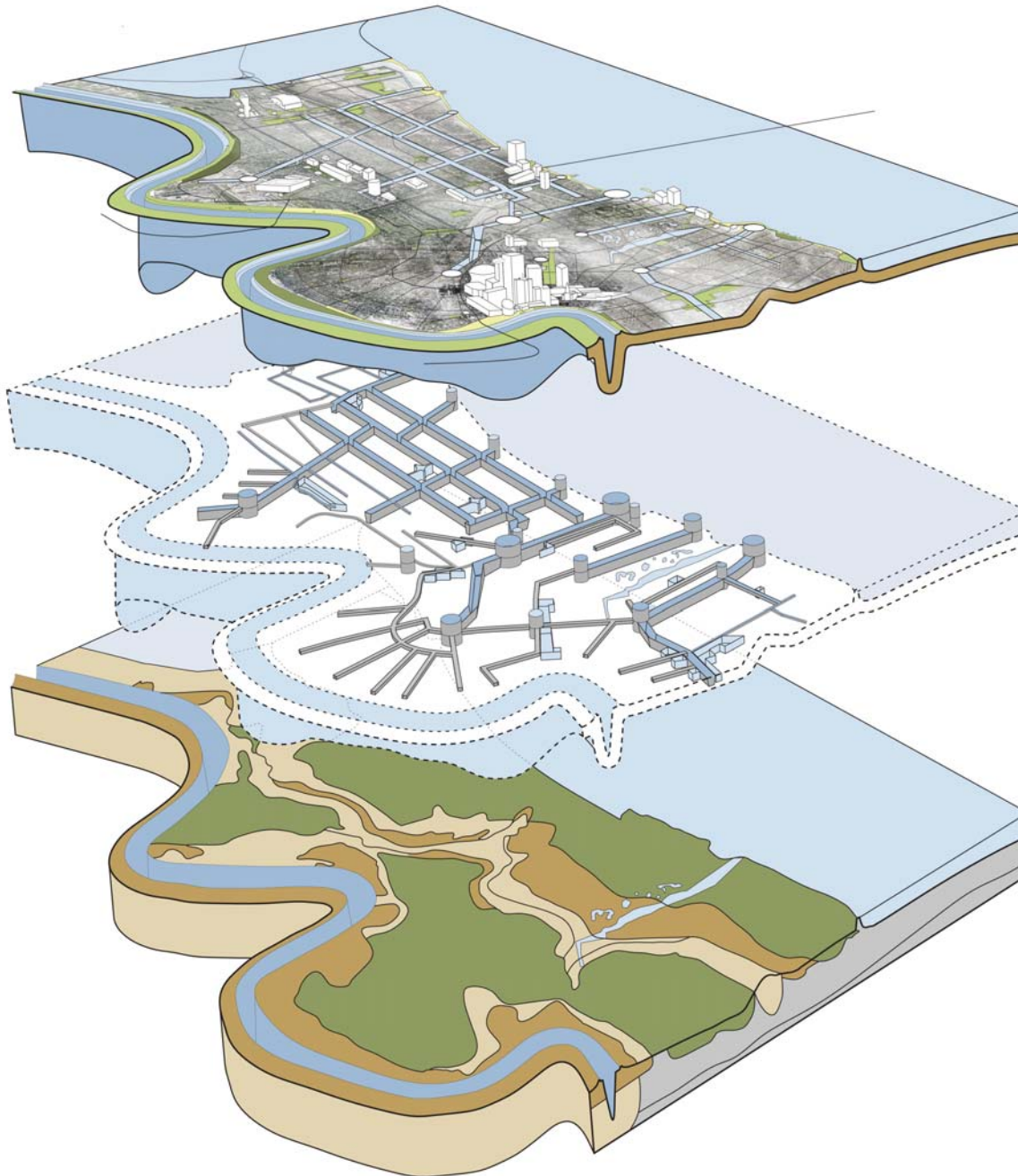


Dutch Dialogues



Waggoner & Ball Architects

Planning Approach



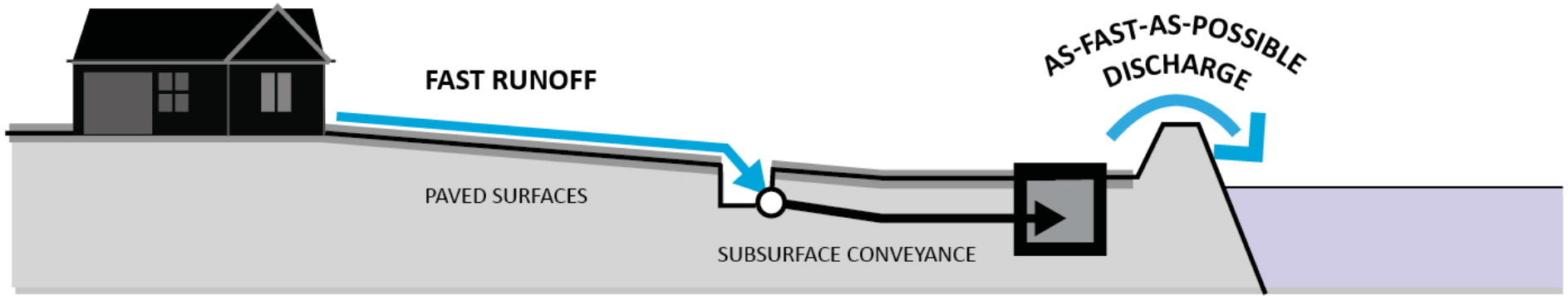
**Inhabitation
Land Cover**

**Infrastructure
Networks**

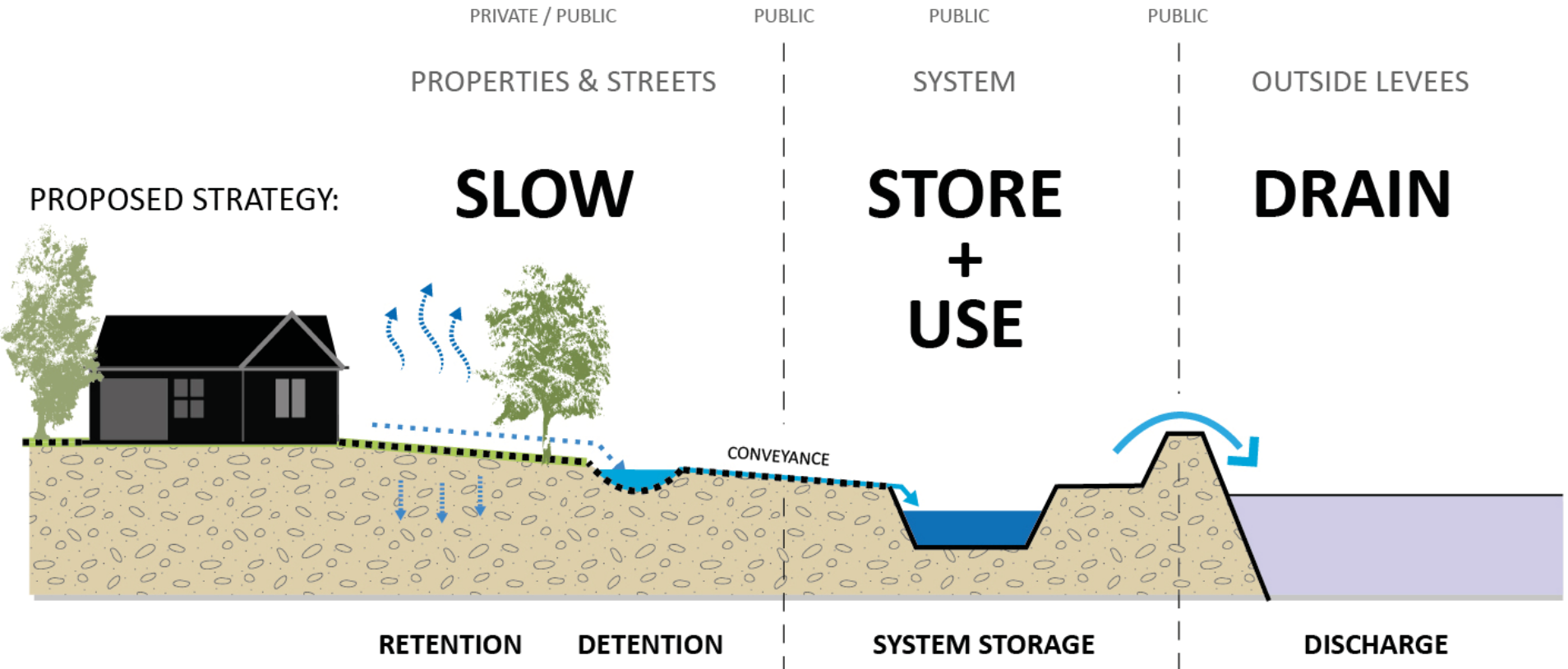
**Soils
Water
Biodiversity**

CURRENT, TECHNOCRATIC SYSTEM:

PUMP & DRAIN

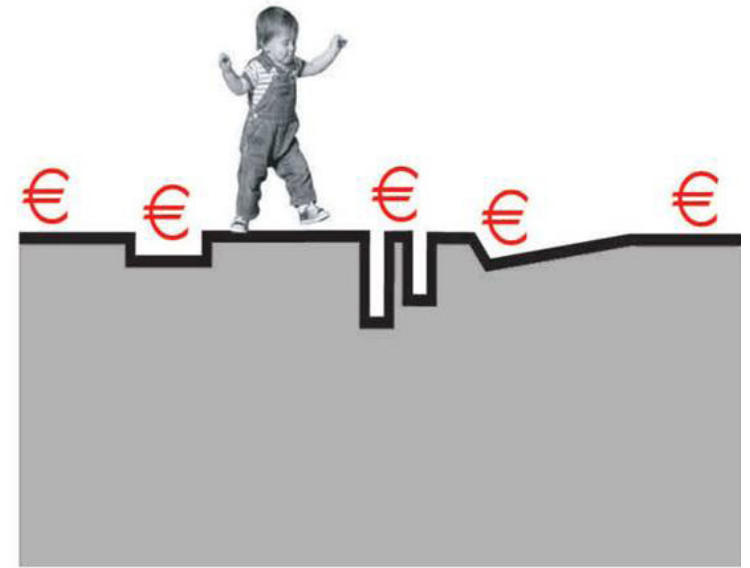


PROPOSED STRATEGY:



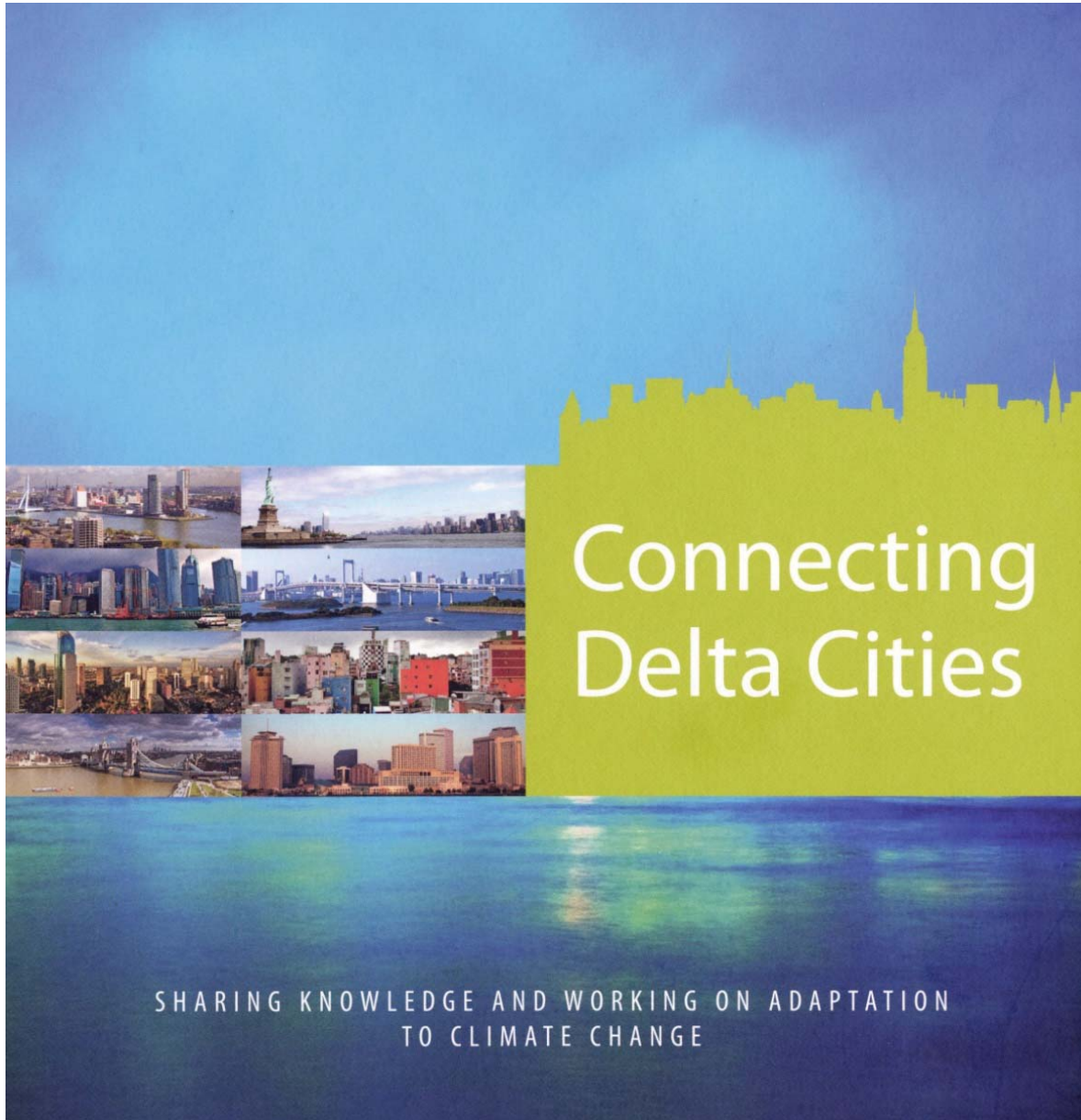
LIVING WATER, BUOYANT LAND

Combining Good Ideas



LIVING WATER, BUOYANT LAND

Dutch Dialogues



Rotterdam

New York

Jakarta

London

New Orleans

Hong Kong

Tokyo

Ho Chi Minh City



Greater New Orleans
Urban Water Plan

Vision

Waggoner & Ball *Architects*

September 2013

Team & Partners

Manning Architects

Dana Brown Landscape Architects

FutureProof

CDM Smith

Nelson Engineers

Dewberry

GCR

Eustis Engineering

Sherwood Design Engineers

Tulane University

LSU Coastal Sustainability Studio

Bright Moments

Arcadis

Deltares

Royal Haskoning

City of Rotterdam

City of Amsterdam

H+N+S Landscape Architects

Bosch Slabbers Landscape Architects

Robbert de Koning Landscape Architect

Palmbout Urban Landscapes

Technical University Delft

Waggoner & Ball Architects



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.



Problems

- 1. Flooding**
- 2. Subsidence*
- 3. Water Assets Wasted*



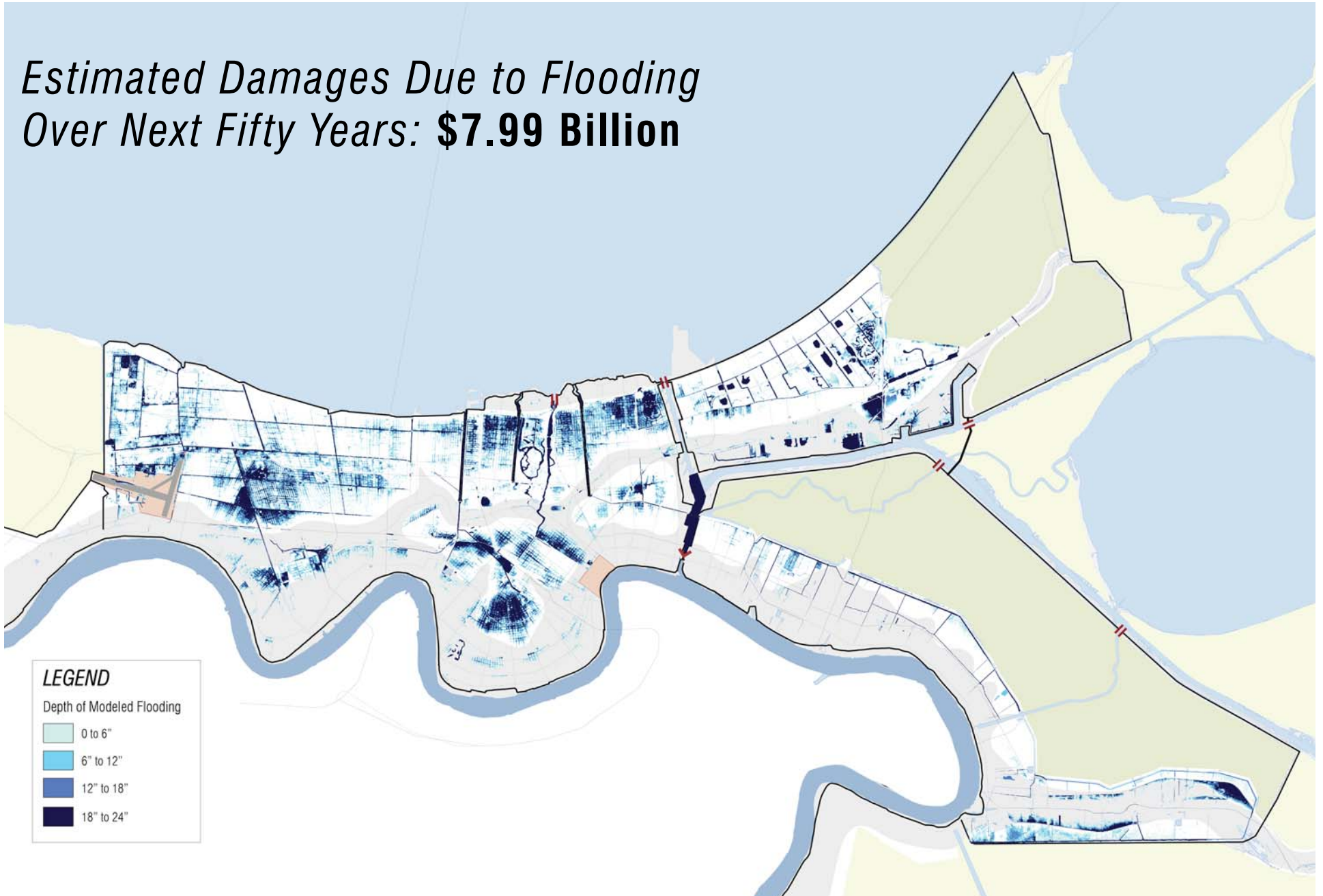
URBAN WATER FLOWS

System Overwhelmed



Problems: 10 Year Storm Modeled Flooding

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

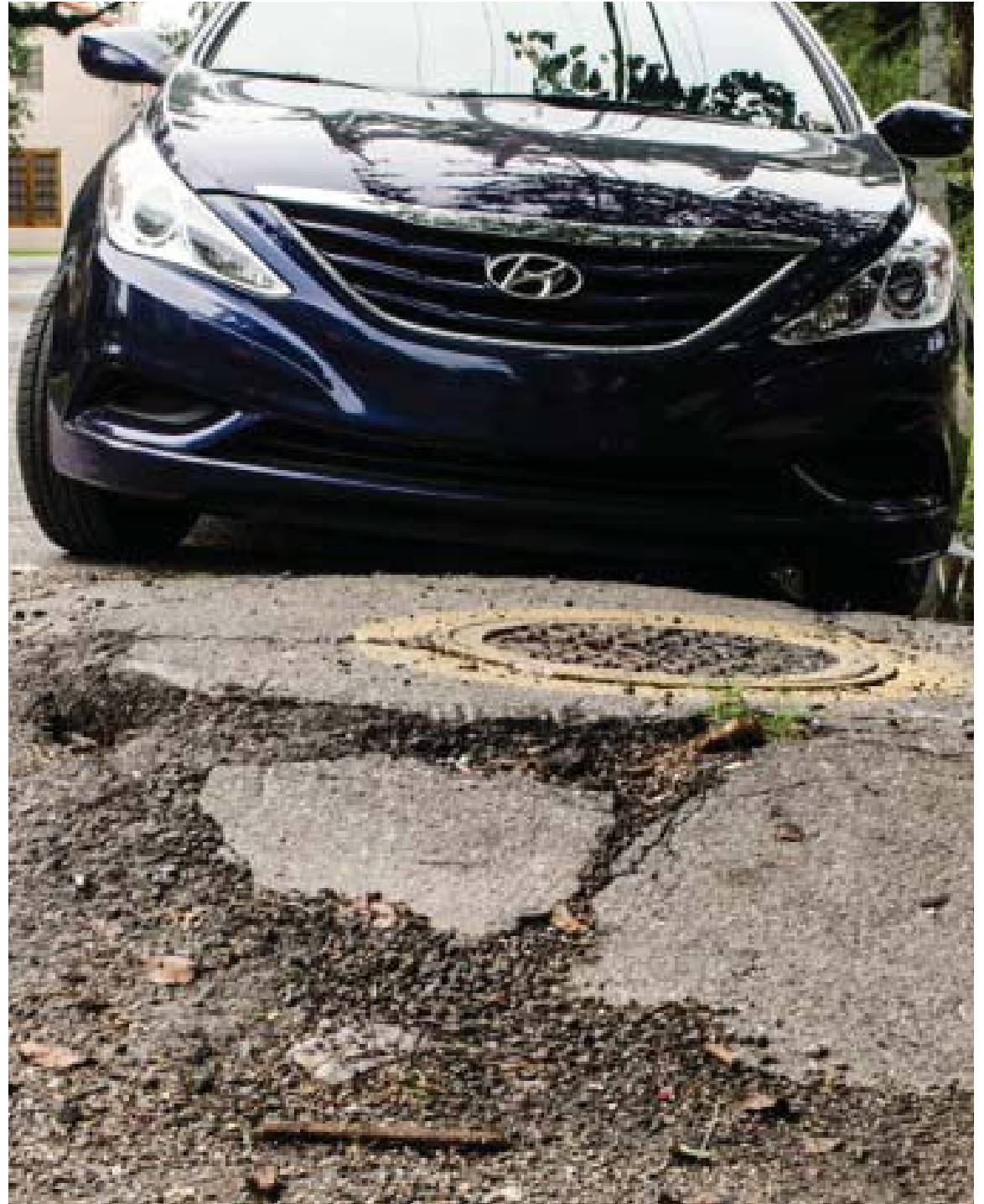


Problems

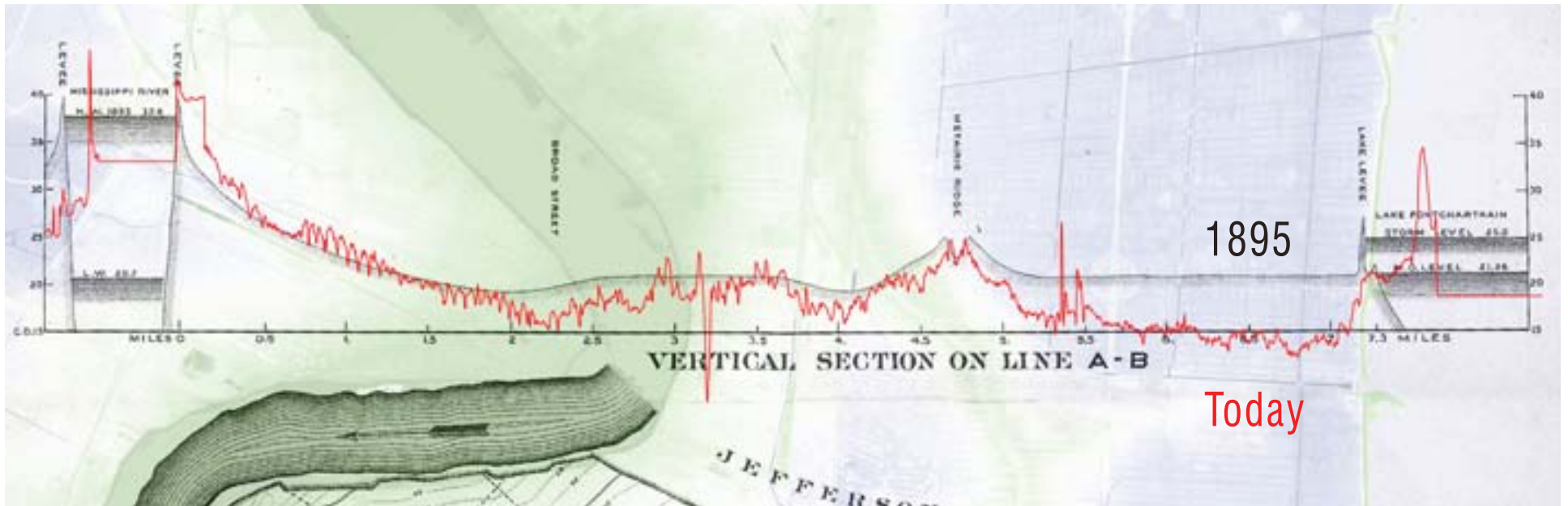
1. *Flooding*

2. ***Subsidence***

3. *Water Assets Wasted*

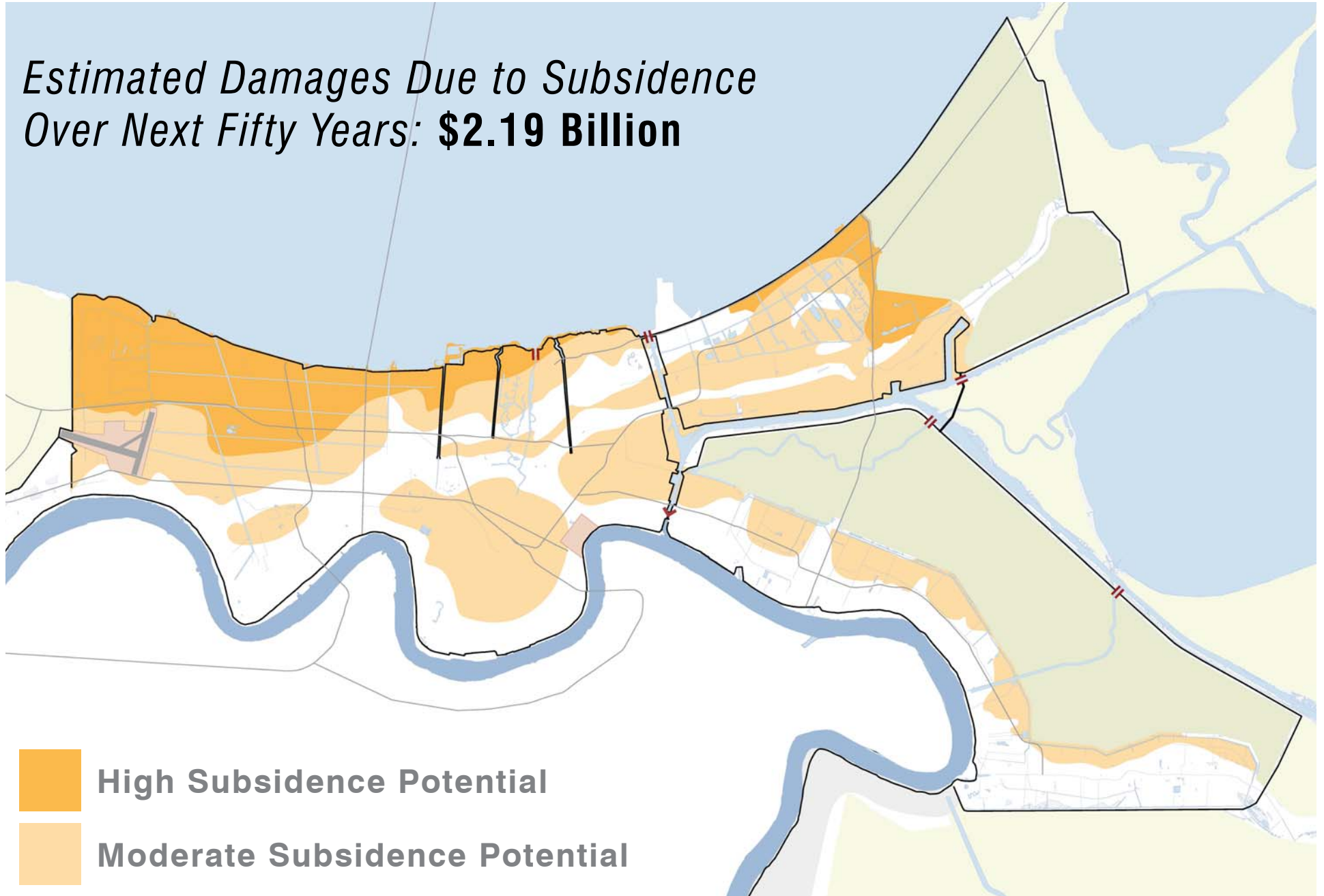


Effects of Pumping



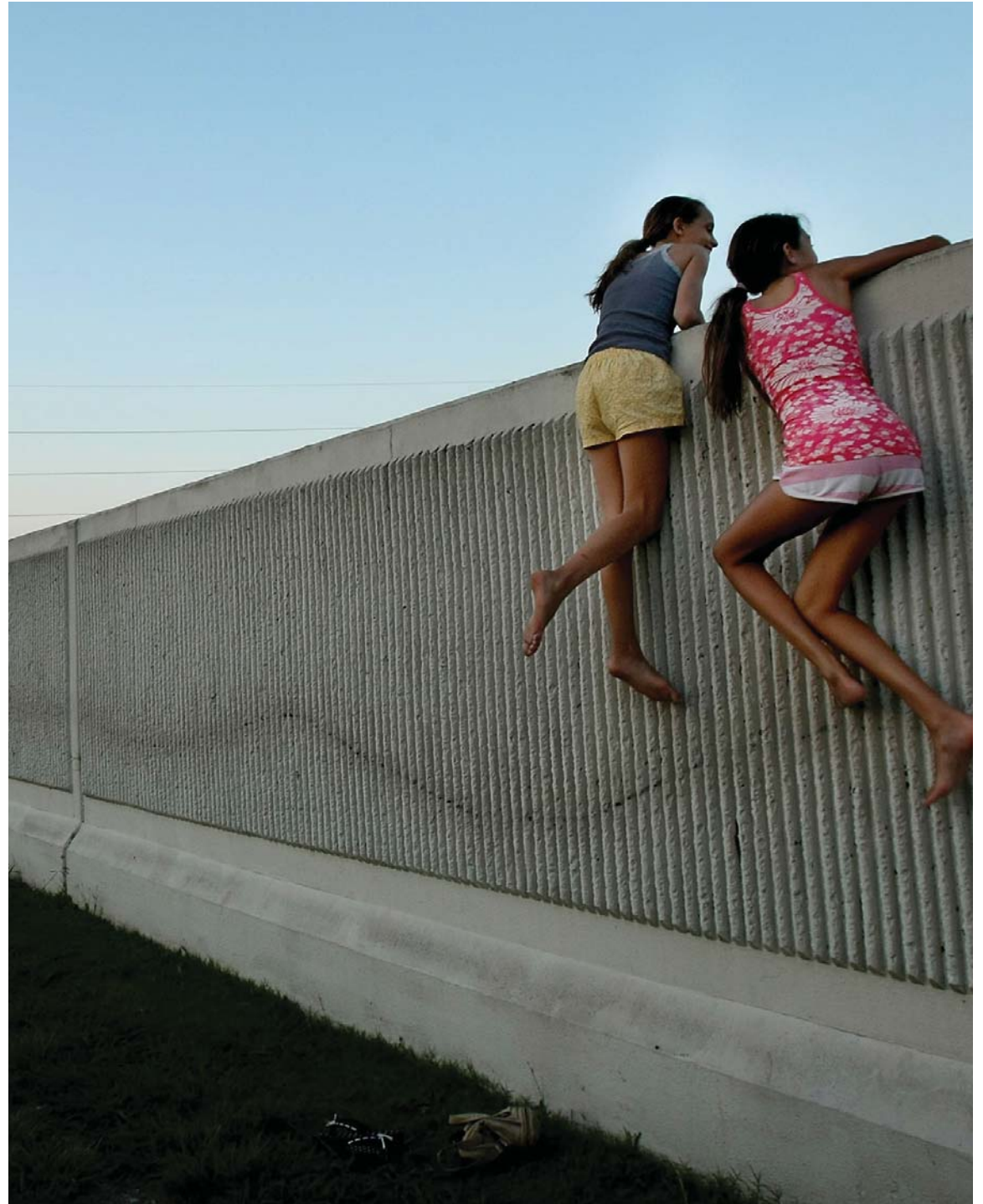
Problems

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



Problems

- 1. Flooding*
- 2. Subsidence*
- 3. Water Assets Wasted***





LIVING WATER, BUOYANT LAND

Opportunities

1. Improved Safety

2. Economic Vitality

3. Enhanced Quality of Life



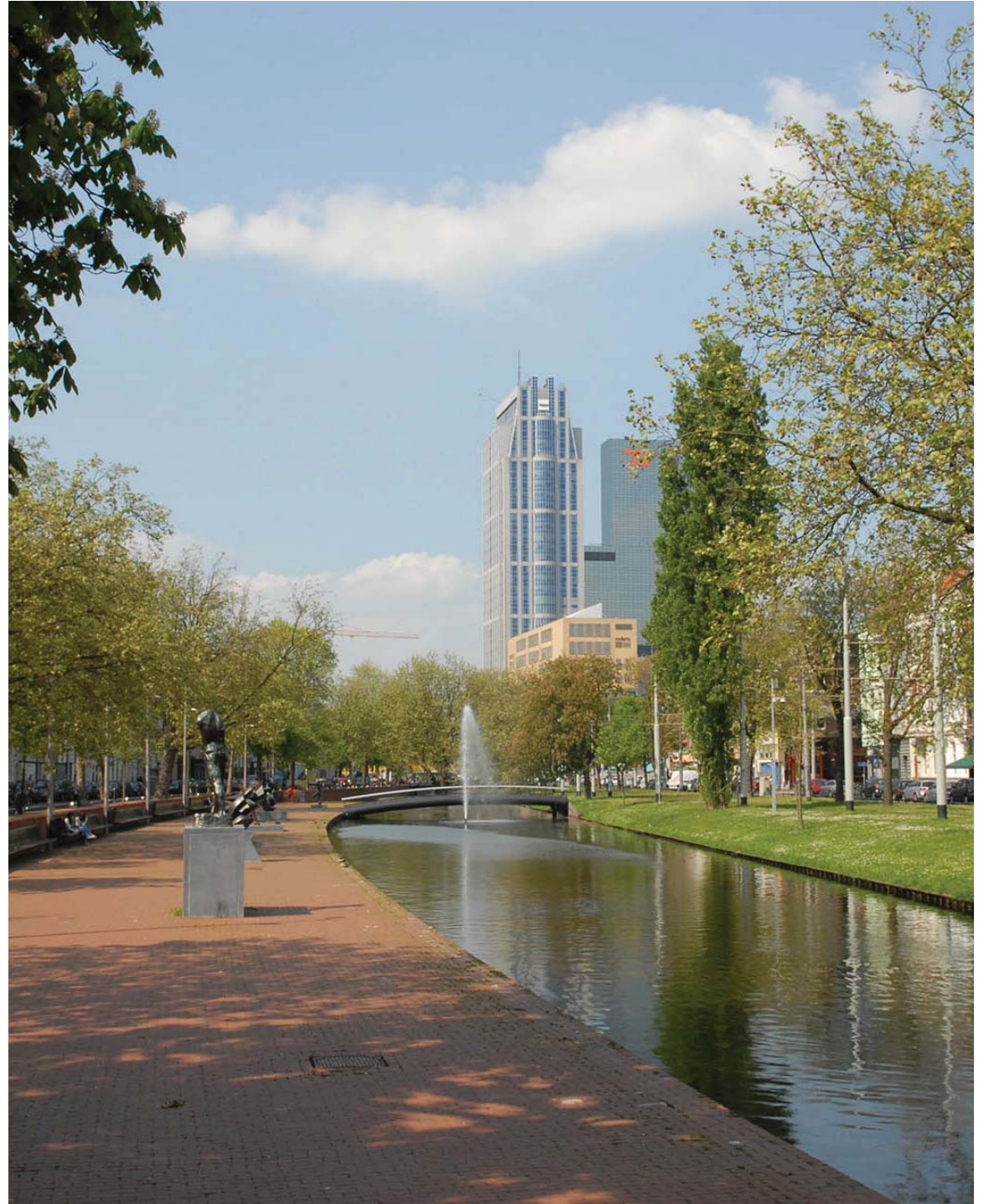
LIVING WATER, BUOYANT LAND

Opportunities

1. *Improved Safety*

2. ***Economic Vitality***

3. *Enhanced Quality of Life*



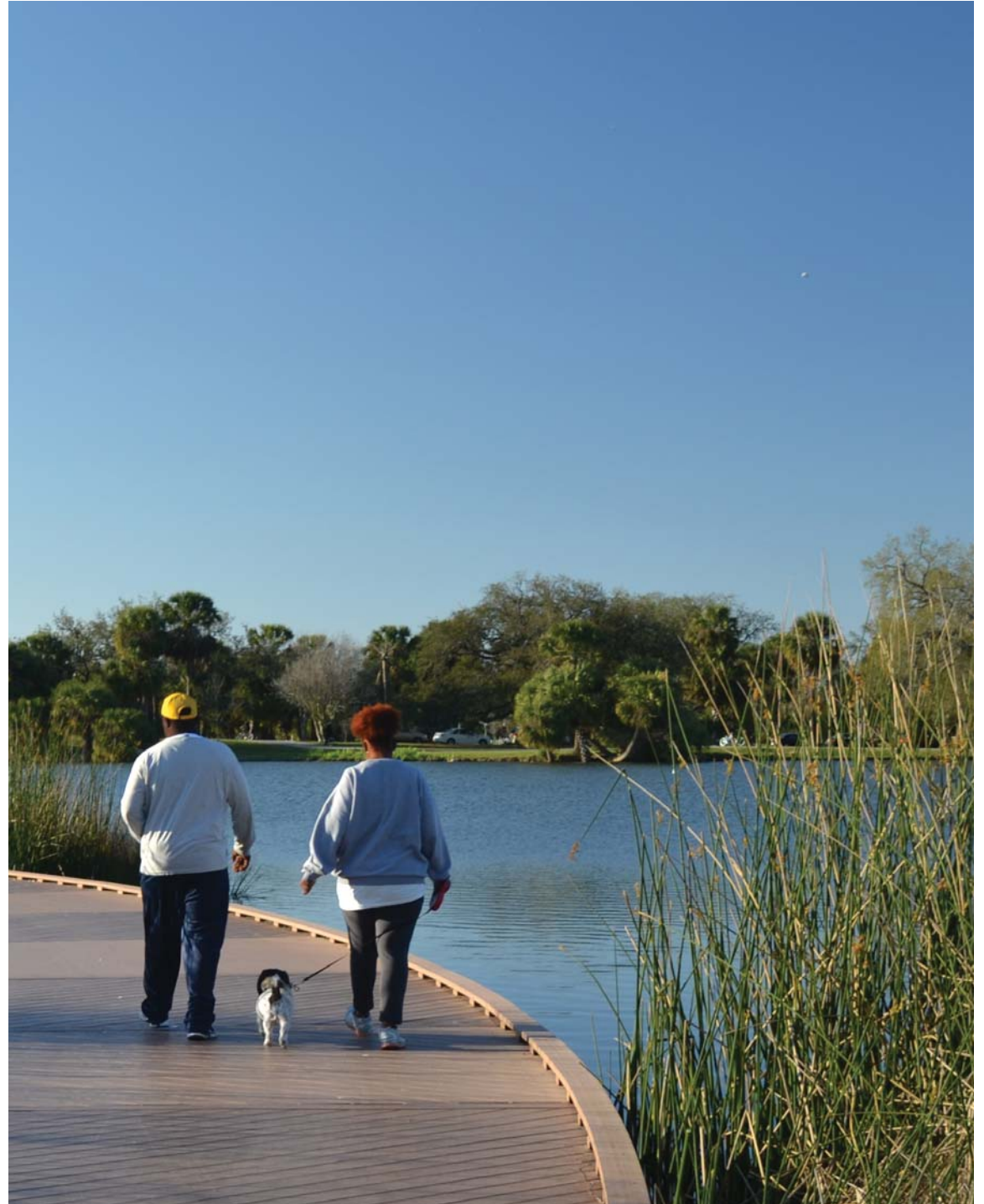
LIVING WATER, BUOYANT LAND

Opportunities

1. Improved Safety

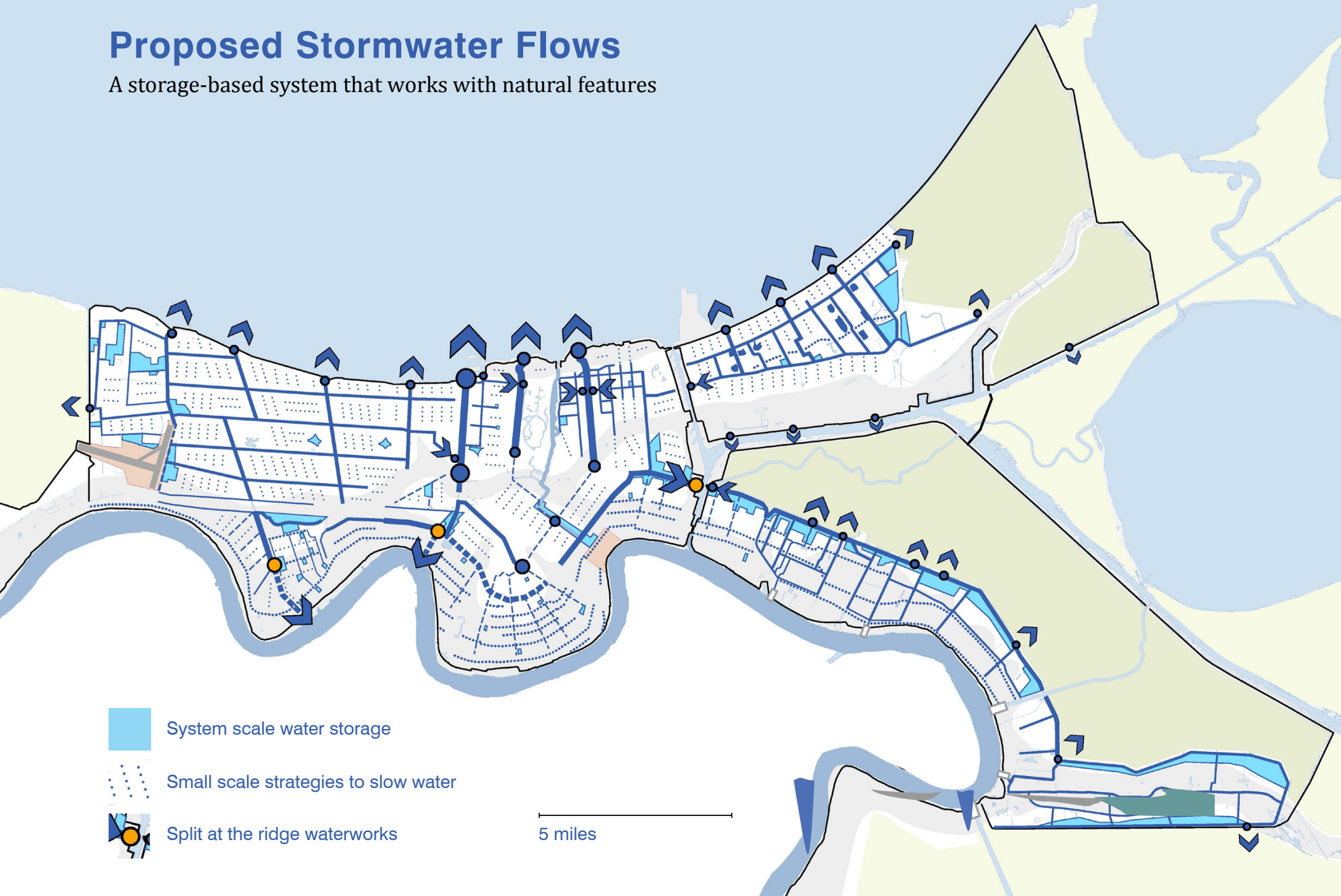
2. Economic Vitality

3. Enhanced Quality of Life



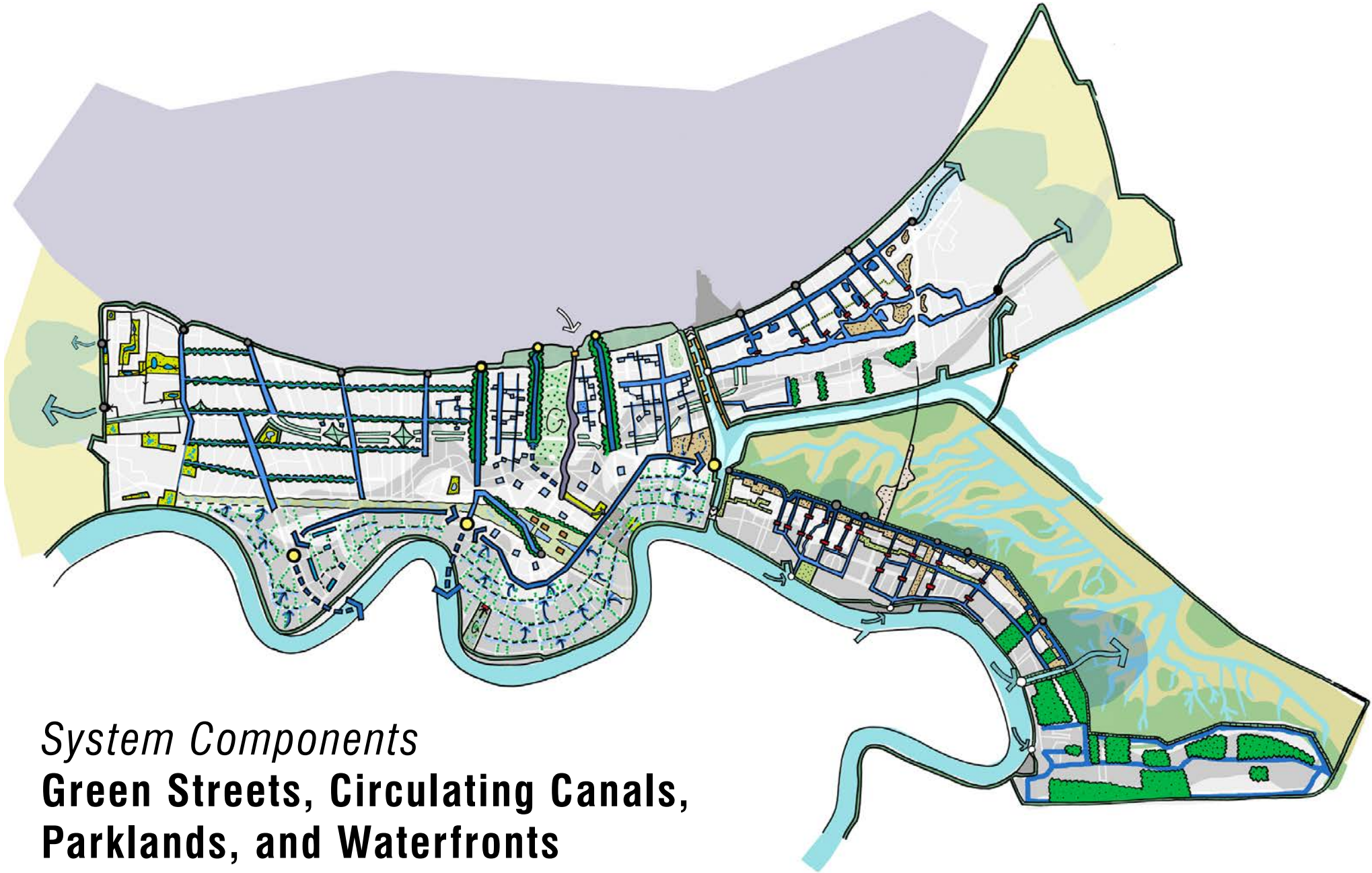
Proposed Stormwater Flows

A storage-based system that works with natural features



Stormwater Proposals

Living Water System



System Components
**Green Streets, Circulating Canals,
Parklands, and Waterfronts**

System Modeling: Proposed Water System



Smart Retrofits

1 Inspire

2005-2018

10% of water objectives



2 Act

2018-2025

35% of water objectives



3 Achieve

2025-2040

95% of water objectives



Regional Costs vs. Benefits Over Fifty Years

Economic Impact and Job Creation

The Urban Water Plan introduces a new industry, creating jobs in the design, construction, and maintenance of stormwater management practices. In addition to the wages paid to individual workers, these new jobs create an economic benefit to society in expanding the tax base and reducing poverty-related costs. Intensive implementation of the plan would create up to 101,790 direct and indirect jobs (full and part-time) over the next 50 years and have a regional economic impact of \$11.3 Billion.

\$11.3 Billion

Reduced Flooding Cost

Common two-year, five-year, and ten-year storm events in the New Orleans area (with 50%, 20%, and 10% chance of occurring each year, respectively) impose an economic drain on local businesses and property owners. Beyond the structural damage and lost worker productivity, these flood events, over 50 years, produce approximately 600,000 tons of debris and leave over 270,000 households in need of temporary shelter.

\$8.0 Billion

Reduced Subsidence Cost

By actively managing the region's groundwater levels, the Plan minimizes land subsidence, thereby reducing damage to structures and infrastructure, including levee improvement costs. Only costs associated with building structural damage are presented here. Infrastructure costs due to subsidence, such as damage to streets, sidewalks, utilities, etc, which are not quantified within the scope of this project, will be significantly higher.

\$2.2 Billion

Lower Flood Insurance Premiums

The National Flood Insurance Program allows cities and counties to earn discounts on flood insurance premiums for their residents through the Community Rating System. The CRS awards points to communities that implement technical solutions and outreach campaigns that mitigate flood risk. Analysis of the credits currently earned by Orleans and Jefferson Parish communities, and the range of credits available, reveals that there is potential for significant savings in all three parishes.

\$609 Million

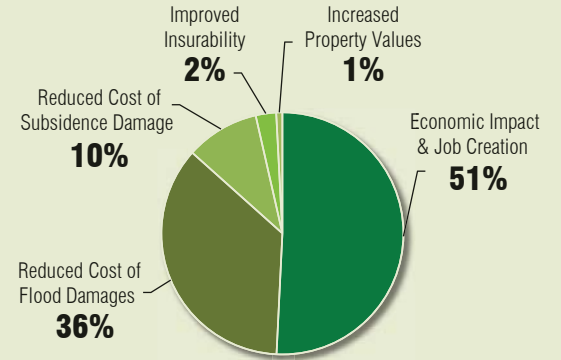
Increased Property Values

By investing in new open canals, storage areas and green space, the Urban Water Plan stands to have a positive impact on property values and new investment. Over 41,500 properties lie within 200 meters of a proposed intervention or improvement. Using assessed values for these parcels, it is estimated that with intensive implementation, property values would increase by \$183 million.

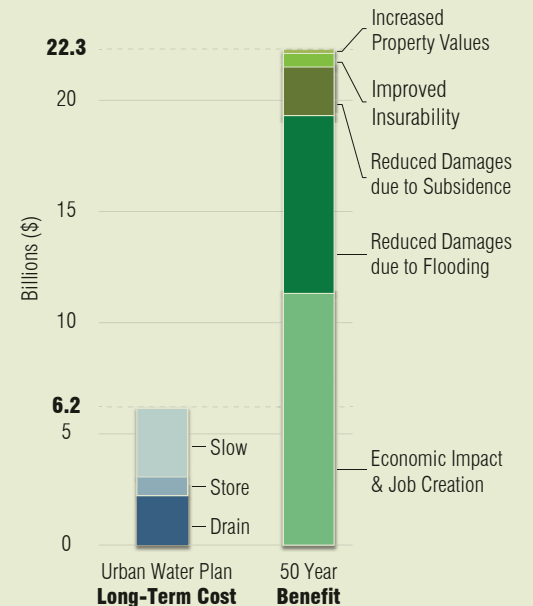
\$183 Million

=

>\$22.3 Billion



Quantitative Benefit Ratios

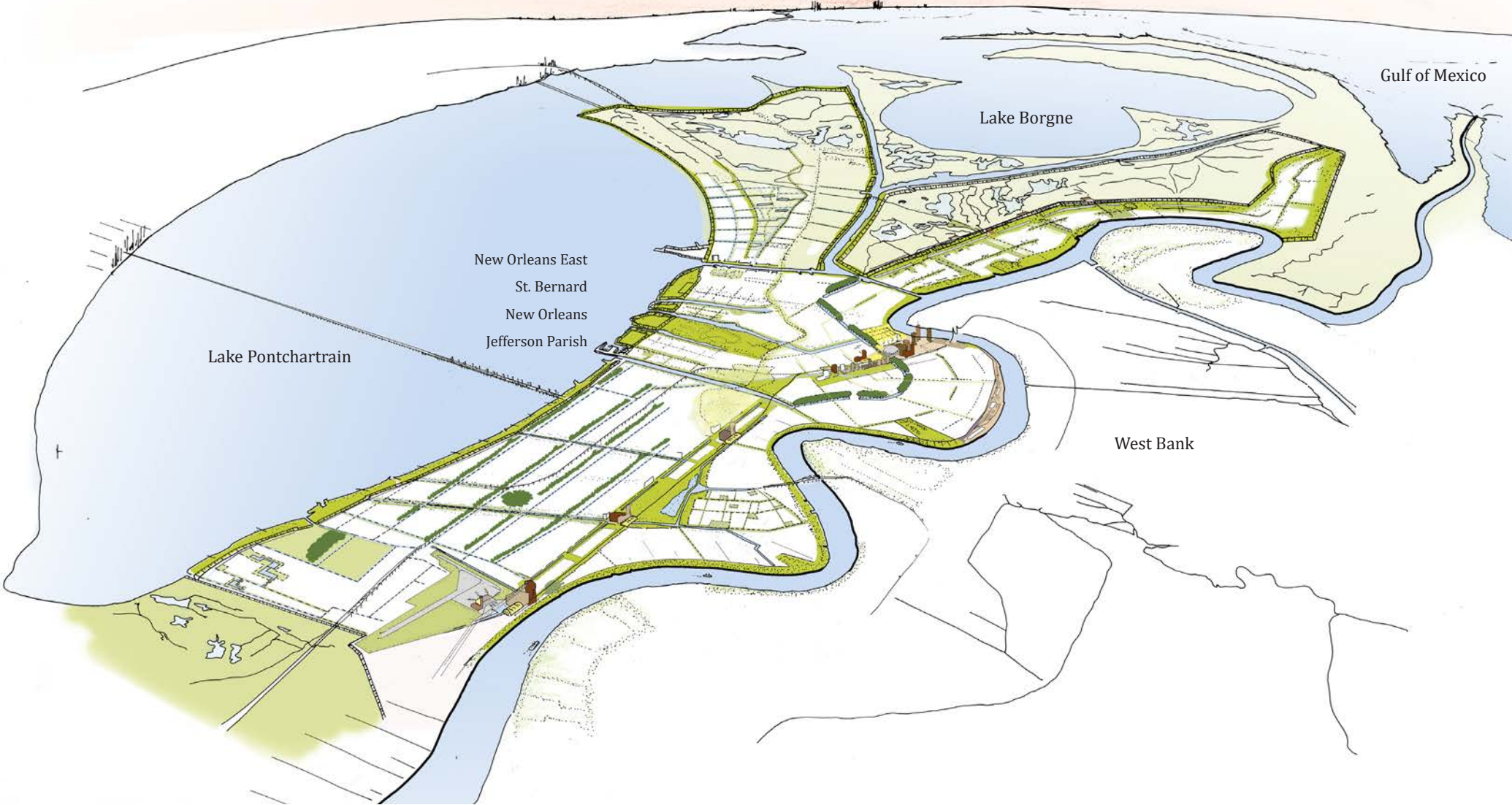


Plan Costs vs. Benefits

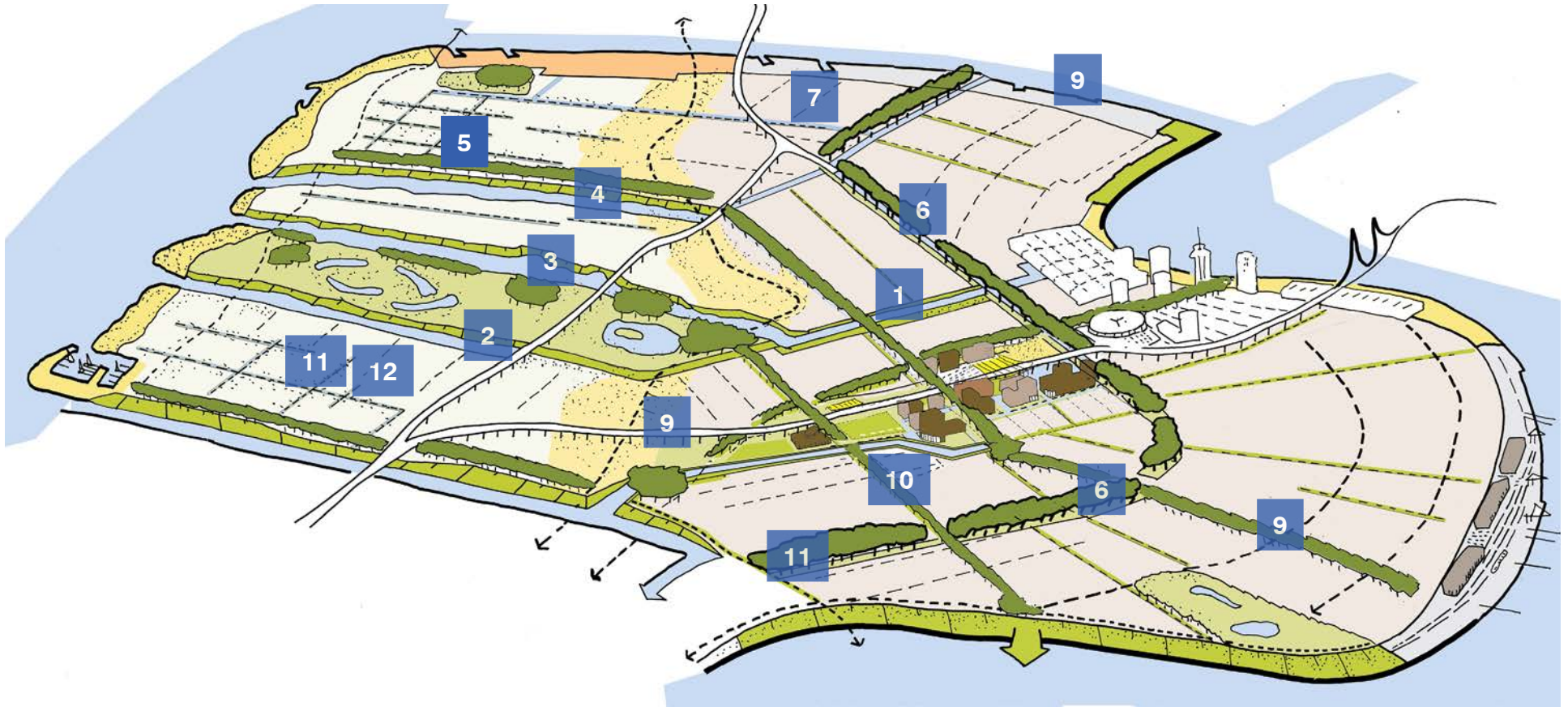
← **Total Economic Benefit**

LIVING WATER, BUOYANT LAND

Regional Plan



Orleans Basin



1. Lafitte Blueway

4. London Avenue Canal

7. Desire Parklands

9. Uptown Streets

11. Hollygrove & the
Monticello Canal

2. Orleans Avenue Canal

5. Filmore (Gentilly)

8. Inner Harbor
Navigation Canal

10. Palmetto Canal

12. Lakeview

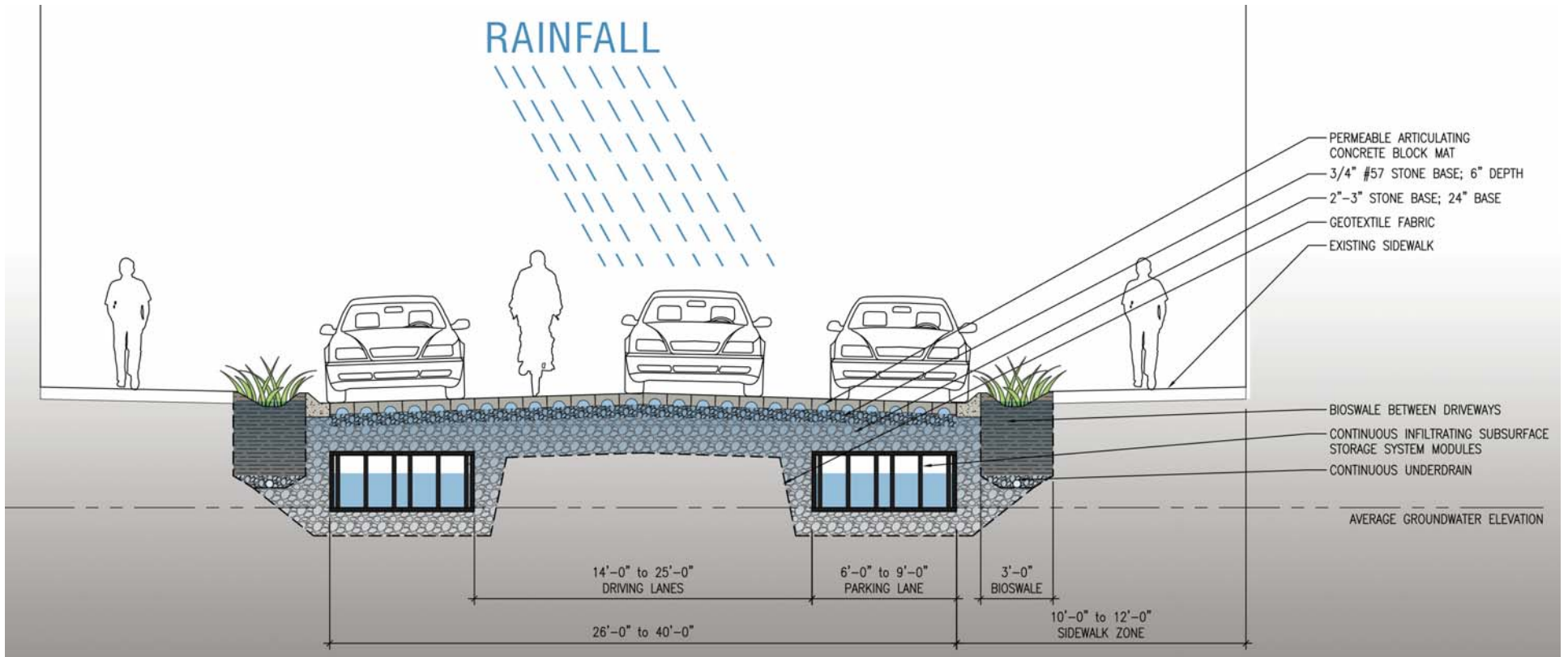
3. Bayou St. John

6. Claiborne Corridor

Uptown to Bucktown: Redirect Upslope Drainage



Streets



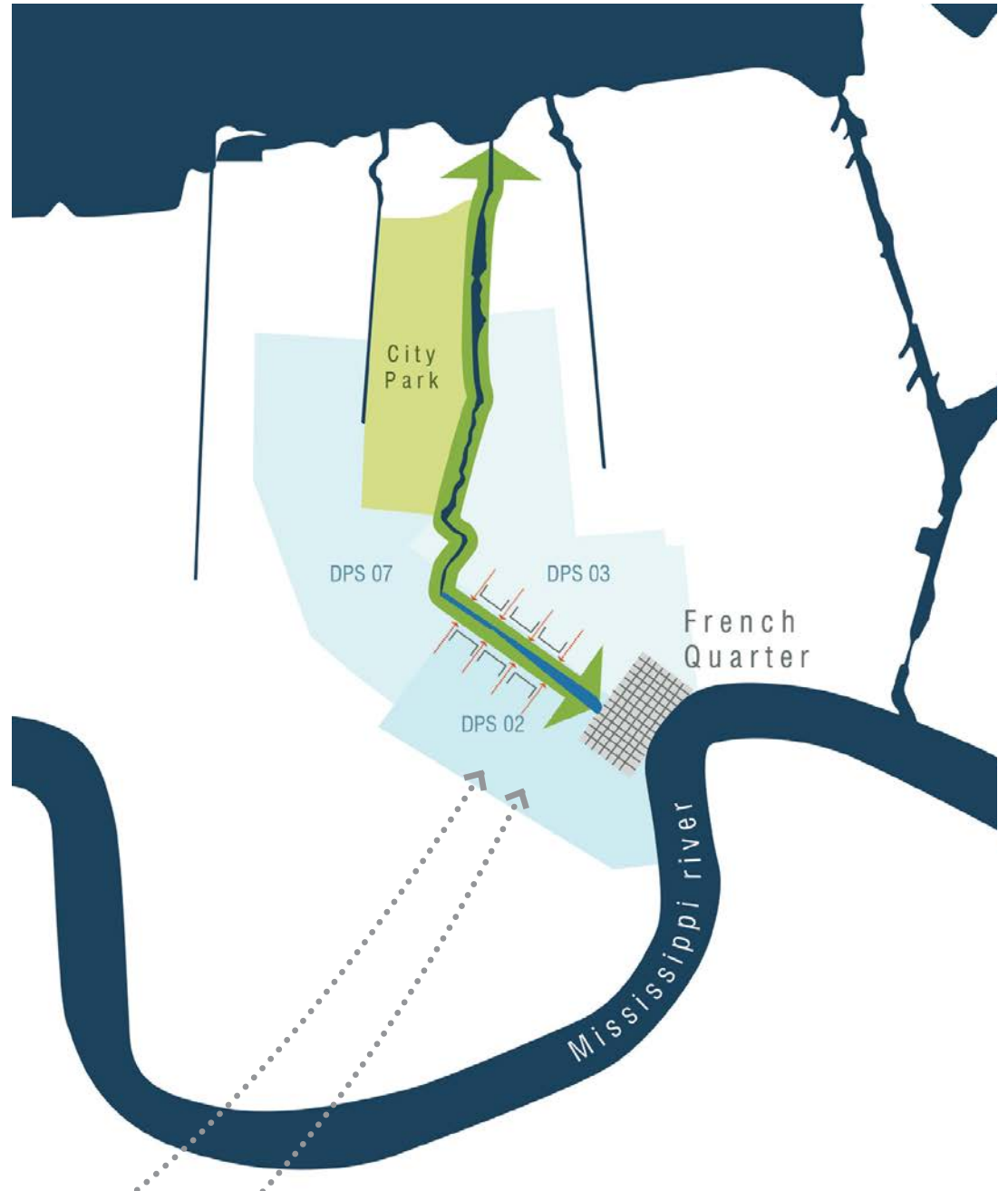
Uptown to Bucktown: Interceptor Streets



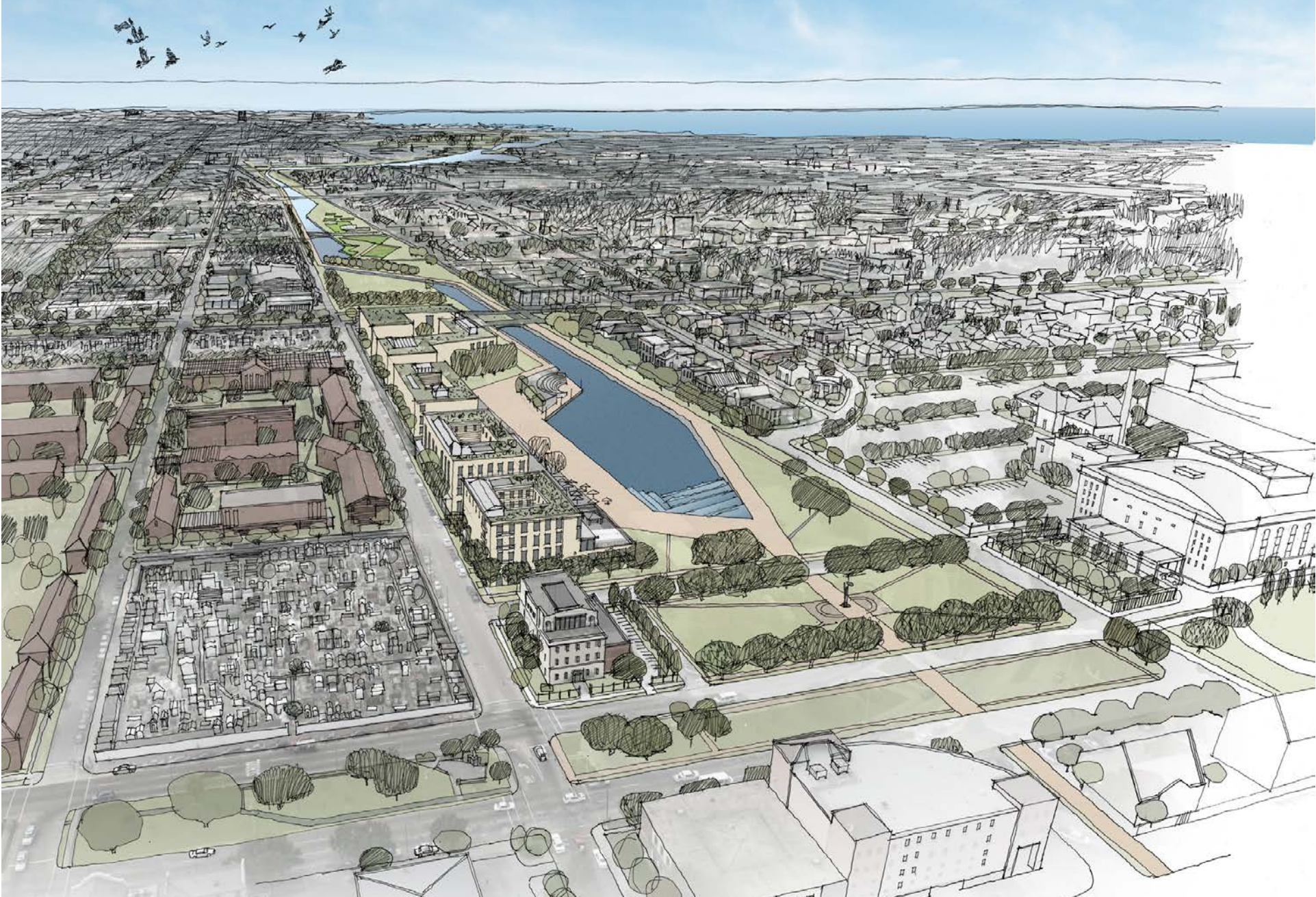
Uptown to Bucktown: Interceptor Streets



Lafitte Blueway: Historic Water Identity



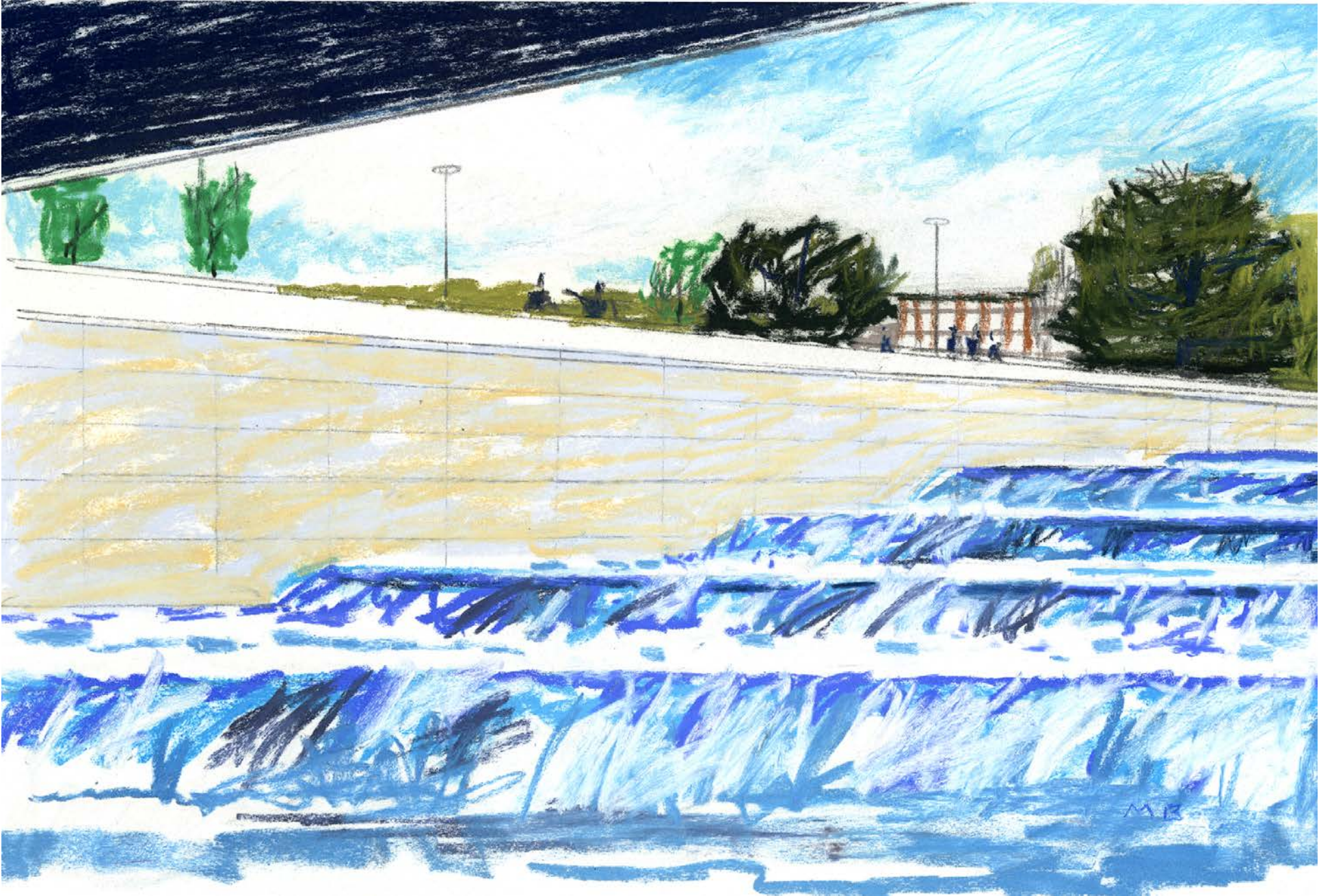
Lafitte Blueway: Basin Street



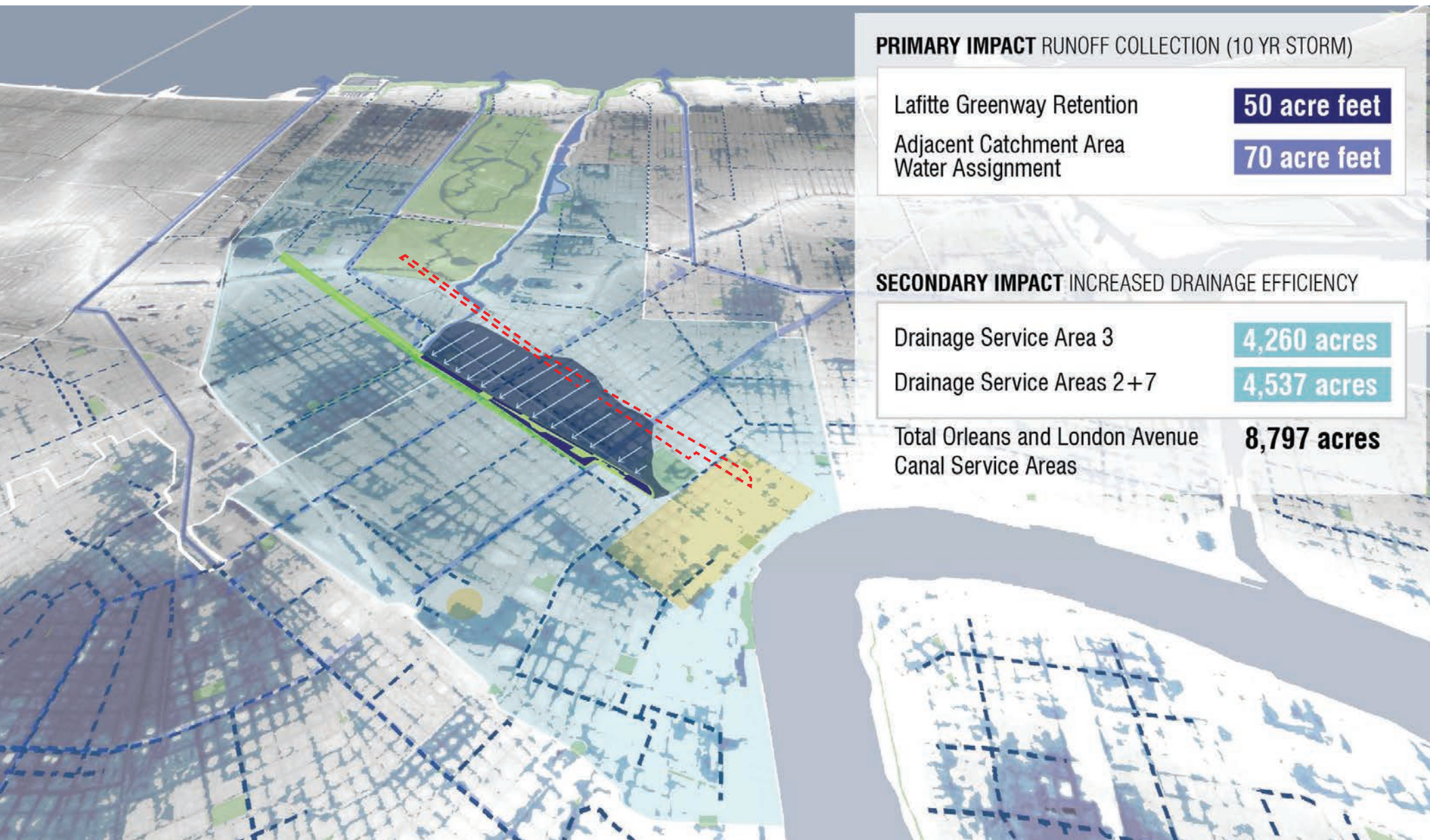
Circulating System



Lafitte Blueway: Bayou Cascade



Lafitte Blueway: Drainage Impact



PRIMARY IMPACT RUNOFF COLLECTION (10 YR STORM)

Lafitte Greenway Retention

50 acre feet

Adjacent Catchment Area
Water Assignment

70 acre feet

SECONDARY IMPACT INCREASED DRAINAGE EFFICIENCY

Drainage Service Area 3

4,260 acres

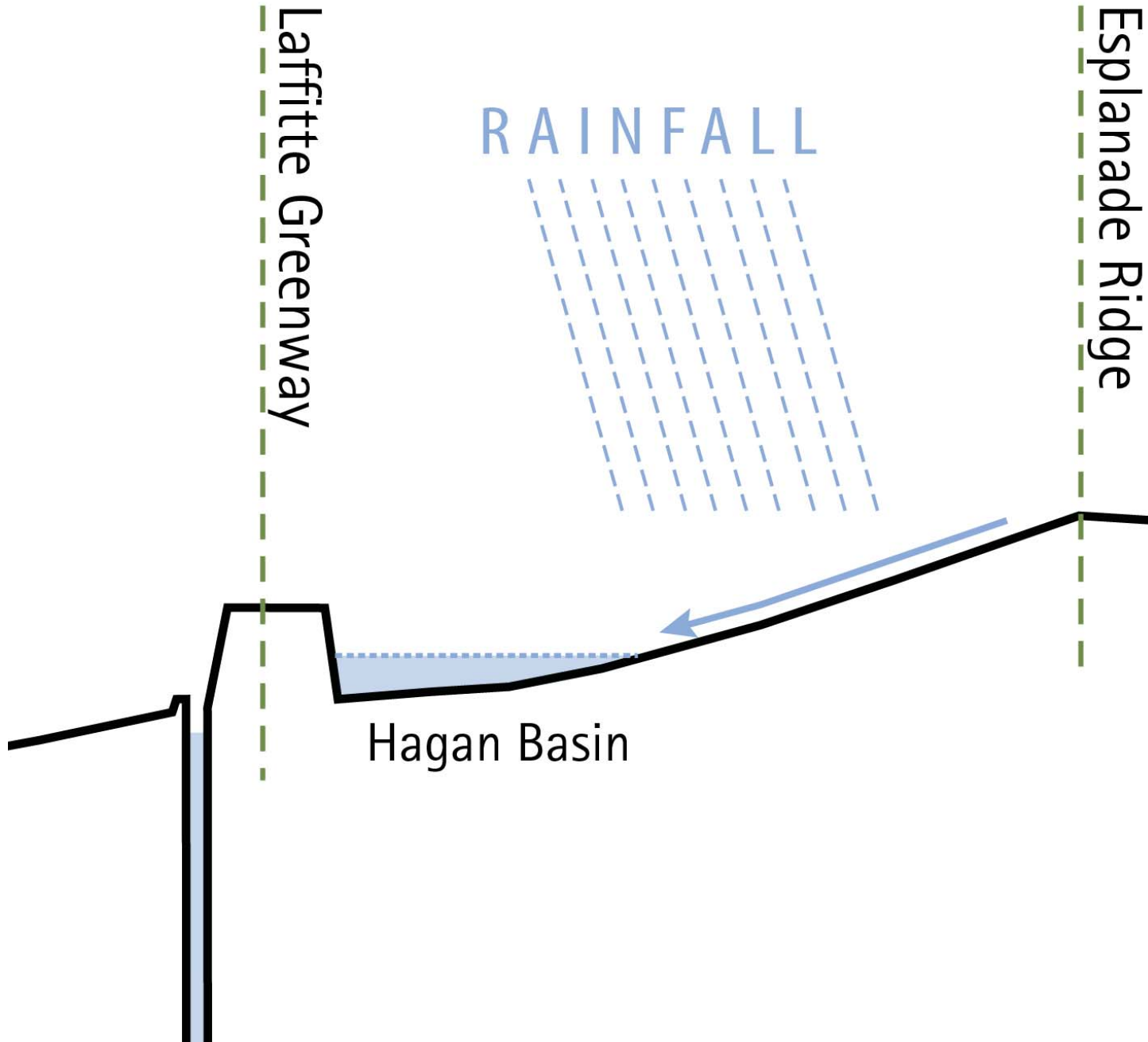
Drainage Service Areas 2+7

4,537 acres

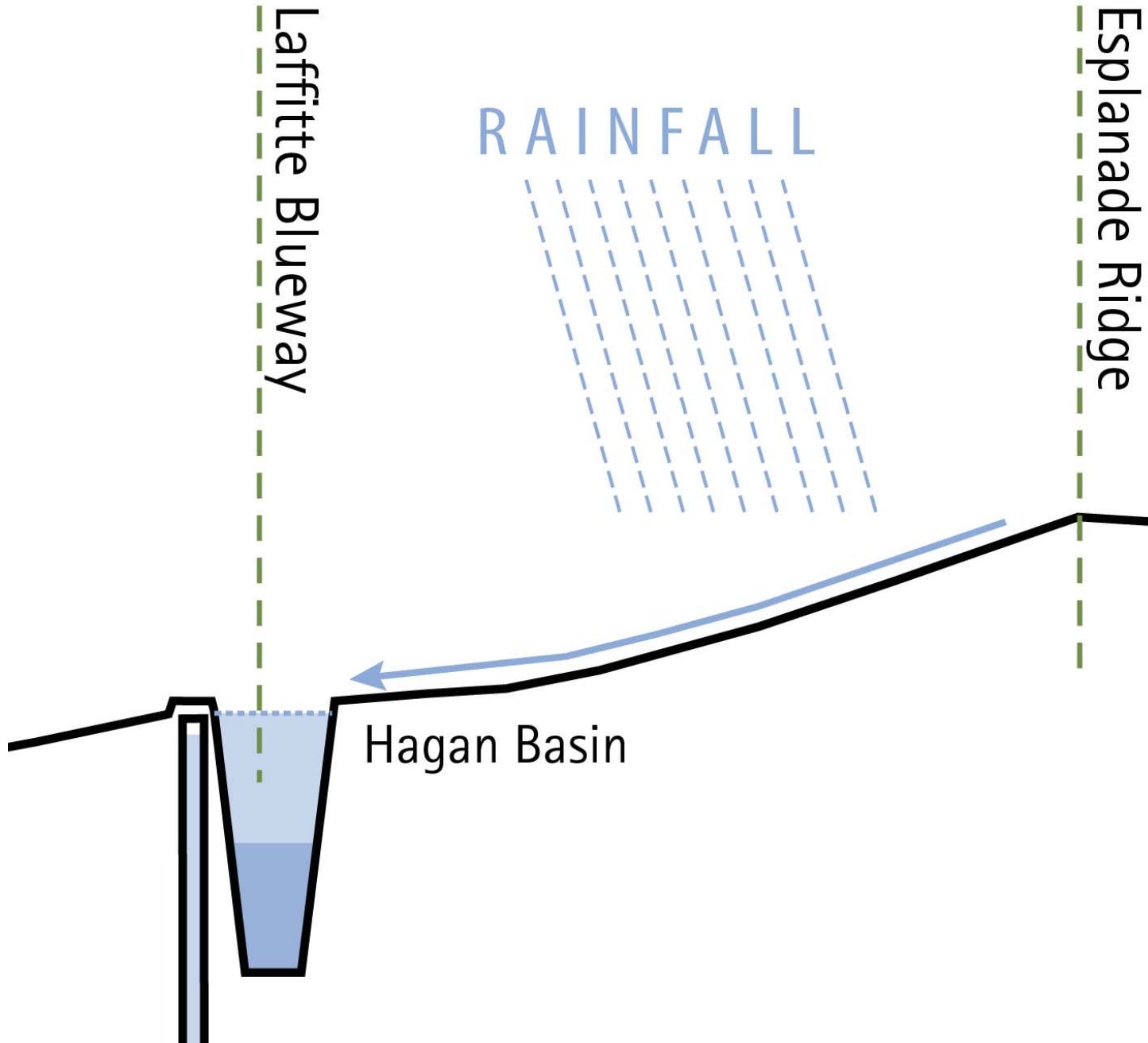
Total Orleans and London Avenue
Canal Service Areas

8,797 acres

Lafitte Blueway



Lafitte Blueway



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Lafitte Blueway



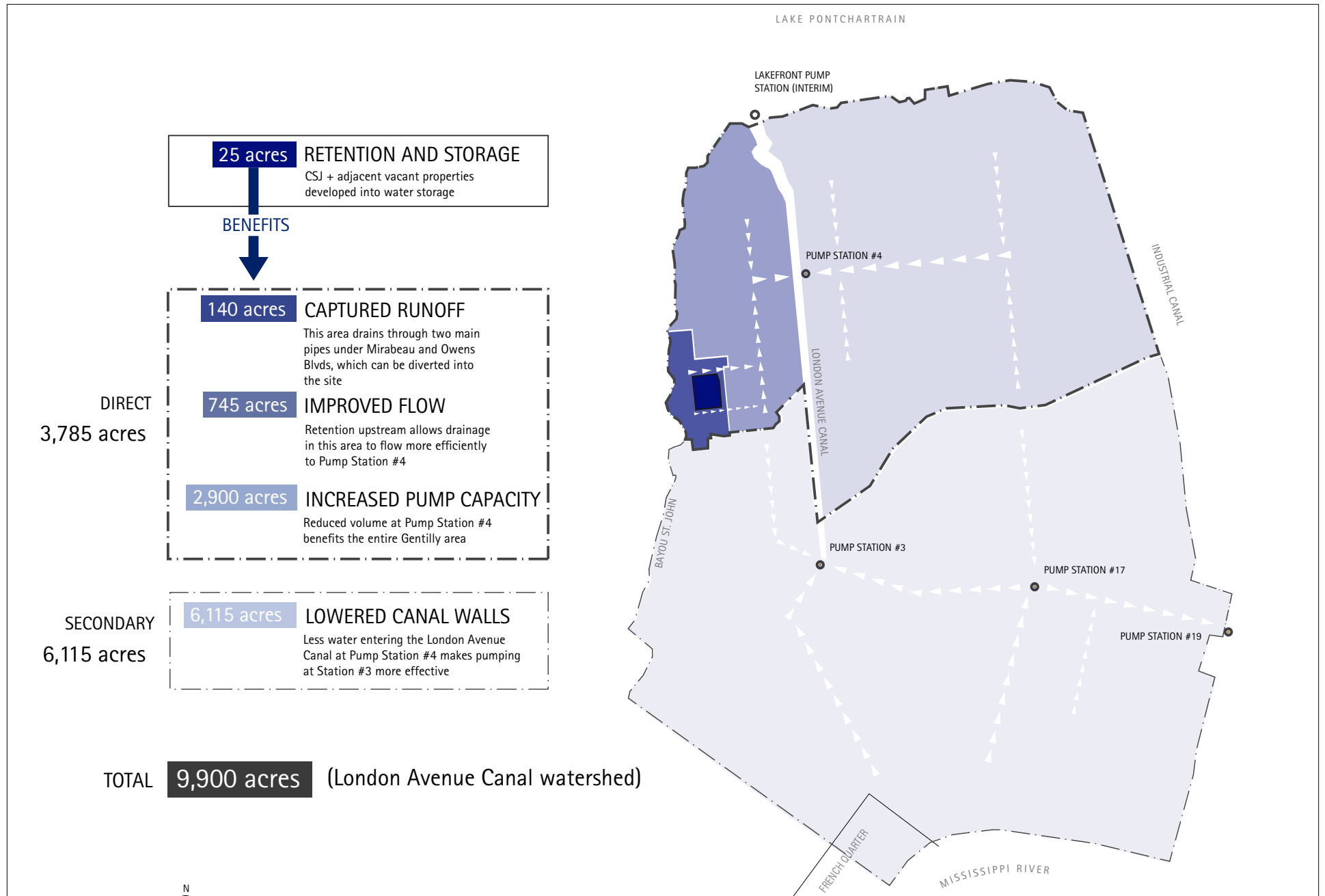
Mirabeau Water Garden



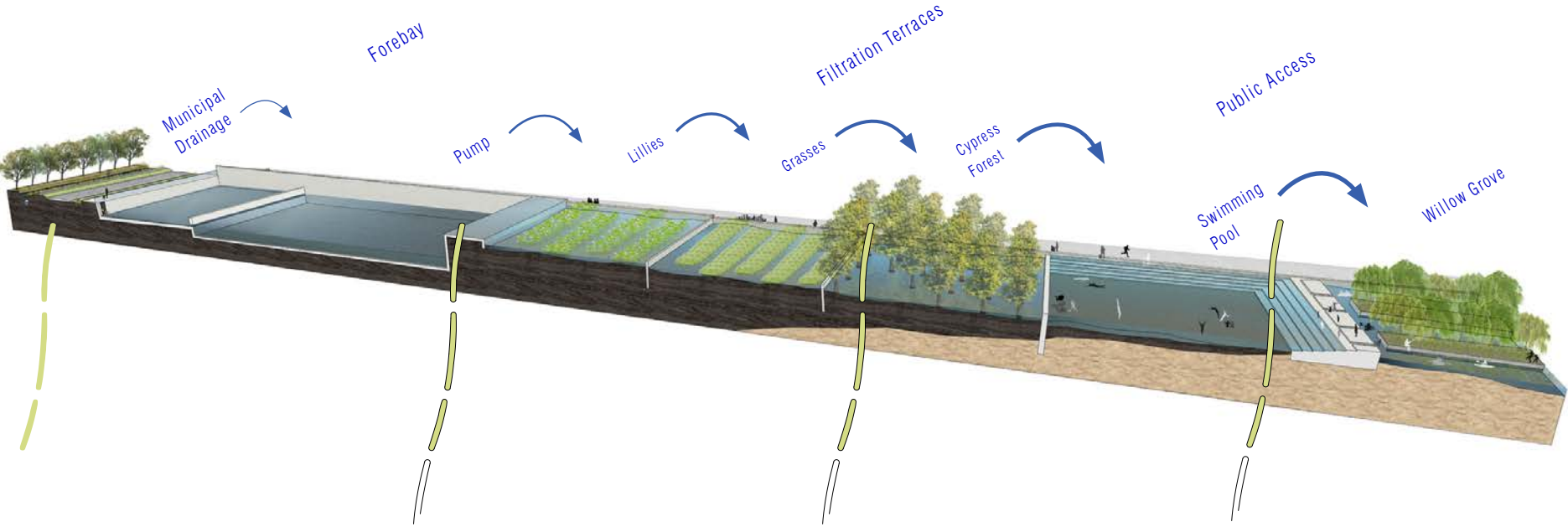
Mirabeau Water Garden



Mirabeau Water Garden



Mirabeau Water Garden

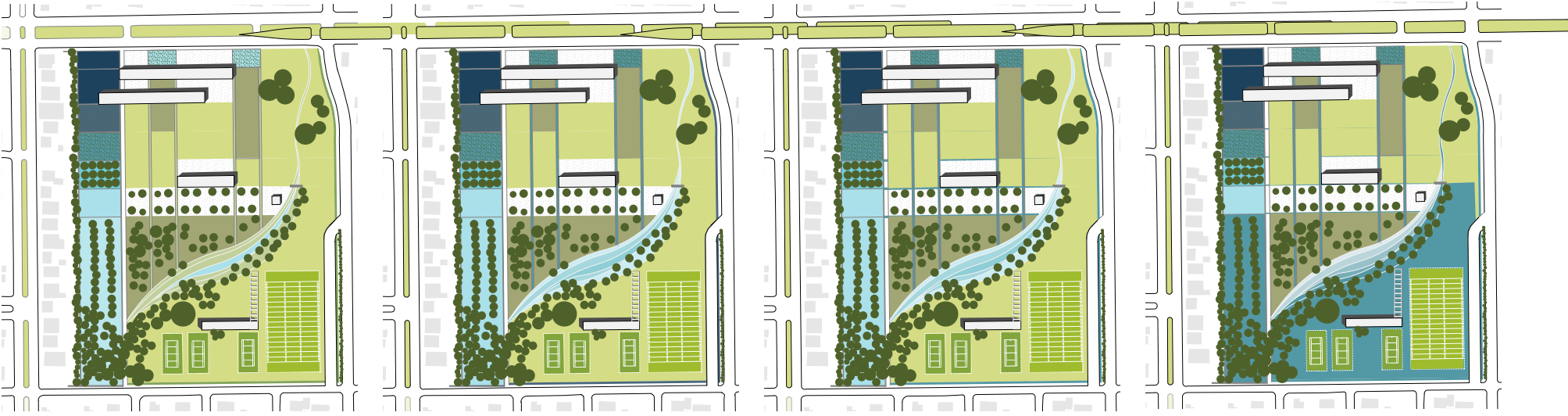


DRY CONDITION

LIGHT RAIN EVENT

AVERAGE RAIN EVENT

EXTREME RAIN EVENT



Mirabeau Water Garden





livingwithwater.com