



WORKING WITH NATURE TRAINING SERIES

MARCH 16, 2022

*Development regulations and
incentives for nature-based solutions*

LOUISIANA
WATERSHED
INITIATIVE

working together for sustainability and resilience



AGENDA

- Program overview
- Development regulations and incentives for nature-based solutions
- Gretna stormwater regulations case study
- Questions



NATURE-BASED SOLUTIONS PROGRAM OVERVIEW

MAXIMIZE NATURAL FUNCTIONS OF THE FLOODPLAIN

- Fund projects that harness natural features to reduce flood risk, improve water quality and provide additional co-benefits
- Provide training and technical resources to advance understanding and adoption of nature-based solutions
- Prioritize nature-based solutions throughout state programs and projects
- Use tools to quantify benefits and measure performance of nature-based projects



DEVELOPMENT REGULATIONS AND INCENTIVES



Michael Bloom

SUSTAINABILITY PRACTICE MANAGER |
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Michael Bloom directs the sustainability practice of R. G. Miller Engineers, based in Houston. He provides planning and design services for green infrastructure solutions, as well as resilience and sustainability consulting services. Michael is a board-certified environmental engineer, an Envision Sustainability Professional, a certified floodplain manager and a registered professional engineer in Louisiana and seven other states.



Incentives for green stormwater infrastructure on private property

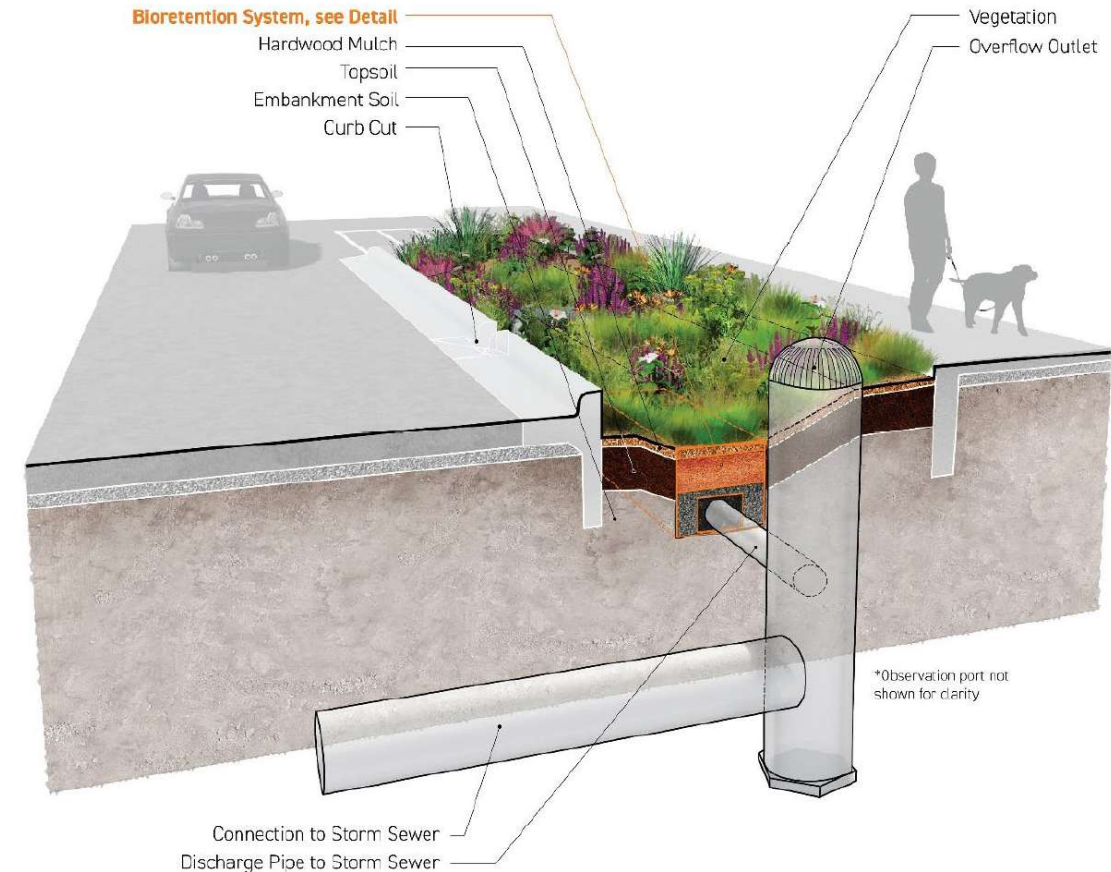
AGENDA

- What is green stormwater infrastructure?
- The rise of green stormwater infrastructure
- Incentives for GSI on private property
- Houston incentives for green development
- Your next steps



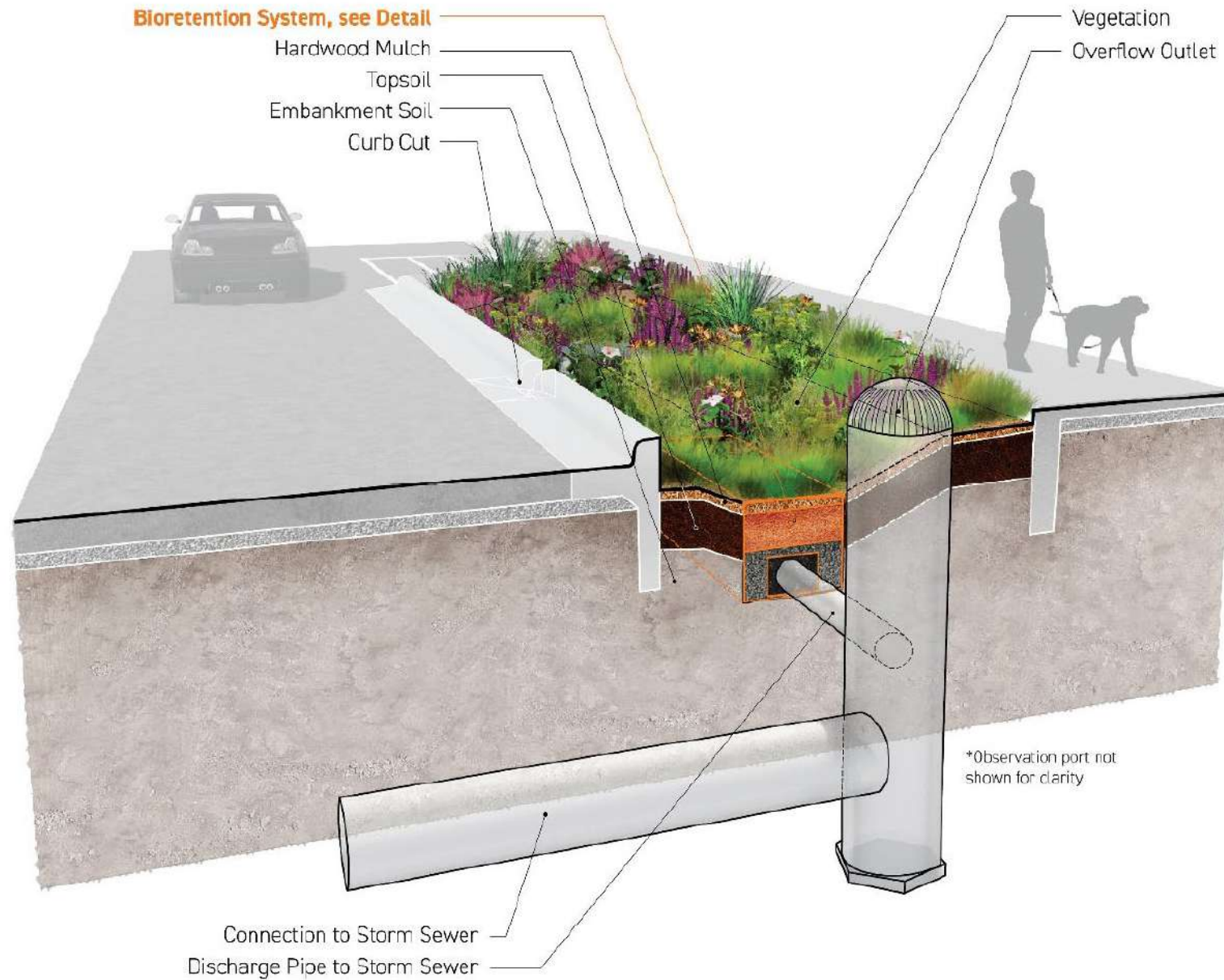
What is green stormwater infrastructure?

- Depends on who you ask
- Parks and open space
- Stormwater management
- Landscaped areas
- Stormwater quality treatment
- “Magic” flood protection



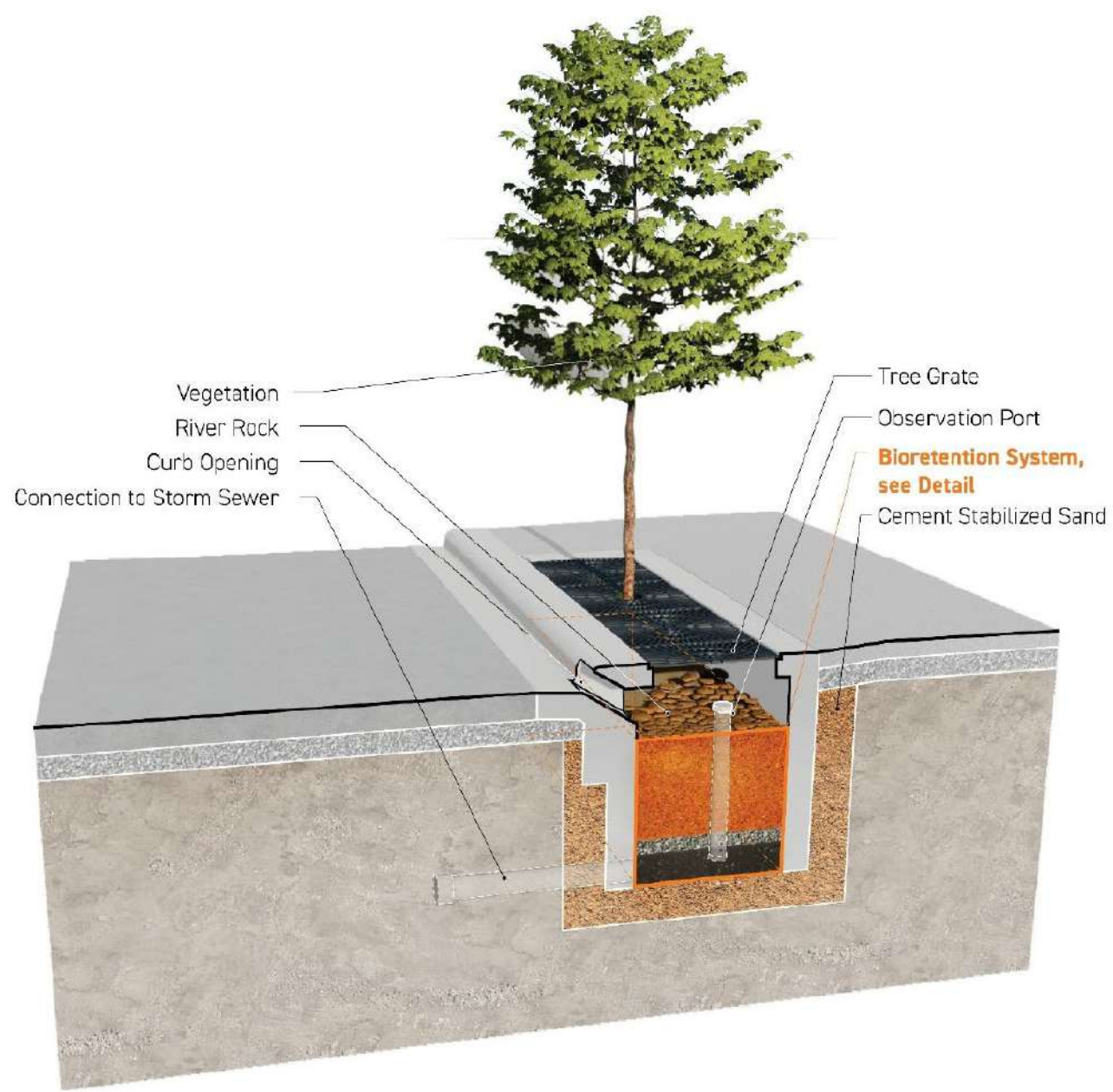
HARRIS COUNTY (2021)





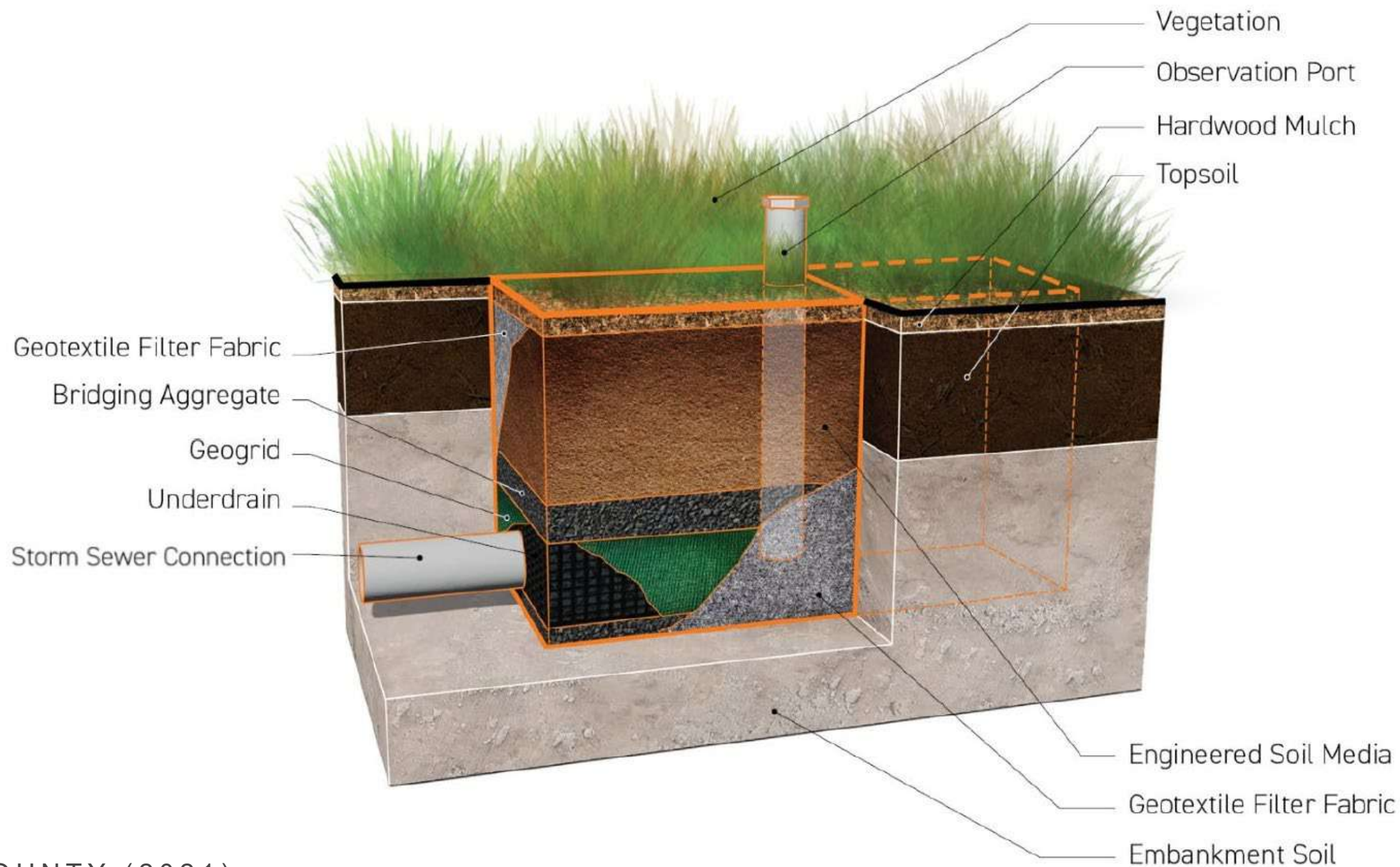
HARRIS COUNTY (2021)





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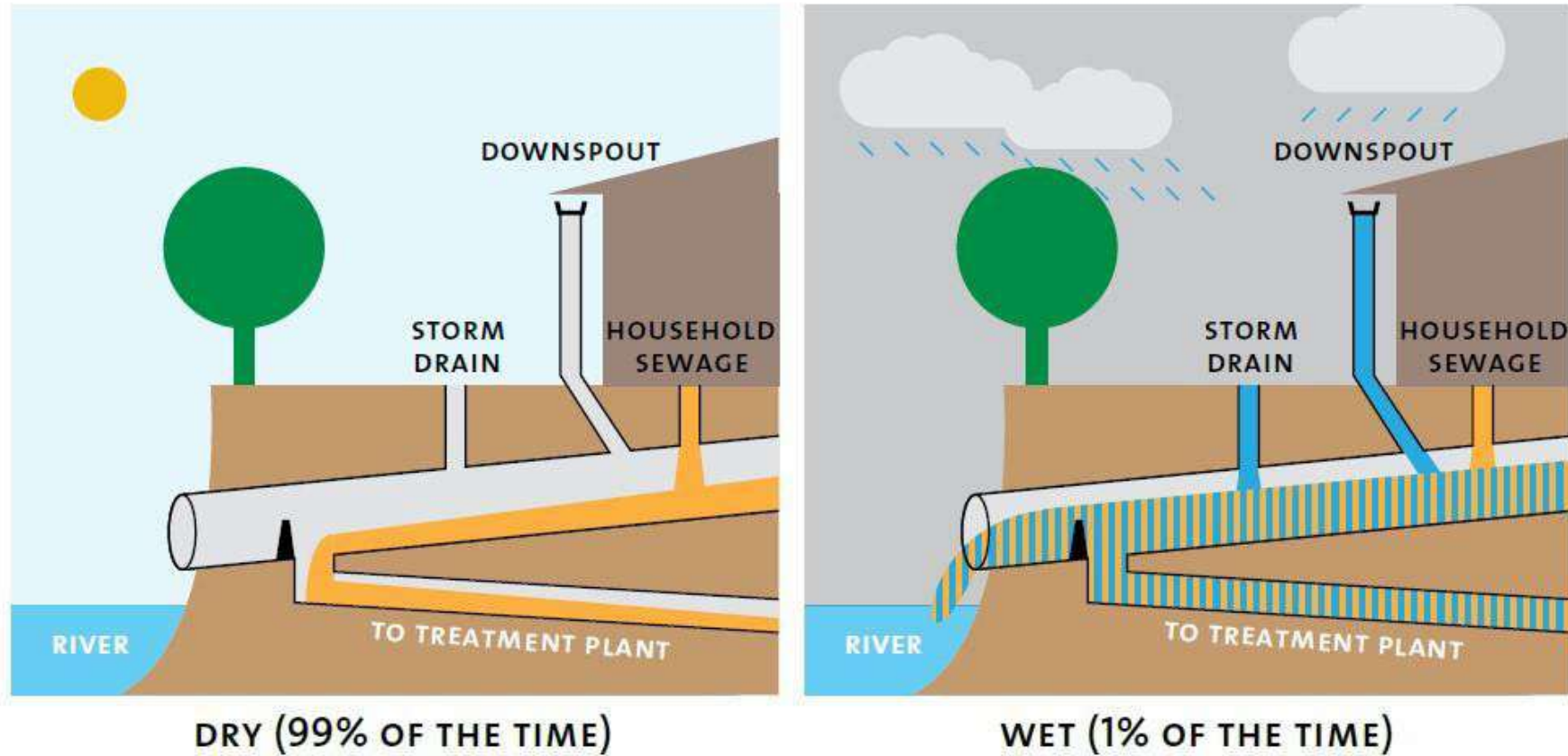




HARRIS COUNTY (2021)



The rise of green stormwater infrastructure

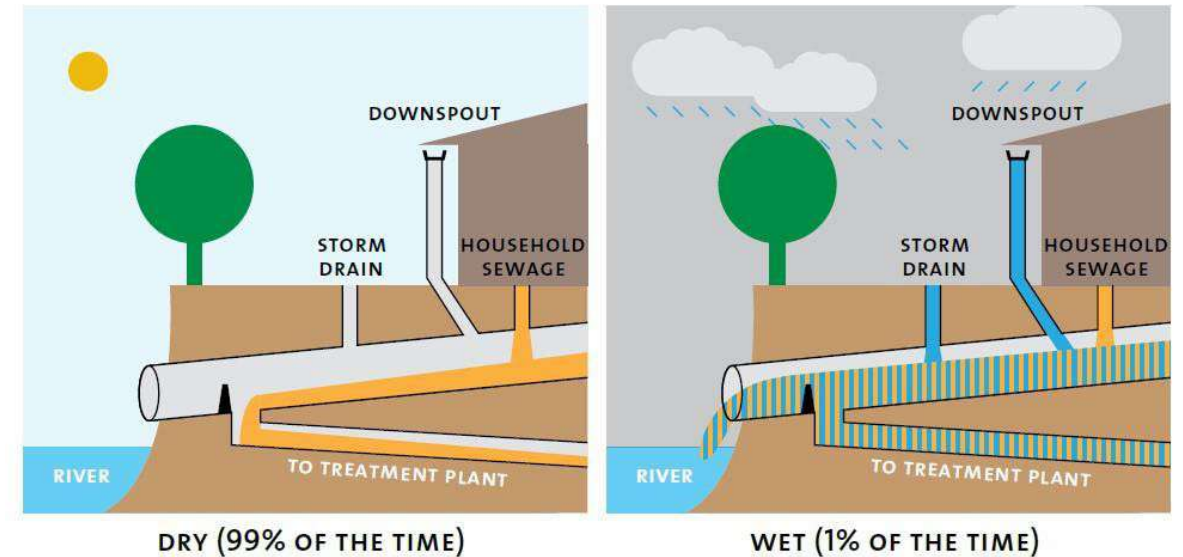


URBAN LAND INSTITUTE (2017)



The rise of green stormwater infrastructure

- Overflows from combined sewer systems violate the Federal Clean Water Act.
- More than 800 cities in the United States are moving forward with fixes.
- Court ordered remedies are required.

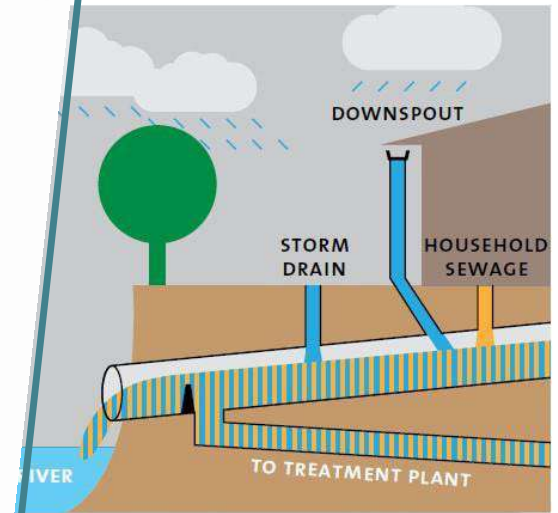
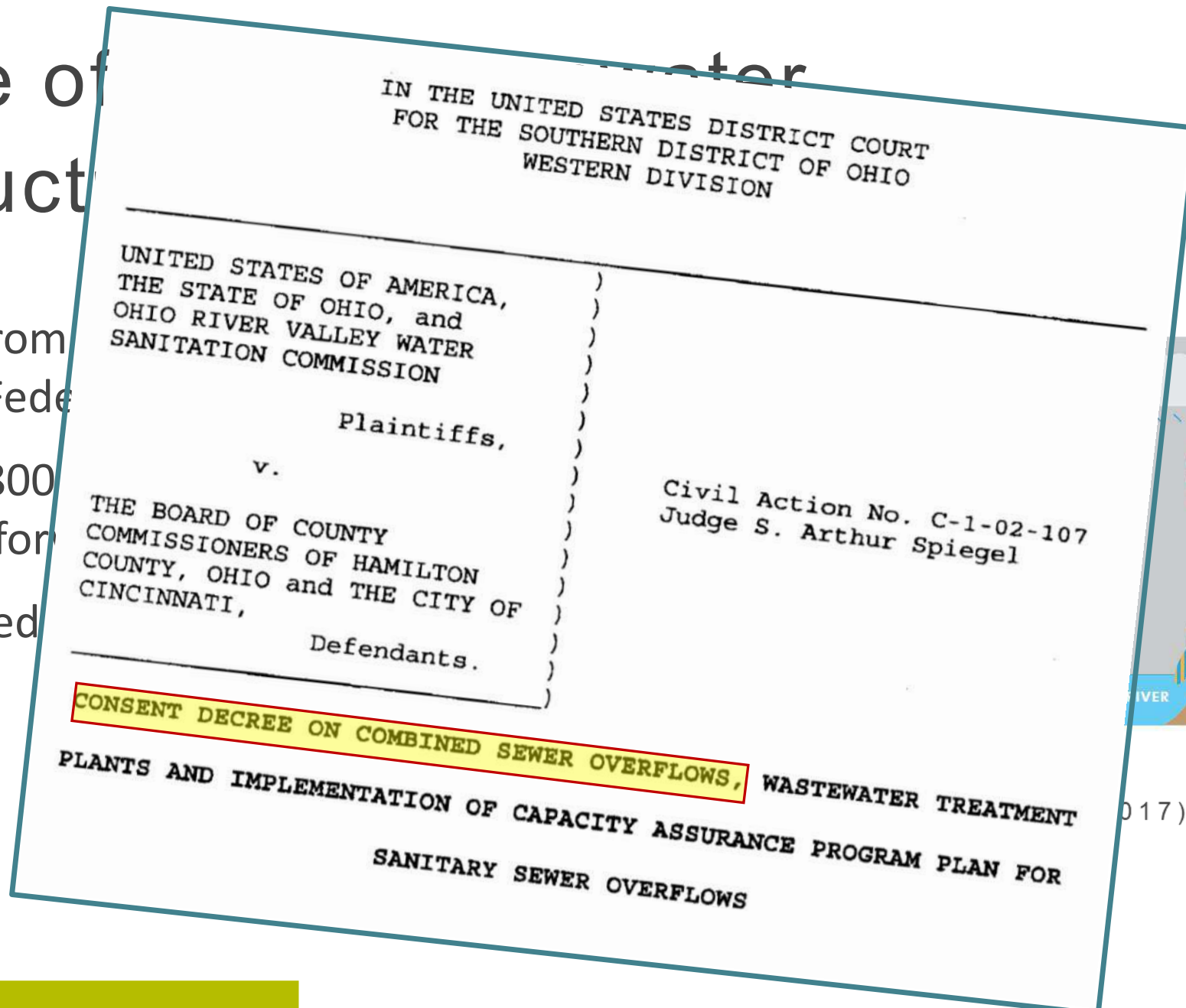


URBAN LAND INSTITUTE (2017)



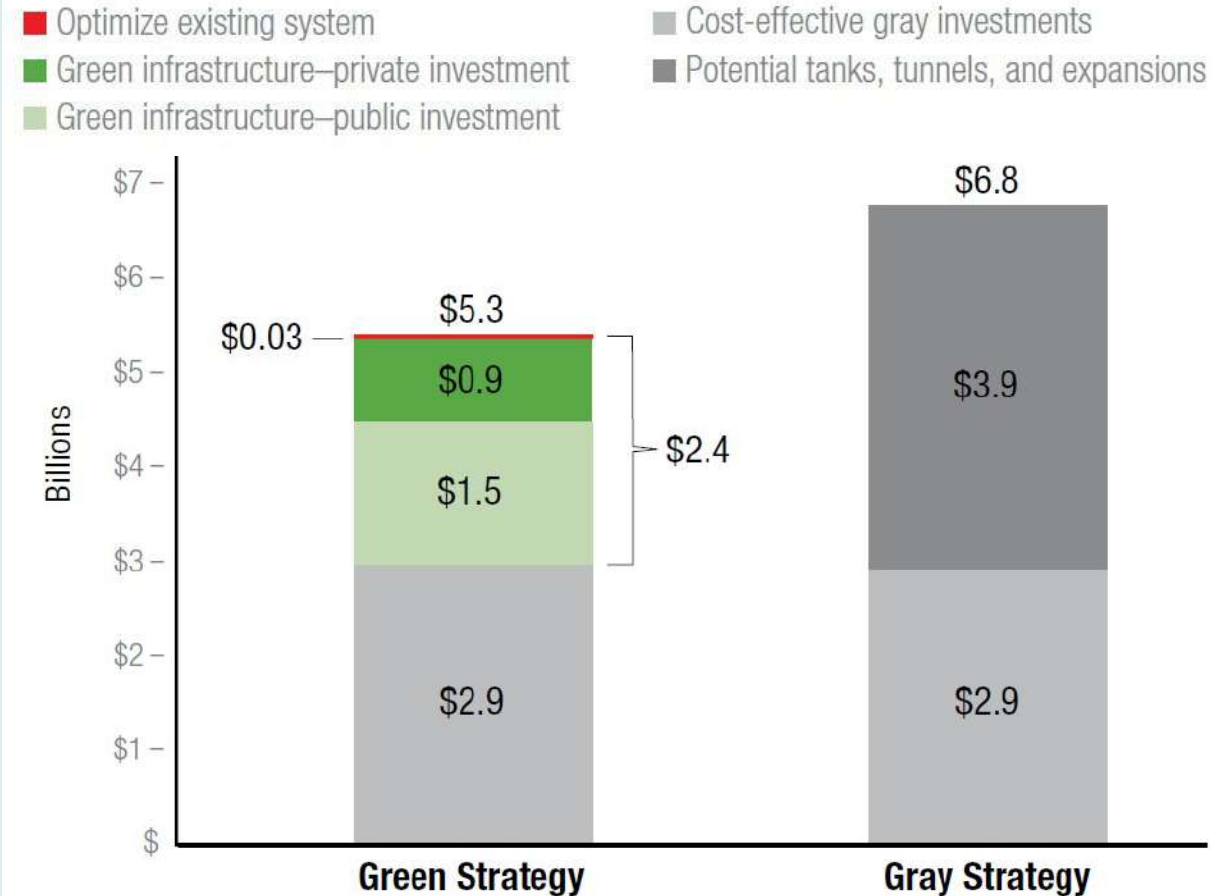
The rise of infrastructure

- Overflows from
violate the Federal
- More than 800
are moving forward
- Court ordered



Green infrastructure costs less

- New York City CSO management cost estimates
 - NYC Green Infrastructure Plan
- Green strategy costs less than gray.**



URBAN LAND INSTITUTE (2019)



GSI drivers in MS4s

- Water quality
 - Municipal separate storm sewer system permit requirements
 - Load reductions from approved total maximum daily loads
- Flood risk reduction, resilience, sustainability and co-benefits
- Enhanced triple-bottom-line outcomes



SOURCE: RANDY BRESNICK, HURRICANE HARVEY FROM INTERNATIONAL SPACE STATION (AUGUST 28, 2017), NASA



Baseline requirements, then add incentives

- Finished floor elevation requirements
- Detention requirements
- No adverse impact
- Hydrology and hydraulic modeling
- Extreme event routing
- Floodplain fill mitigation



HOUSTON (2019)



Incentives to consider

- Timing
 - Expedited platting or re-platting
 - Expedited permitting
- Financial
 - Cash incentives
 - Permitting fees
 - Platting fees
 - Utility connection fees
 - Impact fees
 - Tax abatements
- Awards and recognition
- Development rules
 - Open space reserves
 - Parking
 - Landscape design
 - Open space/parks
 - Right-of-way use



Incentives to consider

- Design rules
 - Stormwater collection
 - Stormwater conveyance
 - Stormwater detention/retention
 - Floodplain management
 - Stormwater quality
- Building code
 - Grey water
 - Rainwater harvesting



HOUSTON (2019)



Houston incentives for green development

- Benchmarking
- Engagement with developers
- Drafted incentives
- Evaluated incentives
- Recommended incentives

houston.tx.gov/igd



HOUSTON (2019)



Benchmarking



Qualitative evaluation

Incentive	Developer Benefits	Ease of Implementation	Ease of Administration	Degree of Cost/Revenue Neutrality	Net Public Benefits	Weighted Score	Further Evaluation?
Weight	10	4	4	6	2		
Timing Incentives							
Expedited platting or re-platting.	2	4	4	6	6	100	NO
Expedited permitting.	2	3	3	6	6	92	NO
Platting and permitting timing certainty	5	5	5	6	6	138	YES
Financial Incentives							
Reduced permitting fees.	2	8	8	5	5	124	NO
Reduced platting fees.	2	8	8	5	5	124	NO
Reduced utility connection fees.	2	8	8	5	5	124	NO
Reduced drainage utility parcel fees.	2	8	8	5	5	124	NO
Reduced Impact fees.	8	8	8	5	3	180	YES
Property tax abatements.	9	6	6	3	5	166	YES
Grants to private developers.	9	4	4	8	5	180	YES
Award Program							
Award program	7	5	5	3	5	138	YES
Municipal Ordinance Incentives							
More flexible parking requirements.	5	5	5	8	6	150	YES
More flexible landscaping requirements.	5	5	5	8	6	150	YES
More flexible park dedication, park fund, and compensating open space regulations.	5	5	5	8	6	150	YES
Infrastructure Design Incentives							
Modified drainage design requirements.	8	5	5	8	4	176	YES
Modified detention requirements.	8	5	5	8	4	176	YES
Modified stormwater quality requirements.	8	5	5	8	6	180	YES
Building Code Incentives							
More flexible grading requirements.	2	5	6	9	3	124	NO
Developer Contracts							
Special provisions to city-developer contracts.	6	2	2	8	2	128	NO
Detention Volume Trading or In-Lieu Fee Programs							
Detention volume trading program.	5	2	2	5	5	106	NO
Fee in-lieu program.	7	2	2	5	5	126	NO
Best	10	10	10	10	10	260	
75th Percentile	7.5	7.5	7.5	7.5	7.5	195	
Median	5	5	5	5	5	130	
25th Percentile	2.5	2.5	2.5	2.5	2.5	65	
Worst	1	1	1	1	1	26	

HOUSTON (2019)



Quantitative evaluation factors

- Legal, policy and procedural issues
- Benefits and costs
- Threshold points
- Barriers and challenges
- Implementation strategies

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HOUSTON (2019)



Recommended Houston incentives



- Landscaping and open space
- Parking
- Drainage
- Hydrologic basis for detention
- Stormwater quality
- Harmonize with county

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Integrated Green Development Rules



Recommended Houston incentives



- A rigorous definition of green infrastructure is needed.
- The value of design, construction, monetized co-benefits and two years of operations and maintenance may be subtracted from the property tax increase.
- Credit may be claimed over a 10-year period if GSI value exceeds property tax increase.

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Property Tax Abatement Program



Recommended Houston incentives



- Publicity
- Recognition and branding
- Site tours, media events
- Participation of senior elected officials
- Annual awards event

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Award & Recognition Program



Recommended Houston incentives



- Pre-qualified plans
- Completeness review
- Single-day team review with all disciplines
- Same-day plan approval
- Fee structure to benefit GSI

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**Permitting Process
Certainty and Speed**



Your next steps

- Identify drivers
 - Water quality?
 - Flood risk reduction?
 - Co-benefits?
- Identify stakeholders
 - Engineers
 - Developers and property owners
 - Builders



Your next steps

- Consider local political and policy views
 - Support individual property rights
 - Support the “commons”
- Evaluate your land use and development rules
 - Drainage, detention, stormwater management
 - Floodplain management
 - Landscape design, open space



Your next steps

- Measure your pace of development or redevelopment
- Start slow and small



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GRETN STORMWATER REGULATIONS CASE STUDY



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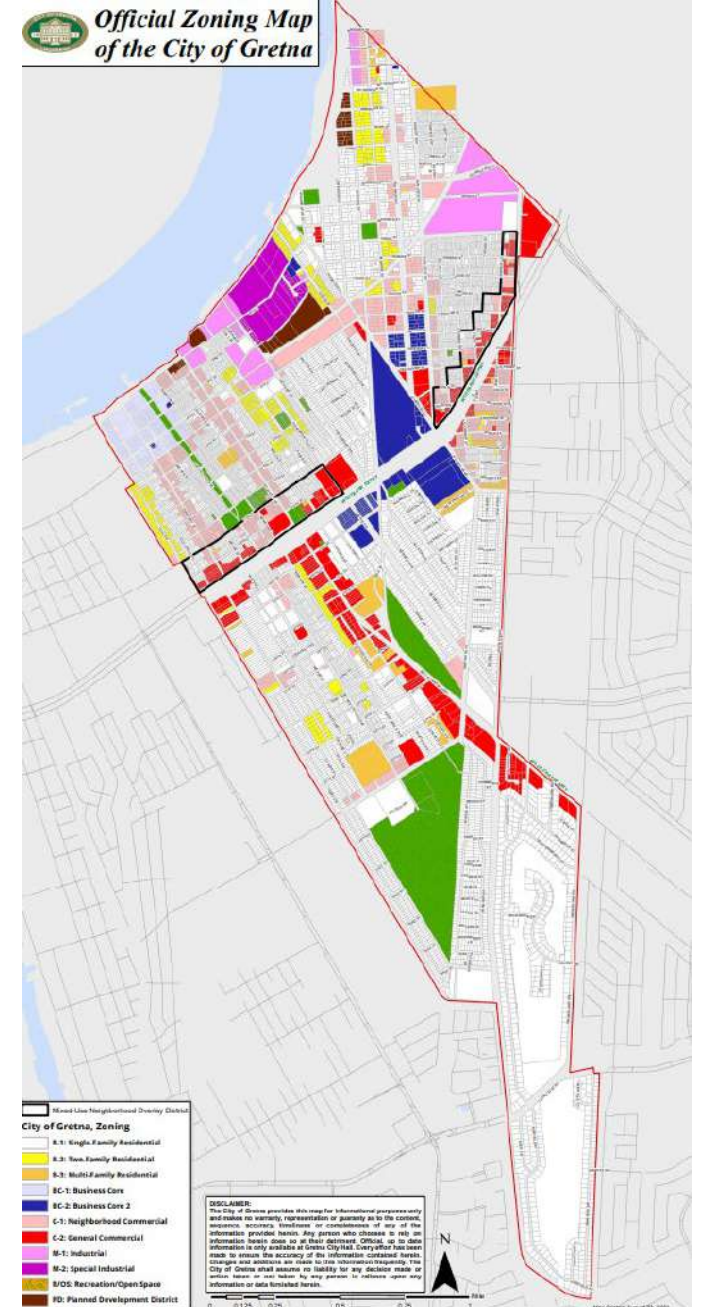


Implementing nature-based regulations in Gretna



Gretna overview

- Incorporated city on West Bank of Jefferson Parish
- About 4 square miles
- Population: 18,000
- Development trends:
 - Mostly urban infill, very few greenfield lots
 - No slow down in private investment due to pandemic
 - Historic districts seeing most investment (Old Gretna and McDonoghville)
 - Rising property values spurring more commercial development interest throughout city and residential interest in downtown district
 - More than \$25 million capital program underway for revitalizing commercial corridors, rebuilding public infrastructure and managing future risks



Gretna's green infrastructure projects demonstrate multiple benefits



City Hall Plaza



Gretna Resilience District



Unified Development Code



*A **Unified Development Code** combines all traditional zoning and subdivision regulations, along with other desired city regulations, such as design guidelines, sign regulations and **floodplain and stormwater management.***

- Adopted in 2019, following 2018 Comprehensive Plan
- Streamlines development permitting process by:
 - Removing inconsistencies and outdated policies
 - Outlining required permits, processes, deadlines and regulations (e.g., subdivisions, site plans and conditional use permits)
- Provides high level of flexibility:
 - Determination of betterment and other relief resides with planning director
 - Administrative processes streamlined



Stormwater management regulations



Purpose: Establish a consistent and **transparent set of performance standards and requirements** for planting and stormwater management that will diminish threats to public health, safety, property and natural resources of Gretna

- **Reduce urban heat island effect** by preserving and increasing the city's tree canopy
- **Decrease flood risk and property damage** by reducing runoff and increasing permeability
- **Protect ecological functions** of wetlands and **improve water quality** using green infrastructure
- **Protect public health and safety** by establishing buffer requirements that decrease incompatible land uses



Commercial development and stormwater management

THRESHOLDS AND MAJOR REQUIREMENTS

Developments meeting the following criteria must prepare a stormwater management plan using green infrastructure:

- All **new development or substantial redevelopment** (10,000 square feet or larger) per Section 58-89—does not apply to single-family or duplex lots less than 5 acres
 - a) A minimum of 50% of the planting area must consist of green infrastructure.
 - b) A minimum of 50% of all hardscape (parking spaces, drive isles, walkways, outdoor vehicular storage areas, gathering spaces) must be surfaced with pervious materials.
 - c) Ten-year storm event post-development runoff rate must not exceed the 10-year storm event predevelopment runoff rate.
 - d) Site must be designed to retain, detain or filter the first 1.25 inch of stormwater runoff during each rain event (10-year storm).



**Bakery & Café under construction
at 5th and Lafayette Street**

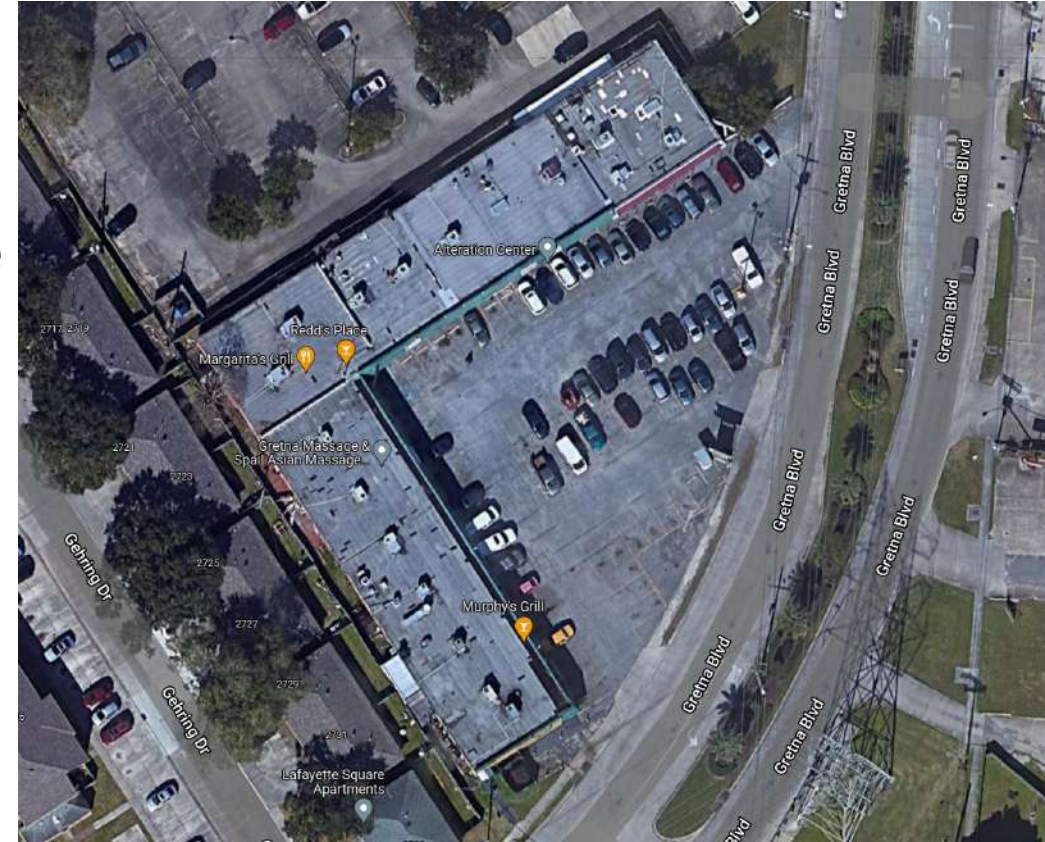
UDC Section 58-271



Commercial development and stormwater management



- Substantial redevelopment
 - Improvements **costing more than 50% of building's assessed value**
 - Increase of impervious coverage exceeding **10% of existing coverage**
 - **Resurfacing/modifying hardscape** of parking lot other than restriping
- New developments less than 10,000 square feet, excluding single- and double-family homes
 - Required planting areas must use 50% green infrastructure.
 - Minimum of 50% of all hardscape must be pervious materials.
- Minor subdivisions—lot consolidations:
 - Planning director may exempt development from SWM Plan **ONLY WHEN** the proposed subdivision and subsequent development is determined to not adversely affect drainage for adjacent sites.



Commercial development at 505 Gretna Blvd.

UDC Section 58-271



Parking lots

THE MOST LIMITING FACTOR WHEN
ESTABLISHING A NEW USE

Improvements other than restriping:

- May trigger stormwater management requirements, screening, buffering with vegetated areas
- Will require planted islands, 50% of which must be green infrastructure intended to assist drainage



New parking lot for Thai D'Jing on 5th Street: an example where creative parking supply meets stormwater requirements

**UDC Section
58-181-186**



Planting and buffering

APPLICABILITY

Required for new/substantial redevelopment:

- Requiring vegetated buffers (58-272 e) for abutting uses, screening parking areas from street view
- Requiring street tree planting (58-272 d)
 - All adjacent properties (not R-1 or R-2) must provide street trees.
- Any development purposing the removal of healthy, non-hazardous trees (DBH > 6")

New and redevelopment of

- Vehicular-use areas or vehicular-use area additions of five or more spaces (58-272 f)



Zoning District or Use of Proposed Development	Zoning/Use of Abutting Development					
	R-1, R-2	R-3	BC-1, C-1	BC-2, C-2	M-1, M-2	ROS
R-1, R-2	none	none	none	20'	30'	none
R-3	10'	none	none	20'	20'	20' if Multi-Family building
BC-1, C-1	10'	10'	none	none	20'	20'
BC-2, C-2	20'	15'	none	none	20'	20'
M-1, M-2	50'	40'	20'	20'	10'	30'
PUD	10'	10'	10'	10'	30'	10'
Active Recreational Facilities	20'	20'	10'	10'	20'	20'
Institutions (public, private or religious)	20'	20'	none	none	20'	20'

Required buffer areas also help meet pre-post runoff requirements and detention.

UDC Section 58-272



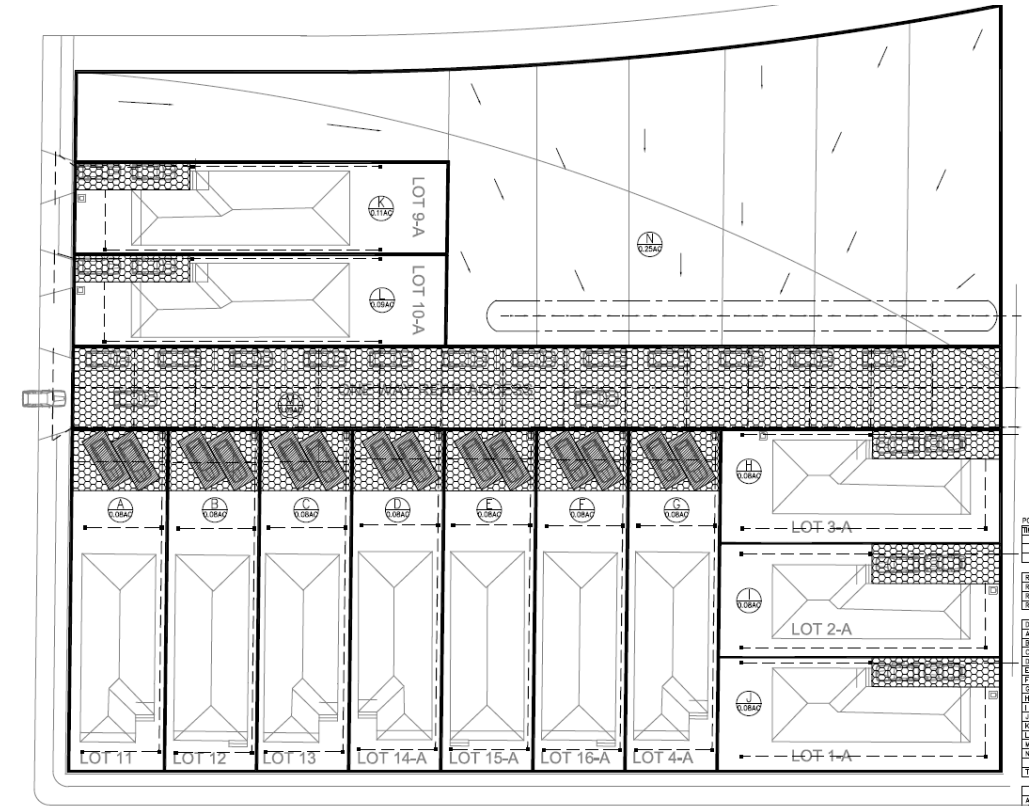
Residential development and stormwater management



- Driveways and setback areas involve managing greenspace and runoff.
 - 50% of all residential setbacks must be greenspace, including front yards.
 - Driveway sizes are limited (percentage of front yard coverage and lot width coverage).
- Site planning process for subdivisions (few) is more intensive.



Residential driveway redevelopment



Proposed site plan in progress for 2nd and Fried Streets residential redevelopment of industrial property

UDC Section 58-111 and 58-182



Lessons learned



- To lead by example, it is important to have visible examples.
 - City projects are critical for learning and demonstration.
 - Maintenance is an important factor.
- Architects and contractors are keys to success—building knowledge base takes time.
- UDC is a work in progress—having a simplified code amendment process is beneficial.
- Administration of stormwater requirements includes two planners and one contract engineer.
- Everyone loves their driveways—working on neighborhood specific design standards.
- The 10,000-square-foot site threshold can be a deterrent but is not pushing development out of Gretna.

gretnala.com/UDC

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QUESTIONS?

CONTACT INFORMATION

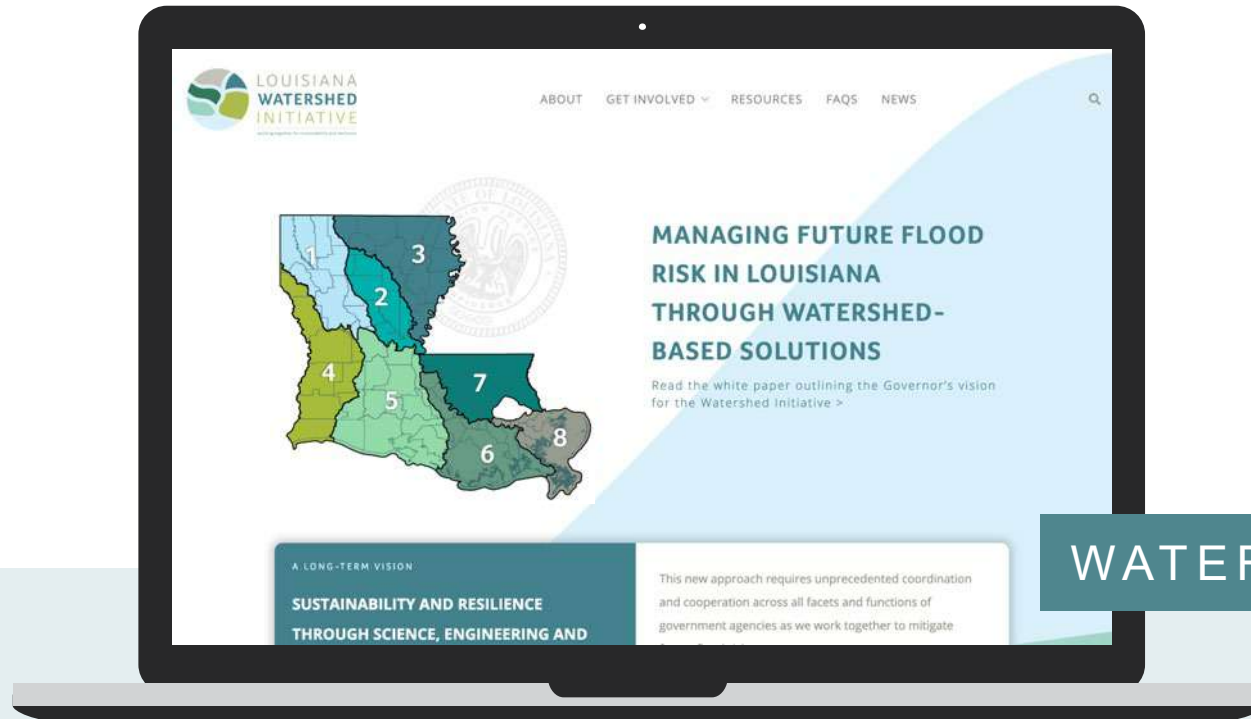
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THANK YOU



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