



# St. Bernard Neighborhood Stormwater Resilience Project

60% Design Review  
Committee Meeting



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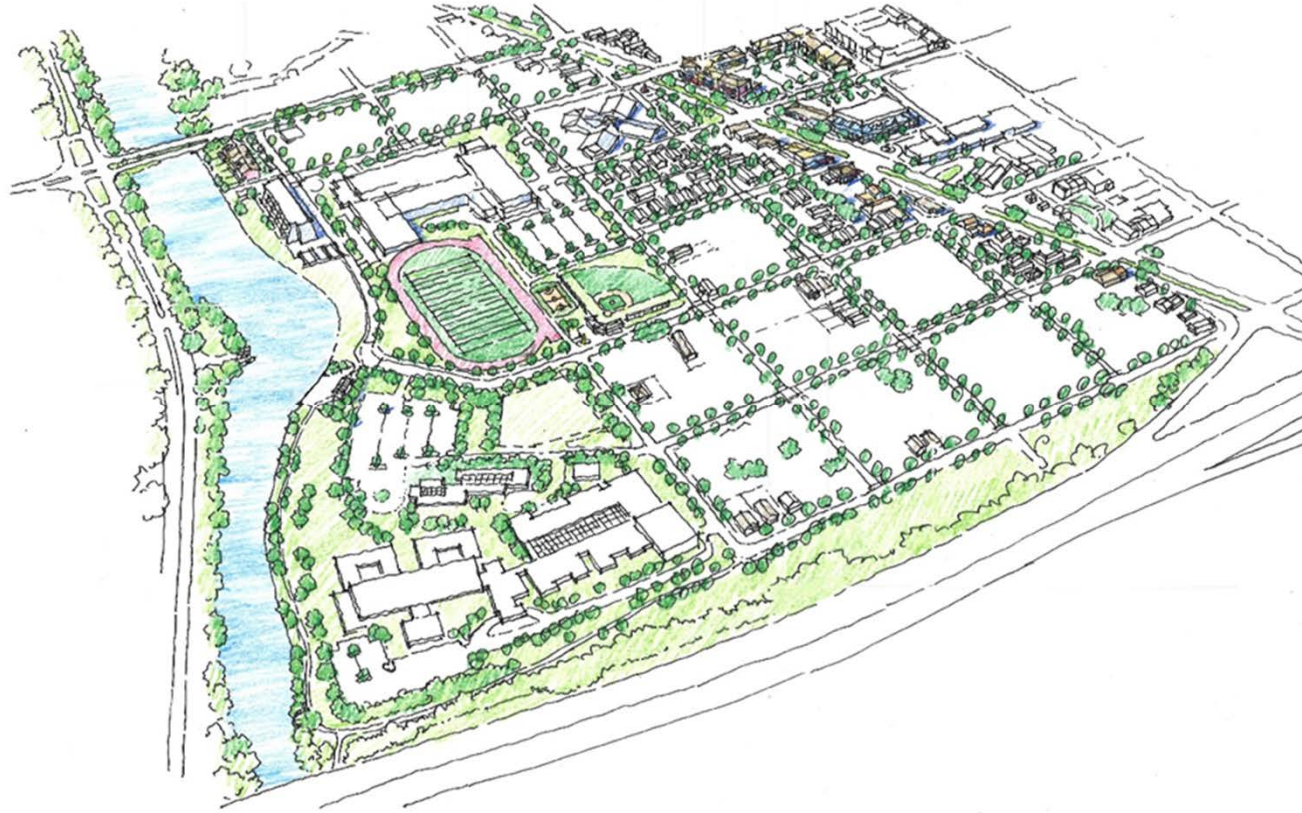


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# Agenda

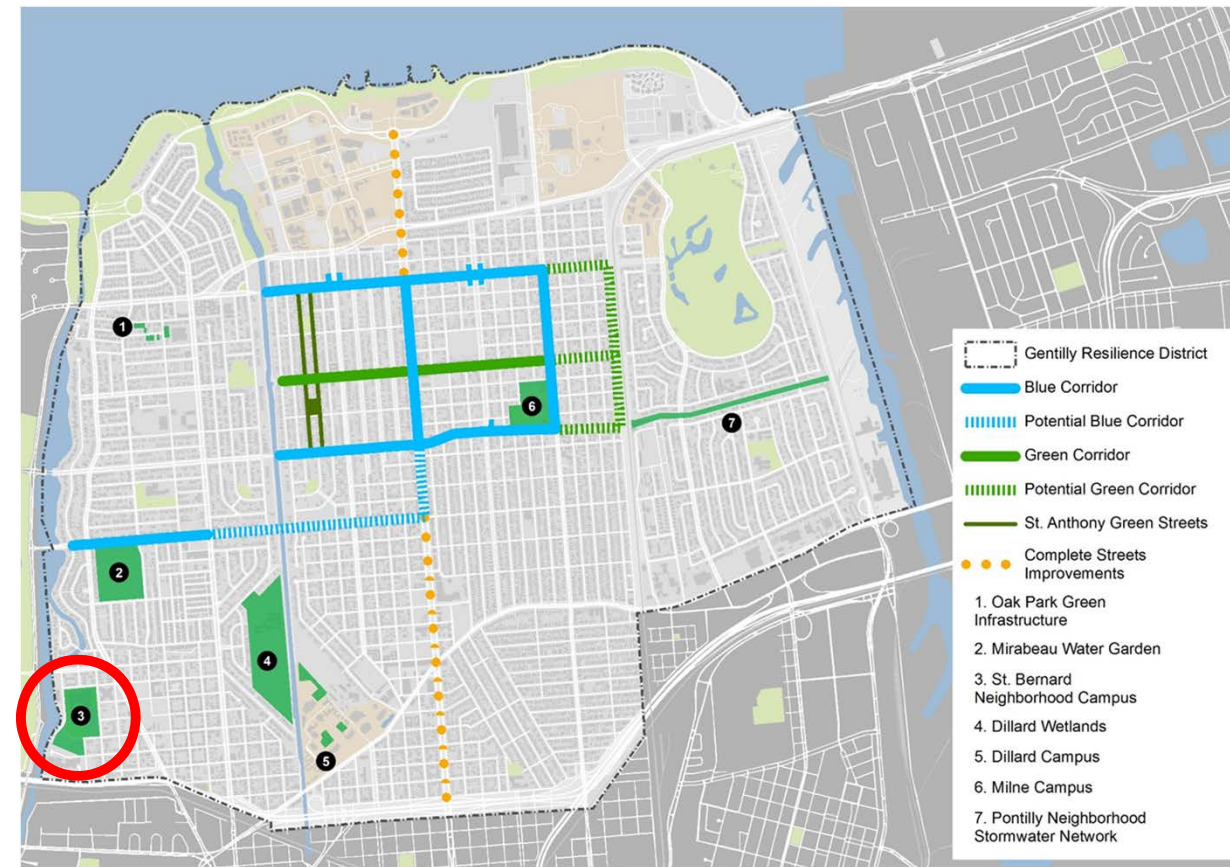
- Project Overview and Goals
- Existing Conditions
- Community Outreach
- 60% Design
- Project Benefit Cost Analysis
- Schedule
- Q&A





# Project Overview

- Budget: \$10 M
- Project #3
- Between Harrison and I-610 & Bayou St. John and St. Bernard Avenue



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# Project Goals

## Water Goals

1. Reduce flooding by storing stormwater on site before slowly releasing it into the drainage system.
2. Limit subsidence by raising and stabilizing groundwater levels.
3. Reduce and stabilize groundwater salinity.
4. Demonstrate resilient water management at all scales in a beautiful and tactile language accessible to all audiences.

## Public Health Goals

1. Increase access to high quality parks.
2. Provide recreation: sports fields, walking trails, play ground, canoe/kayak access to Bayou St. John.
3. Contribute to low-stress biking corridors.
4. Safety and security lighting.

## Urban Heat Goals

1. Increase native plantings for shade & habitat.
2. Provide circulating surface water with interactive features fed by filtered rainwater.





# Project Goals

## Economic Goals

1. Meet NDR requirements for Benefit Cost Analysis for HUD funding.
2. Create an economically sustainable campus through educational, institutional, and for-profit operators.
3. Demonstrate that resilient neighborhood-scale stormwater management can provide benefits far beyond the initial investment.

## Cultural Goals

1. Develop a community established around sports and recreational activities.
2. Information kiosk for public education.
3. Demonstrate that green infrastructure can contribute to beautiful and functional public spaces.



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# Existing Conditions Flooding



## PAST FLOODING

June 20, 2017



August 5, 2017



June 1, 2017



August 5, 2017



 Rain gauge host



# Existing Flooding Conditions

 **APRIL 4, 2019**

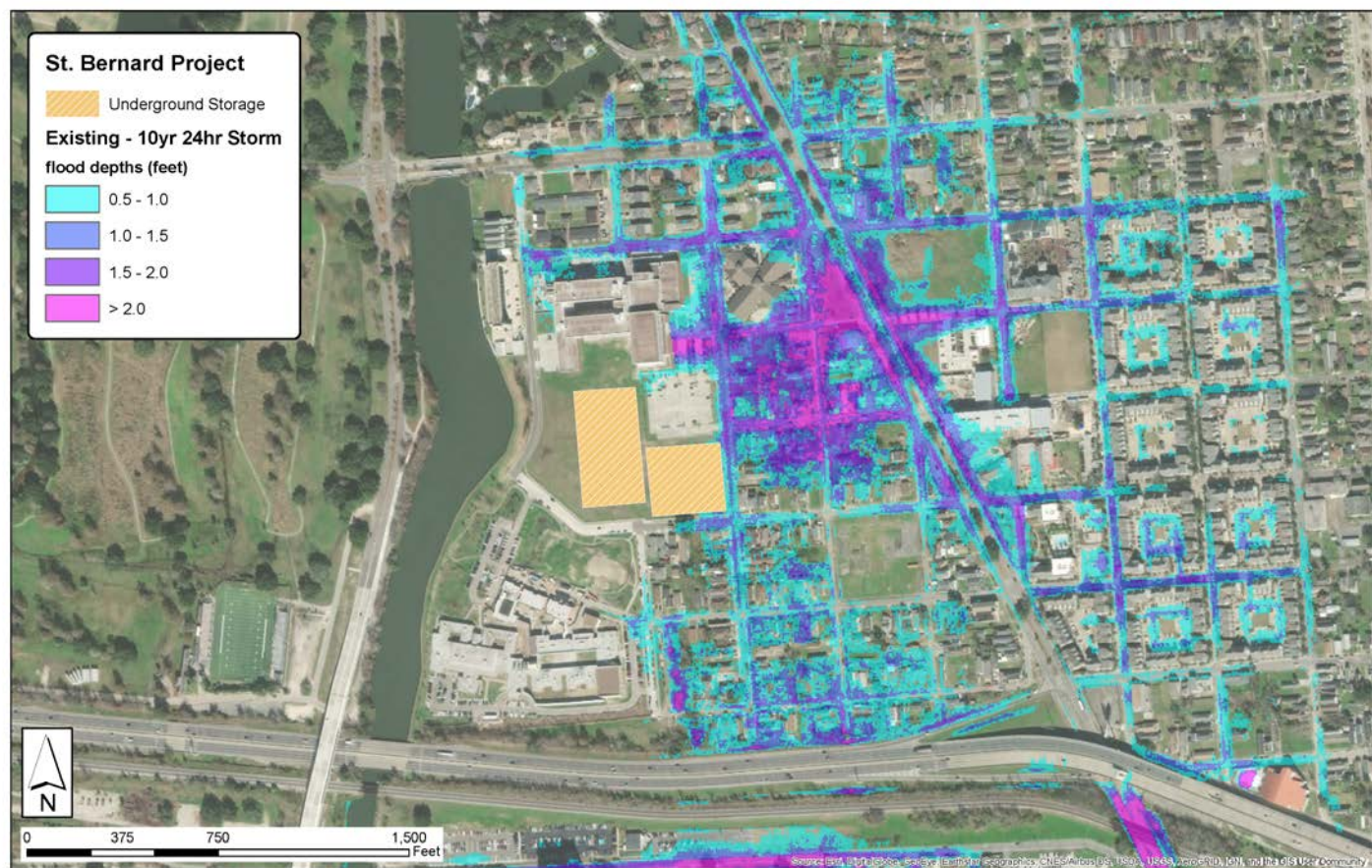


3.74 inches

 Rain gauge host    Observed flooding    Broken catch basin

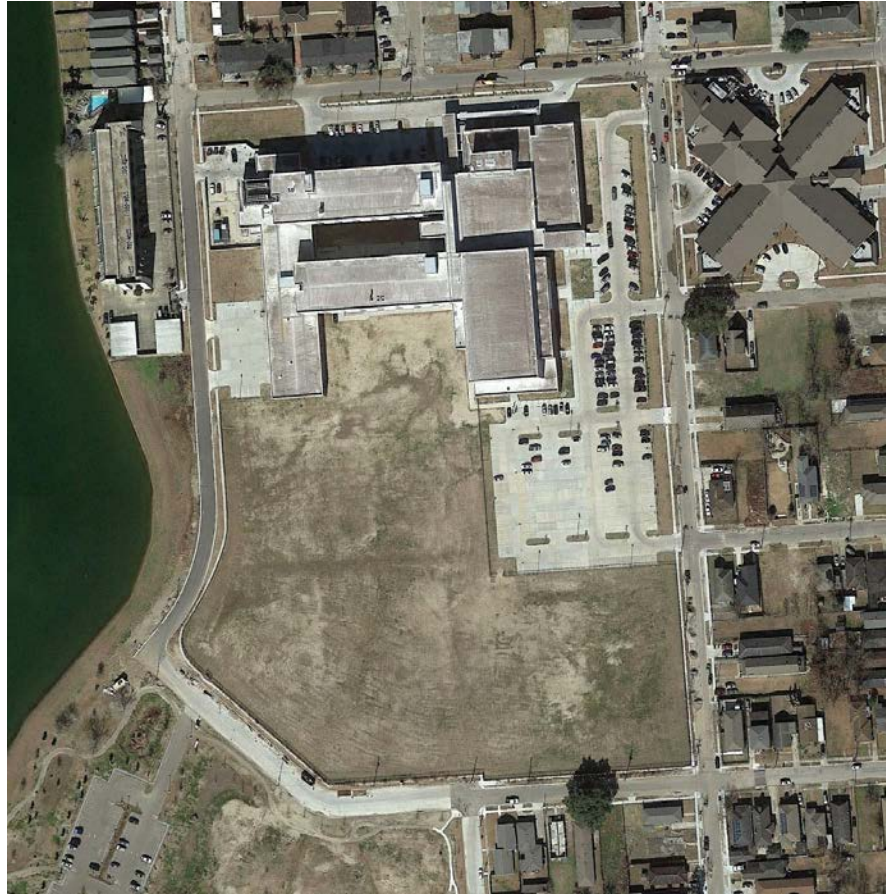


# Existing 10-Year





# Existing Conditions Fields



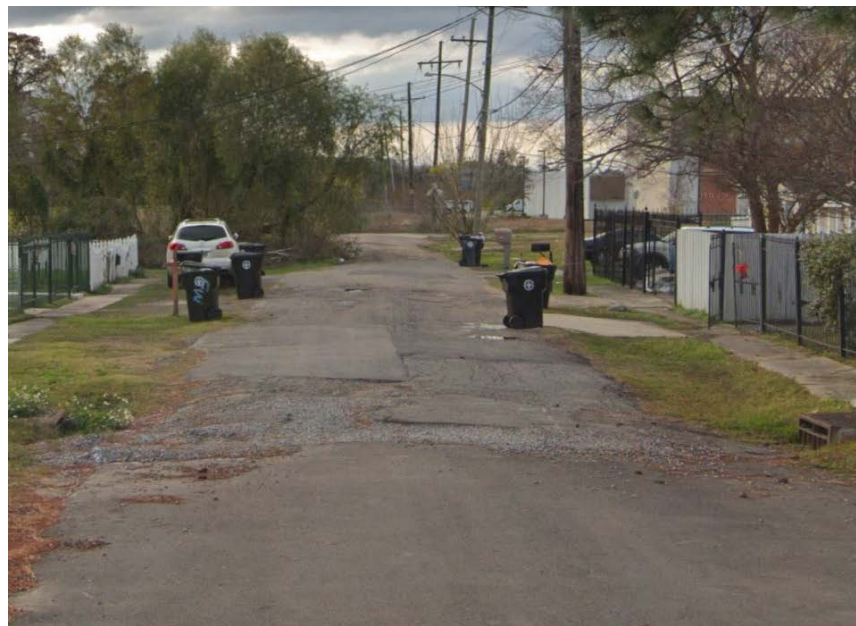
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# Existing Conditions Roads

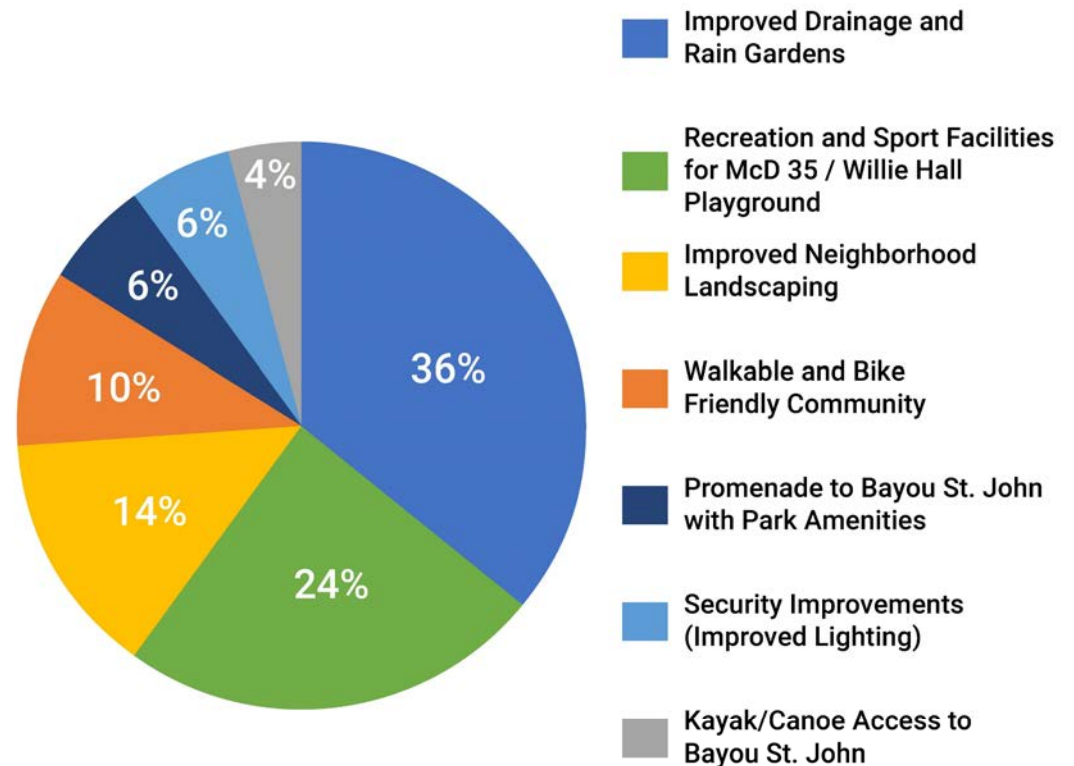




# Scoping Phase Public Engagement

## What we Heard

1. Improve Drainage
2. Sports Facilities
3. Improve Neighborhood Landscaping
4. Provide Walkable and Bike Friendly Area
5. Provide Park Amenities
6. Security Improvements
7. Kayak/Canoe Access to Bayou St. John



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# Public Engagement

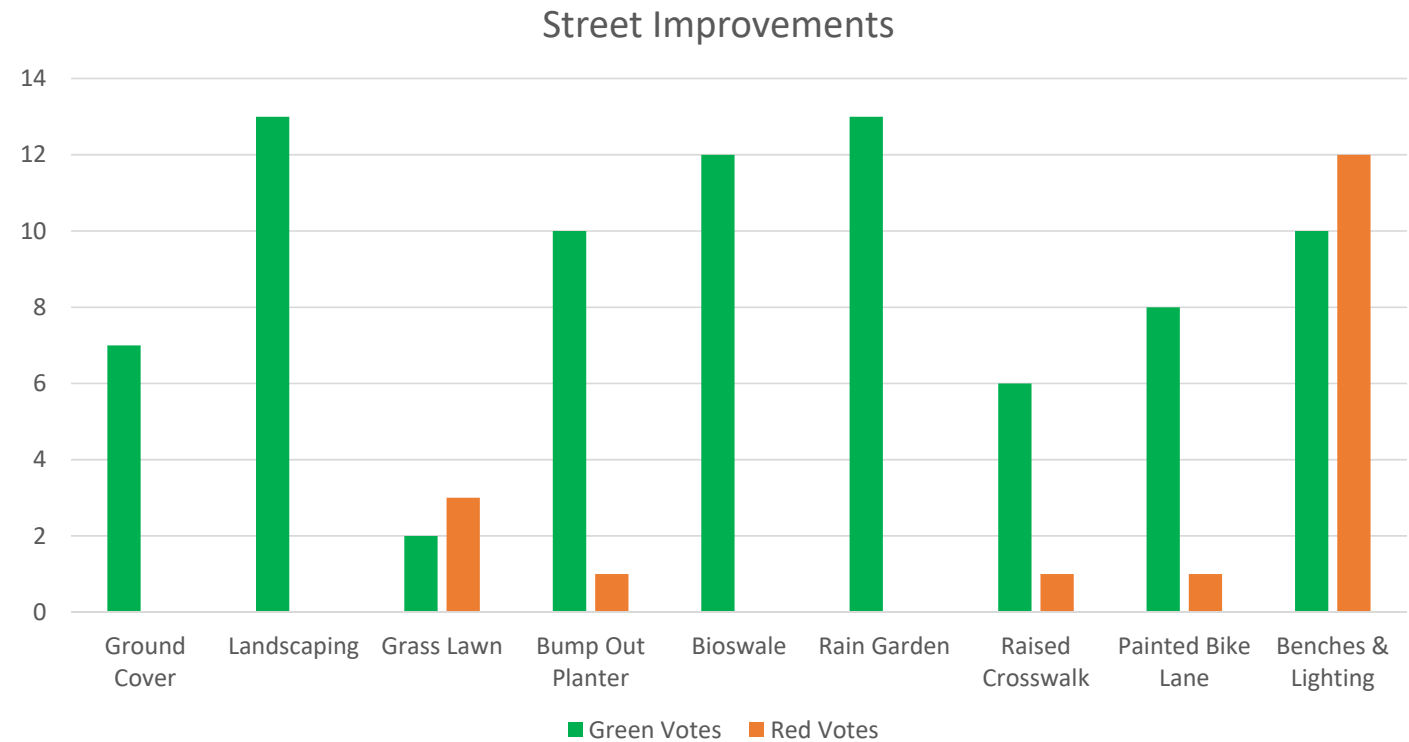
## Park Amenities What We Heard

### Liked

1. Playground
2. Exercise Station
3. Green Area
4. Boardwalk
5. Shade Structure

### Disliked

1. Benches
2. Public Fountain
3. Dog Park
4. Picnic Area
5. Event Lawn



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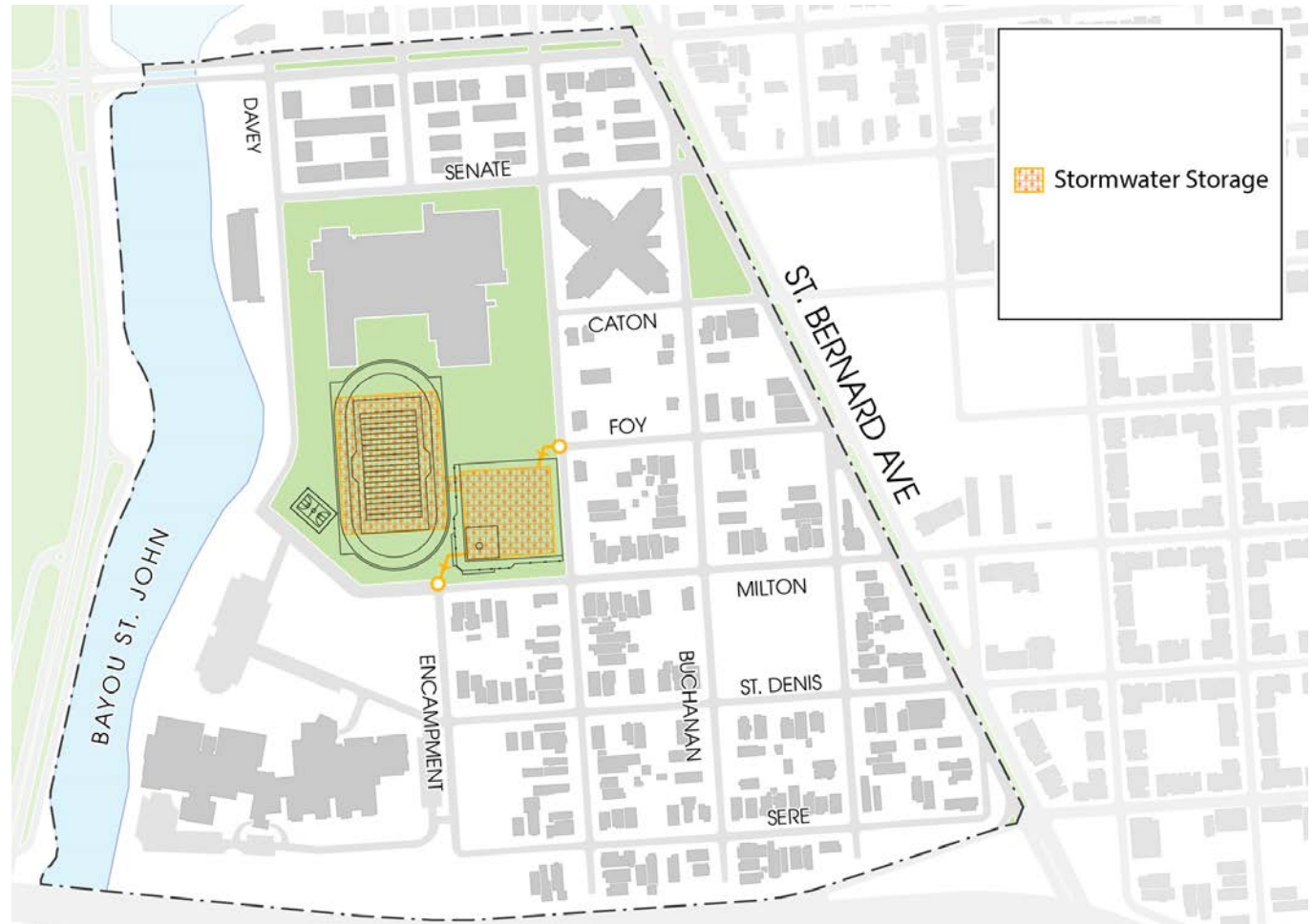
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# Project Phasing

## Phase 1

- Stormwater Storage
- Athletic Fields

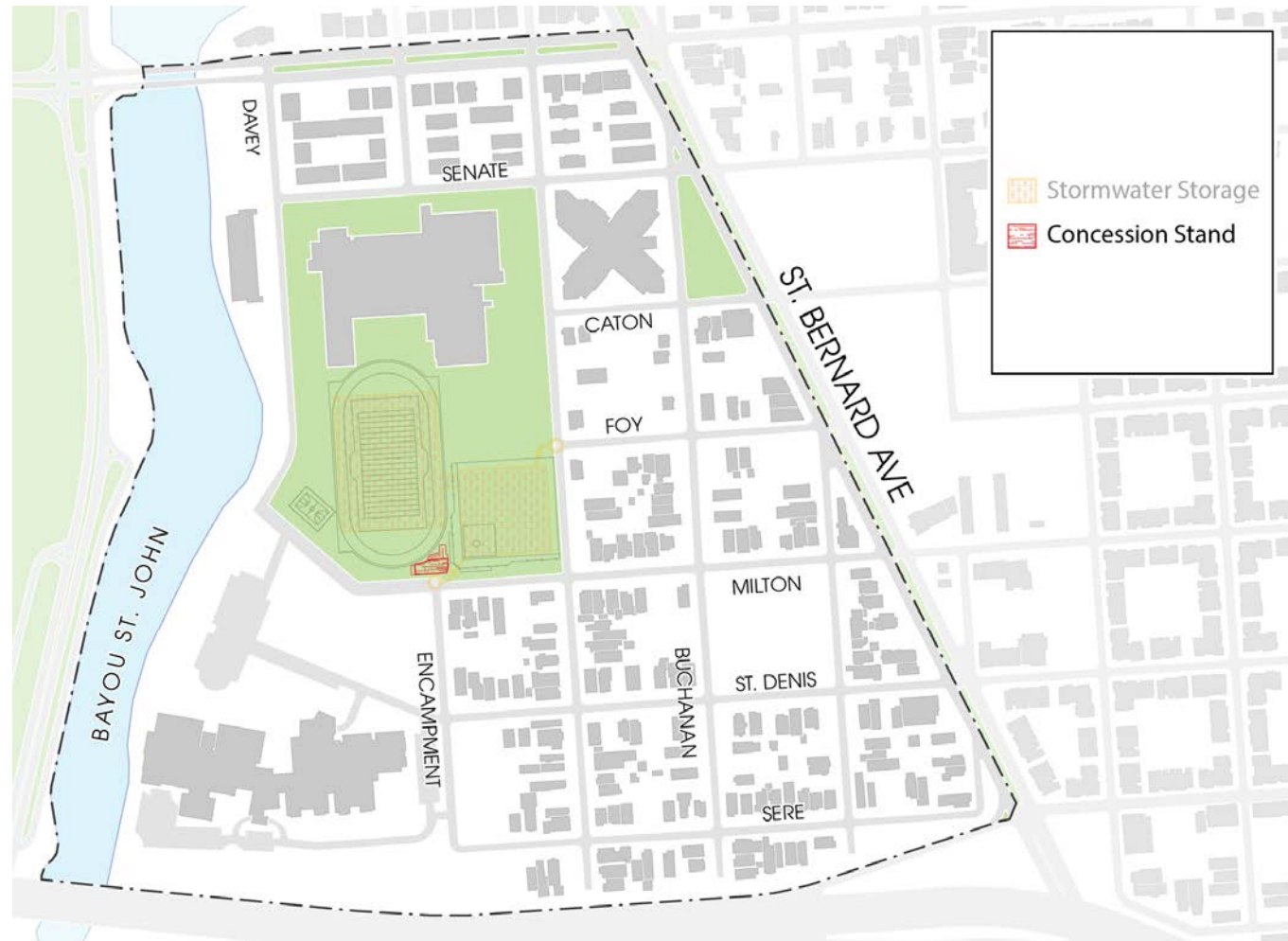




# Project Phasing

## Phase 2

- Concession Building





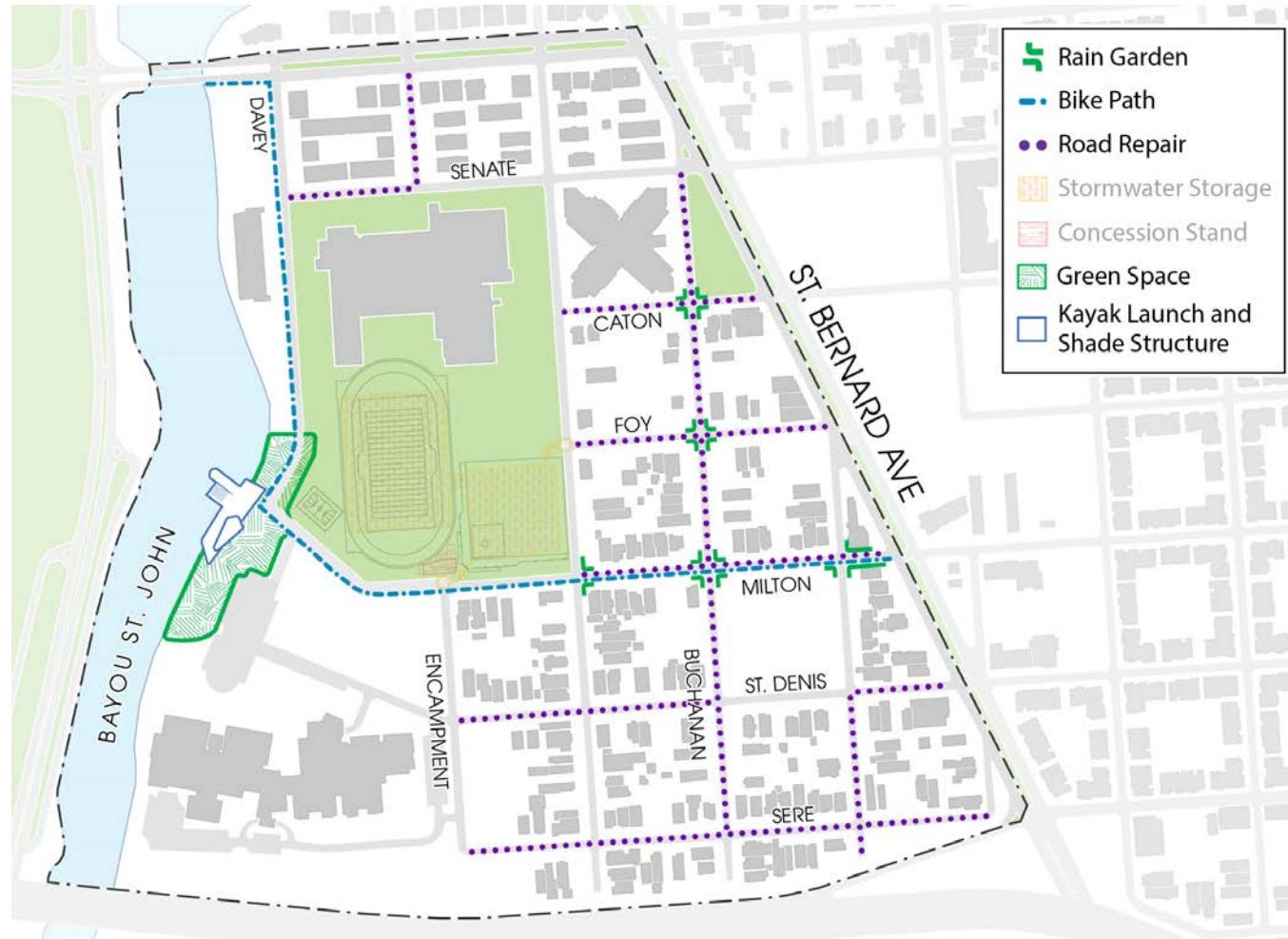
# Project Phasing

## Phase 3

- Rain Gardens
- Road Repairs
- Bike Path

### Bayou St. John Park

- Playground
- Shade Structure
- Boardwalk
- Walking Trail
- Kayak/Canoe Launch



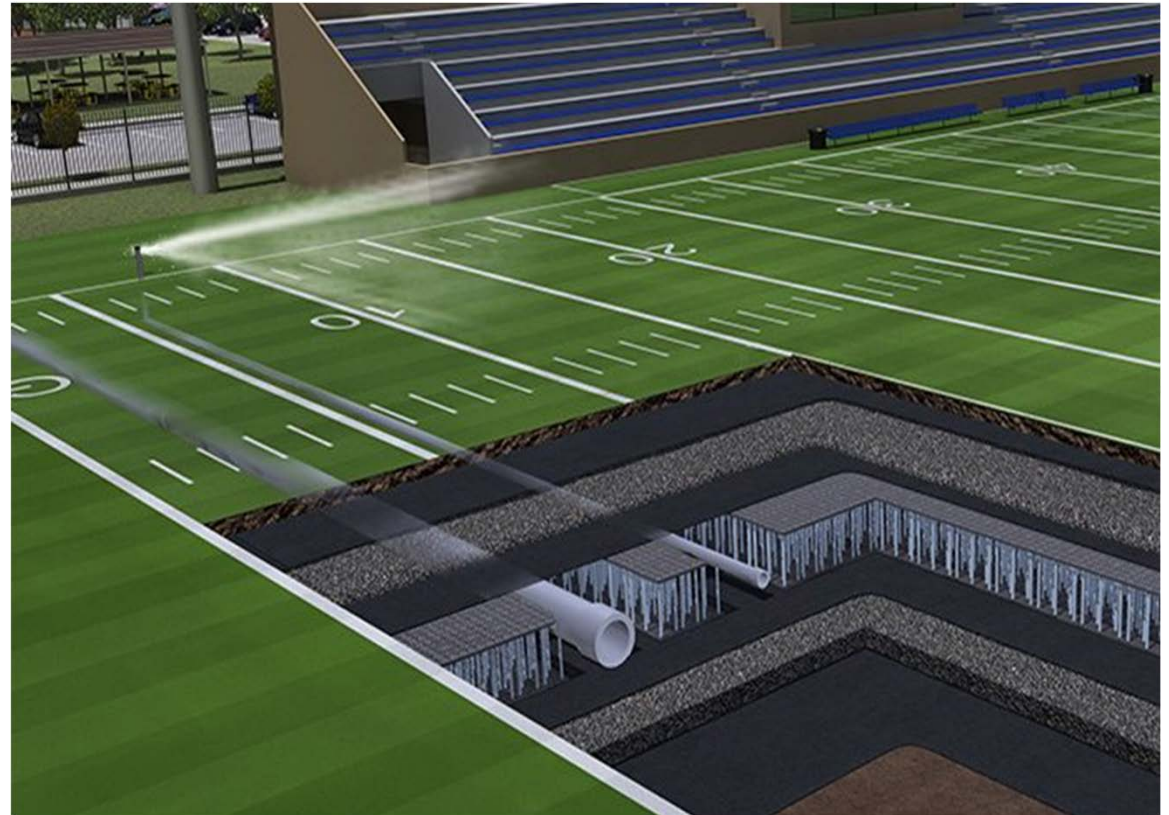


# Phase 1 – Underground Stormwater Storage



## Multi-Functional Recreational Fields

- Underground stormwater detention basin
- Increase storage to 5 million gallons of strategic stormwater storage
- sodded athletic fields



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# Phase 1 – Willie Hall Playground

## Athletic Fields

- Football/Soccer Field
- Baseball/Softball Field
- Basketball Court
- Sports and Area Lighting
- Bleachers

## Additional Features:

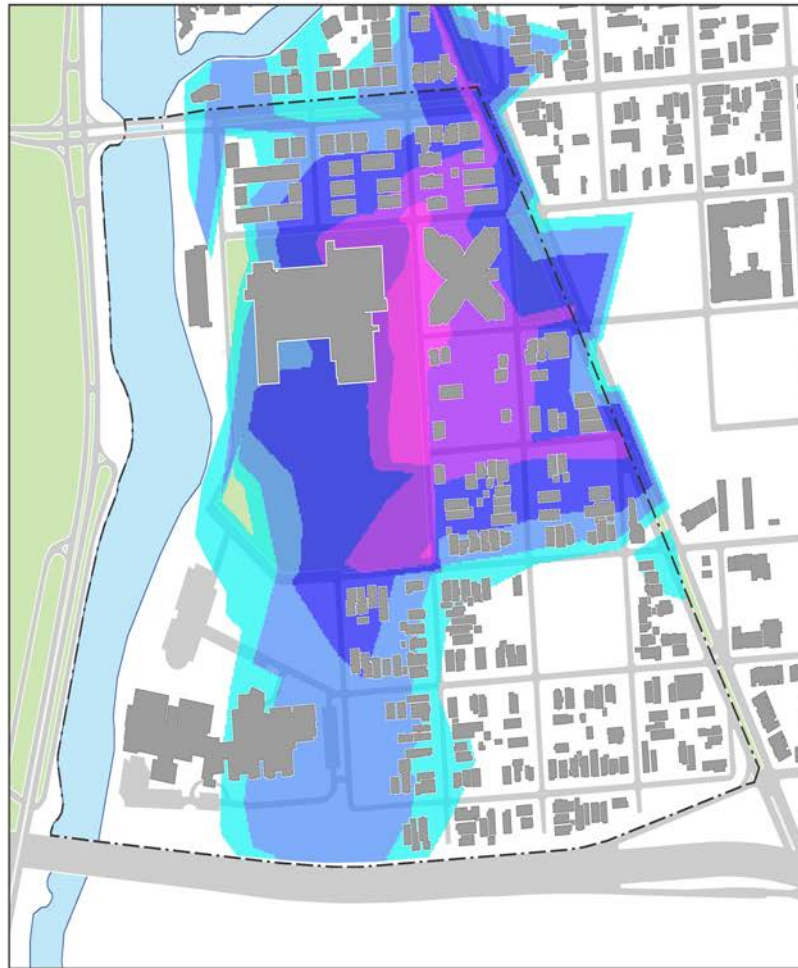
- Landscaping



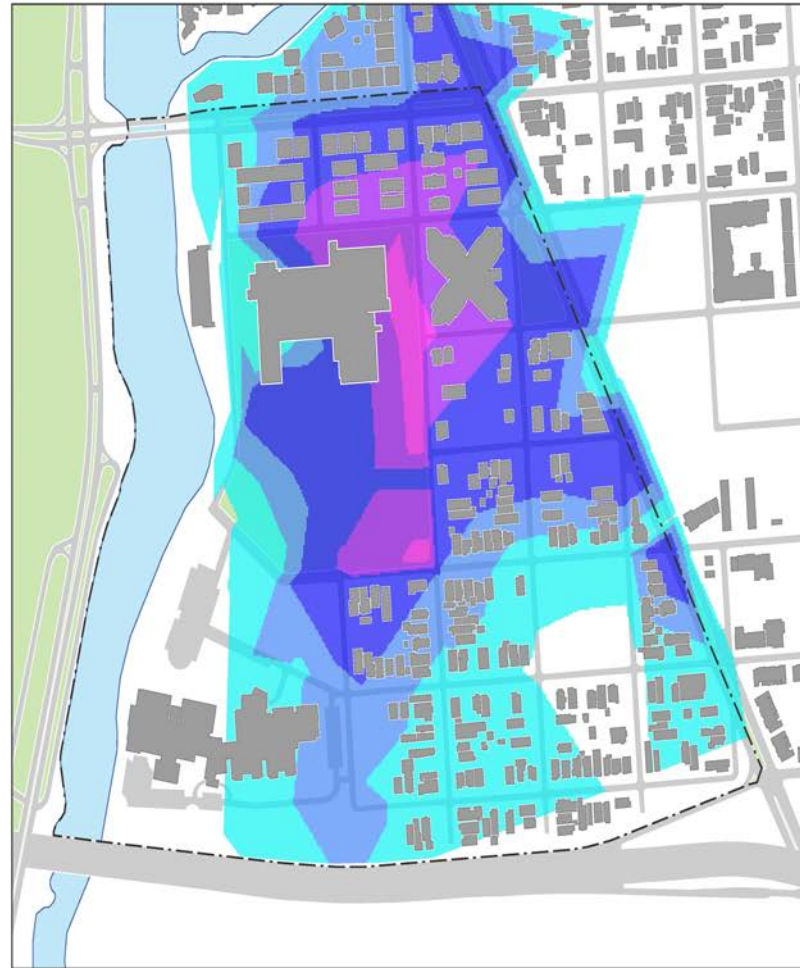


Flood

From storm - Projected benefit



From storm - Projected benefit



Flood Reduction (in)





# Phase 2 - Concession Building



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# Phase 3 - Green Infrastructure





# Key Design Element

## Rain Gardens

### Bump-outs:

- Provide water quality, promotes transpiration, and enhances the streetscape
- Provides shorter crossing distance for pedestrians, enhancing safety



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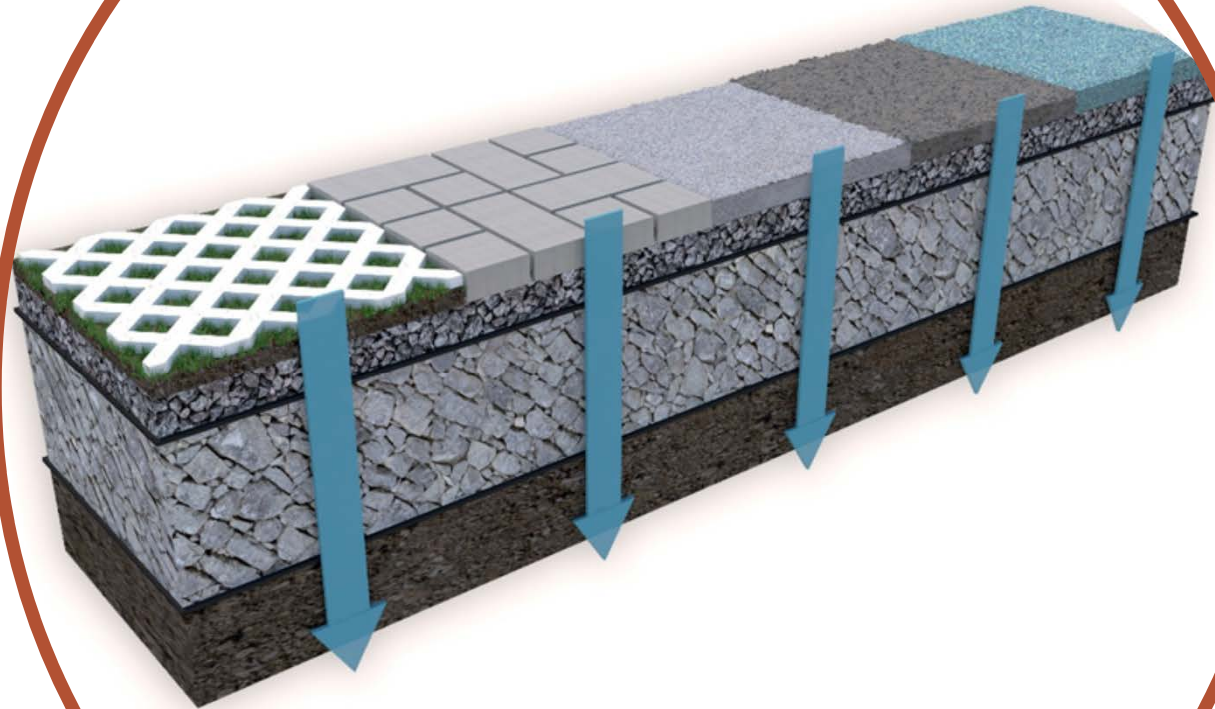


# Key Design Element

## Sidewalk and ADA Ramps

- May Include permeable concrete to promote infiltration reducing subsidence

**Pavement Repairs** - Recovery Roads Scope has been added for streets where construction overlaps



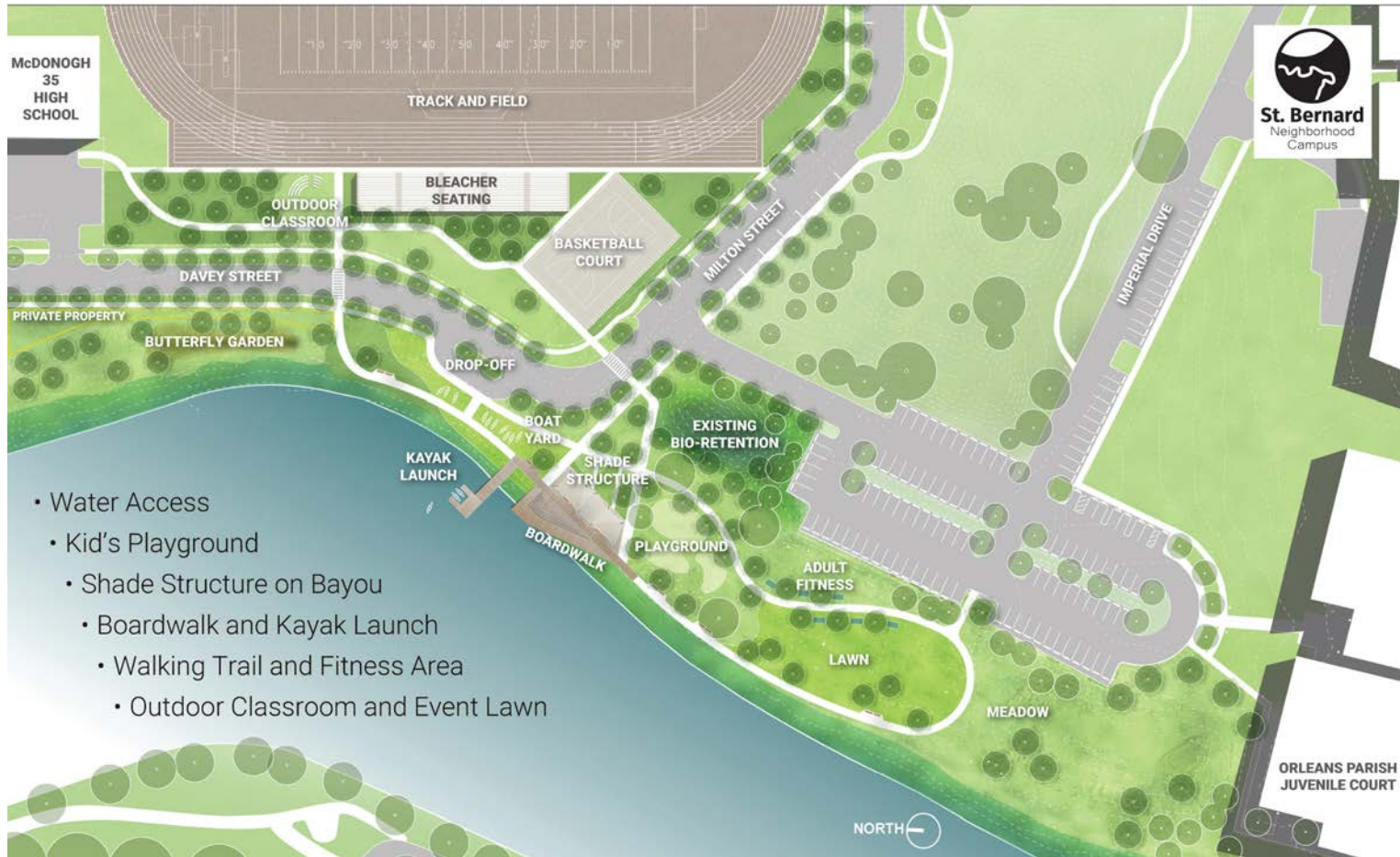
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# Phase 3 – Bayou St. John Park



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# Bayou St. John Park Rendering



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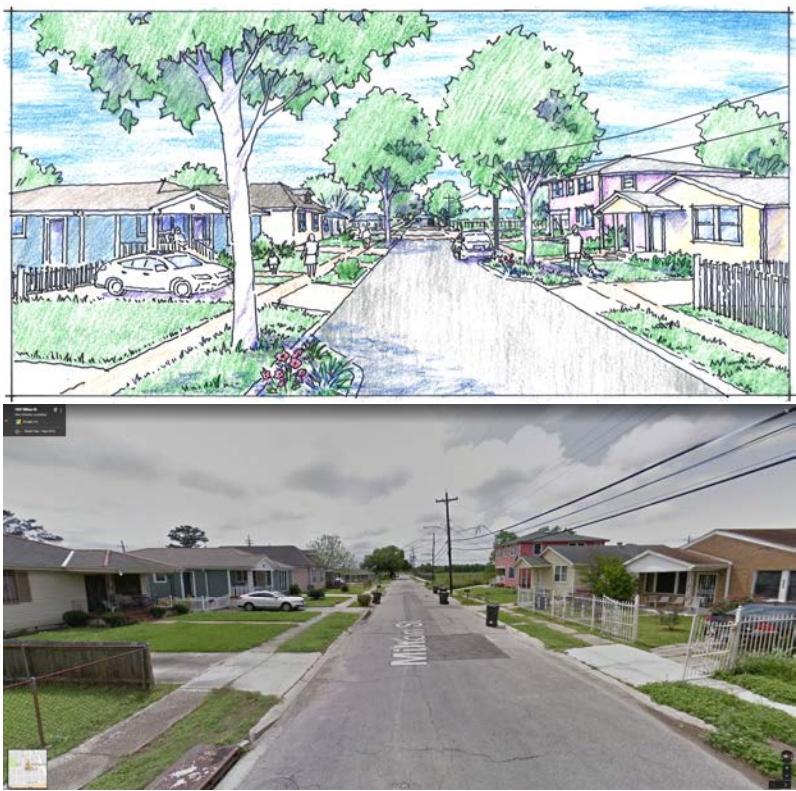
# Streetscape Design



Kayak Launch & Playground



Milton Street Improvements





# Project Cost

## Project Components:

Phase 1	Stormwater: \$5.7M Athletic Fields: \$2.1M
Phase 2	Concession Building: \$740,000
Phase 3	Road Repairs, Green Infrastructure & Park: \$3.3M



**PROBABLE CONSTRUCTION COST = Approx. \$12M**

including 10% contingency

AACE Class 2 Accuracy range -15% to +20%



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# Project Benefit Cost Analysis

## Greatest Benefits

- Property Value Increase
- Flood Damage Reduction
- Subsidence Reduction
- Stormwater Treatment

## Costs

- Capital Expenditures
- Operations and Maintenance
- Replacement Costs

Triple Bottom Line (in NPV) = \$4.8M

Benefit Cost Ratio = 1.4

Impact Type	Cost/Benefit	Expected Value
Financial	Capital Expenditures	-\$7,478,000
Financial	Operations and Maintenance	-\$3,033,000
Financial	Replacement Costs	-\$1,477,000
Financial	Residual Value of Assets	\$3,000
Social	Subsidence Road Impact	\$2,357,000
Social	Subsidence Property Impact	\$464,000
Social	Public Health	\$71,000
Social	Public Health CVD Impact	\$21,000
Social	Property Value	\$931,000
Social	Flood Damage	\$8,935,000
Social	Recreational Value	\$1,078,000
Social	Education	\$105,000
Social	Heat Island Effect	\$32,000
Environmental	Carbon Emission Sequestration	\$4,000
Environmental	Air Pollution Sequestration	\$13,000
Environmental	Stormwater Treatment	\$2,760,000

	Expected Value
Financial	-\$11,985,000
Social	\$13,994,000
Environmental	\$2,777,000
<b>Triple Bottom Line NPV</b>	<b>\$4,786,000</b>



# Operations & Maintenance

Shared Operation between School and NORDC defined in Agreement

NORDC Operates

Monday -Friday	4 PM-9 PM
Saturday	9AM -2 PM
Sunday and Holidays	As Needed

Maintenance to be shared between NORDC and School  
– Under Negotiations

Maintenance of Rain Garden – Adjacent Homeowner



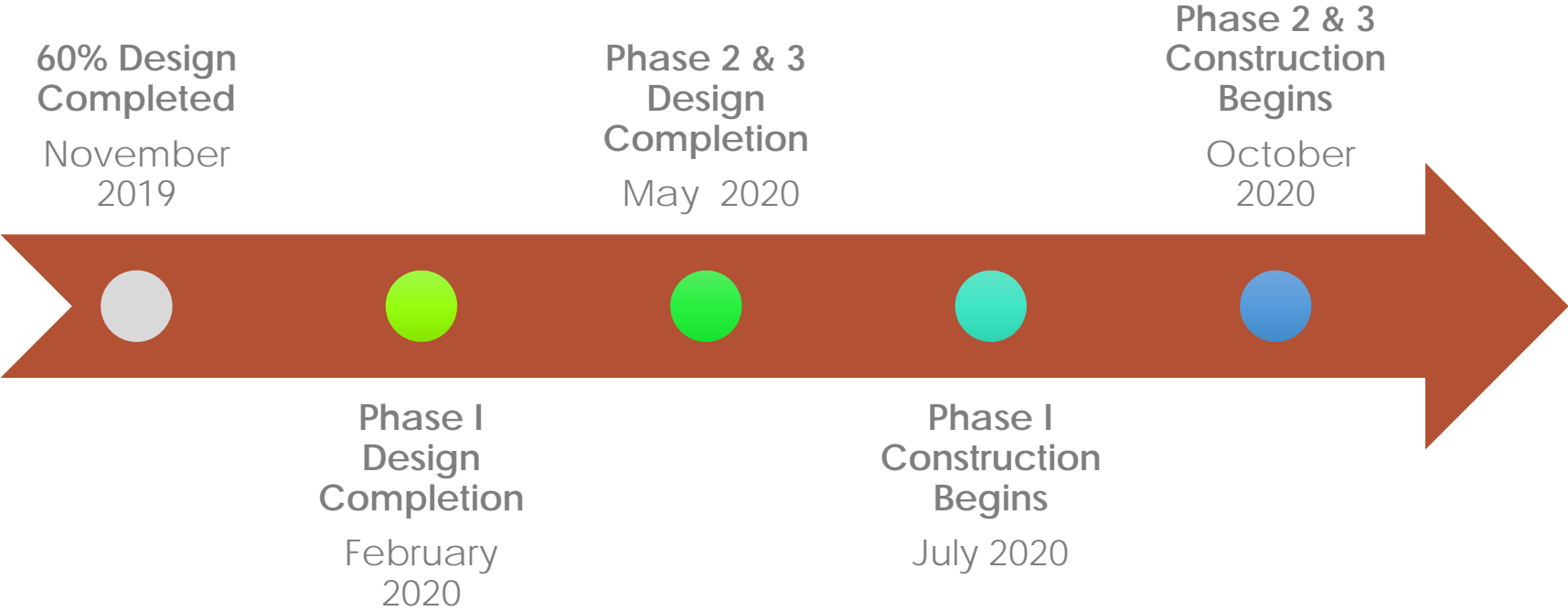
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# Project Schedule





# Questions – Thank You!



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