

# Low Impact Development (LID) Construction and Performance Evaluation in the City of Houston – Phase II

Texas Commission on Environmental Quality (TCEQ) 319  
(h) Nonpoint Source Grant Program

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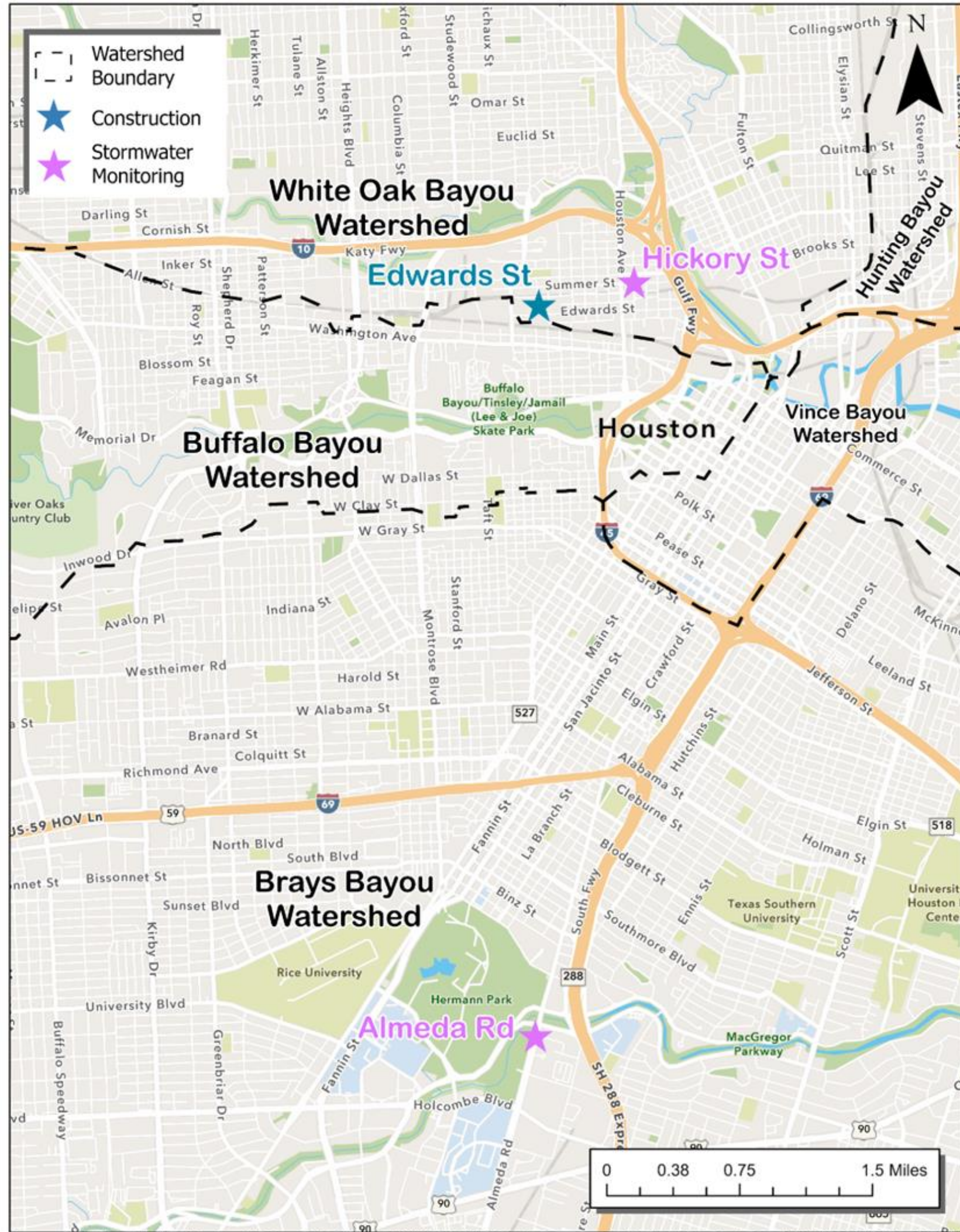
HARC

# Overview

## Main Tasks

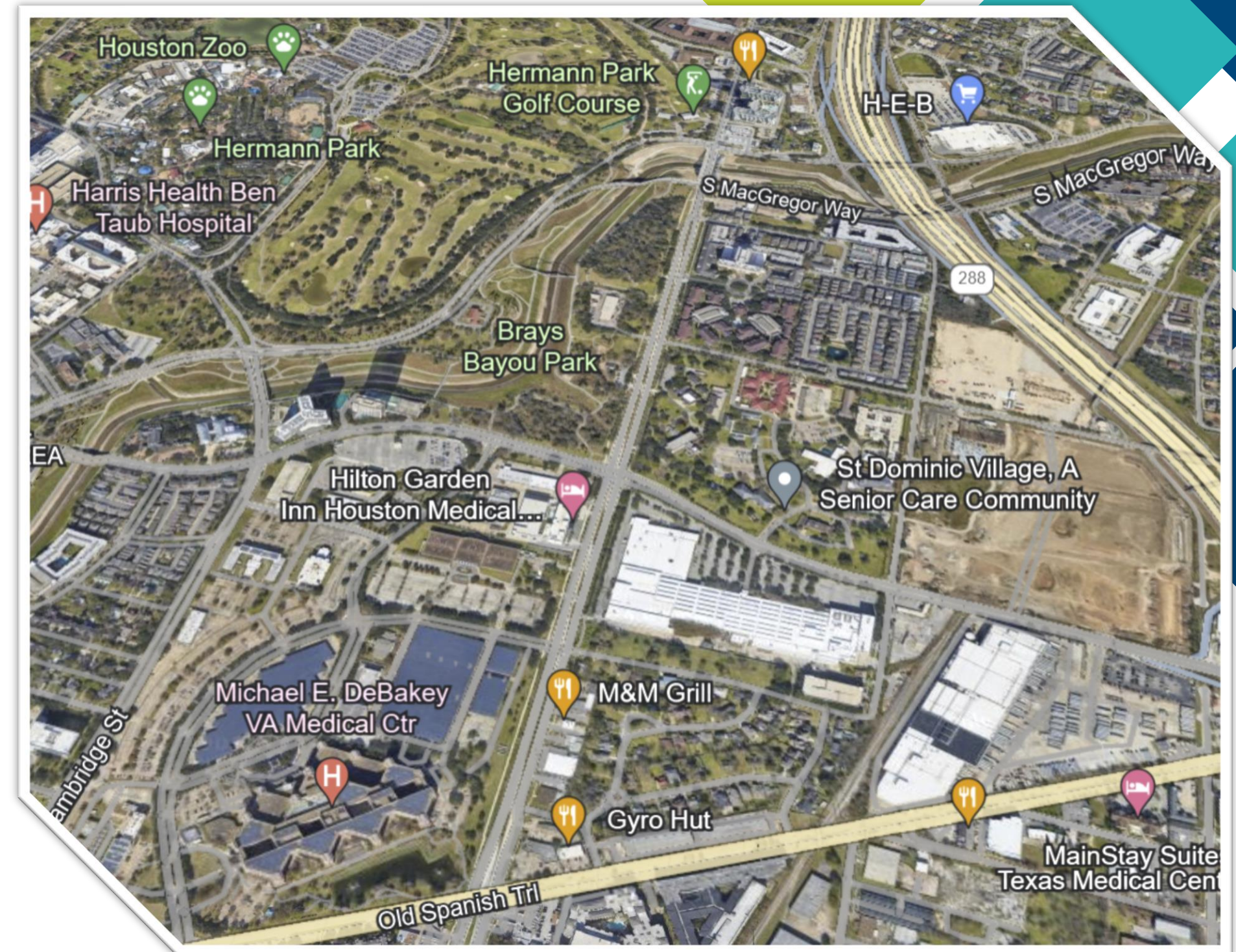
- **LID Effectiveness Monitoring**
- **LID Design and Construction**
- LID Performance Assessment
  - Regional LID stormwater monitoring data and project locations
- Stakeholder Communication/Portal Development
  - Online Low Impact Development Resource Portal
  - Including informational overview/project factsheets, [Project Mapping Database](#), + additional resources





# Site Profiles – Alameda Rd

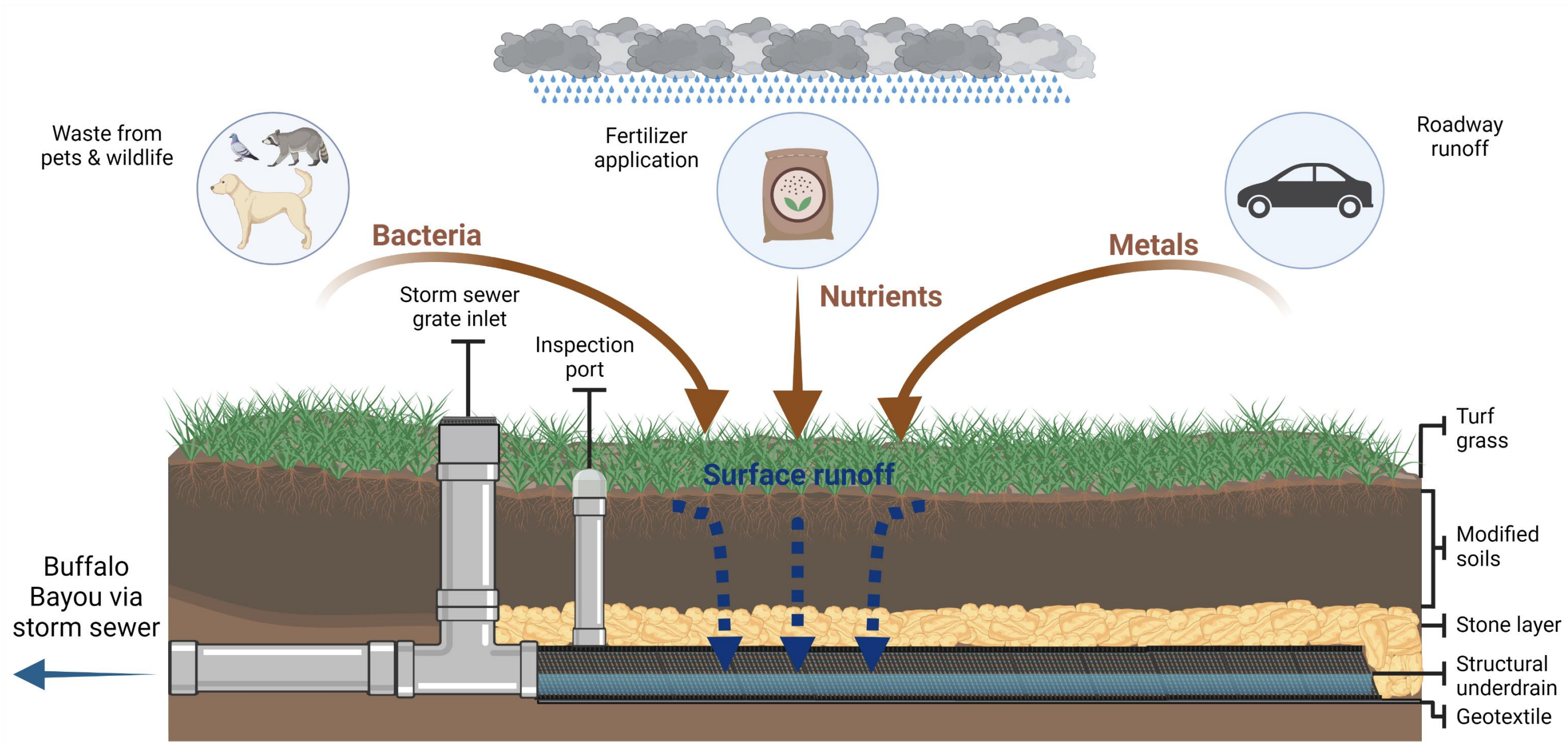
- Brays Bayou Watershed
- City of Houston – 1-mile Paving and Drainage Improvements
- Biofiltration LID BMPs
  - Total number of biofiltration features: 25
  - Total drainage area: 21.3 ac



# Site Profiles – Alameda Rd



# Site Profiles – Alameda Rd

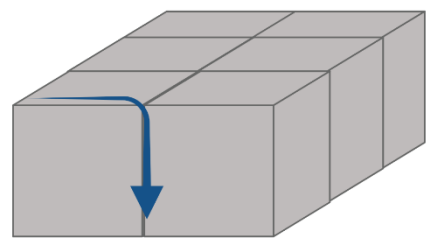


# Site Profiles – Winter/Hickory St

- White Oak Bayou Watershed
- City of Houston – GI Pilot Project
  - Porous Paver Alley (Winter)
  - Permeable Concrete Sidewalk (Hickory)

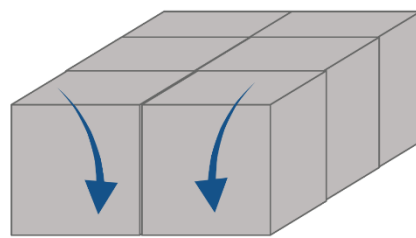


Porous Pavers



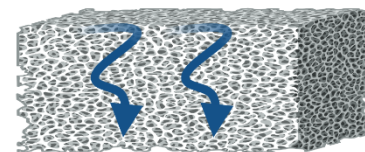
Stormwater flows between the pavers

Permeable Pavers

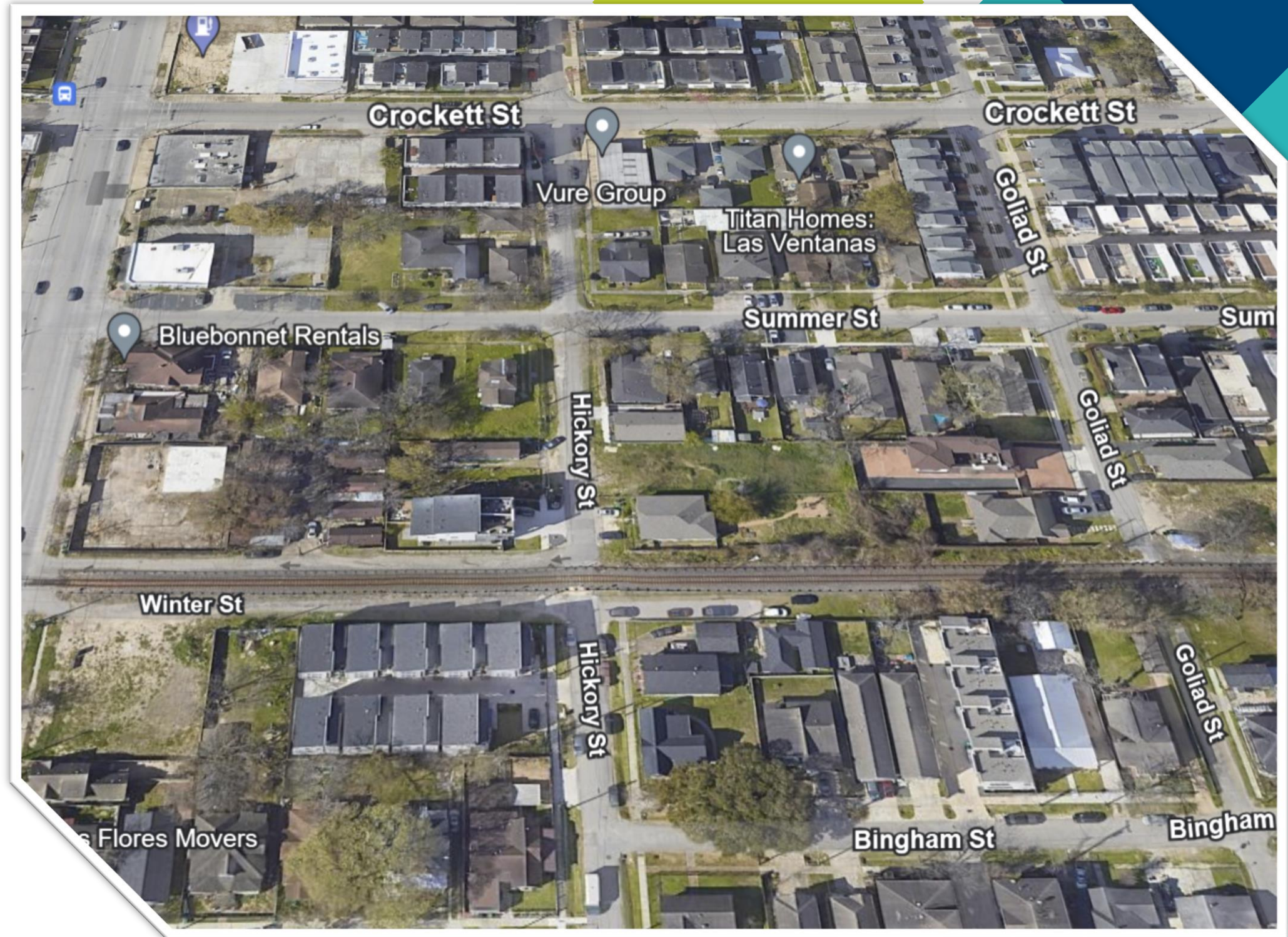


Stormwater flows through the pavers

Permeable Concrete



Stormwater flows through the pores

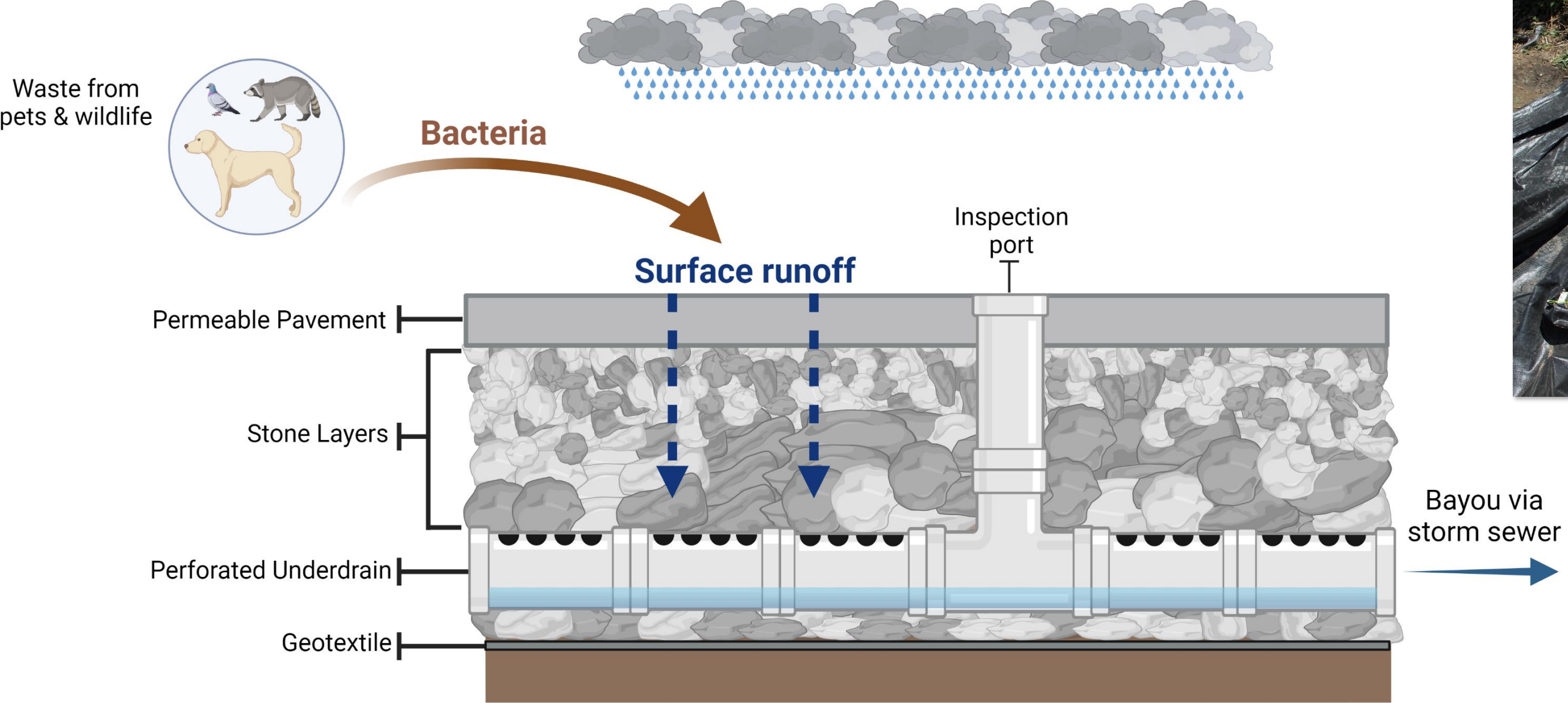


# Site Profiles – Winter St





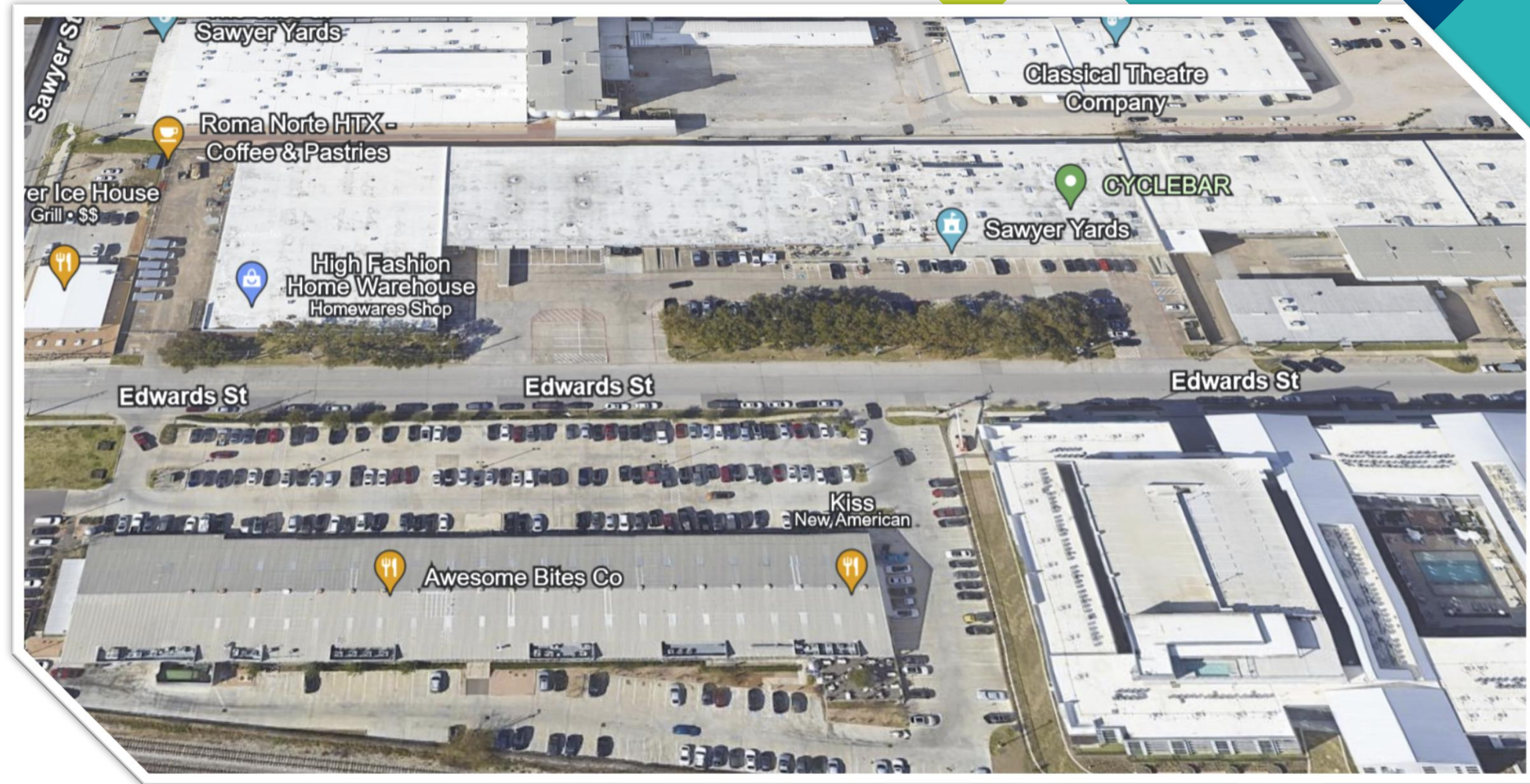
# Site Profiles – Winter/Hickory St



# Site Profiles – Edwards St

## Main Tasks

- TIRZ 13 funding a multimodal improvement project
- Planning and engineering by EHRA
- LID Design and Construction – \$220,000 TCEQ grant funding
  - Pours paver sidewalk LID construction
  - Estimated project completion Summer 2024



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# LID Monitoring

- 6 storm events
- 72-hour dry antecedent period
- Storms between 0.10 in and 3 inches per hour
- 2 x per site inflow/outflow
- Alameda – bacteria (*E. coli*), nutrients, TSS, heavy metals
- Hickory St – bacteria (*E. coli*)



# LID Monitoring – Alameda Rd

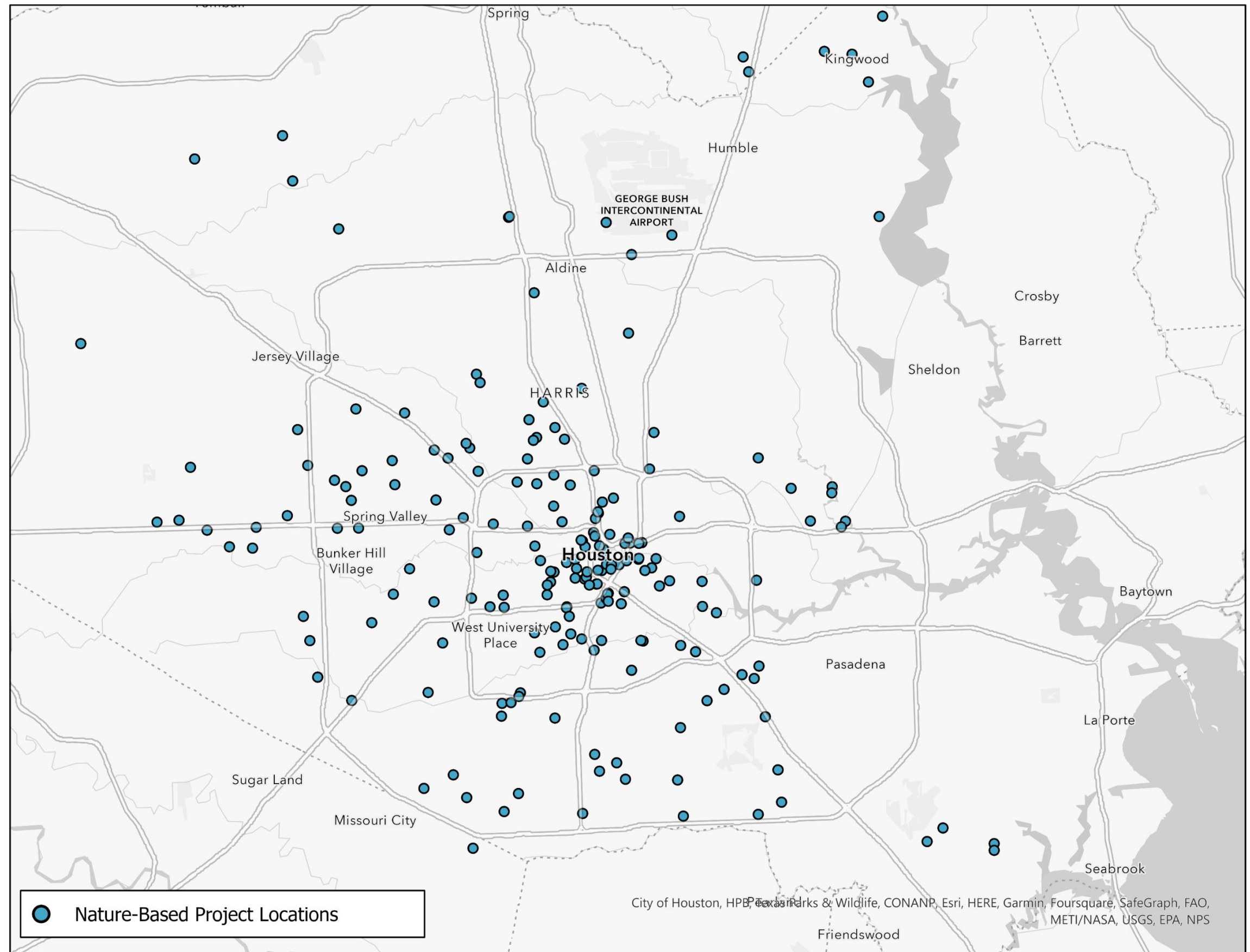


# LID Monitoring – Hickory St



# NBS Database

- Top four most utilized LID practices:
  - Pervious/Permeable Pavement/Pavers
  - Bioswales
  - Grassy Swales
  - Artificial Turf with detention



# Contact

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