



RESILIENT SIDEWALKS PLAN

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TRANSPORTATION & DRAINAGE OPERATIONS

June 1, 2023



PURPOSE

together we create a strong foundation
for Houston to thrive



5 TO THRIVE VALUES

respect | ownership | communication | integrity | teamwork

Background



- **August 2017:** Hurricane Harvey devastates Houston
- **CDBG DR 17 (Disaster Recovery)** funding received by COH for planning activities.
 - 6 Resilience Planning Studies
 - 1 modeling effort
 - 1 Hazard Mitigation Plan
 - 3 Housing planning support initiatives

Background



February 2018

\$835 M available for Hurricane Harvey Recovery (CDBG-DR 17 program) through the Texas GLO, from HUD

Local Action Plan released allocating \$23 M for planning efforts

Procurement Processes

- **Project Awarded to Consulting Team**
- **Council Approval**
- **Project Underway**

Project Completion

Winter 2023



2018

2019

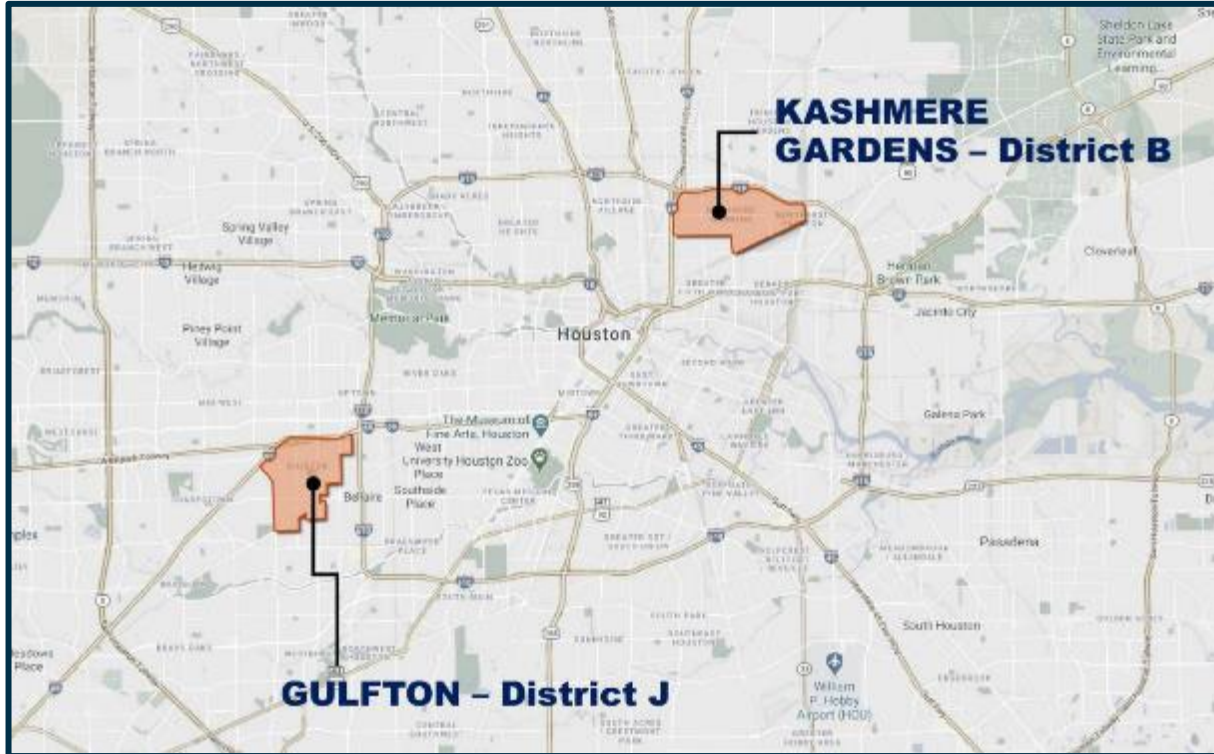
2020

2021

2022

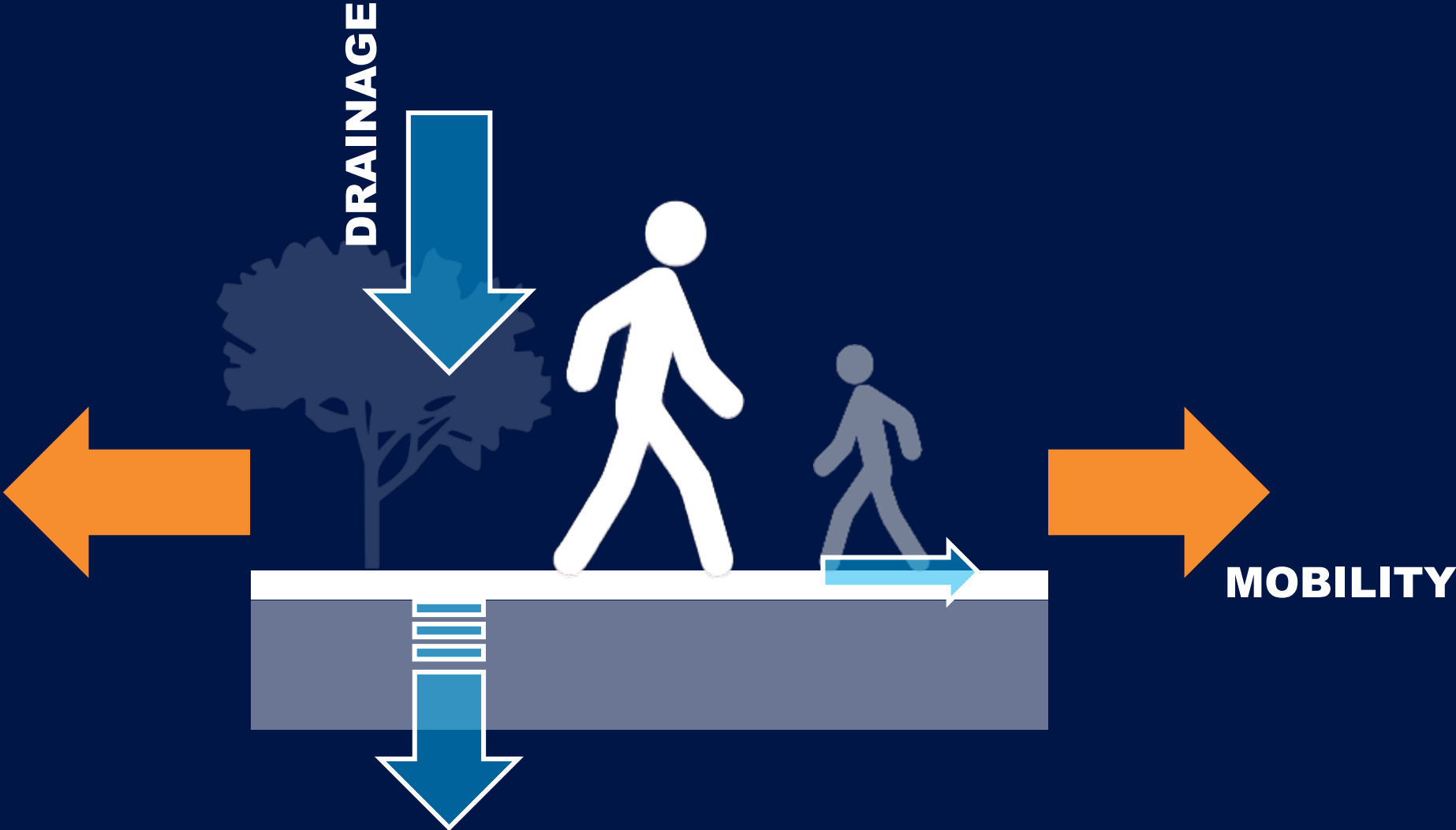
2023

Project Charge



- Two Neighborhood Sidewalk Plans
 - Kashmere Gardens
 - Gulfton
- A city-wide toolkit.
- Address safety, drainage, accessibility, alternative materials, innovative design, **funding**, maintenance requirements, etc.

Principles – Sidewalk Performance



Literature Review & Mapping

Houston Public Works Sidewalk Program constructs new sidewalks and ramps along streets leading to schools, major thoroughfares and improves accessibility for people with disabilities.

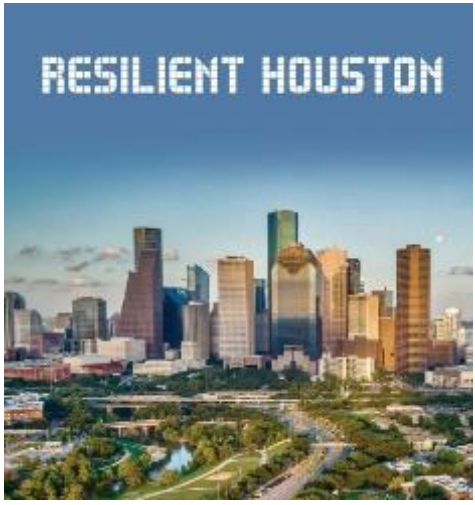
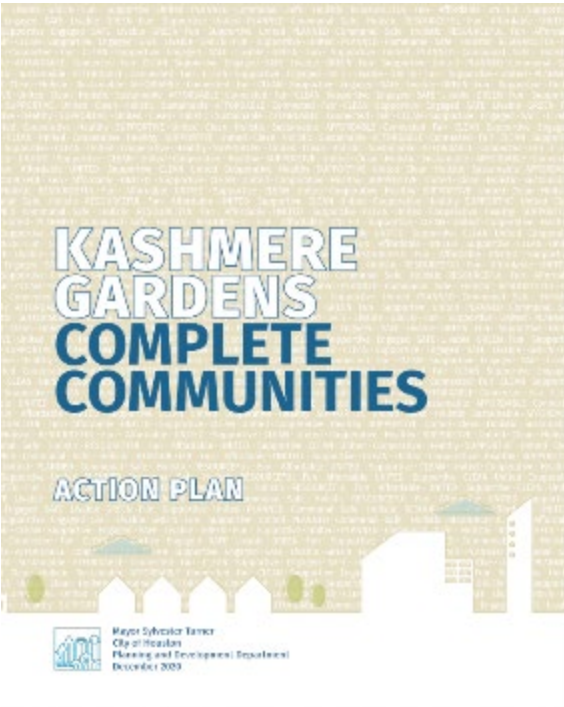
*The Pedestrian Accessibility Review process is managed through the Mayor's Office for People with Disabilities.

CODE
The Sidewalk Program is governed by [Code of Ordinances Article II, Sections 40.83 & 84](#).

PROGRAMS
The Sidewalk Program has three types of requests:

PROGRAM REQUEST	SIDEWALK UP TO	ELIGIBILITY
Pedestrian Accessibility Review	1,500 feet	Person with disability has no safe path to travel to: - bank - bus stop - educational facility - employment - grocery store - place of worship - home - medical facility - METRO/UT - pharmacy - vehicle
School Sidewalk	4 blocks	Used by students to walk to school Not around school perimeter Not on dead-end street
Major Thoroughfare	4 blocks	Along designated thoroughfare Non-sidewalk Evidence of pedestrian traffic No future reconstruction or improvements planned within the next 5 years

Pedestrian Accessibility Review
The highest priority projects come from the Mayor's Office for People with Disabilities Pedestrian Accessibility Review process. The request provides up to 1,500 feet of improved sidewalk accessibility for people with disabilities to safely travel to the bank, bus stop, educational facility, employment, grocery store, home, medical facility, METRO/UT, pharmacy, vehicle or place of...

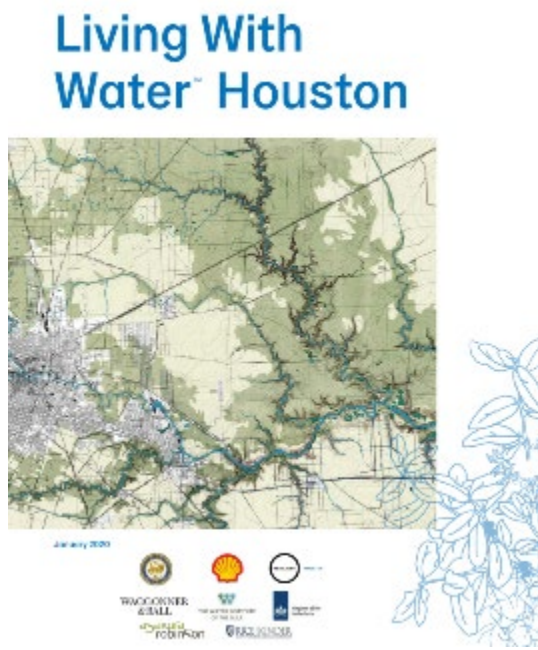
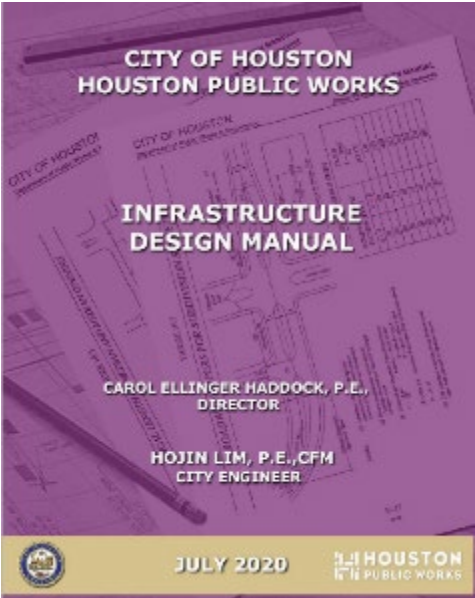


City of Houston, Texas, Ordinance No. 2020 - 684

AN ORDINANCE AMENDING CHAPTER 1, CHAPTER 10, CHAPTER 26, CHAPTER 33, CHAPTER 40, AND CHAPTER 42 OF THE CODE OF ORDINANCES, HOUSTON, TEXAS, RELATING TO ESTABLISHING STANDARDS FOR WALKABLE PLACES IN THE CITY AND AMENDING RELATED PROVISIONS FOR TRANSIT ORIENTED DEVELOPMENT; ESTABLISHING FEES; PROVIDING FOR SEVERABILITY; ESTABLISHING AN EFFECTIVE DATE; CONTAINING FINDINGS AND OTHER PROVISIONS RELATED TO THE FOREGOING SUBJECT; AND DECLARING AN EMERGENCY.

WHEREAS, the City of Houston, Texas, (the "City") in the exercise of its lawful authority may enact police power ordinances to promote and protect the health, safety, and welfare of the public; and

WHEREAS, the City is a municipal corporation and home rule city organized under the Constitution and the general and special laws of the State of Texas, and thereby

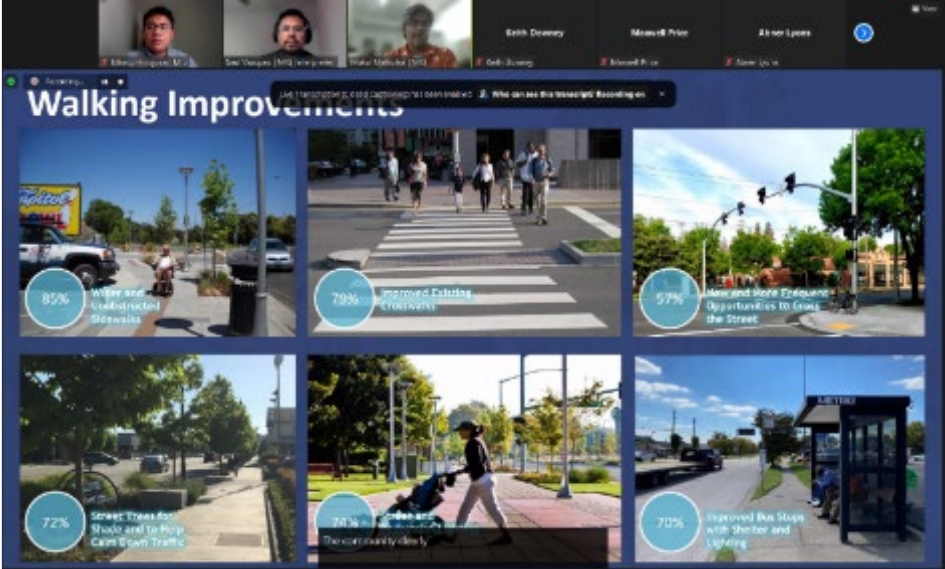


Project Scope



- Planning level
- Examine sidewalks for mobility and drainage
- Create a menu of options
- Contribute to a **Resilient Pedestrian Network**

Community Involvement



**More than
1,000
Respondents!**

Existing Conditions



Existing Conditions

Open Ditch



Open ditch next to roadway with no sidewalks



Open ditch next to property line with no sidewalks



Open ditch next to roadway with sidewalk on one side



Open ditch next to property line with sidewalk on one side



Open ditch next to roadway with sidewalk on both sides



Open ditch next to property line with sidewalk on both sides



Open ditch between narrow roadway or property line

Curb & Gutter



Curb and gutter in a local street with no sidewalks



Curb and gutter in a major thoroughfare with no sidewalks



Curb and gutter in a local street with buffered sidewalk on one side



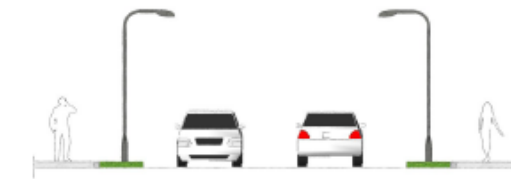
Curb and gutter in a major thoroughfare with buffered sidewalks on both sides



Curb and gutter in a local street with unbuffered sidewalks on both sides



Curb and gutter in a major thoroughfare with unbuffered sidewalks on both sides



Curb and gutter in a local street with buffered sidewalks on both sides



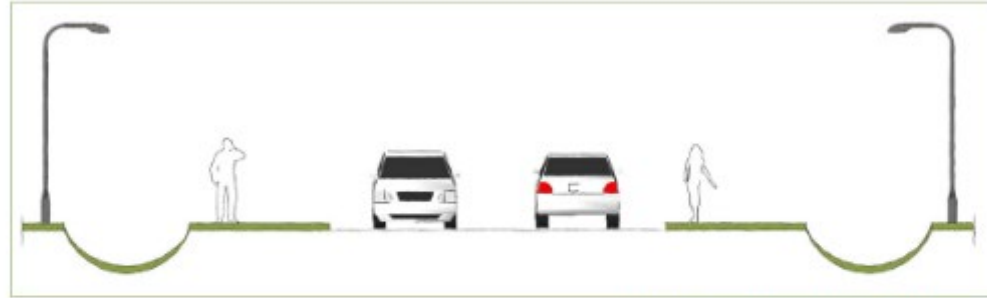
Curb and gutter in a major thoroughfare with buffered sidewalk on one side

Scenario OD-2: Existing

Open Ditch Next to Property Line

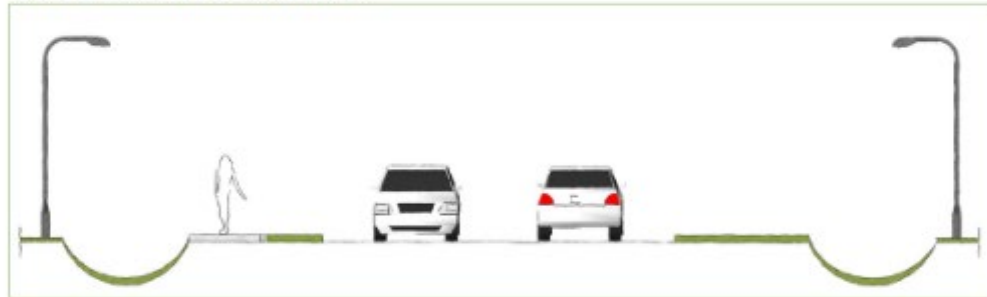
Prototypical Existing Conditions Section

Section 1: No Sidewalks on Both Sides of the Street



Sketch courtesy of the City of Houston

Section 2: Sidewalk on One Side of the Street



Sketch courtesy of the City of Houston



Rendering of an existing condition with no sidewalks on both sides of the street

Scenario OD-2: Proposed

Open Ditch Next to Property Line

Preferred Scenario Solution OD-2.0

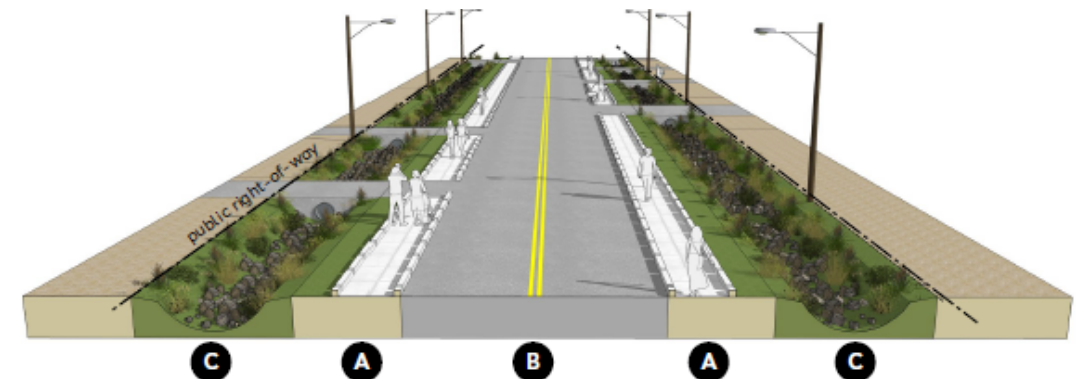
Proposed improvements include adding a sidewalk on at least one side of the roadway with a six-inch vertical concrete slotted curb for protection allowing water to drain to the bioswale. This curb satisfies the safety buffer requirement of the IDM. Additional improvements include converting the open ditch into a bioswale or bioretention planter to mitigate potential flooding created by the addition of impervious pavement.

Scenario Improvement Criteria

Sidewalk/ Pedestrian Zone*	6' minimum (7' preferred) standard concrete sidewalk	A
Vehicular and Bike Access	18' minimum (20' preferred) with two bi-directional lanes Refer to the City of Houston Bike Plan	B
Drainage/ Amenity Zone	8' minimum open ditch repurposed as bioswale	C

Alternative Solutions

OD-2.1	Provide permeable sidewalk with slotted curbs on at least side of the street. Maintain existing open ditches.
OD-2.2	Provide standard concrete sidewalk with slotted curbs on at least one side of the street. Convert part or whole of roadway to porous asphalt. Maintain existing open ditches.
OD-2.3	Regrade entire street and provide one consolidated open ditch bioswale on one side of the ROW. Provide standard concrete sidewalk that is raised or with slotted curbs.



* Will require modification approval if located on a TOD Street, Major Thoroughfare, or within the Central Business District. May require modification approval if identified in the Walkable Places Plan.

Scenario OD-2: Proposed

Open Ditch Next to Property Line

Proposed Conditions: Renderings and Built Examples



OD-2.0 Rendering of proposed improvement on both sides of street



OD-2.1 Rendering of permeable paving sidewalk on one side of the street



OD-2.0 Built example in Houston



OD-2.3 Built example of regraded street with concrete sidewalk and a consolidated bioswale on one side of the street



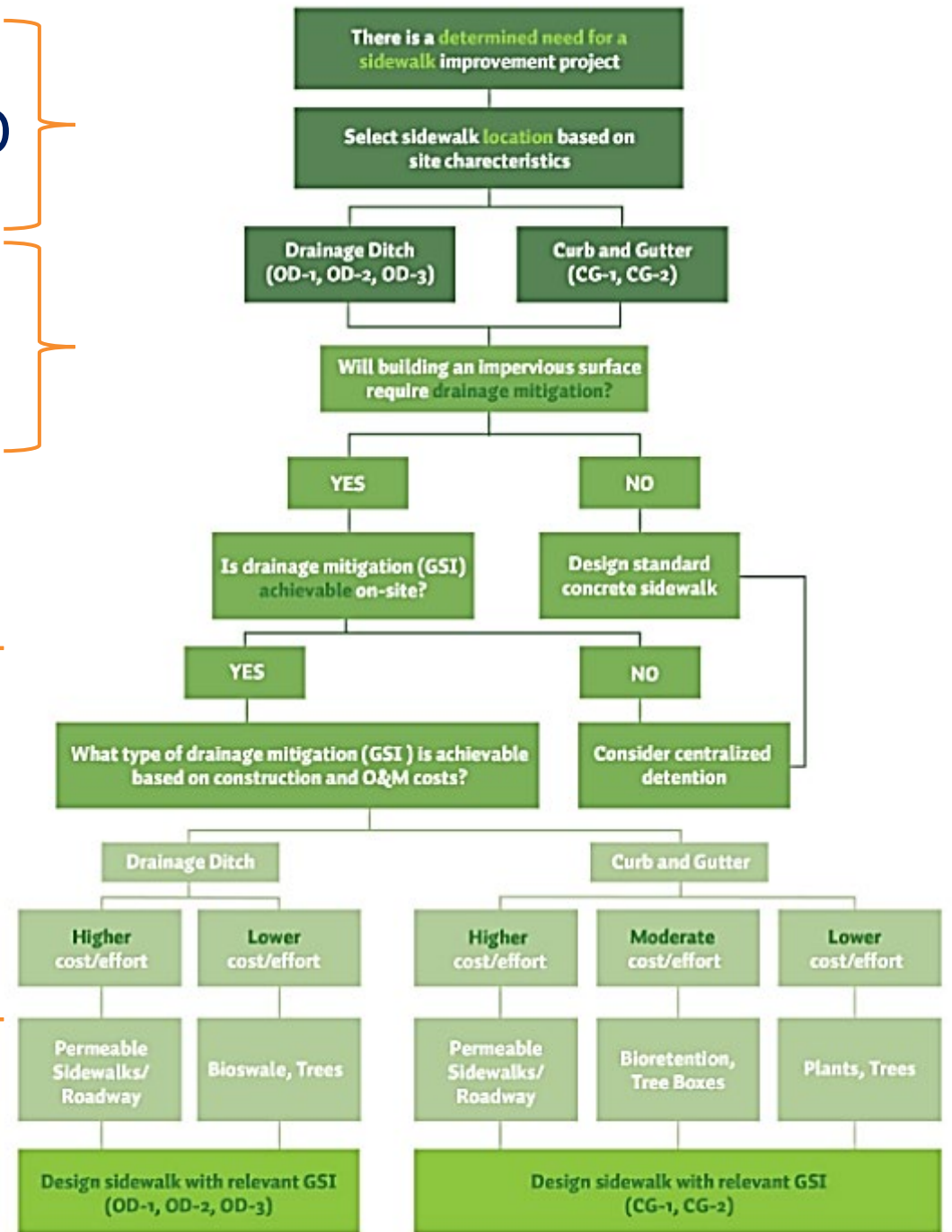
Decision Matrix

SIDEWALK NEED

DRAINAGE NEED DETERMINED

DRAINAGE TYPE & MATERIALS

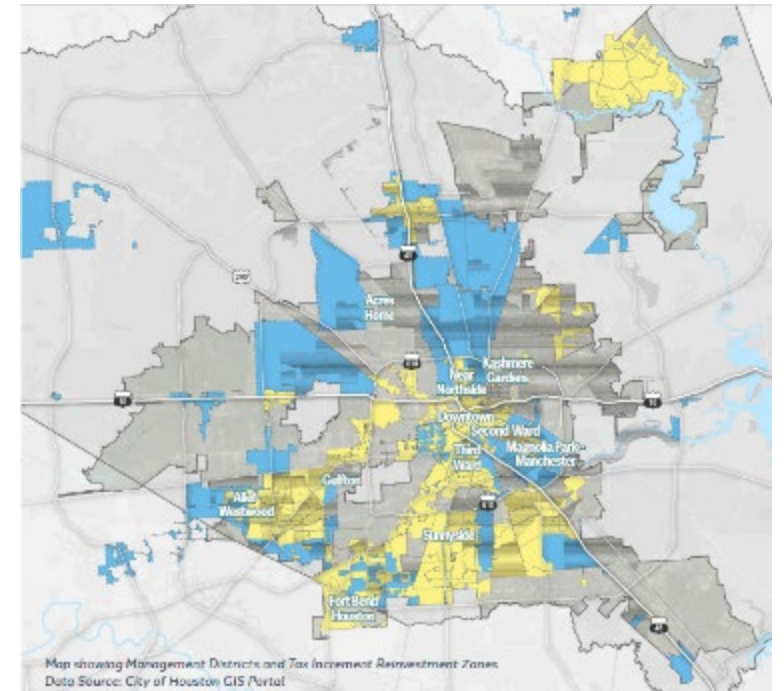
FUNDING, COST, O&M CONSIDERATIONS



Resiliency is Funding



Lack of awareness and inadequate coverage of existing funding



TIRZs and Management Districts Map Legend

- Harris County Boundary
- Management Districts
- City of Houston
- Management Districts Boundary
- Lakes and Rivers
- Socially Vulnerable Communities
- TIRZs

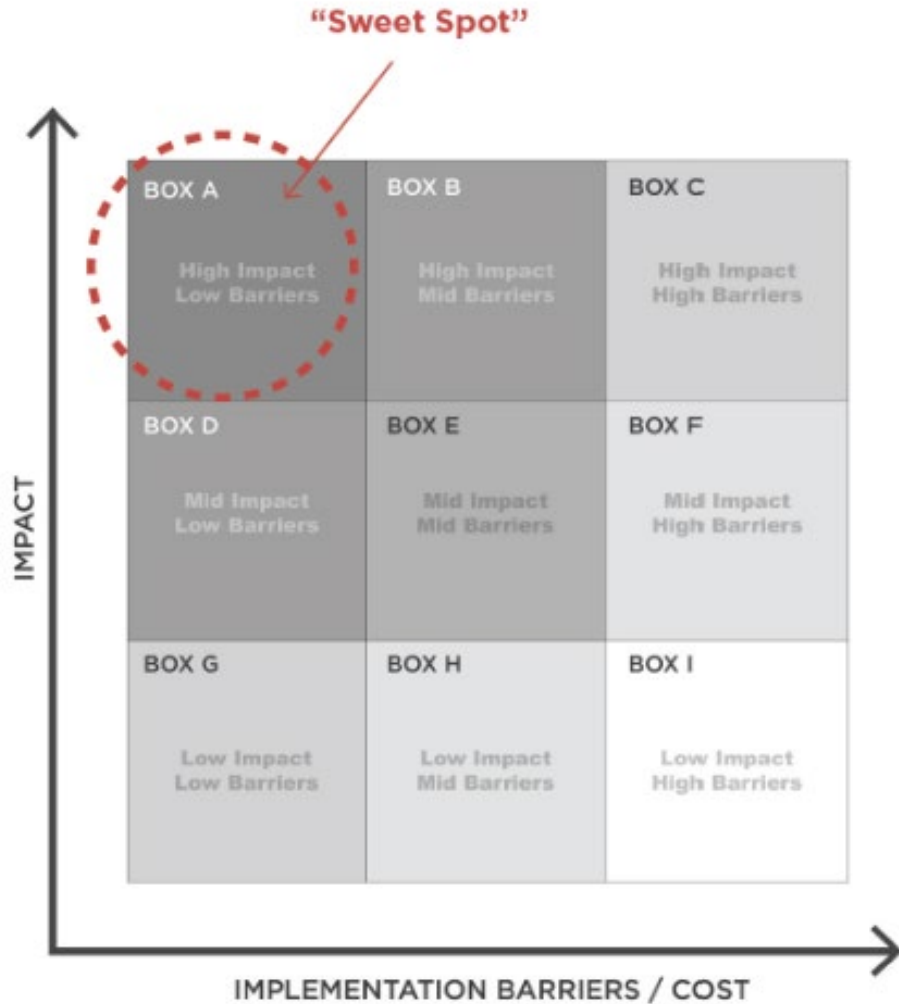


Future Funding Strategies



- **Sidewalk Fee-in-Lieu (COH)**
 - City Council approved January 2023
 - Developers of new construction to pay a fee instead of providing sidewalks (\$12 per sq. foot) where applicable
 - Projected revenue of \$1.7m annually
 - City divided into sidewalk service areas – 70% spent in generating area, rest city-wide
- **Target Infrastructure Grants (IRA, IIJA, others)**
- **Other Potential Strategies:**
 - Neighborhood Partnering Program
 - Transportation Benefit Districts
 - Community Facility Districts

Prioritization and Phasing



- Develop a prioritization matrix to identify sidewalk scenarios/corridors that can be implemented first
- Identify ways to phase sidewalk projects to offer immediate mobility
 - **Near Term** – safe and accessible tactical solutions
 - **Long Term** – permanent capital projects as more funding becomes available

Prioritization and Phasing

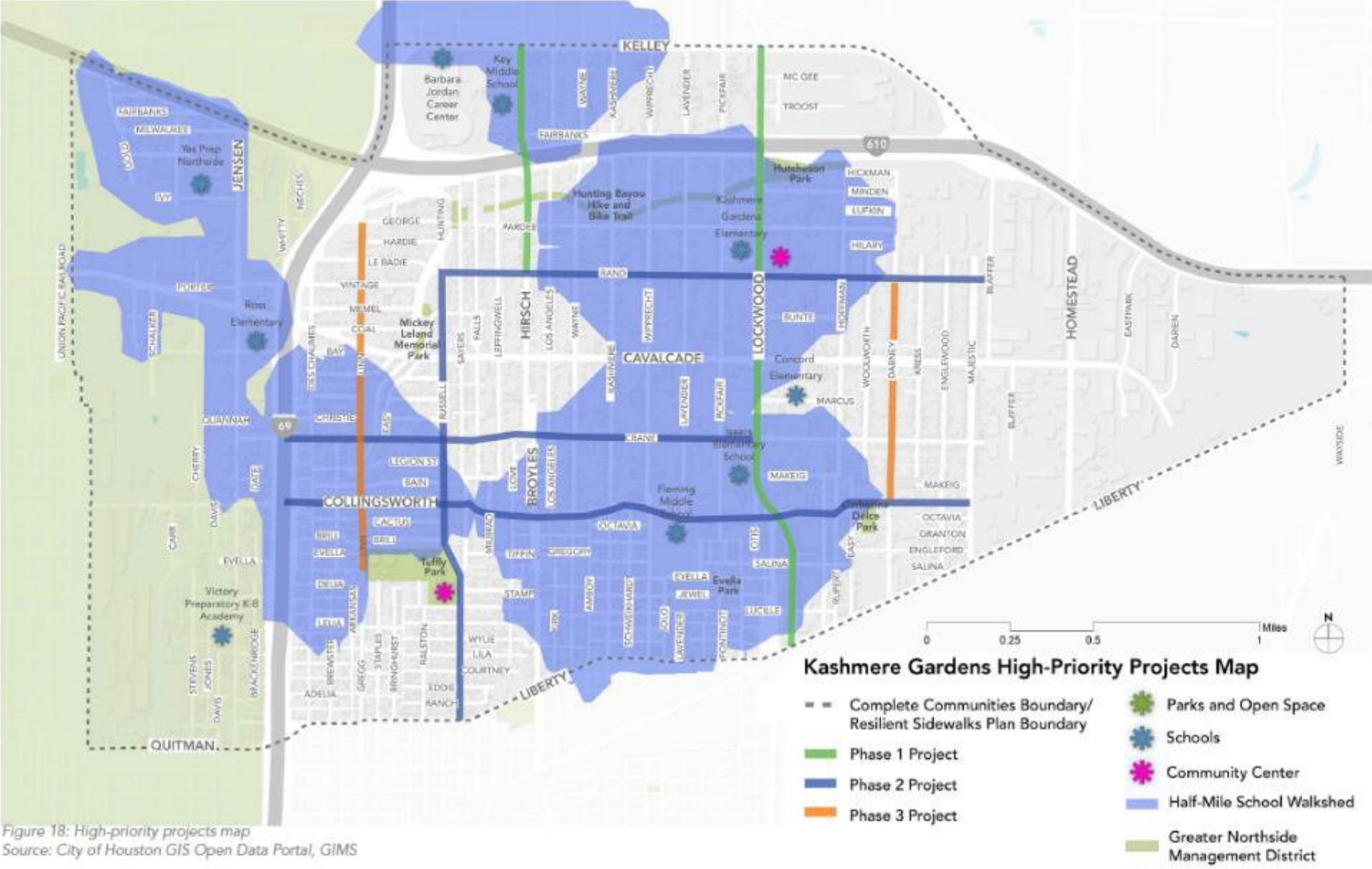


Figure 18: High-priority projects map
 Source: City of Houston GIS Open Data Portal, GIMS

Actionable Next Steps



- Produce an actionable toolkit
 - Plug into city docs like the IDM
 - Create a working document
 - Menu of options for all to work with
 - Inform and coordinate with city pilot projects
- Create a robust sidewalk inventory and a priority list
- Identify offshoot projects to be tackled
- Identify grant funding and partnerships

Contact – Resilient Sidewalks Plan on *Engage Houston*



[Home](#) / Resilient Sidewalks Plan

Resilient Sidewalks Plan



LOCATION Kashmere Gardens, Gulfton, and City-wide

COUNCIL DISTRICT B, J

TYPE Plan

START [Fall 2021](#)

COMPLETION [Winter 2023](#)

thank you!



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