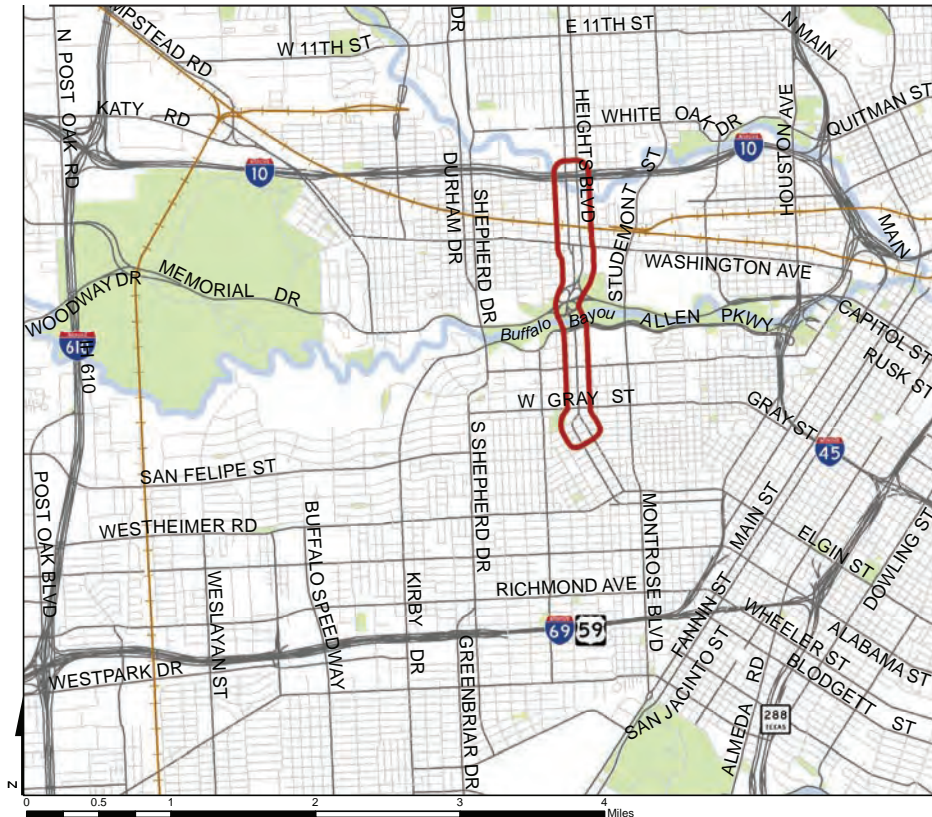


PROJECT LOCATION



Corridor Information

- **Project Limits:** IH-10 Eastbound Frontage Road to Nevada/Bomar Street (south of W. Gray Street)
- **Total Project Length:** 2.7 centerline miles
- **Signalized Intersections:** 15
- **Council Districts:** C and H
- **Key Map:** 492H, 492M, 492R, 493E, 493J, 493N
- **Super Neighborhoods:** Greater Heights, Washington Ave Coalition/Memorial Park, and Neartown-Montrose



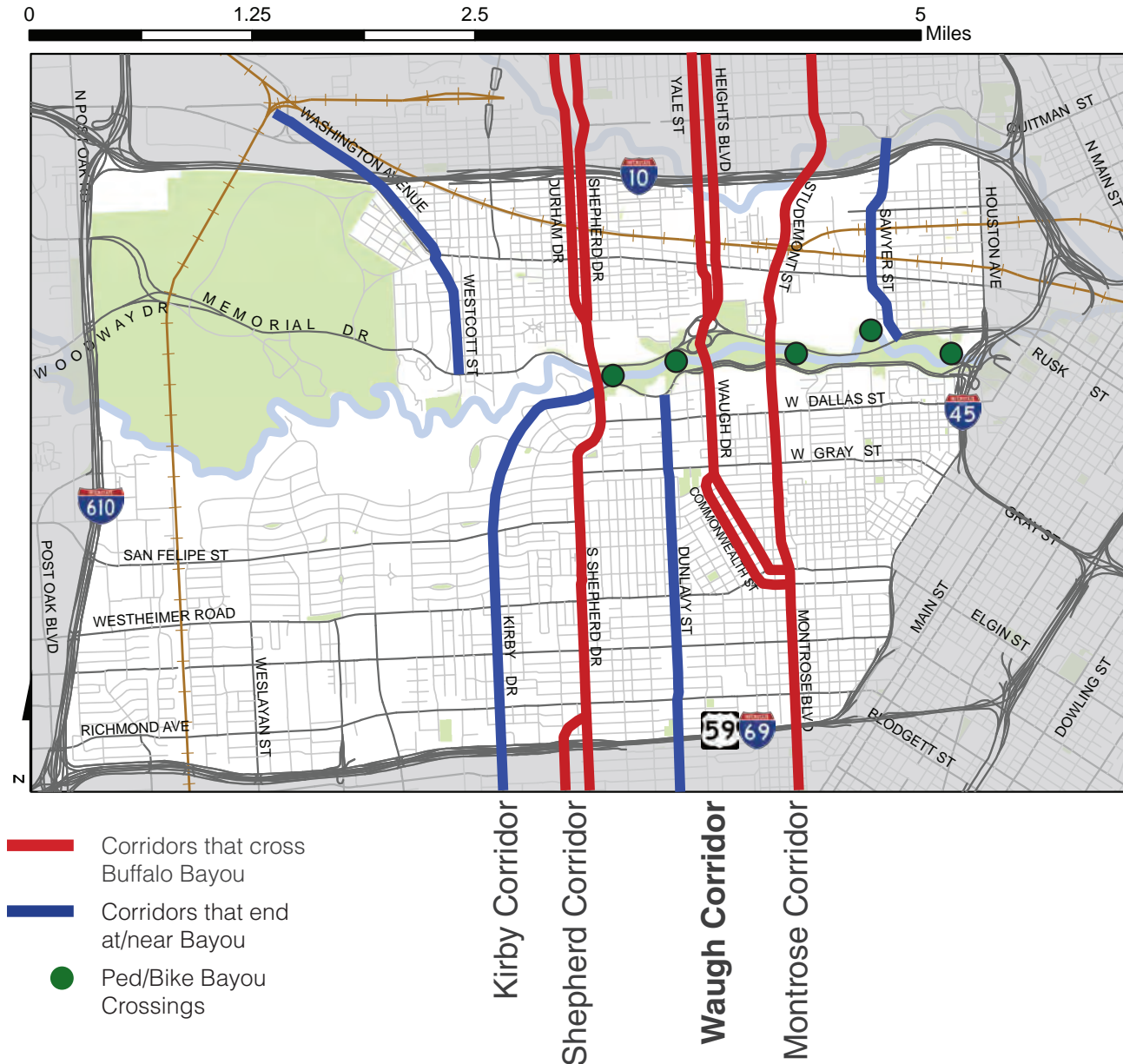
LEGEND

Civic	Multi Family Residential
Commercial	Office
Industrial	Single Family Residential
Utilities	Water
Vacant	Parks
Unknown	

Context:

- Primarily dense commercial and multi-family residential with new project announced
- Over 20,000 people and 22,000 jobs within 1/2 mile of corridor
- Signature parks
- Single family neighborhoods offset from corridor adjacent to commercial and Multi-family

NETWORK CONNECTIVITY



A critical multimodal network connection

Limited north-south connectivity between IH-610 and Downtown

Multiple Barriers

- Memorial Park
- River Oaks CC
- Buffalo Bayou
- UPRR Terminal Sub

Three North-South Corridors in Five Miles

- Shepherd/Durham/Greenbriar
- Waugh/Heights/Yale/Commonwealth
- Studemont/Montrose

SUMMARY OF WALK, BIKE & TRANSIT

Sidewalks

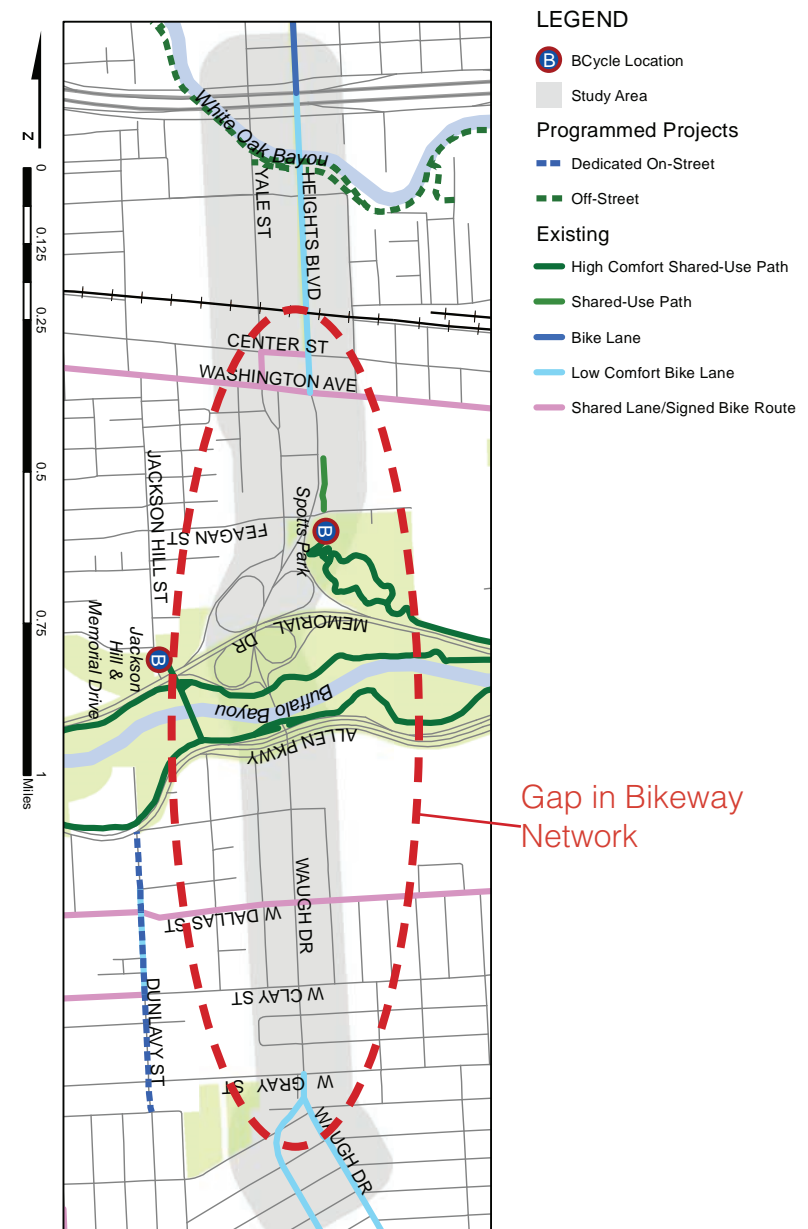
- Some sections in new/good condition; most below standard and do not meet ADA
- Narrow Bridges
- Many difficult intersection crossings and missing curb ramps.

Bikeways

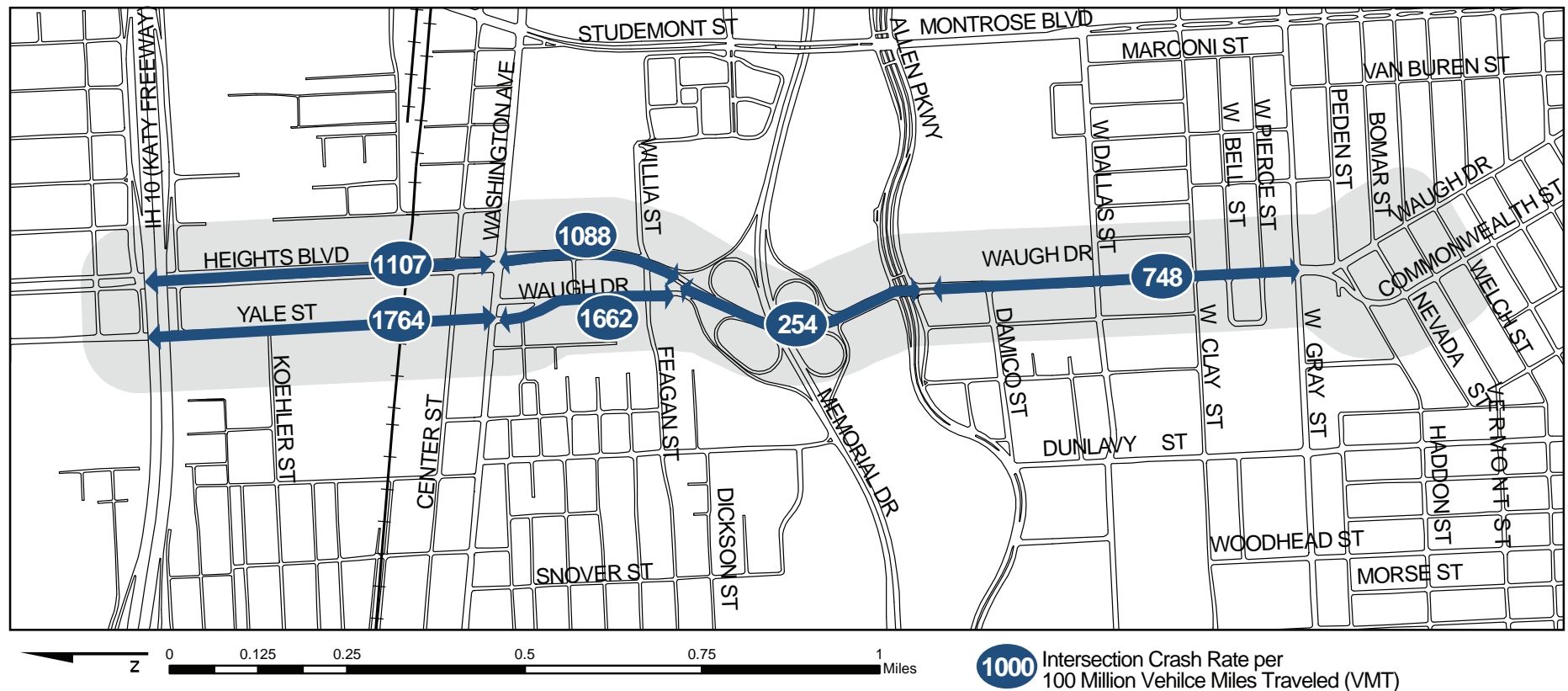
- Major gap in bikeway network limiting high-comfort access to parks, trails and jobs
- Existing riderships
- Competing gap from Washington to W. Gray and park access were common community requests in recent Houston Bike Plan

Transit

- Segment between W. Dallas served by 40 Telephone/Heights, high ridership route (4,800 bpd; ~300 in this segment) with frequency of every 15-30 minutes throughout day.
- Opportunity to improve access, stop amenities, and potentially reduce bike/bus conflicts

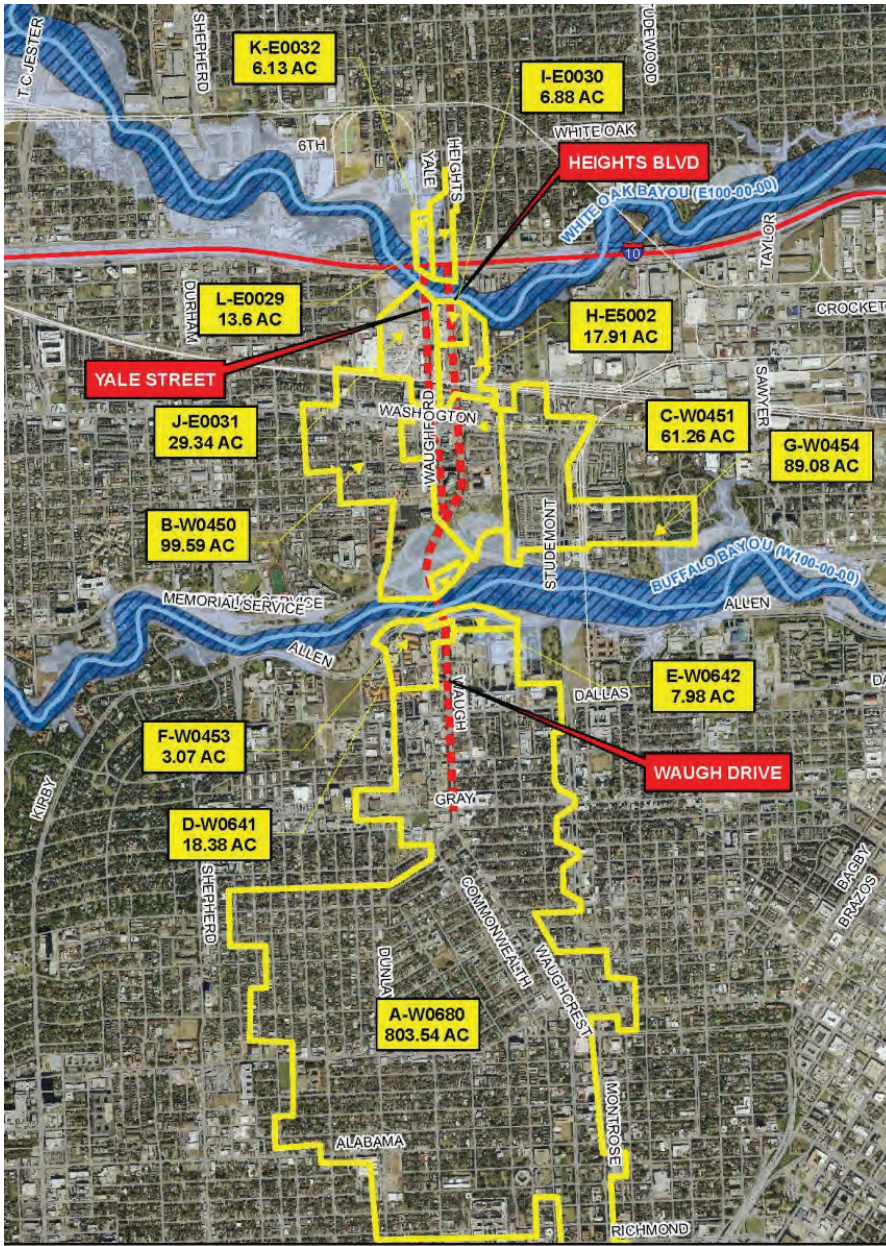


SAFETY IMPROVEMENT OPPORTUNITIES



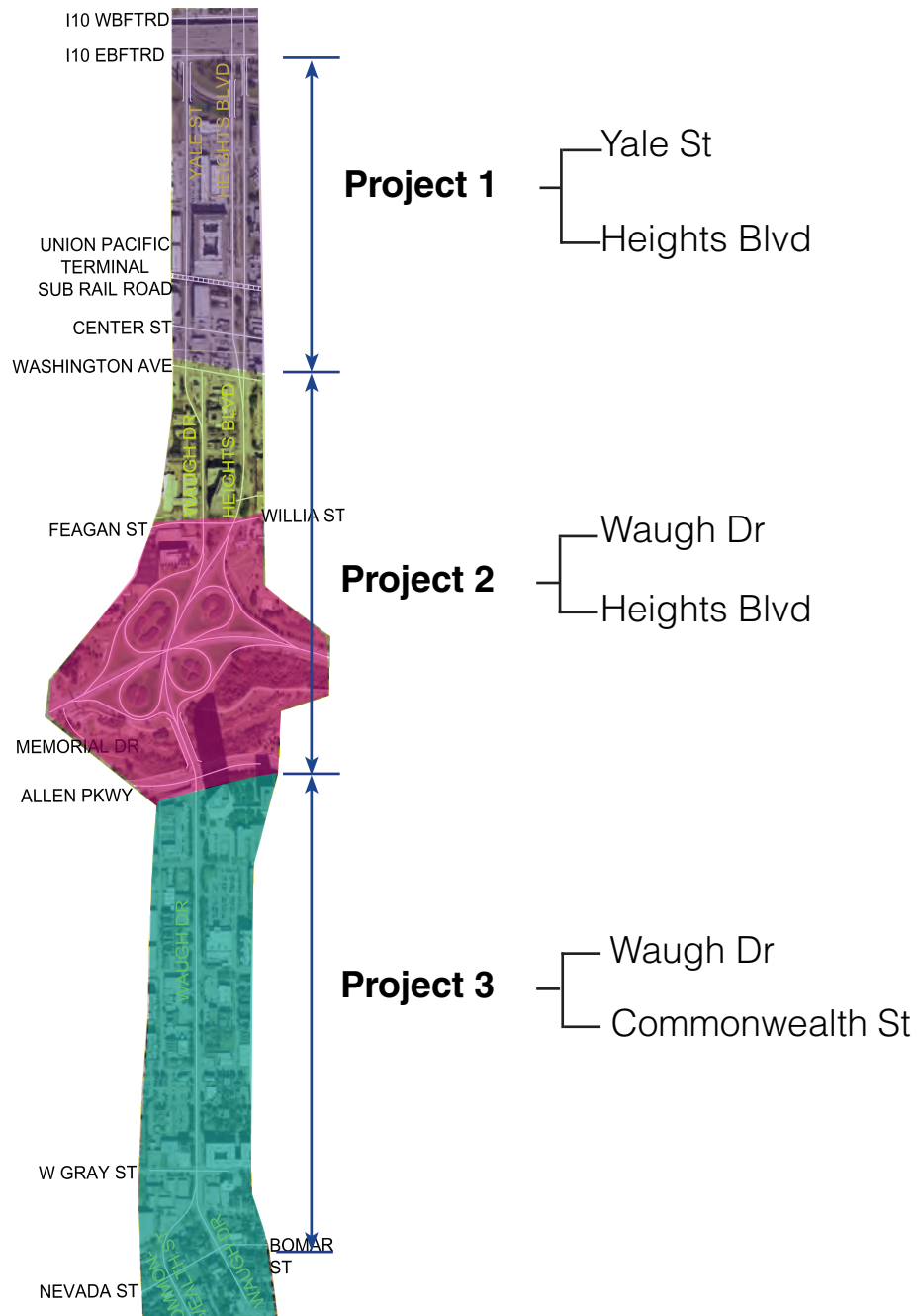
- Corridor has a 2-4 times higher vehicle crash rates than state average for similar streets
- Highest vehicle crash rate intersections at Center Street, Washington Avenue, Feagan, D'amico, Clay and Gray.
- 17 bicycle crashes (one fatality) and 8 pedestrian crashes (one fatality) in past 5 years

DRAINAGE PROBLEMS IDENTIFICATION



- Inadequate storm sewer trunk lines along Waugh Drive / Heights Blvd south of Washington (W0451 – System C)
- Inadequate downstream (offsite) storm sewer capacity storm system at Washington / Heights Boulevard intersection (W0454 – System G)
- Aged storm sewers with limited as-built information.
- Existing floodplain storage volume in green space areas at Memorial Drive / Waugh Drive Interchange needs to be preserved.
- Rebuilding of interchange provides opportunity to provide additional floodplain storage and benefit surrounding area.

CORRIDOR OVERVIEW



Project Extents

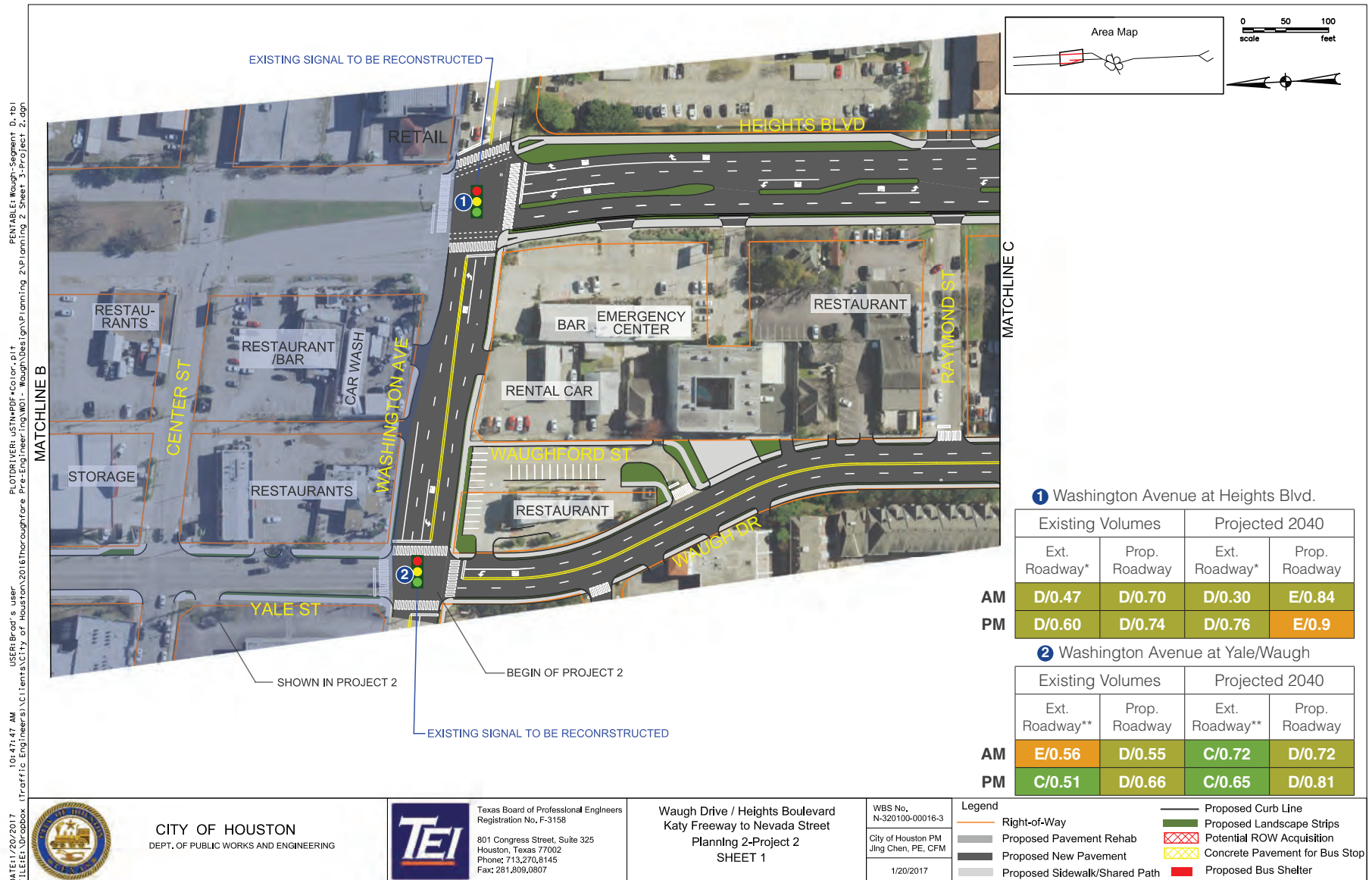
- **Project 1** - IH-10 to North of Washington Avenue
- **Project 2** - Washington Avenue to Allen Parkway
- **Project 3** - South of Allen Parkway to Nevada/Bomar Street

WHY REALIGN?

- Allows **transformation of cloverleaf interchange** to urban, multimodal corridor aligned with the current and future mixed-use development and park context.
- Unlocks **access and utilization of approximately 16 acres of park land** that can become centerpiece of Buffalo Bayou Park
 - Current land values in the area are in the range of \$2-3 million per acre excluding improvements
- **Links together Cleveland Park, Spotts Park and Knox Park with Buffalo Bayou Park** making each stronger while improving trail connectivity, active uses and potential parking availability
- **Supports bridge improvements.** Both existing bridges over Memorial (historical) and Buffalo Bayou (bat colony) would be difficult to modify, widen or rehab to align with mobility goals or as they reach end of useful life
- Greater **flexibility for traffic control** during construction
- **Potential to improve drainage outcomes** with more potential detention
- Concept **supported by stakeholders** (e.g., Buffalo Bayou Partnership, local developers, TPWD) as transformative opportunity, if done well

ROADWAY SCHEMATIC (1 OF 3)

WAUGH/S. HEIGHTS/INTERCHANGE | Washington Avenue to Allen Parkway

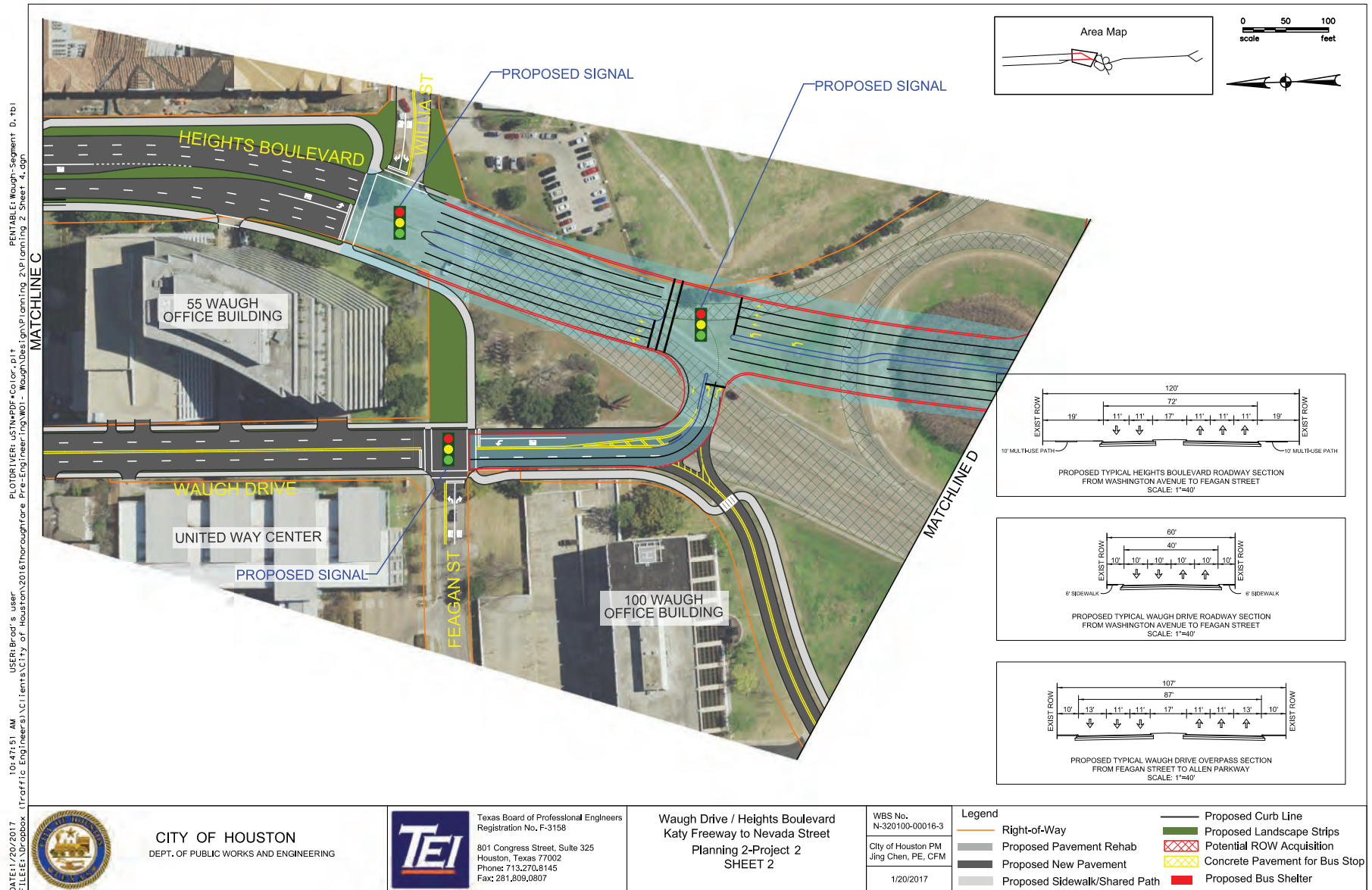


* Existing Washington Avenue at Heights Boulevard does not allow EB left turns

**Existing WB left turns to SB Waugh Drive are made at Waughford St; Proposed allows two-way operations on Waugh

ROADWAY SCHEMATIC (2 OF 3)

WAUGH/S. HEIGHTS/INTERCHANGE | Washington Avenue to Allen Parkway



ROADWAY SCHEMATIC (3 OF 3)

WAUGH/S. HEIGHTS/INTERCHANGE | Washington Avenue to Allen Parkway



INTERCHANGE INTERSECTION ANALYSIS

WAUGH/S. HEIGHTS/INTERCHANGE | Washington Avenue to Allen Parkway

Level of Service / Volume to Capacity Ratio

1

Waugh Drive at Feagan Street

	Existing Volumes		Projected 2040	
	Ext. Roadway*	Prop. Roadway	Ext. Roadway*	Prop. Roadway
AM	No Signal	D/1.12	No Signal	D/1.04
PM	No Signal	D/0.60	No Signal	D/0.63

2

S. Heights Blvd at Willia St

	Existing Volumes		Projected 2040	
	Ext. Roadway*	Prop. Roadway	Ext. Roadway*	Prop. Roadway
AM	No Signal	C/0.52	No Signal	C/0.58
PM	No Signal	C/0.60	No Signal	C/0.68

3

Waugh Drive at S. Heights Blvd.

	Existing Volumes		Projected 2040	
	Ext. Roadway*	Prop. Roadway	Ext. Roadway*	Prop. Roadway
AM	No Signal	C/0.80	No Signal	D/1.09
PM	No Signal	C/0.65	No Signal	C/0.93

4

Memorial Drive at Waugh SPUI

	Existing Volumes		Projected 2040	
	Ext. Roadway	Prop. Roadway**	Ext. Roadway	Prop. Roadway**
AM	No Signal	C/0.87	No Signal	D/1.03
PM	No Signal	C/0.89	No Signal	D/1.13

5

Waugh Drive at Allen Parkway (EB)

	Existing Volumes		Projected 2040	
	Ext. Roadway*	Prop. Roadway	Ext. Roadway*	Prop. Roadway
AM	B/0.53	B/0.53	B/0.67	B/0.67
PM	B/0.492	B/0.65	B/0.62	C/0.81

Waugh Drive at Allen Parkway (WB)

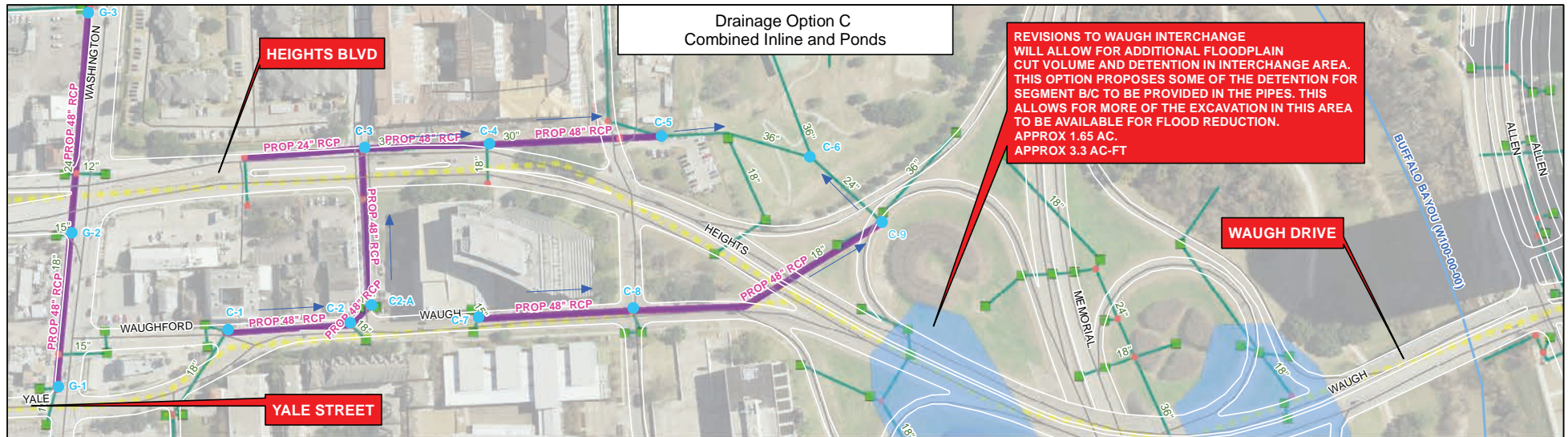
	Existing Volumes		Projected 2040	
	Ext. Roadway*	Prop. Roadway	Ext. Roadway*	Prop. Roadway
AM	B/0.52	A/0.57	B/0.66	A/0.70
PM	B/0.59	B/0.78	C/0.75	C/0.87

* Assumes two-way operations on Waugh Drive south of Washington Avenue and closure of Feagan between Waugh and Heights Blvd.

** Assumes Single Point Urban Interchange

DRAINAGE RECOMMENDATION SUMMARY

WAUGH/S. HEIGHTS/INTERCHANGE | Washington Avenue to Allen Parkway



Excavated Detention Pond(s)

Pros:

Lower costs, less storm sewer improvements required, however, capacity improvements still needed.

Cons:

Less of the excavation achieved in interchange area can be counted towards flood reduction.

Estimated Cost: \$1,678,000

Inline Detention with Detention Pond(s)

Pros:

100-year capacity for System G within project limits. Better storm sewer capacity for System C, less of the excavated volume in interchange needed for project mitigation so it can be utilized for a flood reduction benefit

Cons:

Higher cost than only excavated.

Estimated Cost: \$1,889,000

Recommended



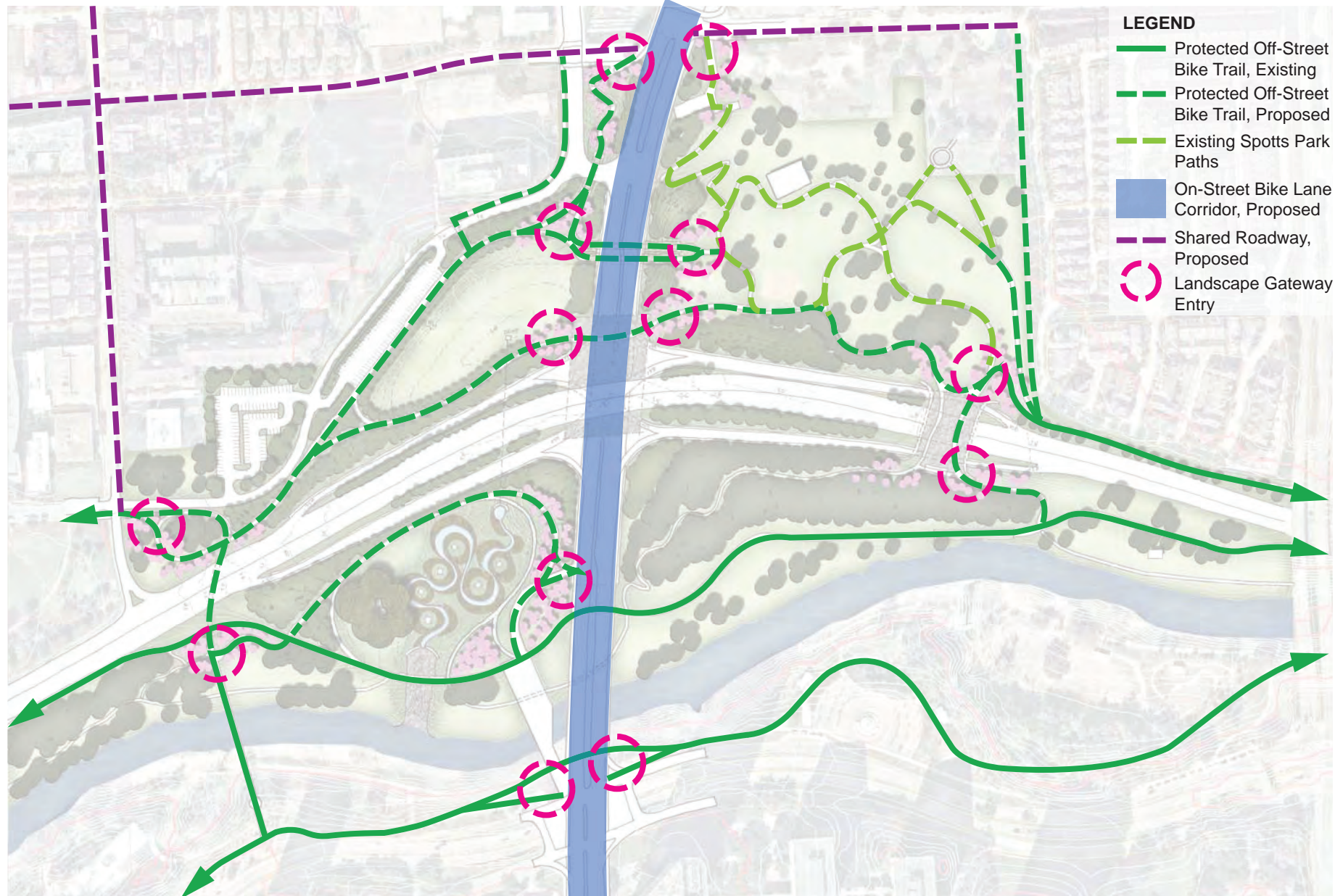
BUFFALO BAYOU PARK



PROPOSED PARK PLAN



BUFFALO BAYOU PARK



BIKE AND PEDESTRIAN CONNECTIONS



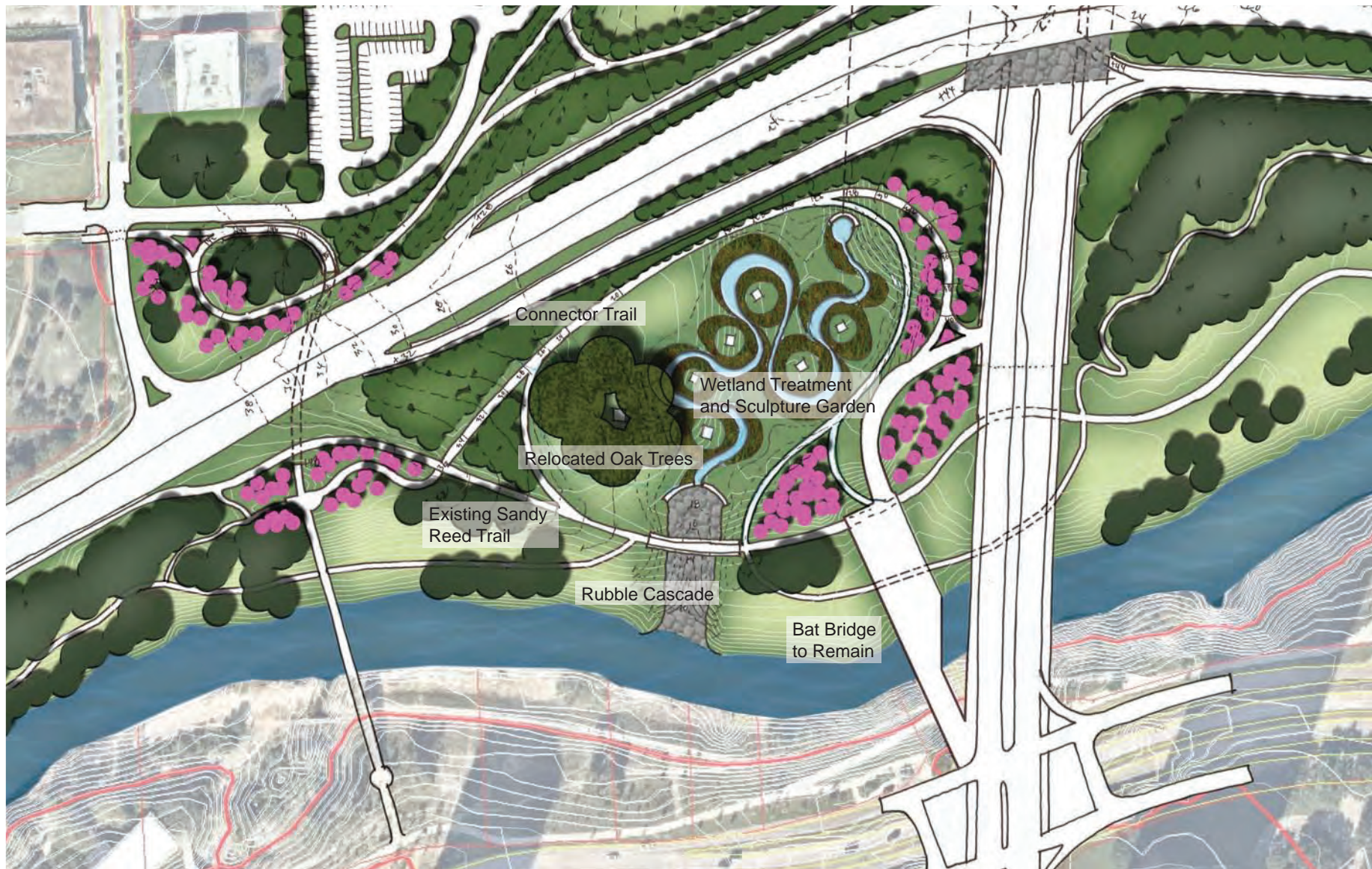
BUFFALO BAYOU PARK



NORTHWEST QUADRANT



BUFFALO BAYOU PARK



SOUTHWEST QUADRANT



BUFFALO BAYOU PARK



SOUTHEAST QUADRANT



TRAFFIC ENGINEERS, INC.

Pre-Engineering of Street and Traffic (Thoroughfares) Improvements

City of Houston - WBS No. N-320100-0016-3



BUFFALO BAYOU PARK



NORTHEAST QUADRANT



BUFFALO BAYOU PARK



PERSPECTIVE LOOKING NORTHEAST