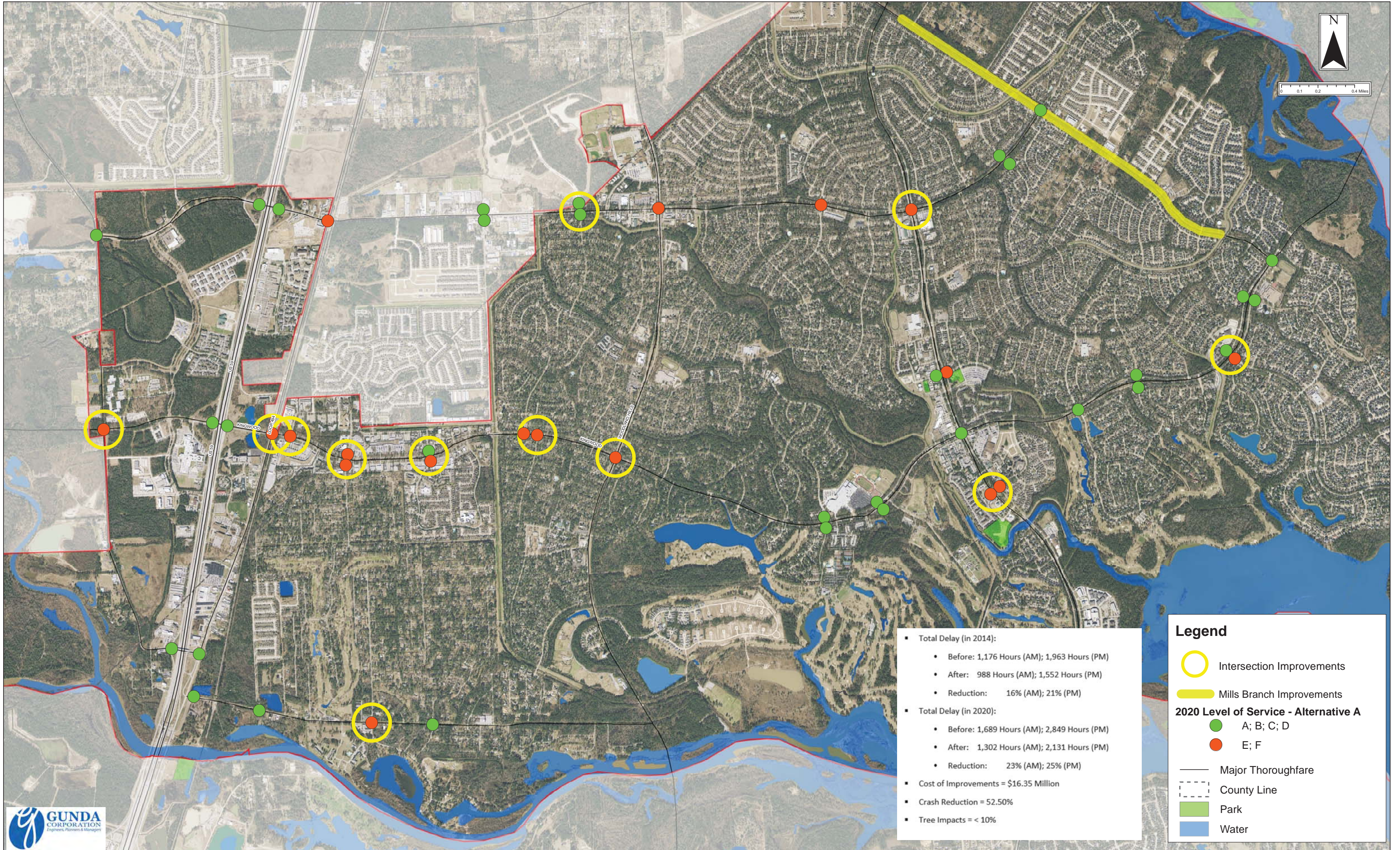
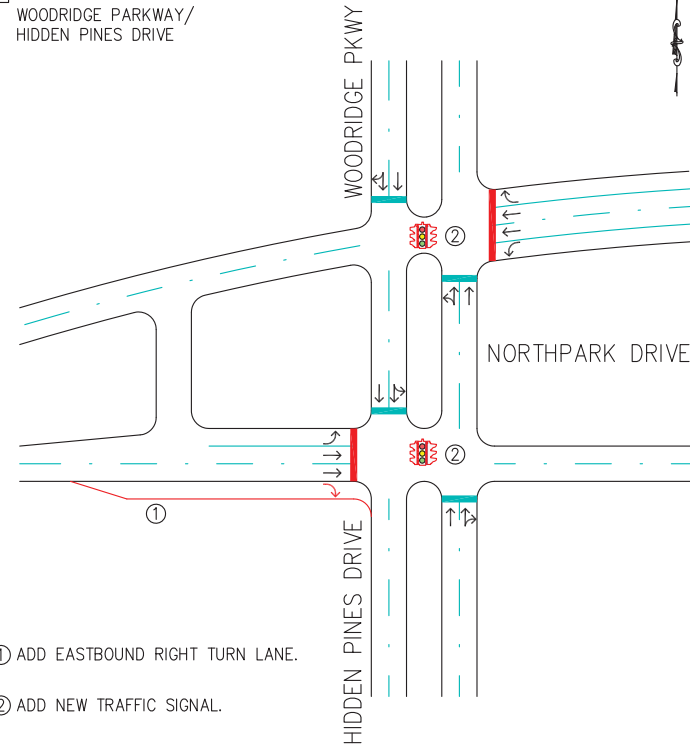


Lake Houston/Kingwood Area Mobility Study

Alternative A: Intersection Improvements

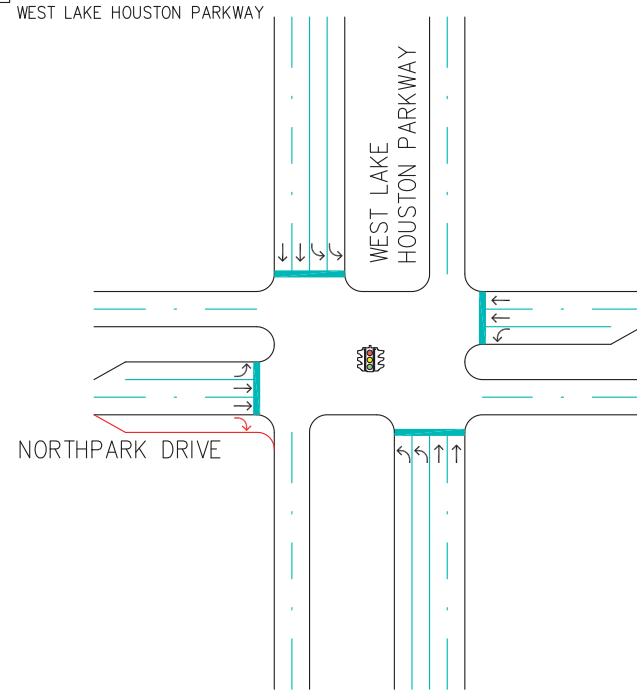


1 NORTH PARK DRIVE & WOODRIDGE PARKWAY/ HIDDEN PINES DRIVE



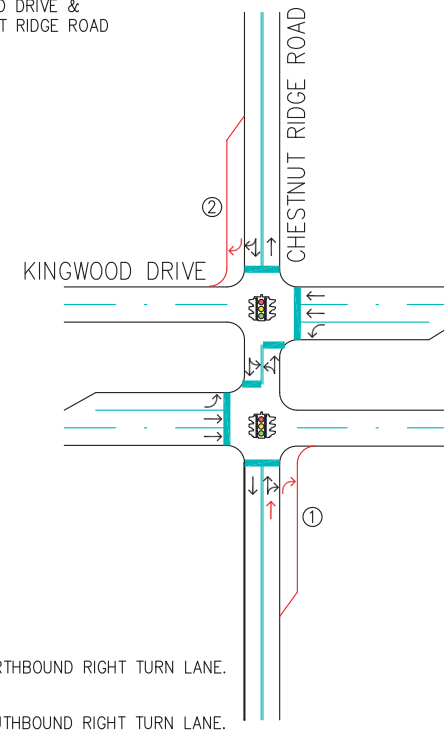
- ① ADD EASTBOUND RIGHT TURN LANE.
- ② ADD NEW TRAFFIC SIGNAL.

2 NORTH PARK DRIVE & WEST LAKE HOUSTON PARKWAY



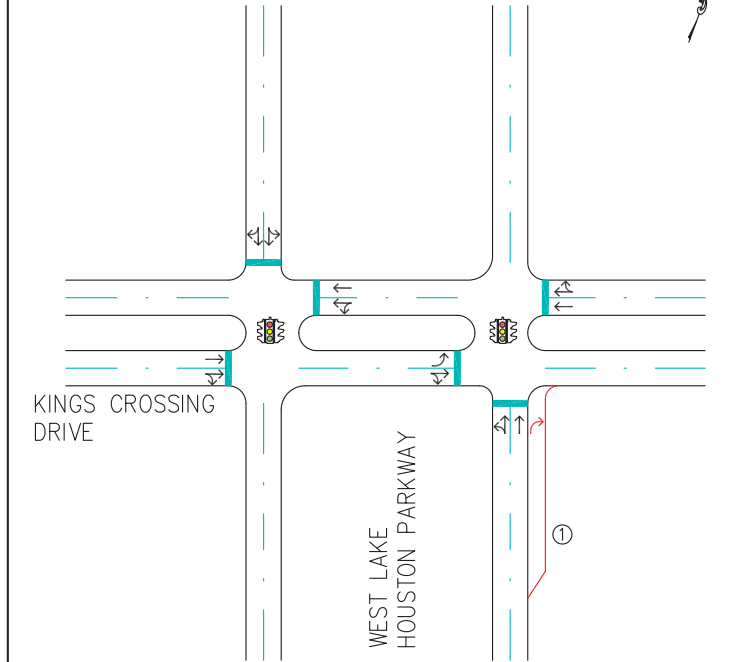
- ① ADD EASTBOUND RIGHT TURN LANE.

3 KINGWOOD DRIVE & CHESTNUT RIDGE ROAD



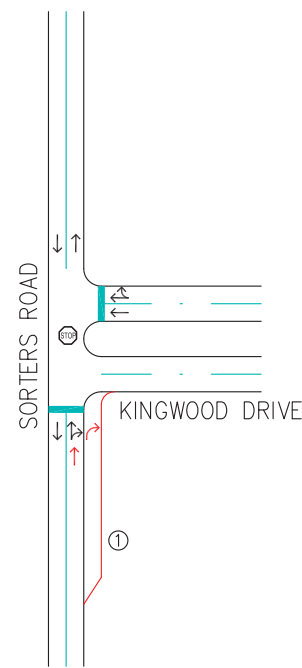
- ① ADD NORTHBOUND RIGHT TURN LANE.
- ② ADD SOUTHBOUND RIGHT TURN LANE.

4 WEST LAKE HOUSTON PARKWAY & KINGS CROSSING DRIVE



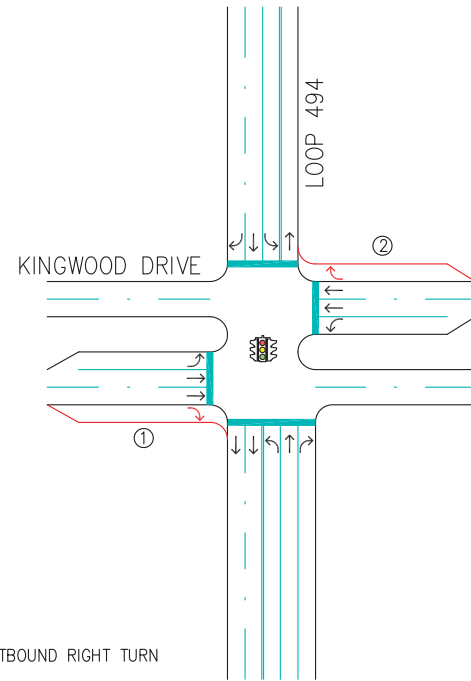
- ① ADD NORTHBOUND RIGHT TURN LANE.

5 KINGWOOD DRIVE & SORTERS ROAD



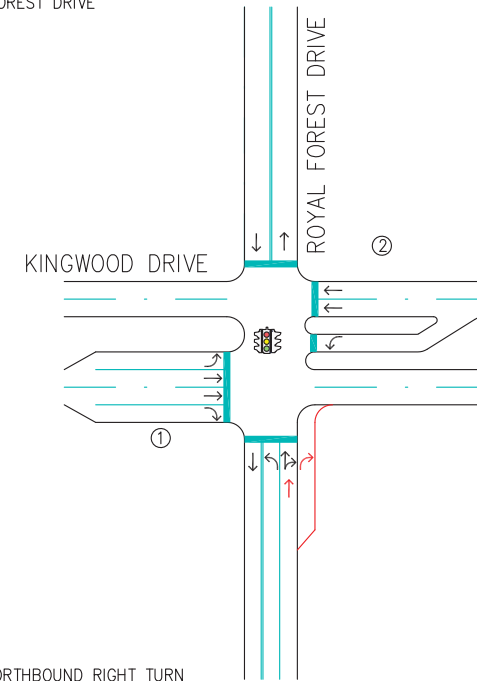
- ① ADD NORTHBOUND RIGHT TURN LANE TO KINGWOOD DRIVE.

6 KINGWOOD DRIVE & LOOP 494



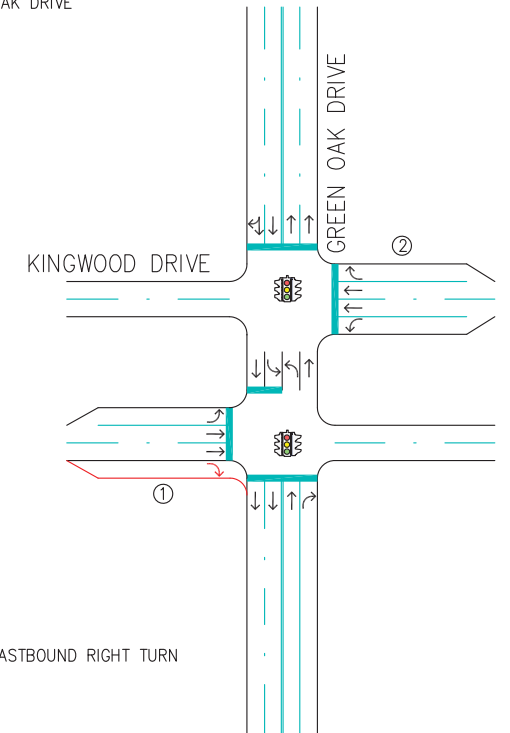
- ① ADD EASTBOUND RIGHT TURN LANE.
- ② ADD WESTBOUND RIGHT TURN LANE.

7 KINGWOOD DRIVE & ROYAL FOREST DRIVE



- ① ADD NORTHBOUND RIGHT TURN LANE.

8 KINGWOOD DRIVE & GREEN OAK DRIVE



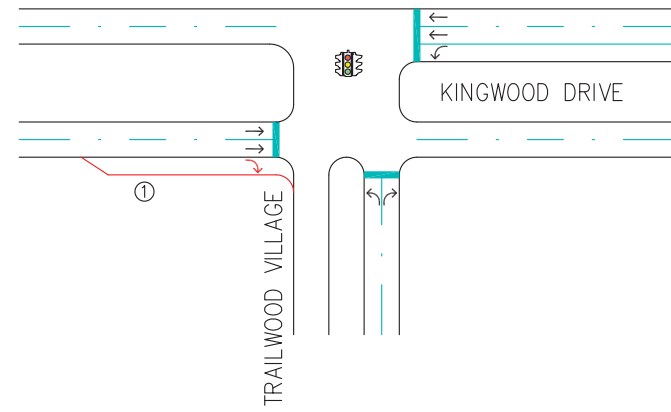
- ① ADD EASTBOUND RIGHT TURN LANE.

- LEGEND:
- EXISTING
 - PROPOSED IMPROVEMENT
 - EXISTING STRIPING
 - EXISTING CURB
 - PROPOSED CURB



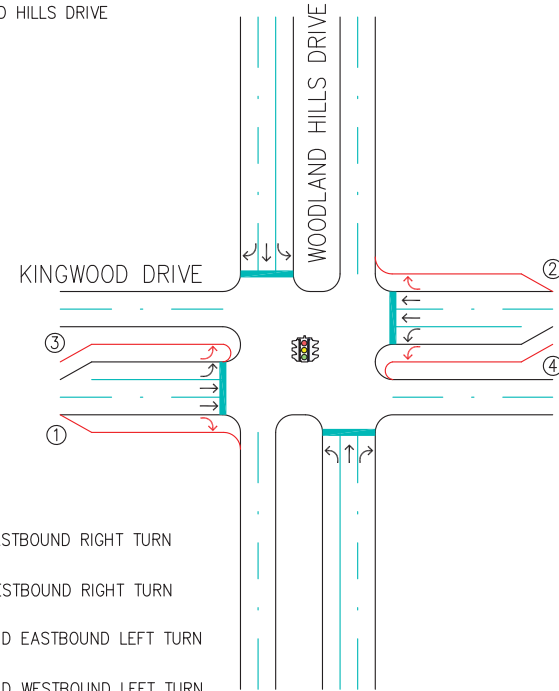
PROJECT NAME:		SHEET TITLE:	
LAKE HOUSTON KINGWOOD MOBILITY PLAN		INTERSECTION IMPROVEMENTS EXISTING (2014)	
DATE: SEPT., 2014		EXHIBIT E7 SHEET 1 OF 2	

9 KINGWOOD DRIVE & TRAILWOOD VILLAGE



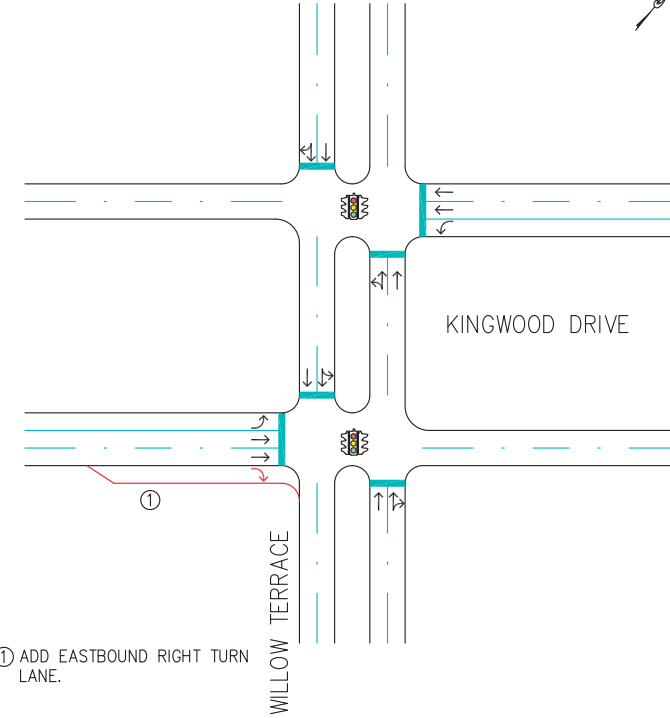
- ① ADD EASTBOUND RIGHT TURN LANE.

10 KINGWOOD DRIVE & WOODLAND HILLS DRIVE



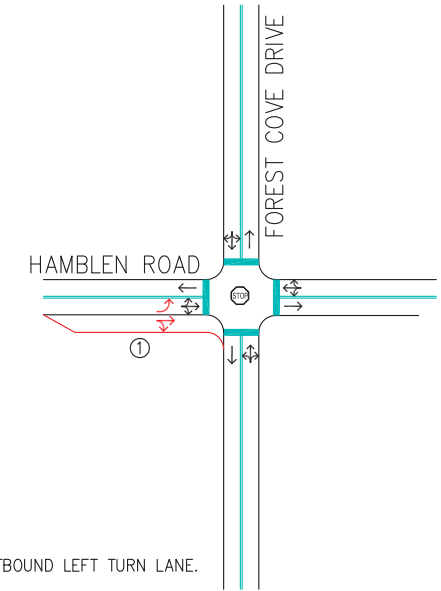
- ① ADD EASTBOUND RIGHT TURN LANE.
- ② ADD WESTBOUND RIGHT TURN LANE.
- ③ ADD 2ND EASTBOUND LEFT TURN LANE.
- ④ ADD 2ND WESTBOUND LEFT TURN LANE.

11 KINGWOOD DRIVE & WILLOW TERRACE



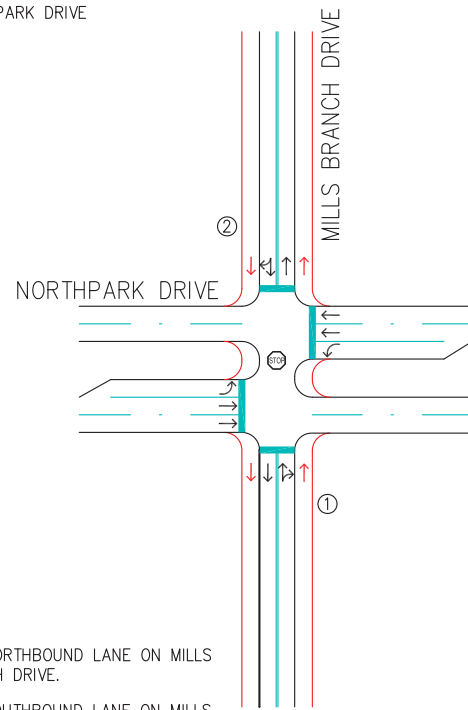
- ① ADD EASTBOUND RIGHT TURN LANE.

12 HAMBLEN ROAD & FOREST COVE DRIVE



- ① ADD EASTBOUND LEFT TURN LANE.

13 MILLS BRANCH DRIVE & NORTHPARK DRIVE



- ① ADD NORTHBOUND LANE ON MILLS BRANCH DRIVE.
- ② ADD SOUTHBOUND LANE ON MILLS BRANCH DRIVE.

- LEGEND:
- EXISTING
 - PROPOSED IMPROVEMENT
 - EXISTING STRIPING
 - EXISTING CURB
 - PROPOSED CURB



PROJECT NAME:
LAKE HOUSTON KINGWOOD
 MOBILITY PLAN

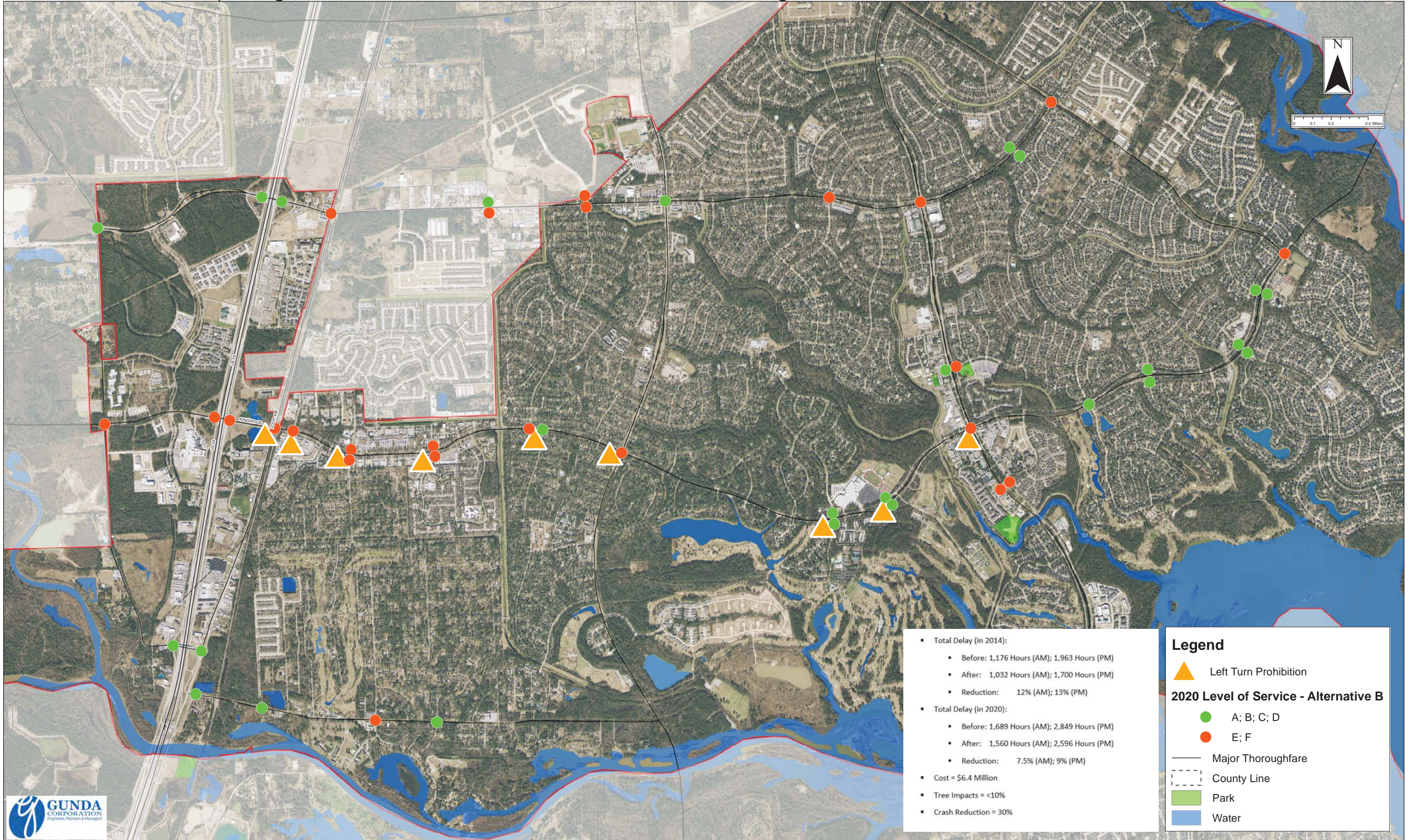
SHEET TITLE:
INTERSECTION IMPROVEMENTS
 EXISTING (2014)

GUNDA PROJ. NO.: 14004-01	SHEET NO.
DATE: SEPT., 2014	EXHIBIT E7 SHEET 2 OF 2

Lake Houston/Kingwood Area Mobility Study

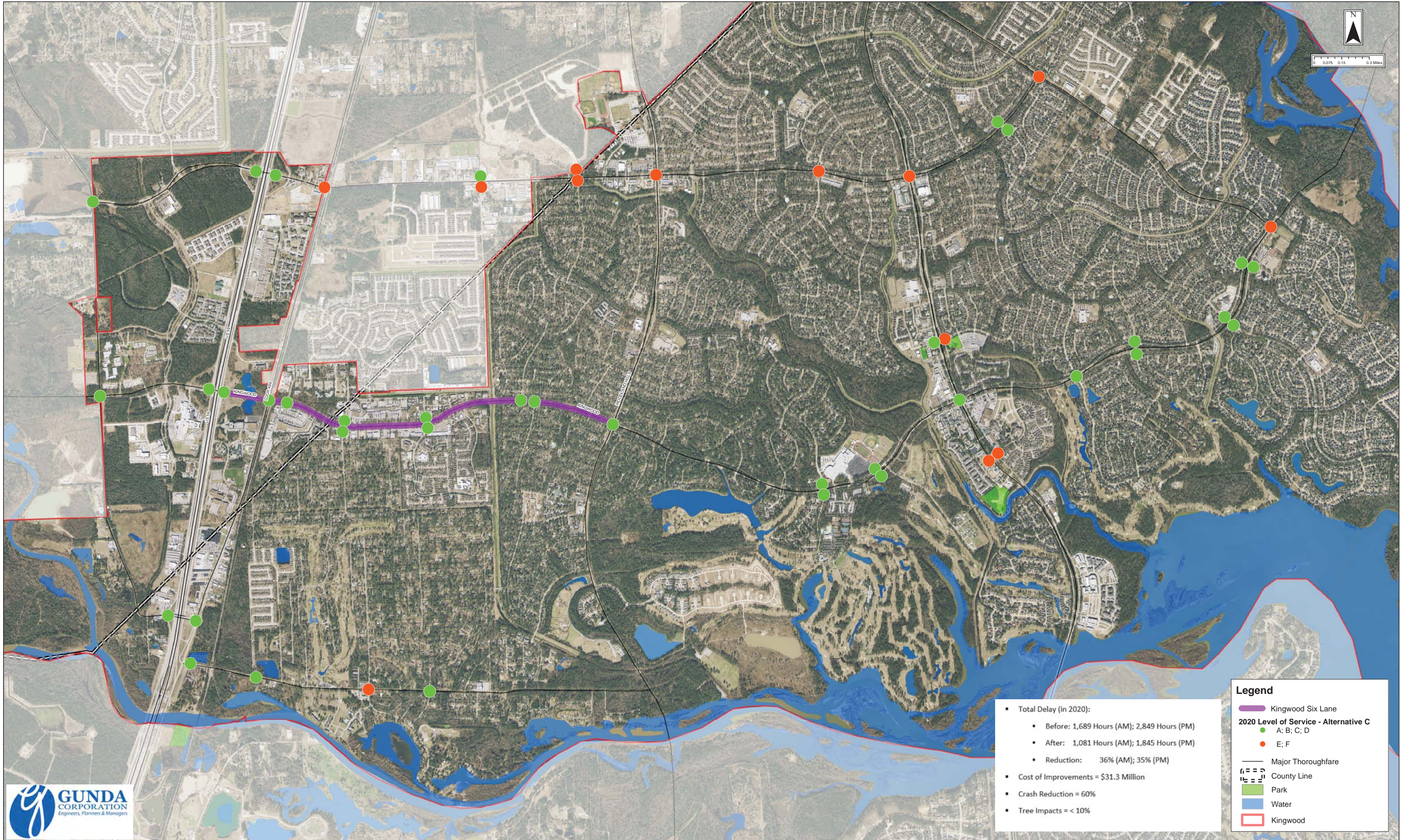
Alternative B: Left Turn Prohibition

(During AM Peak - Eastbound Left Turns Prohibited, During PM Peak - Westbound Left Turns Prohibited)



Lake Houston/Kingwood Area Mobility Study

Alternative C: Kingwood Six Lanes (US 59 to Woodland Hills)



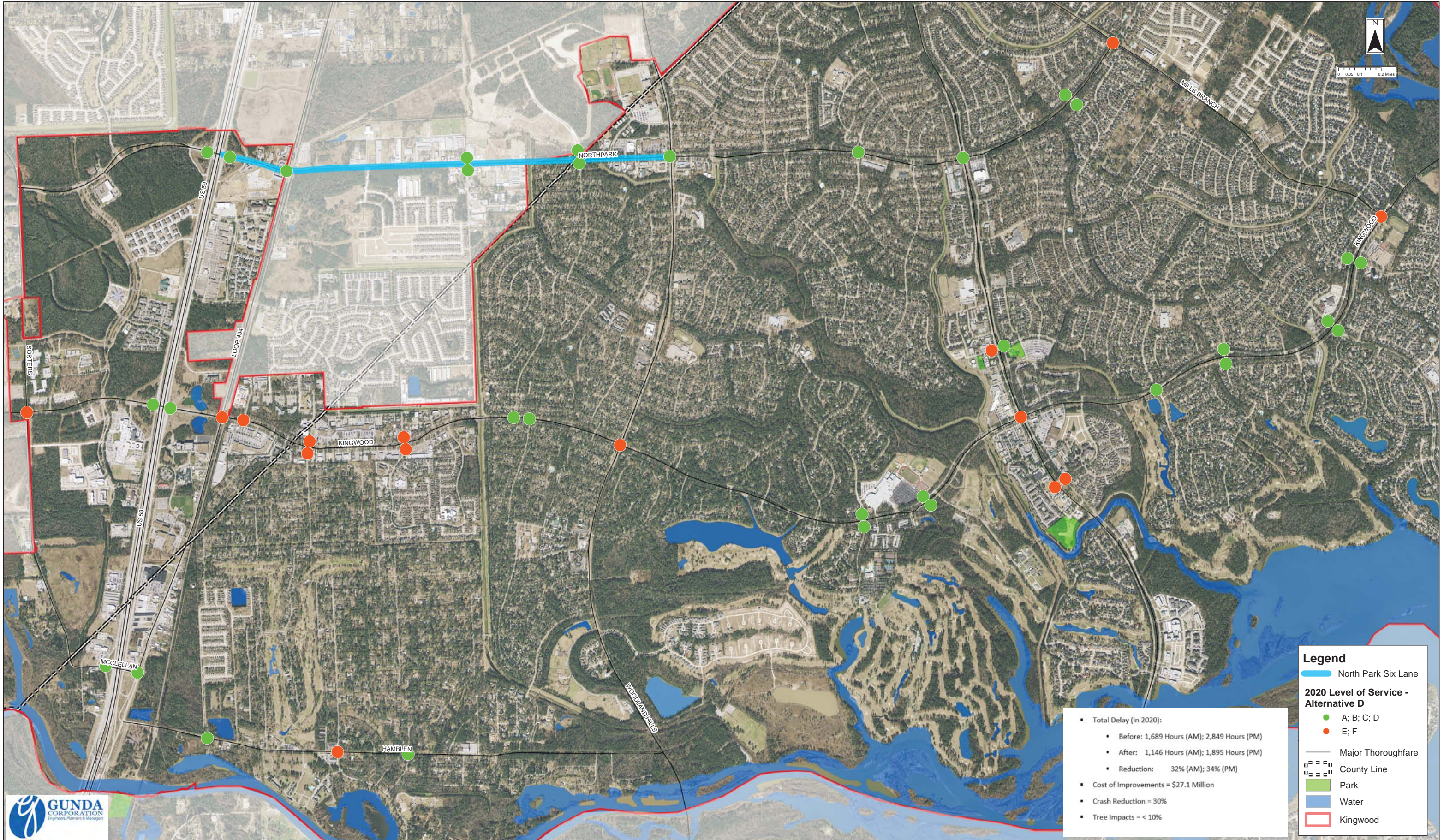
- Total Delay (in 2020):
 - Before: 1,689 Hours (AM); 2,849 Hours (PM)
 - After: 1,081 Hours (AM); 1,845 Hours (PM)
 - Reduction: 36% (AM); 35% (PM)
- Cost of Improvements = \$31.3 Million
- Crash Reduction = 60%
- Tree Impacts = < 10%

Legend

- Kingwood Six Lane
- 2020 Level of Service - Alternative C
 - A; B; C; D
 - E; F
- Major Thoroughfare
- County Line
- Park
- Water
- Kingwood

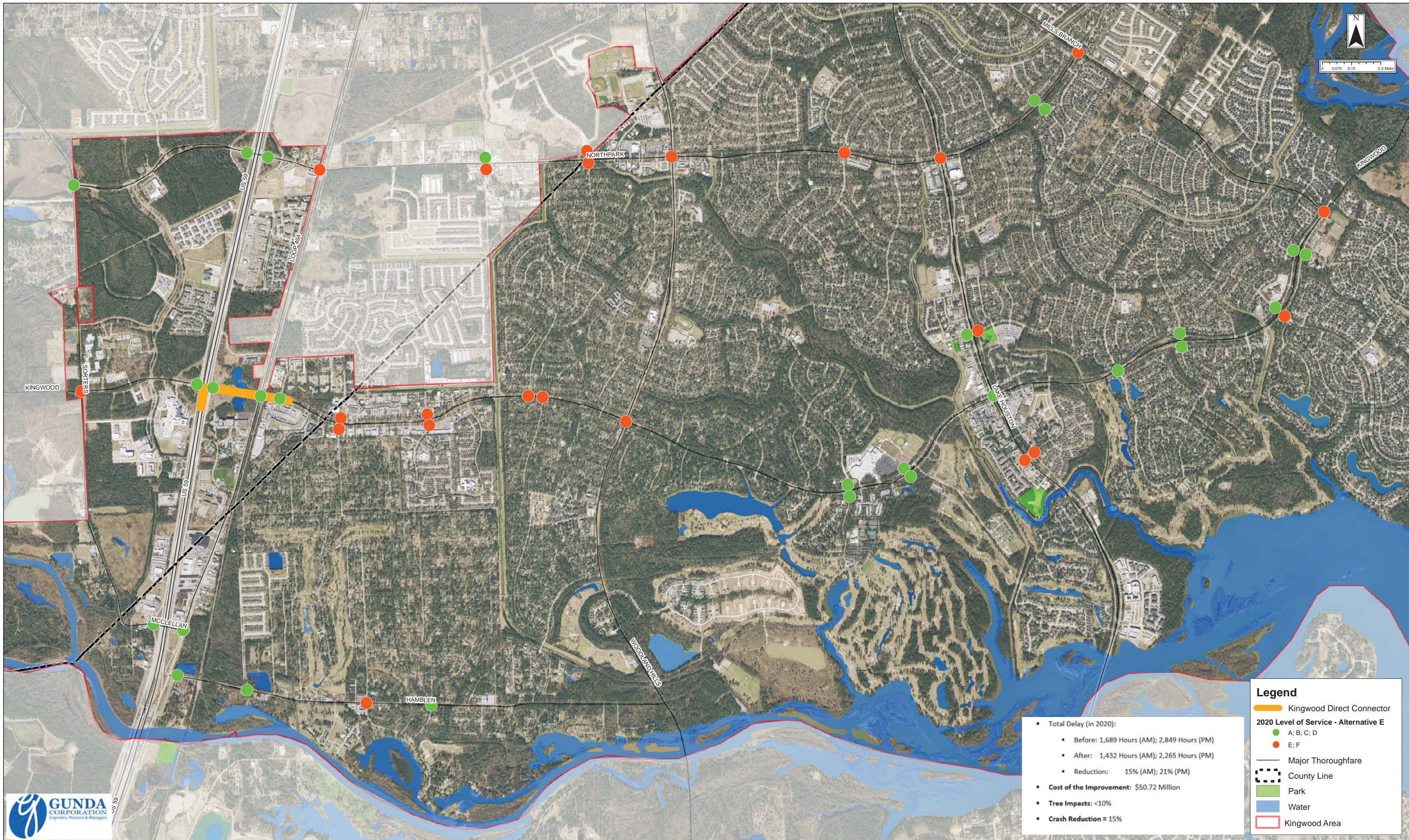
Lake Houston/Kingwood Area Mobility Study

Alternative D: North Park Six Lanes (US 59 to Woodland Hills)



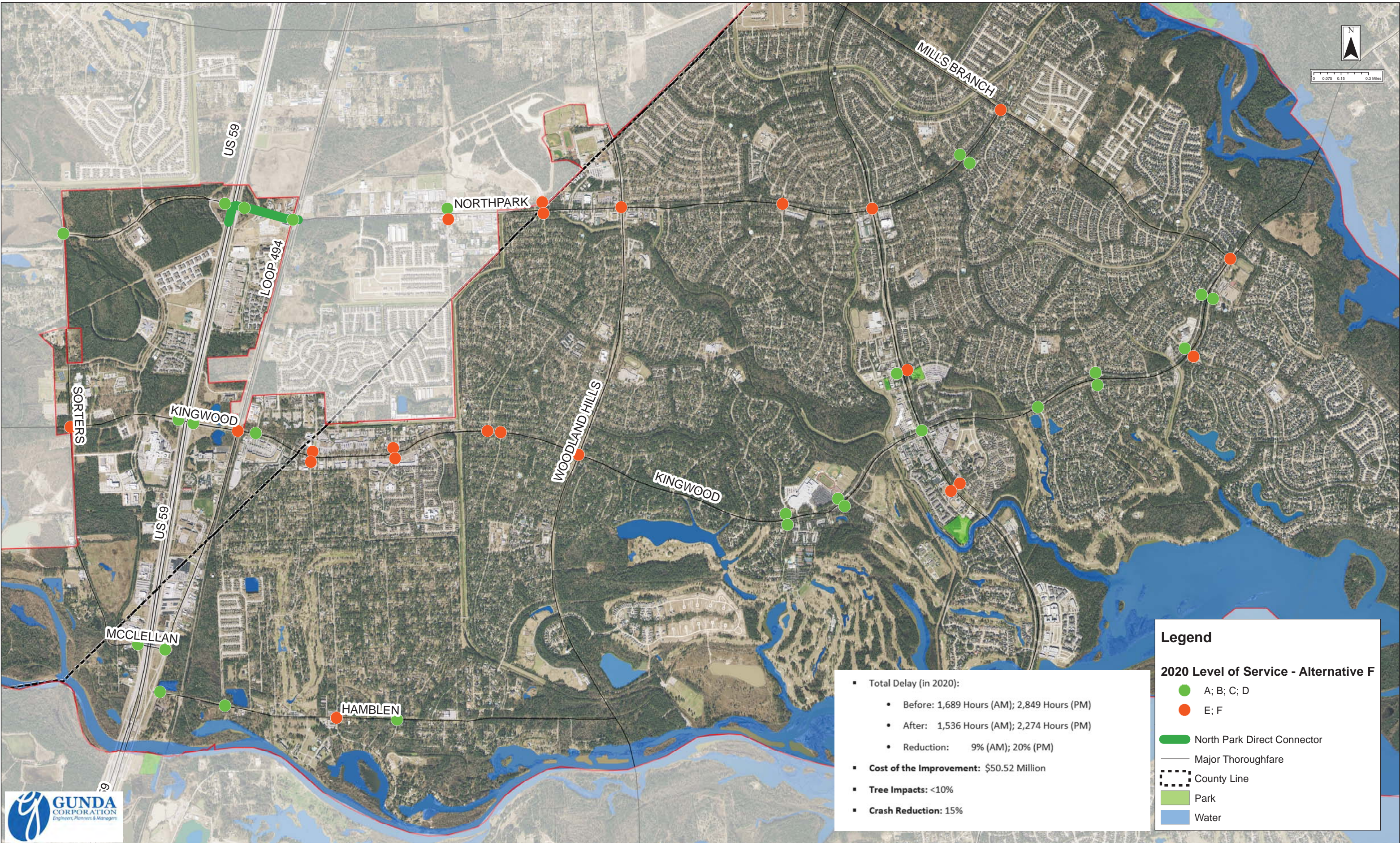
Lake Houston/Kingwood Area Mobility Study

Alternative E: Kingwood Drive Direct Connector (Kingwood Drive to US 59 Southbound)



Lake Houston/Kingwood Area Mobility Study

Alternative F: North Park Drive Direct Connector (North Park Drive to Southbound US 59)



■ **Total Delay (in 2020):**
 • Before: 1,689 Hours (AM); 2,849 Hours (PM)
 • After: 1,536 Hours (AM); 2,274 Hours (PM)
 • Reduction: 9% (AM); 20% (PM)

■ **Cost of the Improvement:** \$50.52 Million

■ **Tree Impacts:** <10%

■ **Crash Reduction:** 15%

Legend

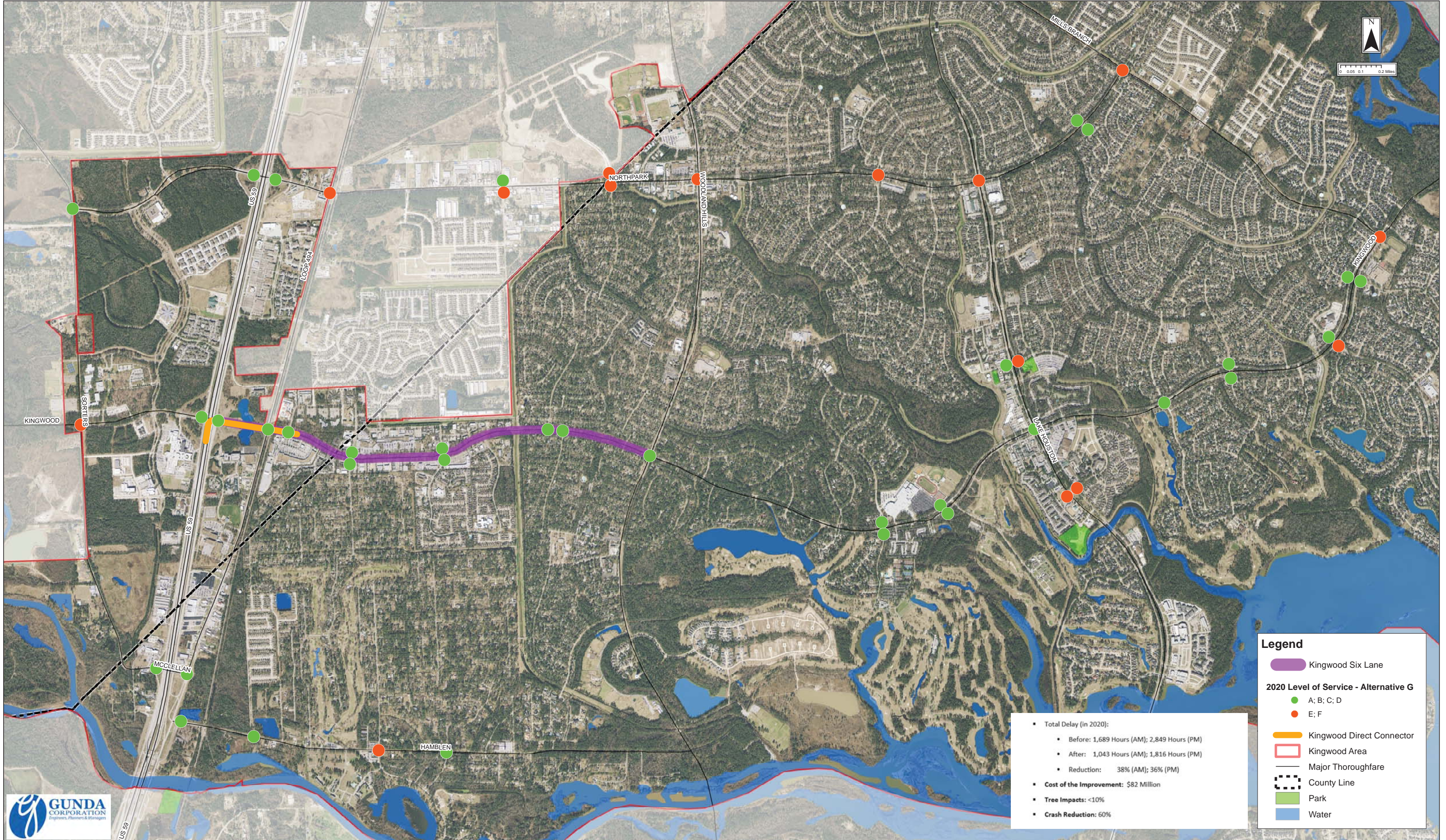
2020 Level of Service - Alternative F

- A; B; C; D
- E; F
- North Park Direct Connector
- Major Thoroughfare
- - - County Line
- Park
- Water



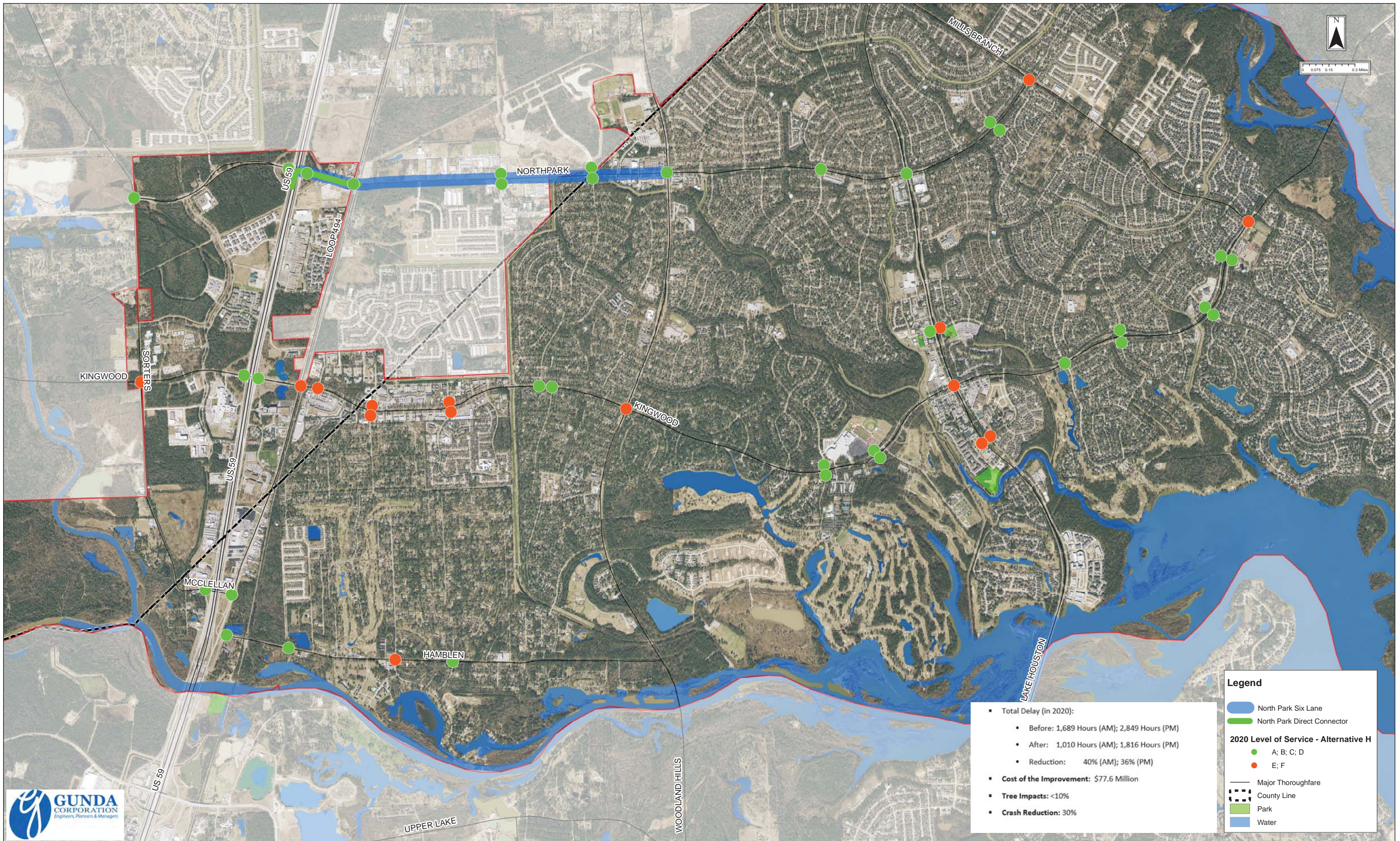
Lake Houston/Kingwood Area Mobility Study

Alternative G: Kingwood Drive Six Lanes + Kingwood Drive Direct Connector



Lake Houston/Kingwood Area Mobility Study

Alternative H: North Park Drive Six Lane + North Park Drive Direct Connector



■ **Total Delay (in 2020):**
 • Before: 1,689 Hours (AM); 2,849 Hours (PM)
 • After: 1,010 Hours (AM); 1,816 Hours (PM)
 • Reduction: 40% (AM); 36% (PM)

■ **Cost of the Improvement:** \$77.6 Million

■ **Tree Impacts:** <10%

■ **Crash Reduction:** 30%

Legend

- North Park Six Lane
- North Park Direct Connector

2020 Level of Service - Alternative H

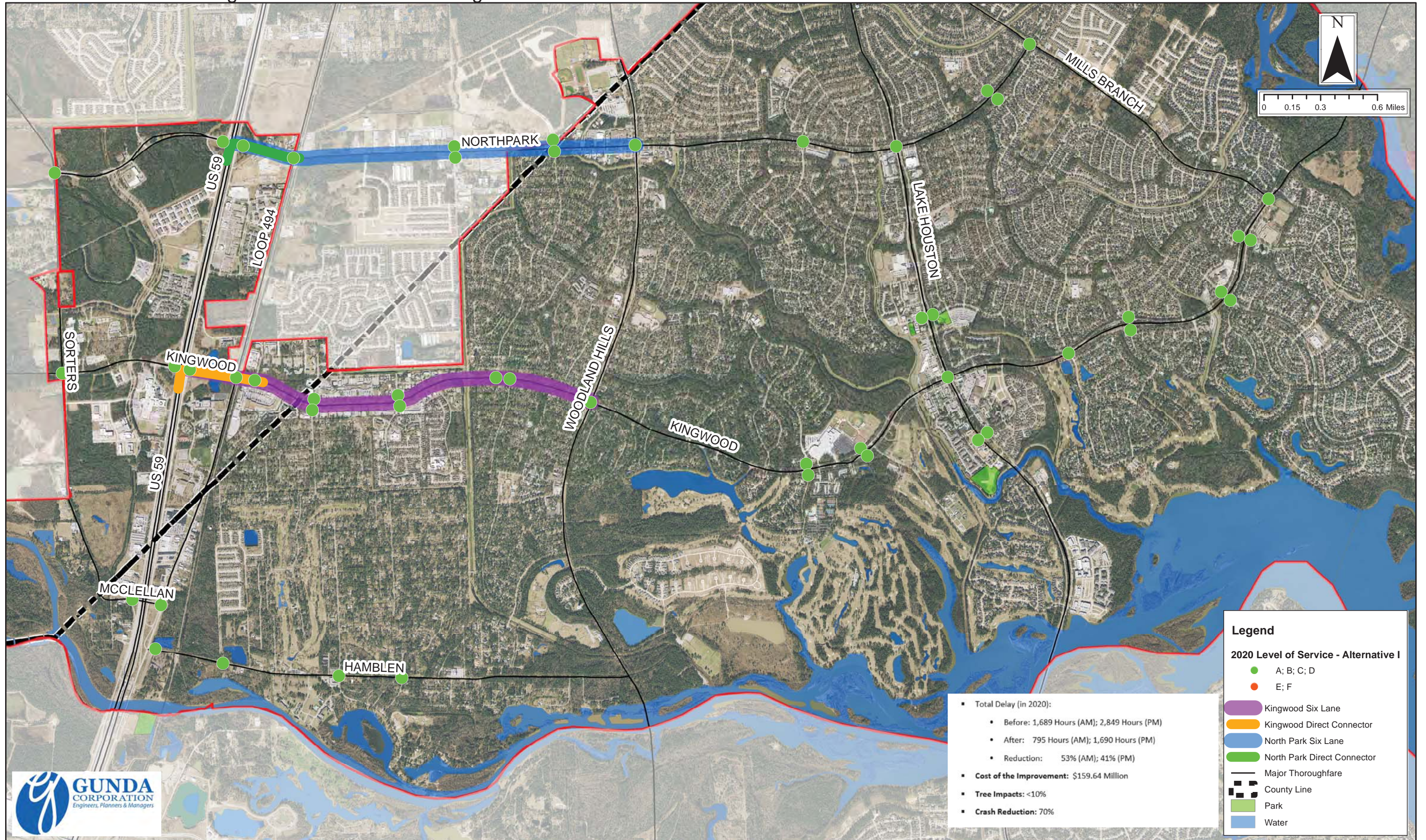
- A; B; C; D
- E; F

- Major Thoroughfare
- County Line
- Park
- Water



Lake Houston/Kingwood Area Mobility Study

Alternative I: Kingwood Drive Six Lane + Kingwood Drive Direct Connector + North Park Drive Six Lane + North Park Drive Direct Connector



Legend

2020 Level of Service - Alternative I

- A; B; C; D
- E; F

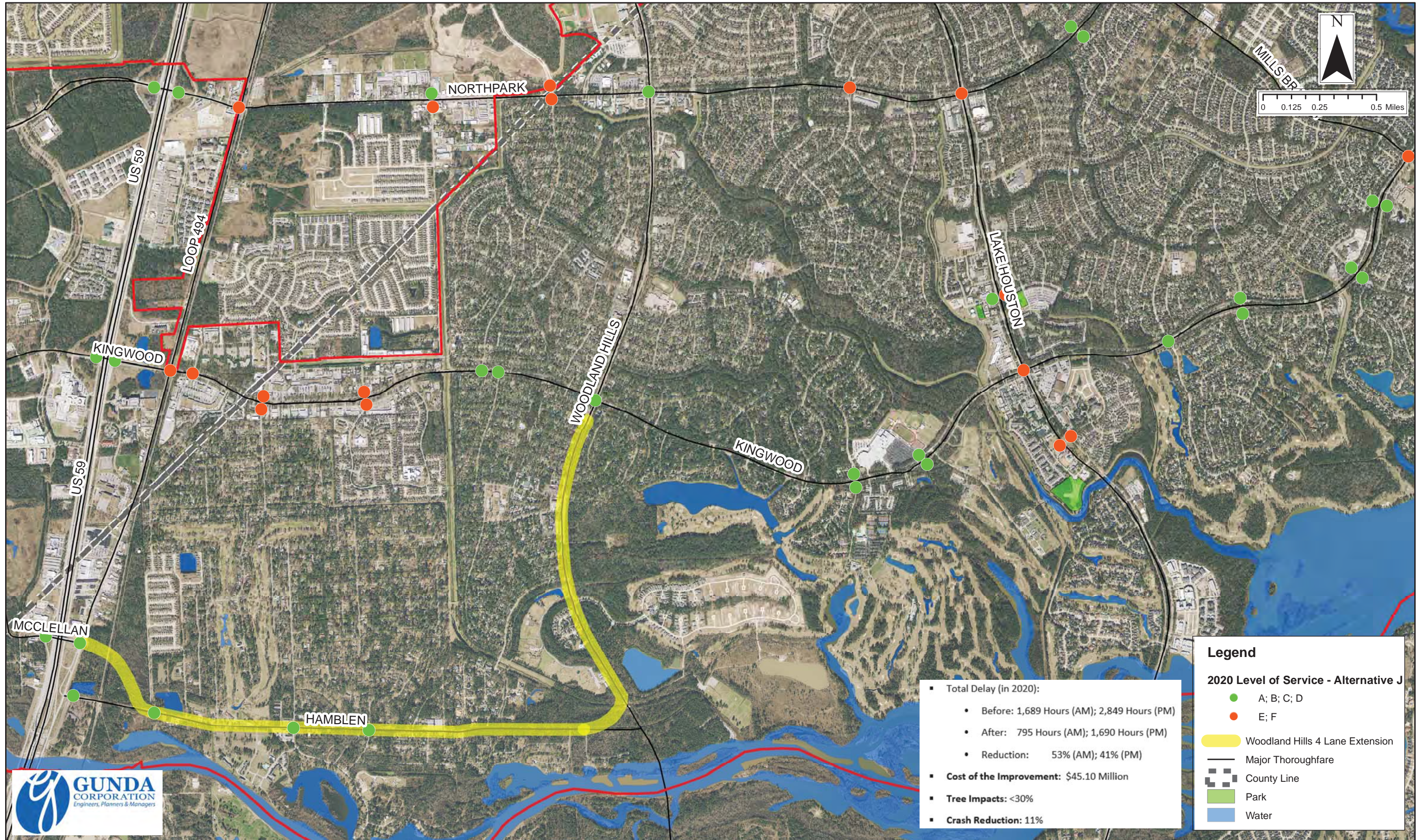
- Kingwood Six Lane
- Kingwood Direct Connector
- North Park Six Lane
- North Park Direct Connector
- Major Thoroughfare
- County Line
- Park
- Water

- **Total Delay (in 2020):**
 - Before: 1,689 Hours (AM); 2,849 Hours (PM)
 - After: 795 Hours (AM); 1,690 Hours (PM)
 - Reduction: 53% (AM); 41% (PM)
- **Cost of the Improvement: \$159.64 Million**
- **Tree Impacts: <10%**
- **Crash Reduction: 70%**



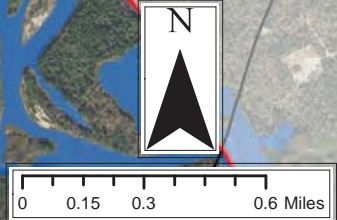
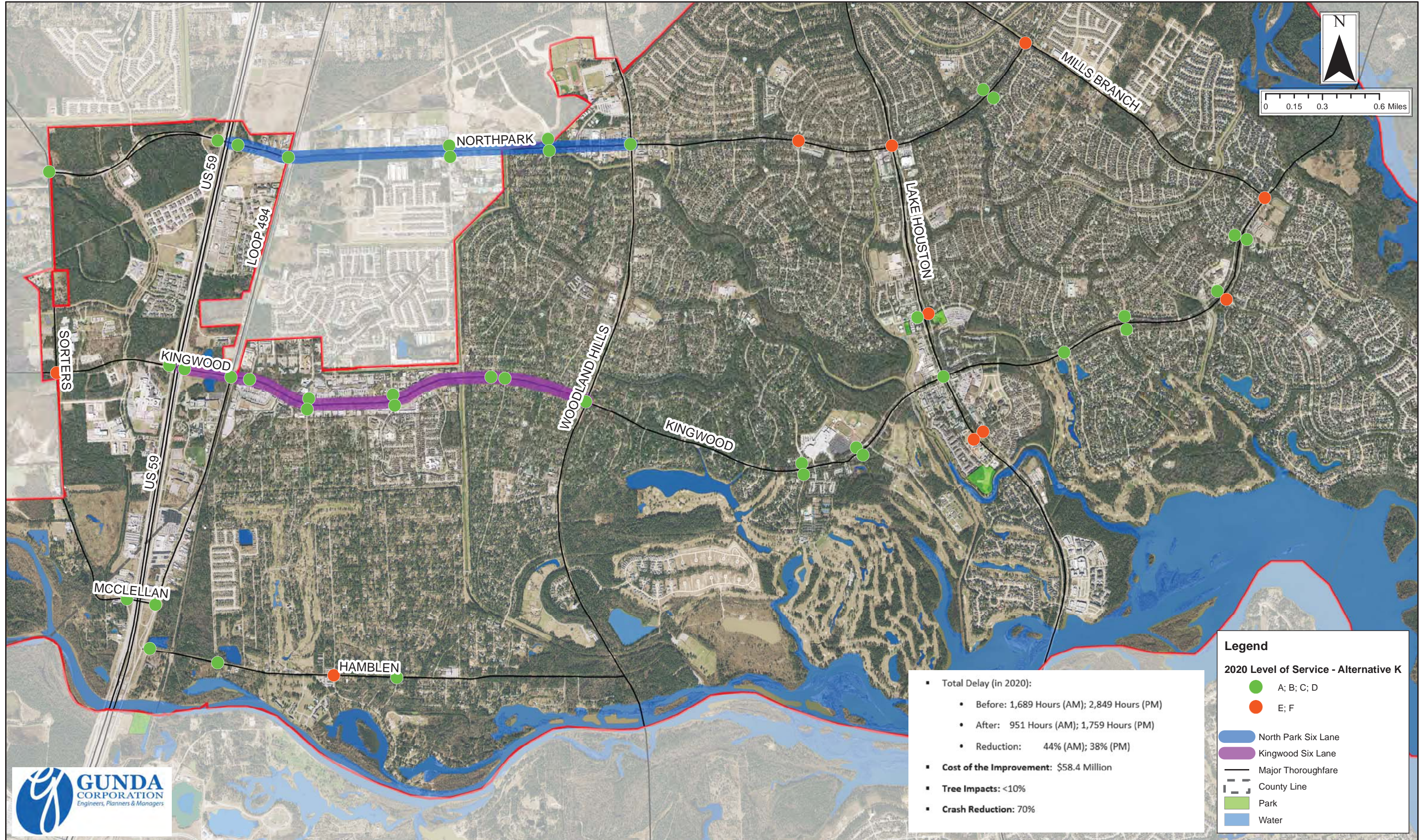
Lake Houston/Kingwood Area Mobility Study

Alternative J: Woodland Hills Four Lane Extension



Lake Houston/Kingwood Area Mobility Study

Alternative K: Kingwood Six Lanes (US 59 to Woodland Hills) + North Park Six Lanes (US 59 to Woodland Hills)



Legend

2020 Level of Service - Alternative K

- A; B; C; D
- E; F

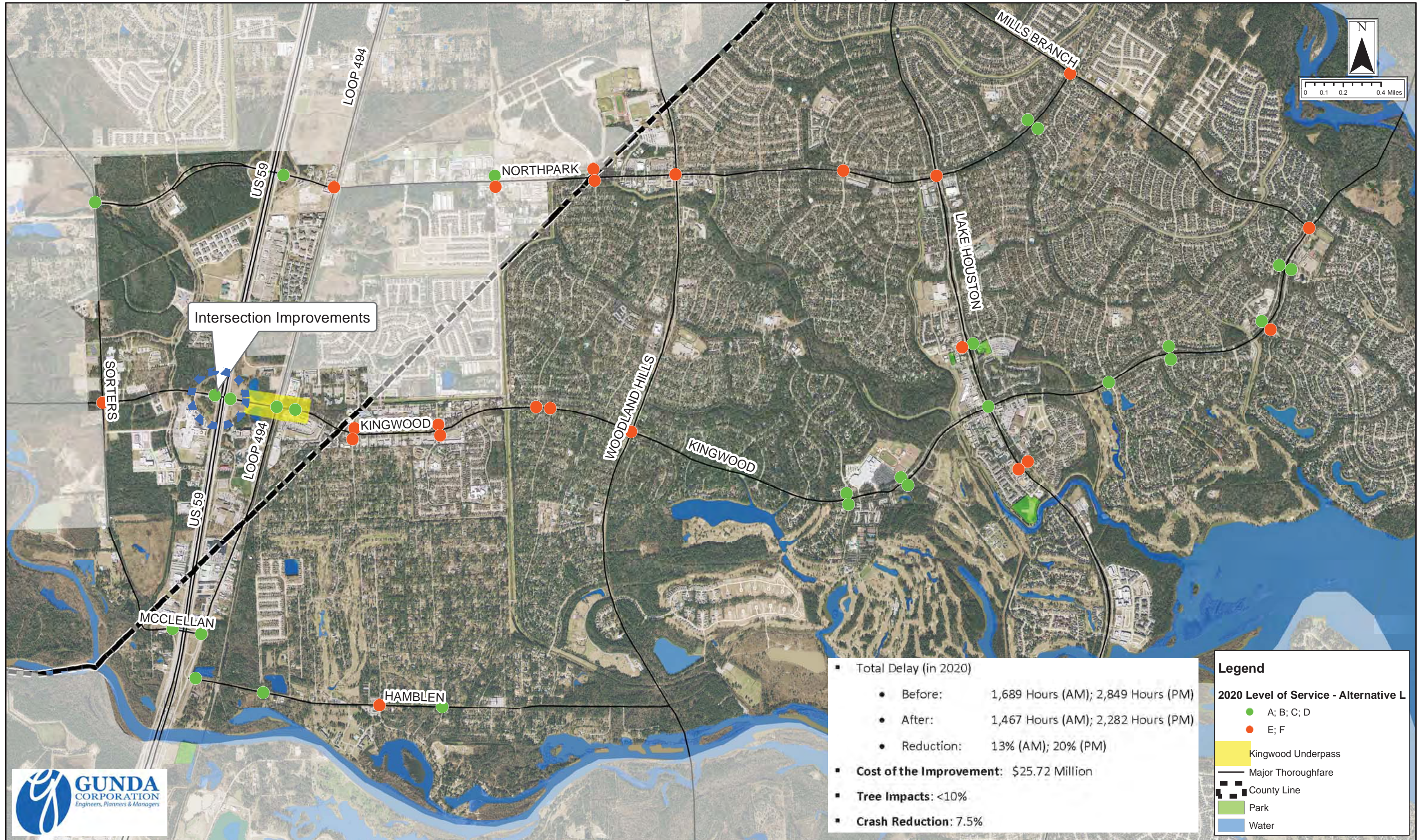
- North Park Six Lane
- Kingwood Six Lane
- Major Thoroughfare
- County Line
- Park
- Water

- **Total Delay (in 2020):**
 - Before: 1,689 Hours (AM); 2,849 Hours (PM)
 - After: 951 Hours (AM); 1,759 Hours (PM)
 - Reduction: 44% (AM); 38% (PM)
- **Cost of the Improvement: \$58.4 Million**
- **Tree Impacts: <10%**
- **Crash Reduction: 70%**



Lake Houston/Kingwood Area Mobility Study

Alternative L: Kingwood Drive Underpass/Overpass



Intersection Improvements

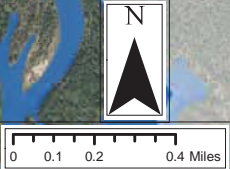
<ul style="list-style-type: none"> • Total Delay (in 2020) <ul style="list-style-type: none"> • Before: 1,689 Hours (AM); 2,849 Hours (PM) • After: 1,467 Hours (AM); 2,282 Hours (PM) • Reduction: 13% (AM); 20% (PM) 	
<ul style="list-style-type: none"> • Cost of the Improvement: \$25.72 Million 	
<ul style="list-style-type: none"> • Tree Impacts: <10% 	
<ul style="list-style-type: none"> • Crash Reduction: 7.5% 	

Legend

2020 Level of Service - Alternative L

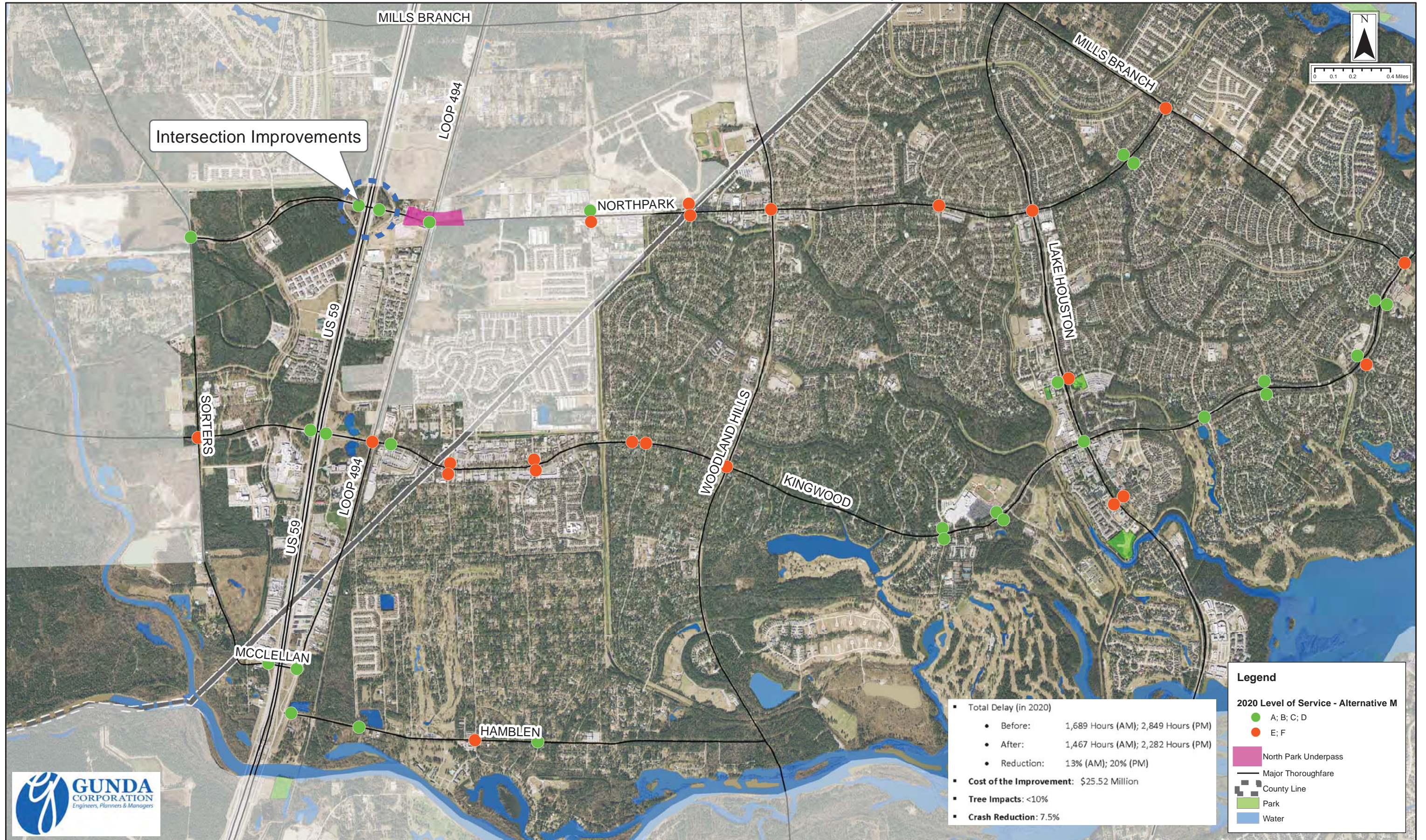
- A; B; C; D
- E; F

- Kingwood Underpass
- Major Thoroughfare
- ▣ County Line
- Park
- Water

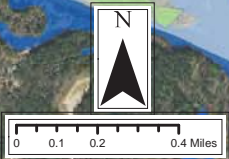


Lake Houston/Kingwood Area Mobility Study

Alternative M: North Park Drive Underpass/Overpass



Intersection Improvements



Total Delay (in 2020)	
• Before:	1,689 Hours (AM); 2,849 Hours (PM)
• After:	1,467 Hours (AM); 2,282 Hours (PM)
• Reduction:	13% (AM); 20% (PM)
Cost of the Improvement: \$25.52 Million	
Tree Impacts: <10%	
Crash Reduction: 7.5%	

Legend

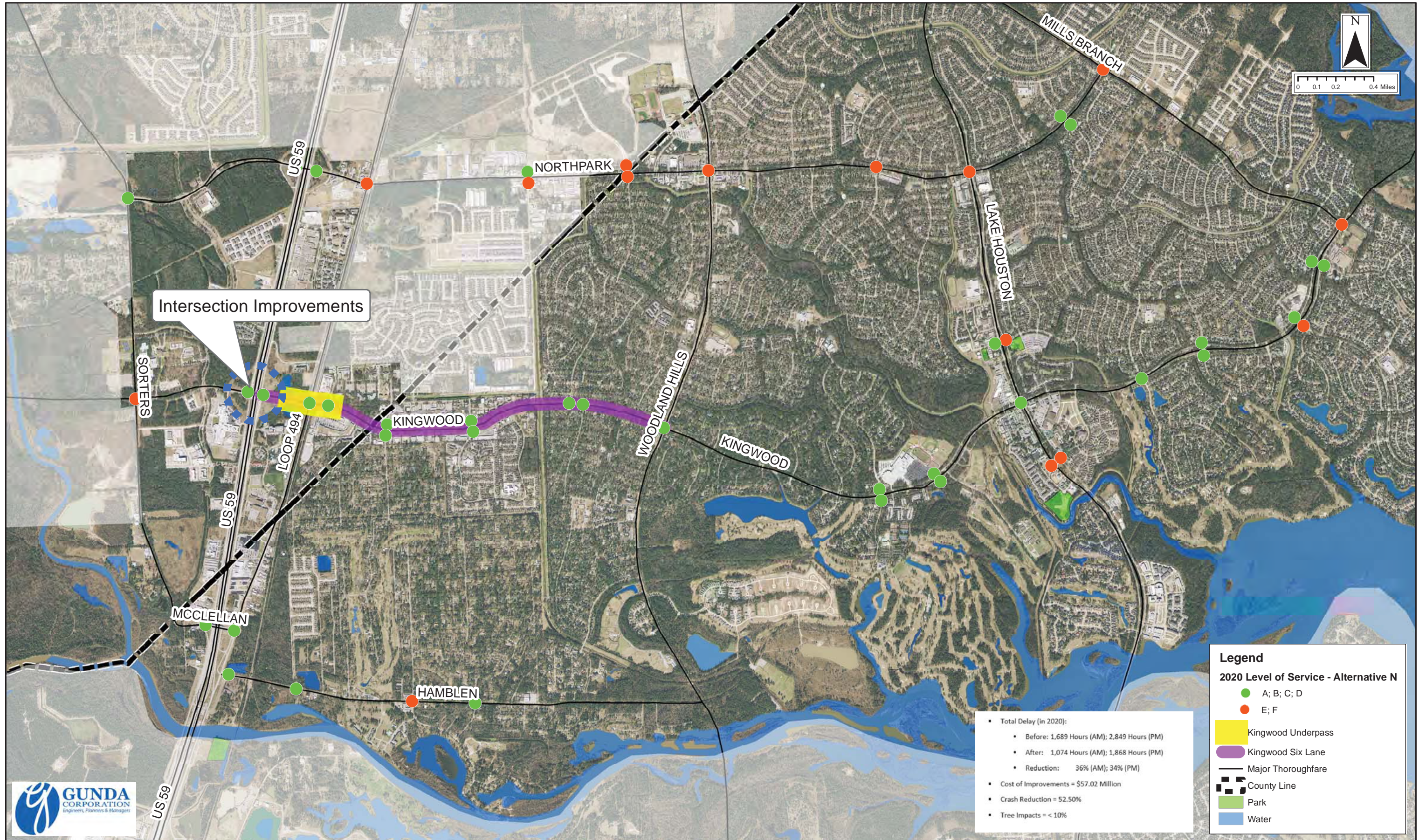
2020 Level of Service - Alternative M

- A; B; C; D
- E; F
- North Park Underpass
- Major Thoroughfare
- ▬ County Line
- Park
- Water



Lake Houston/Kingwood Area Mobility Study

Alternative N: Kingwood Drive Underpass/Overpass + Kingwood Drive Six Lane



Intersection Improvements

Legend

2020 Level of Service - Alternative N

- A; B; C; D
- E; F

Kingwood Underpass

Kingwood Six Lane

Major Thoroughfare

County Line

Park

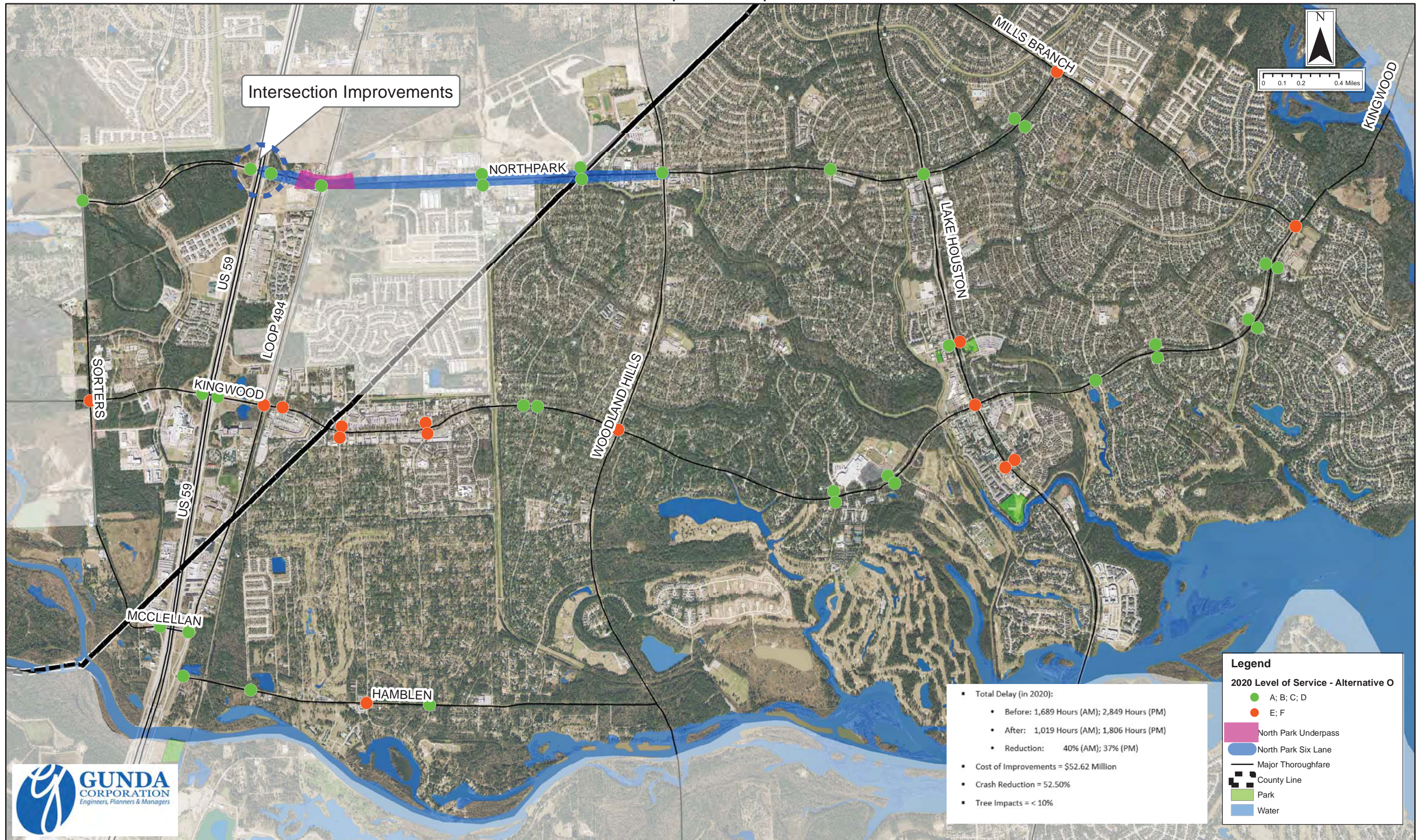
Water

- Total Delay (in 2020):
 - Before: 1,689 Hours (AM); 2,849 Hours (PM)
 - After: 1,074 Hours (AM); 1,868 Hours (PM)
 - Reduction: 36% (AM); 34% (PM)
- Cost of Improvements = \$57.02 Million
- Crash Reduction = 52.50%
- Tree Impacts = < 10%

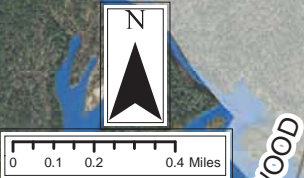


Lake Houston/Kingwood Area Mobility Study

Alternative O: North Park Drive Underpass/Overpass + Six Lane North Park Drive



Intersection Improvements



Legend

2020 Level of Service - Alternative O

- A; B; C; D
- E; F
- North Park Underpass
- North Park Six Lane
- Major Thoroughfare
- County Line
- Park
- Water

- Total Delay (in 2020):
 - Before: 1,689 Hours (AM); 2,849 Hours (PM)
 - After: 1,019 Hours (AM); 1,806 Hours (PM)
 - Reduction: 40% (AM); 37% (PM)
- Cost of Improvements = \$52.62 Million
- Crash Reduction = 52.50%
- Tree Impacts = < 10%

