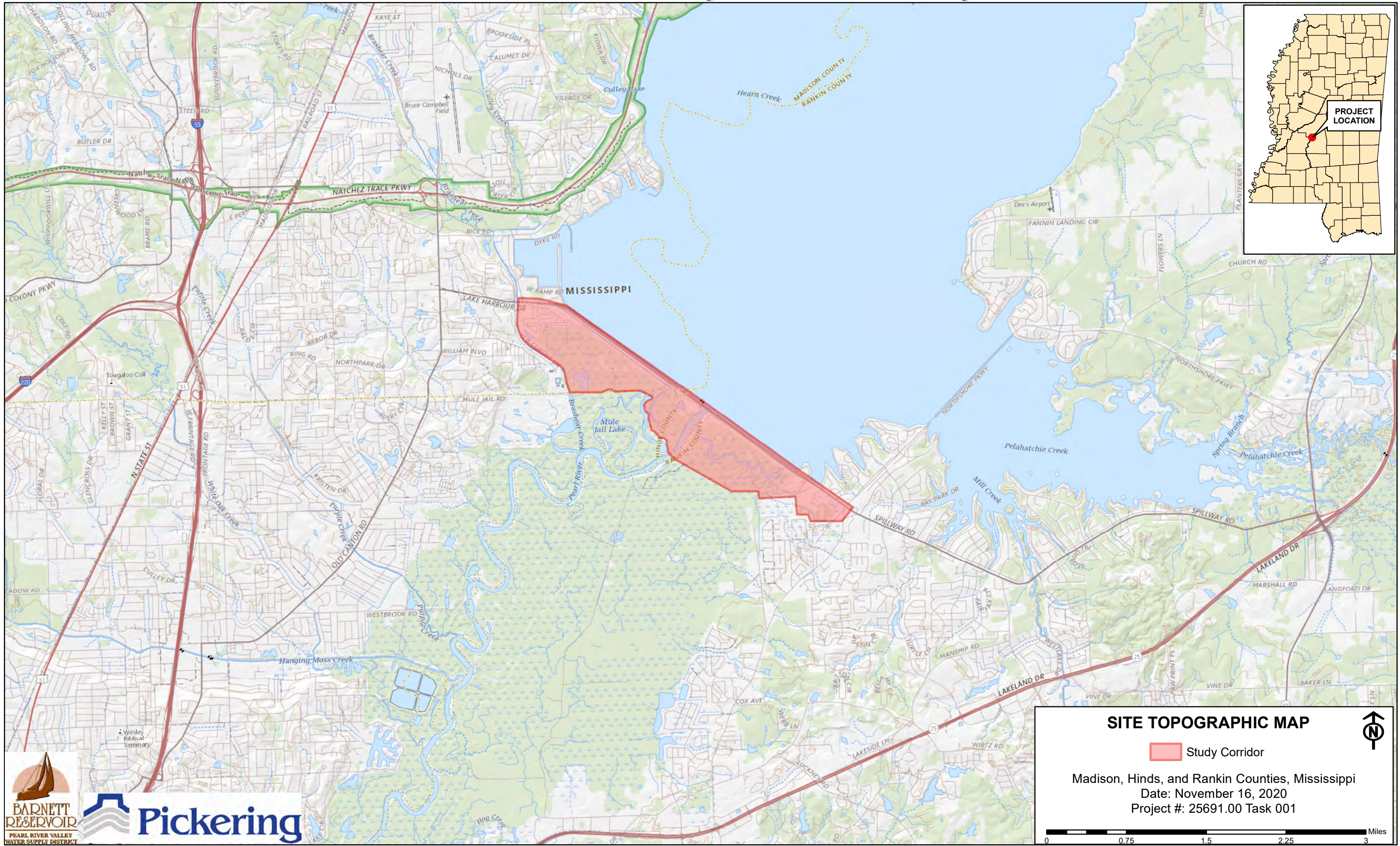


## **APPENDIX A FIGURES**



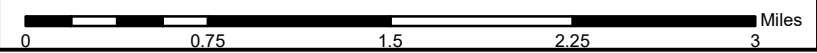
# PRVWSD: Bob Anthony Parkway Relocation



## SITE TOPOGRAPHIC MAP

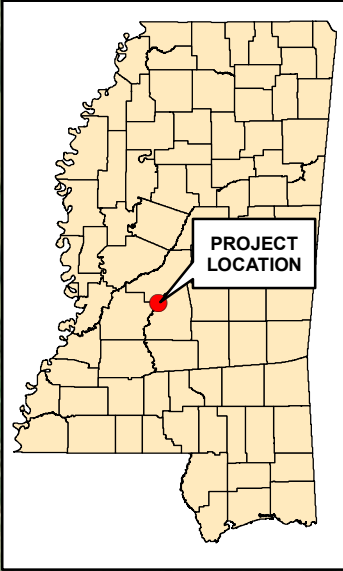
Study Corridor

Madison, Hinds, and Rankin Counties, Mississippi  
Date: November 16, 2020  
Project #: 25691.00 Task 001






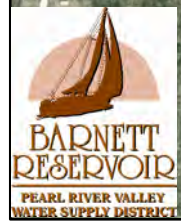
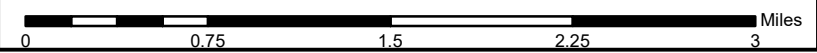
# PRVWSD: Bob Anthony Parkway Relocation



## SITE AND VICINITY MAP

 Study Corridor

Madison, Hinds, and Rankin Counties, Mississippi  
Date: November 16, 2020  
Project #: 25691.00 Task 001







Study Area  
 PRVWSD Boundary



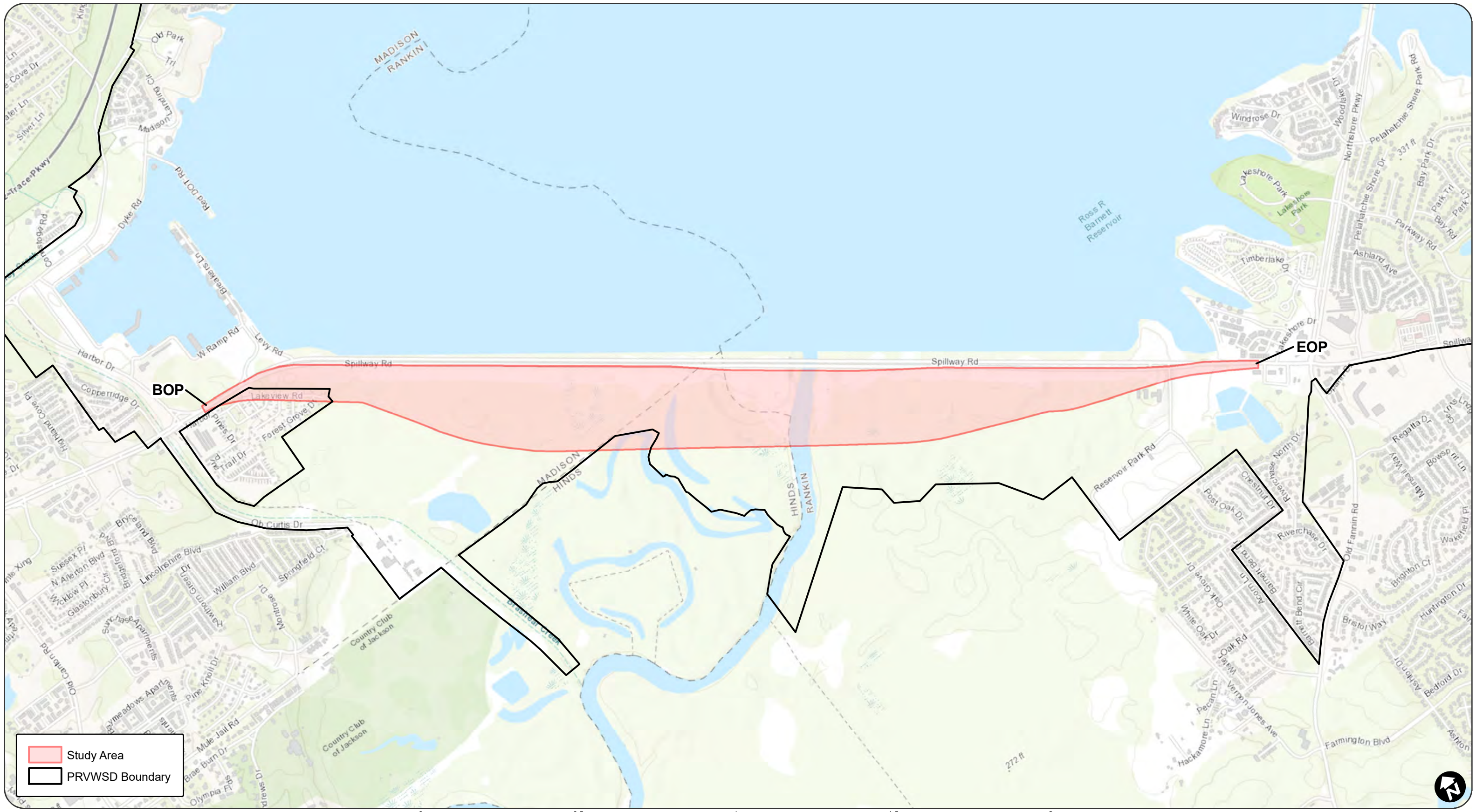
## SITE & VICINITY MAP

Bob Anthony Parkway Relocation Project  
 Hinds, Madison, and Rankin Counties, Mississippi

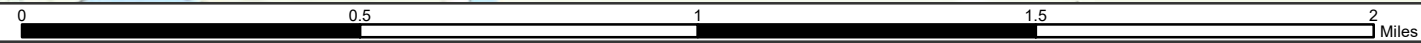


**Pickering**  
 2001 Airport Road, Suite 201  
 Flowood, Mississippi 39232  
 601.956.3663





Study Area  
 PRVWSD Boundary



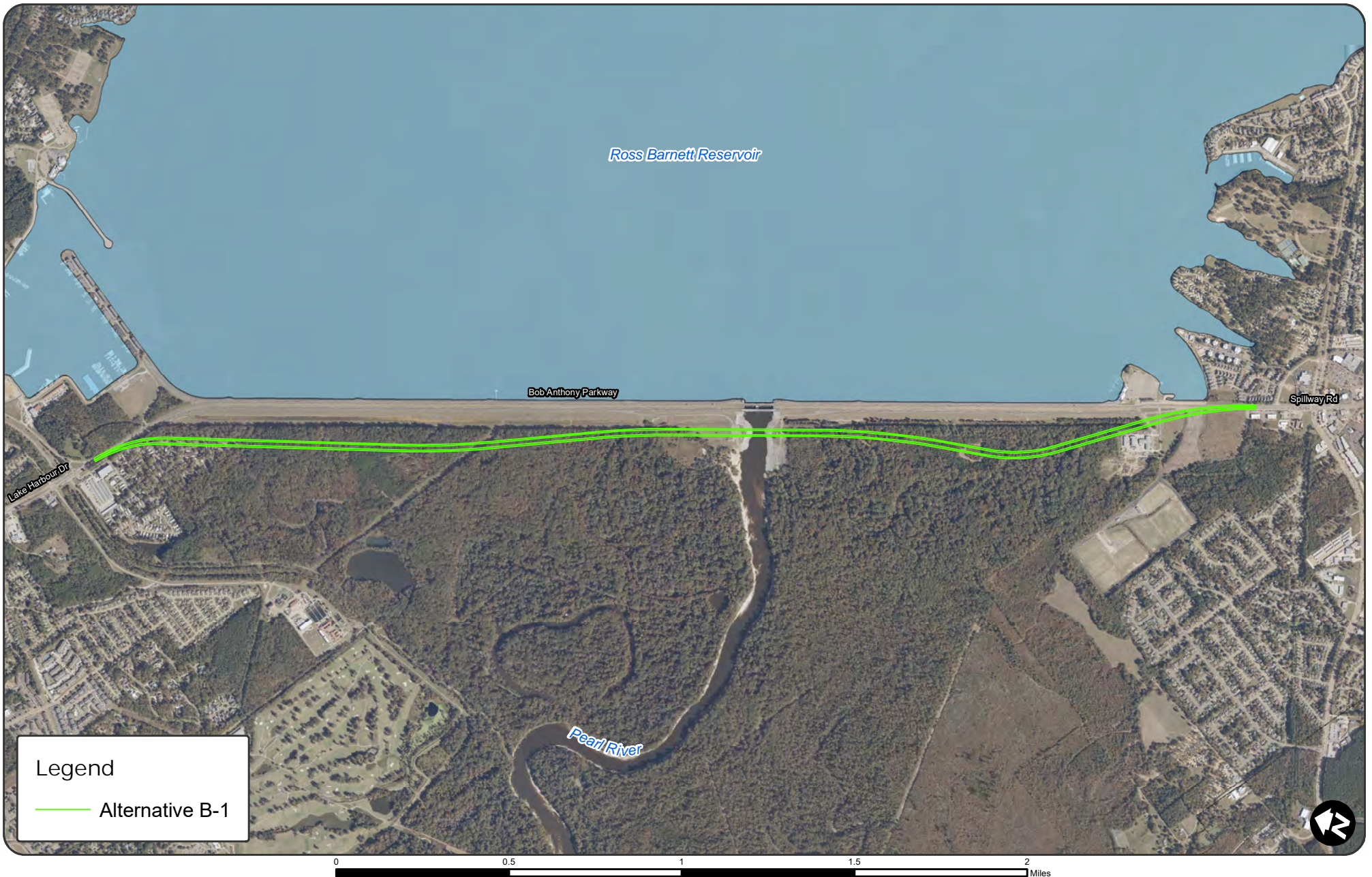
# SITE & VICINITY MAP

Bob Anthony Parkway Relocation Project  
Hinds, Madison, and Rankin Counties, Mississippi



**Pickering**  
 2001 Airport Road, Suite 201  
 Flowood, Mississippi 39232  
 601.956.3663





# ALTERNATIVE B-1

## Bob Anthony Parkway Relocation Project

### Hinds, Madison, and Rankin Counties, Mississippi

**Pickering**  
 2001 Airport Road, Suite 201  
 Flowood, Mississippi 39232  
 601.956.3663





# ALTERNATIVE B-2

## Bob Anthony Parkway Relocation Project

### Hinds, Madison, and Rankin Counties, Mississippi

**Pickering**  
 2001 Airport Road, Suite 201  
 Flowood, Mississippi 39232  
 601.956.3663





# ALTERNATIVE C-1

## Bob Anthony Parkway Relocation Project

### Hinds, Madison, and Rankin Counties, Mississippi

**Pickering**  
 2001 Airport Road, Suite 201  
 Flowood, Mississippi 39232  
 601.956.3663





# ALTERNATIVE C-2

## Bob Anthony Parkway Relocation Project

### Hinds, Madison, and Rankin Counties, Mississippi

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 601.956.3663





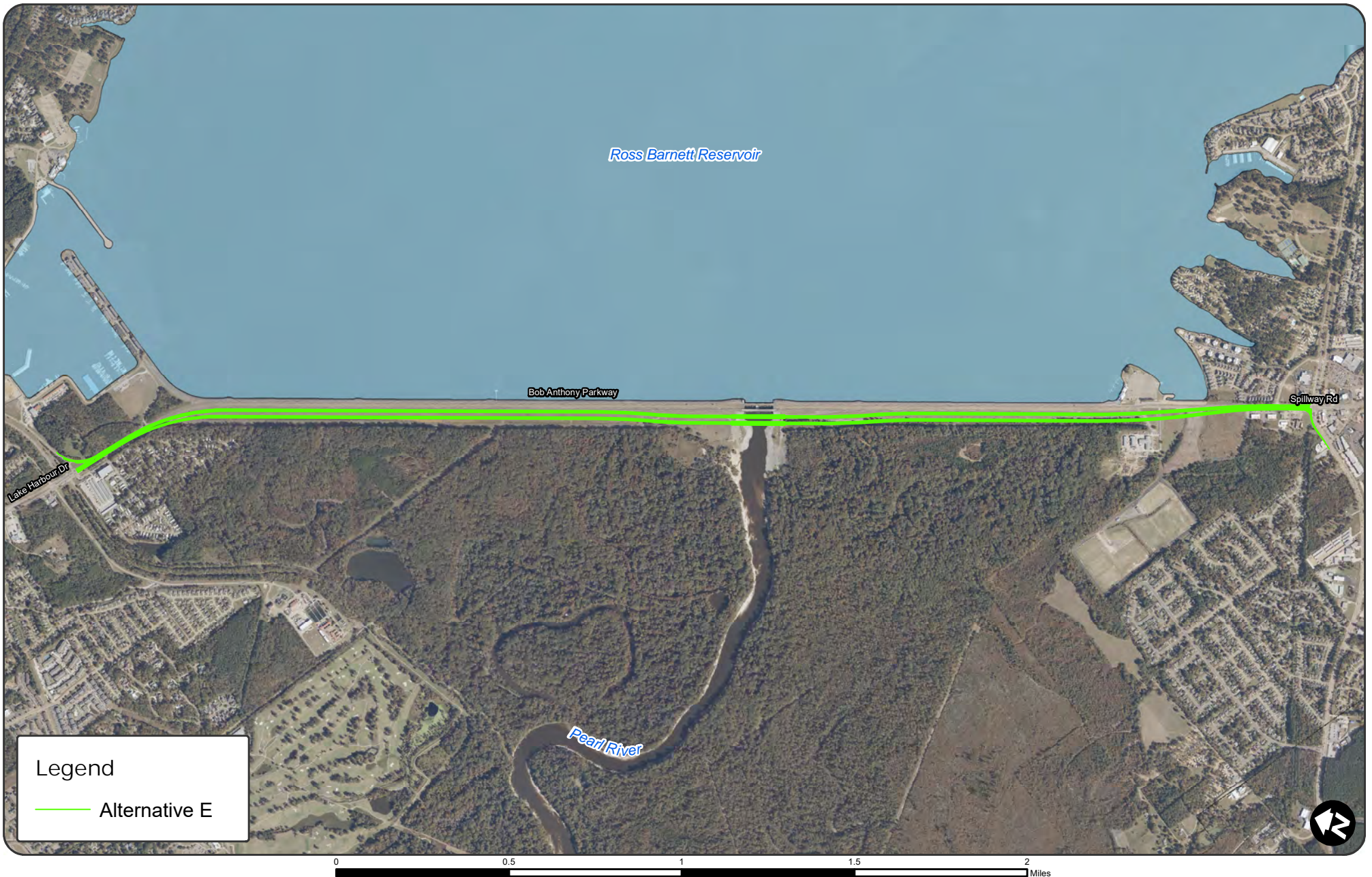
# ALTERNATIVE D

## Bob Anthony Parkway Relocation Project

### Hinds, Madison, and Rankin Counties, Mississippi

**Pickering**  
 2001 Airport Road, Suite 201  
 Flowood, Mississippi 39232  
 601.956.3663





# ALTERNATIVE E

## Bob Anthony Parkway Relocation Project

### Hinds, Madison, and Rankin Counties, Mississippi

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 2001 Airport Road, Suite 201  
 Flowood, Mississippi 39232  
 601.956.3663





# ALTERNATIVE E-2

## Bob Anthony Parkway Relocation Project

### Hinds, Madison, and Rankin Counties, Mississippi

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 Flowood, Mississippi 39232  
 601.956.3663





# ALTERNATIVE F

## Bob Anthony Parkway Relocation Project

### Hinds, Madison, and Rankin Counties, Mississippi

**Pickering**  
 2001 Airport Road, Suite 201  
 Flowood, Mississippi 39232  
 601.956.3663





**Legend**

- Alternative A (No Action)
- Alternative B
- Alternative C
- Alternative D
- Alternative E
- Alternative E2
- Alternative F



# BUILD ALTERNATIVES

## Bob Anthony Parkway Relocation Project

### Hinds, Madison, and Rankin Counties, Mississippi



**Pickering**  
 2001 Airport Road, Suite 201  
 Flowood, Mississippi 39232  
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# ALTERNATIVE B

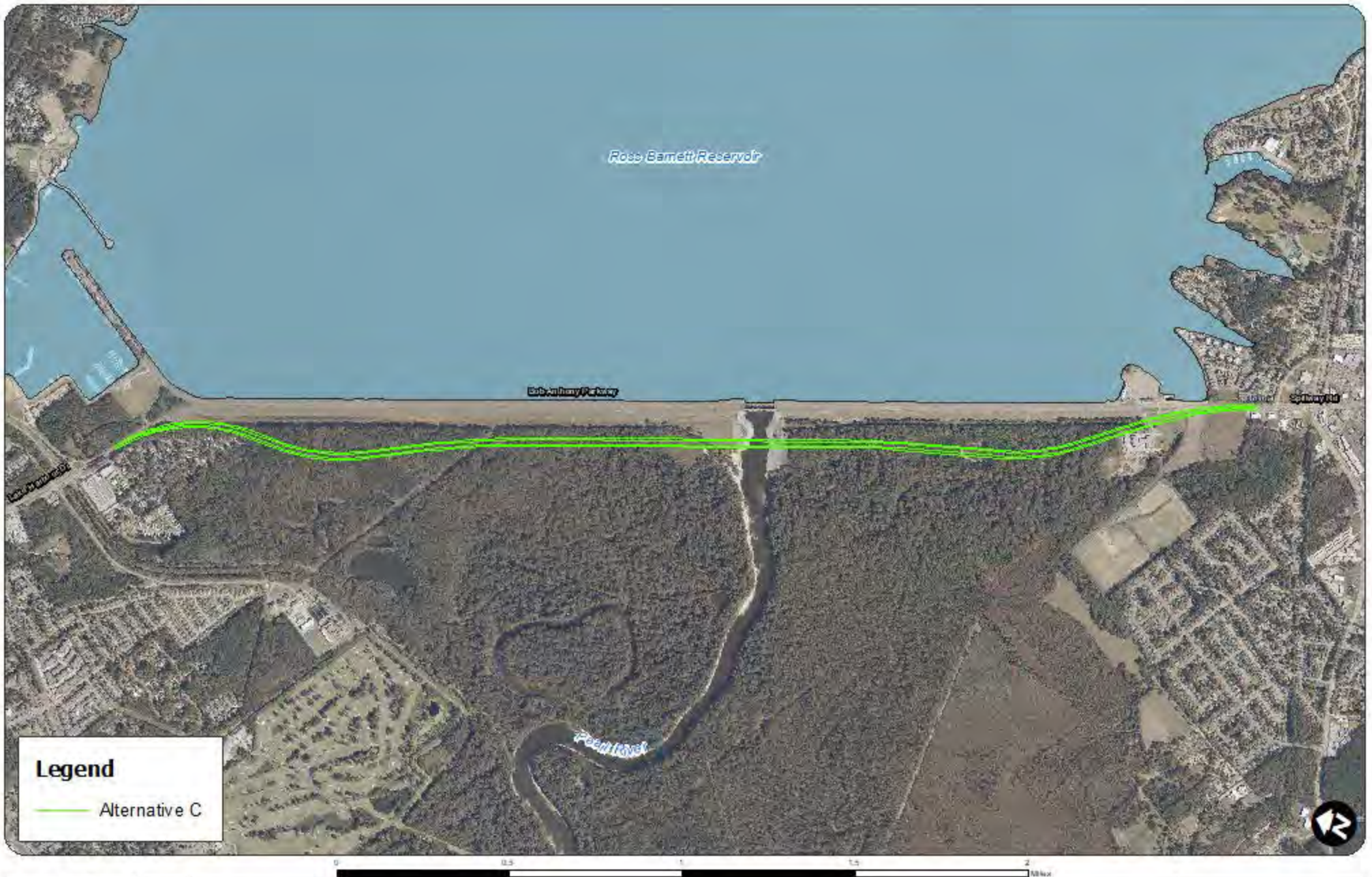
## Bob Anthony Parkway Relocation Project

### Hinds, Madison, and Rankin Counties, Mississippi



**Pickering**  
 2001 Airport Road, Suite 201  
 Flowood, Mississippi 39232  
 601.956.3663





# ALTERNATIVE C

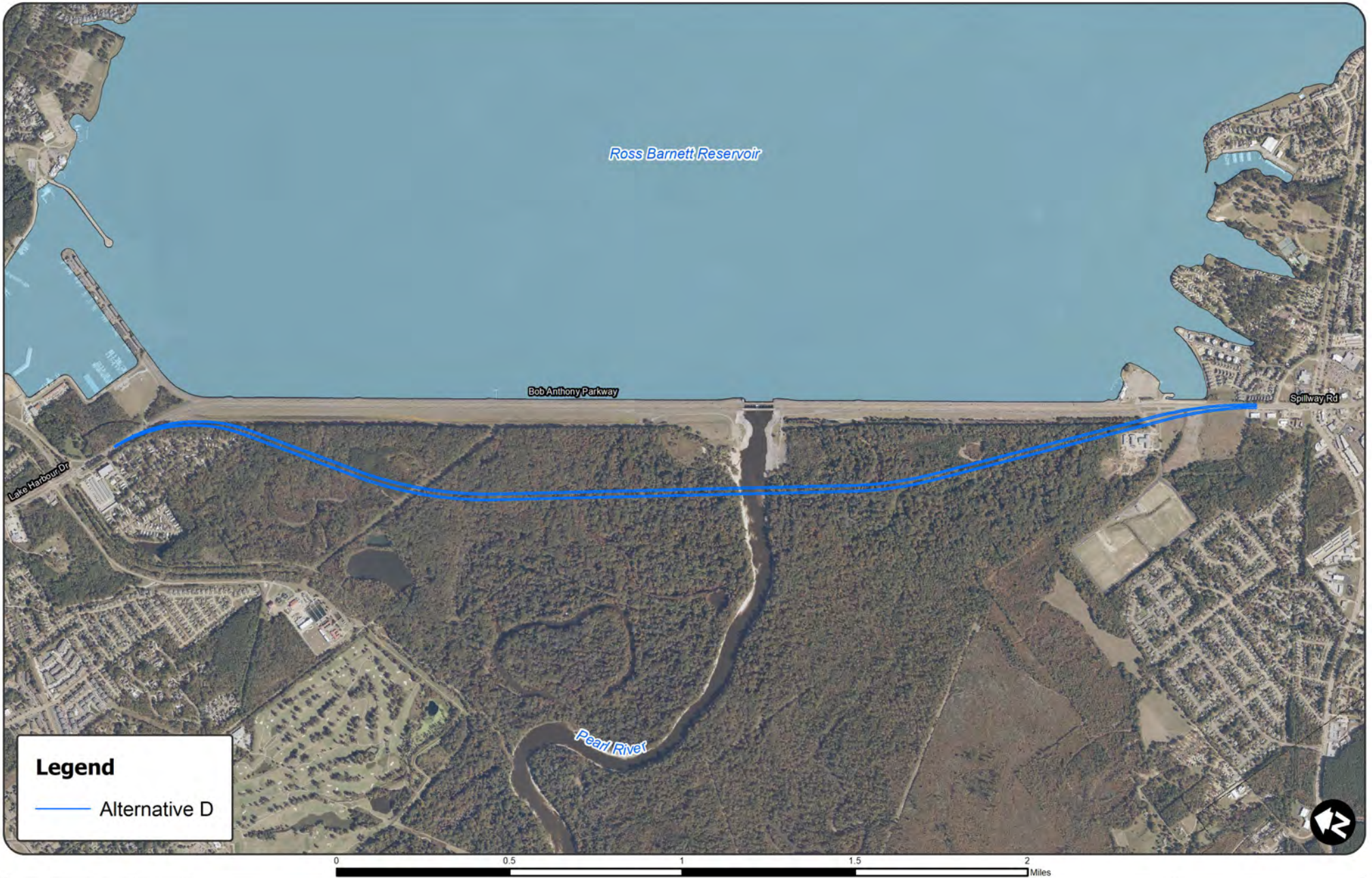
## Bob Anthony Parkway Relocation Project

### Hinds, Madison, and Rankin Counties, Mississippi



**Pickering**  
 2001 Airport Road, Suite 201  
 Flowood, Mississippi 39232  
 601.956.3663





# ALTERNATIVE D

## Bob Anthony Parkway Relocation Project

### Hinds, Madison, and Rankin Counties, Mississippi



**Pickering**  
 2001 Airport Road, Suite 201  
 Flowood, Mississippi 39232  
 601.956.3663





# ALTERNATIVE E

## Bob Anthony Parkway Relocation Project

### Hinds, Madison, and Rankin Counties, Mississippi



**Pickering**  
 2001 Airport Road, Suite 201  
 Flowood, Mississippi 39232  
 601.956.3663





# ALTERNATIVE E2

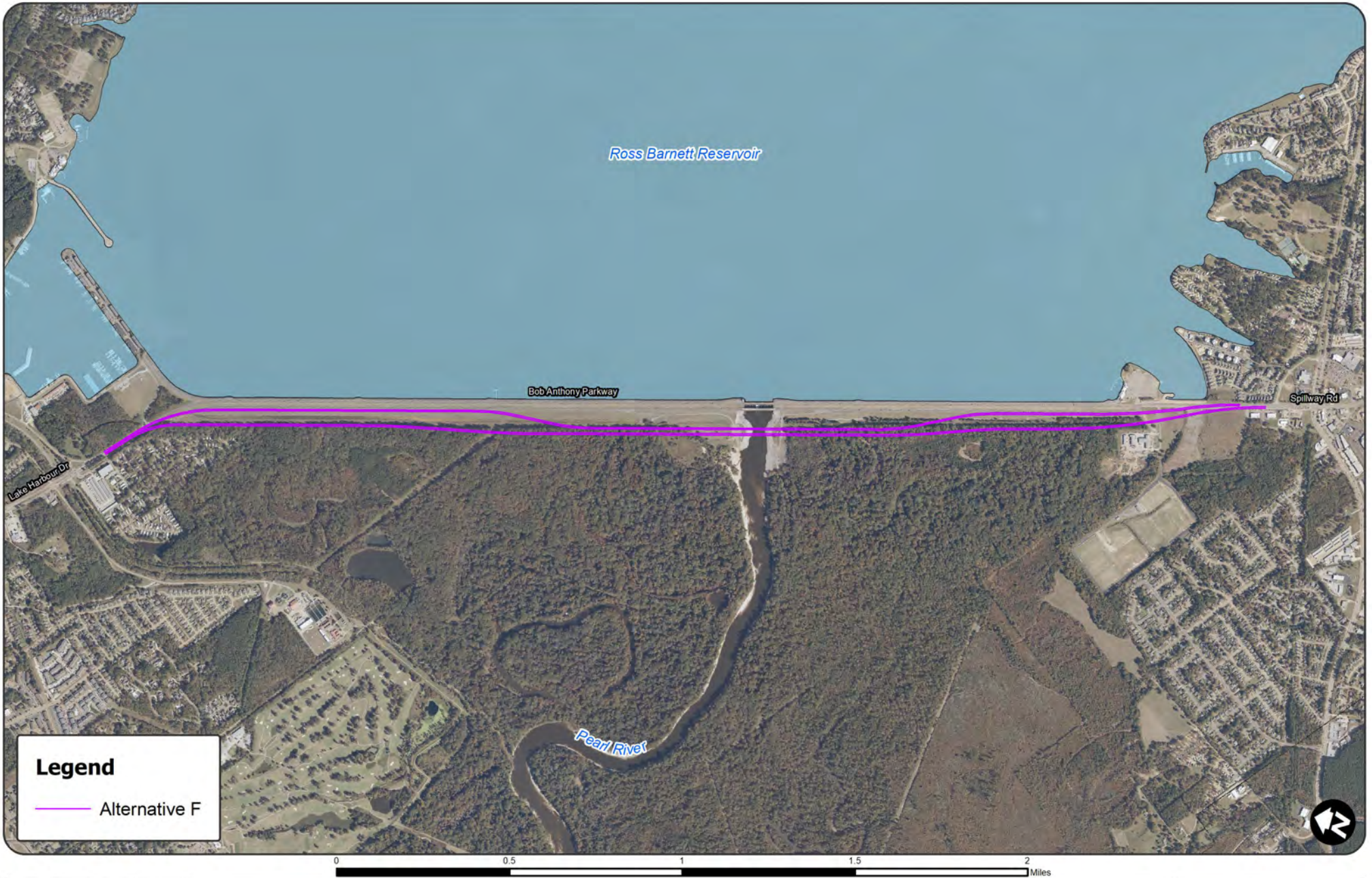
## Bob Anthony Parkway Relocation Project

### Hinds, Madison, and Rankin Counties, Mississippi



**Pickering**  
 2001 Airport Road, Suite 201  
 Flowood, Mississippi 39232  
 601.956.3663





# ALTERNATIVE F

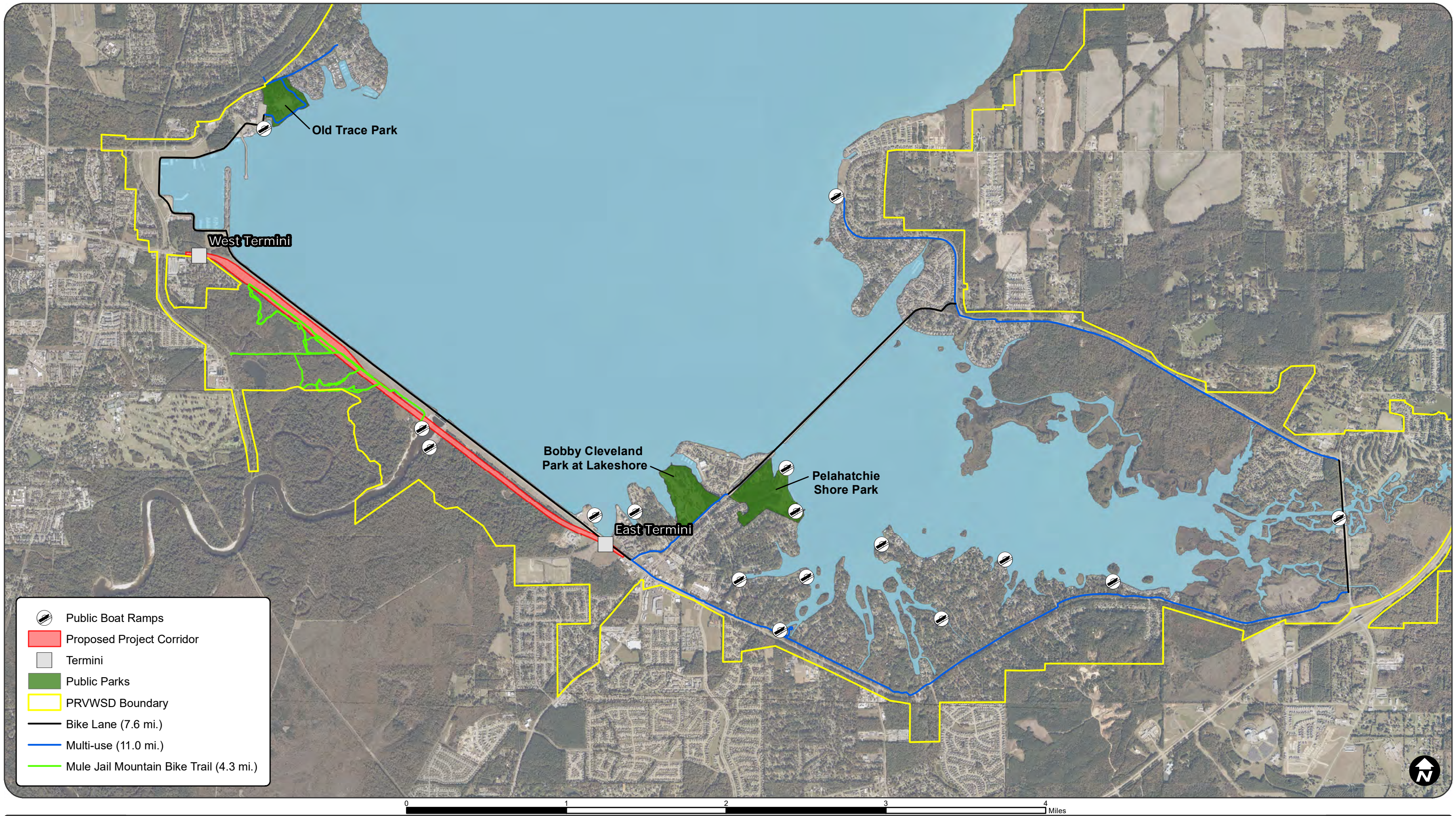
## Bob Anthony Parkway Relocation Project

### Hinds, Madison, and Rankin Counties, Mississippi



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 2001 Airport Road, Suite 201  
 Flowood, Mississippi 39232  
 601.956.3663





# PRVWSD RECREATIONAL AREAS



Bob Anthony Parkway Relocation Project  
Hinds, Madison, and Rankin Counties, Mississippi

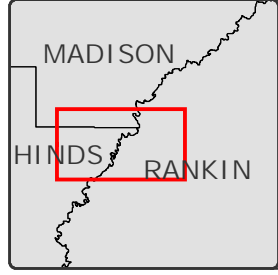
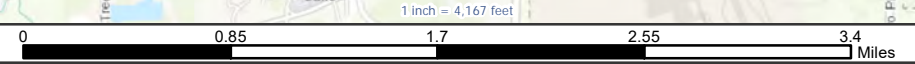
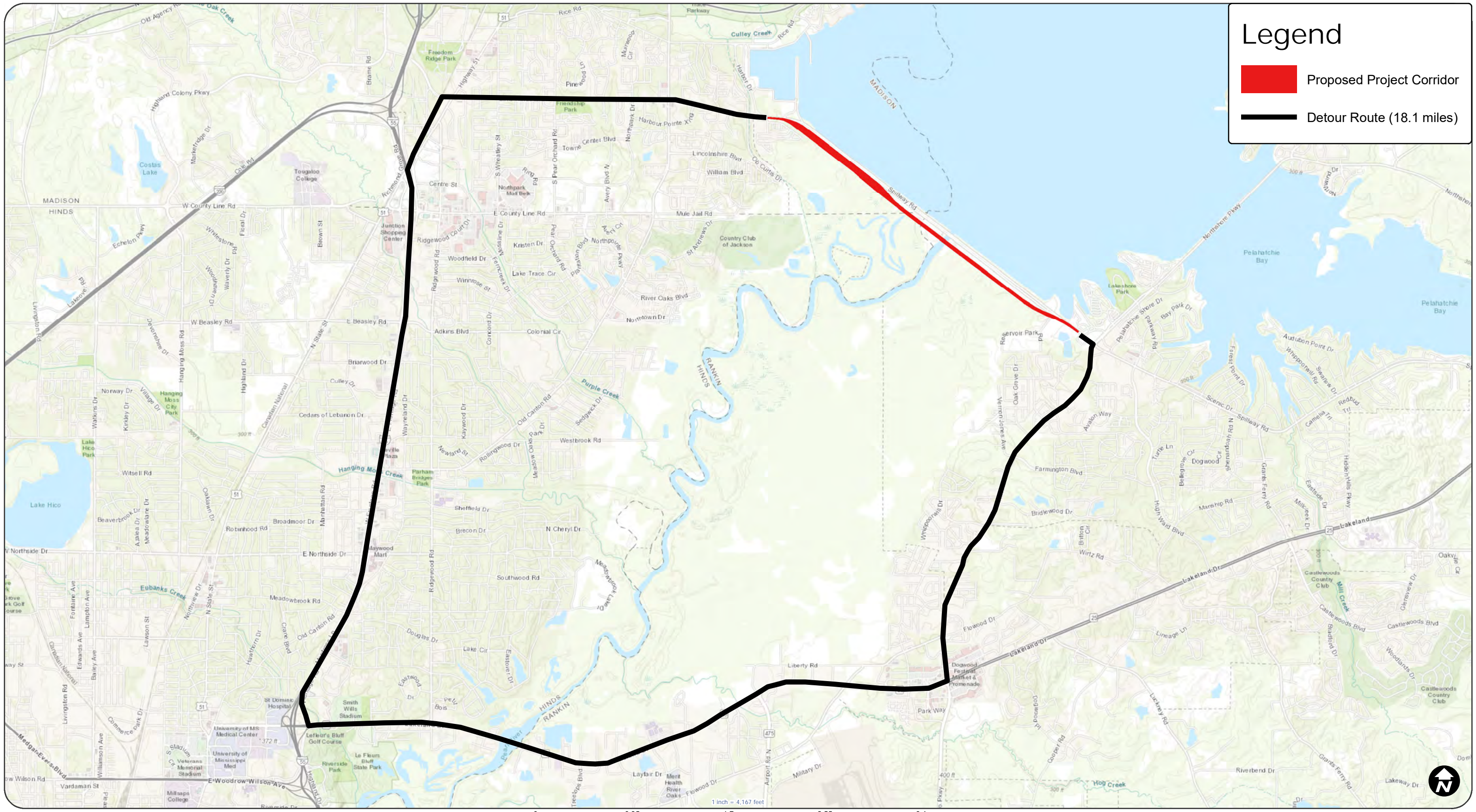


**Pickering**  
2001 Airport Road, Suite 201  
Flowood, Mississippi 39232  
601.956.3663



# Legend

-  Proposed Project Corridor
-  Detour Route (18.1 miles)



## BOB ANTHONY PARKWAY RELOCATION PROJECT DETOUR/ALTERNATE ROUTE MAP



**Pickering**  
 2001 Airport Road, Suite 201  
 Flowood, Mississippi 39232  
 601.956.3663



**NOTES TO USERS**

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To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

**Coastal Base Flood Elevations (BFEs)** shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was State Plane Mississippi West FIPS Zone 2302. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

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NGS Information Services, NOAA, NNGS12  
National Geodetic Survey SSMC-3, #9202  
1315 East-West Highway  
Silver Spring, Maryland 20910-3282  
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at <http://www.ngs.noaa.gov/>.

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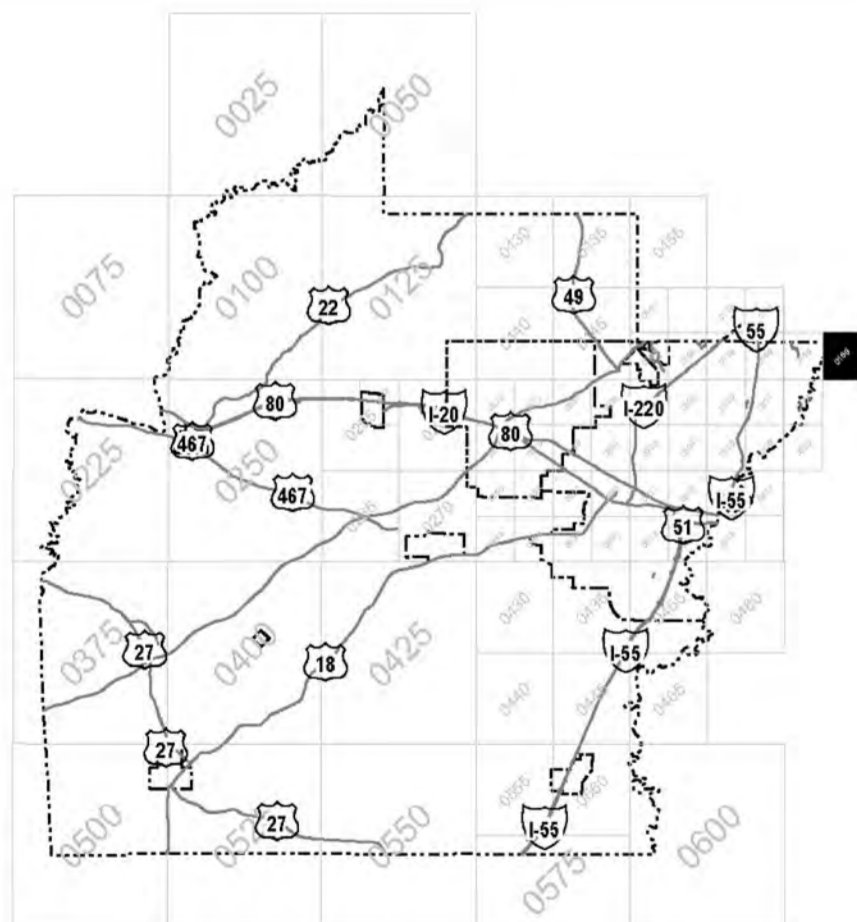
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Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

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If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/nfip/>.

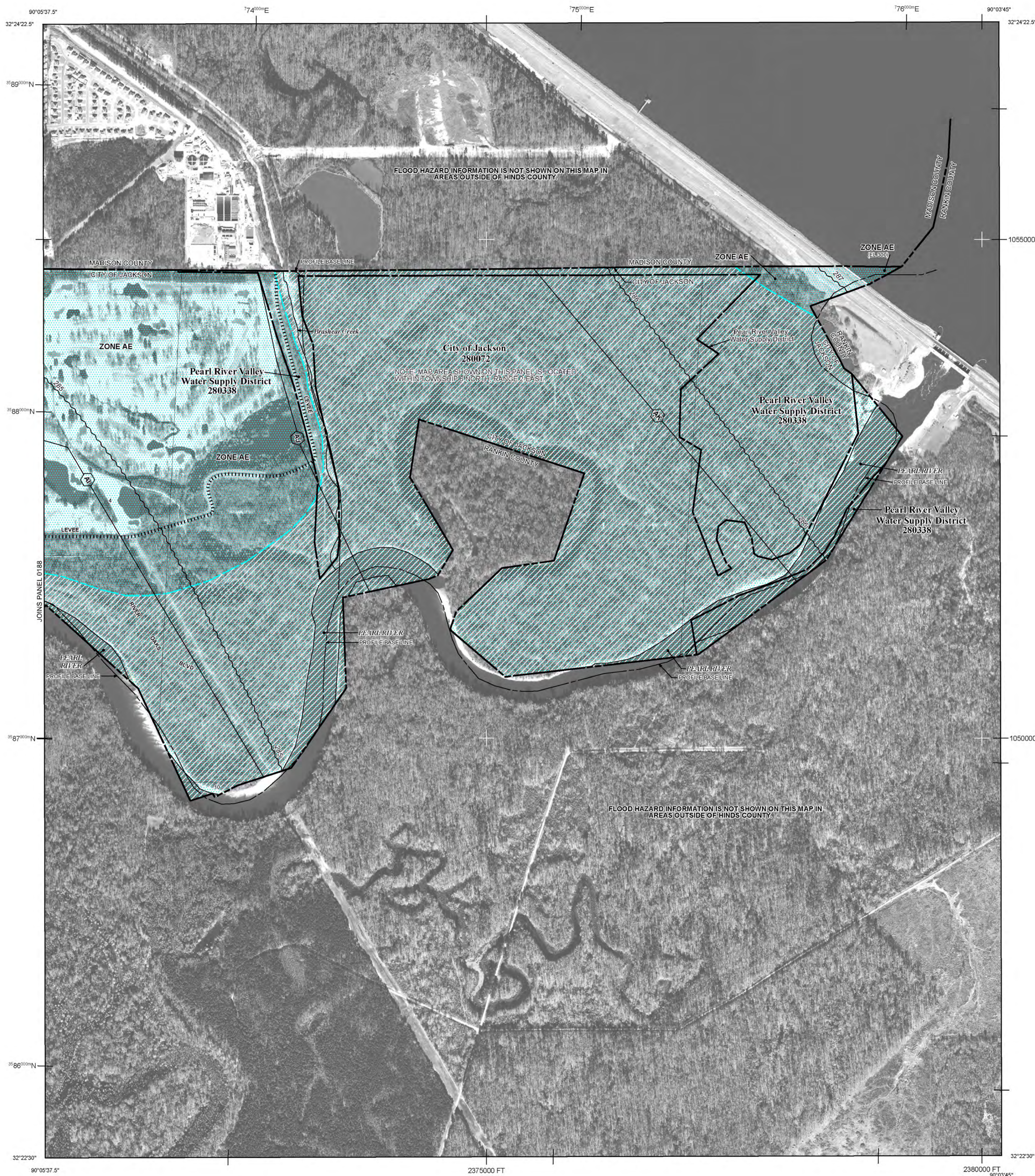
**Elevation Reference Marks**



**HINDS COUNTY AND INCORPORATED COMMUNITIES FIRM PANEL LOCATOR**



This map was produced through the Mississippi Flood Map Modernization Initiative, a cooperative partnership between the State of Mississippi and Department of Homeland Security - Federal Emergency Management Agency.



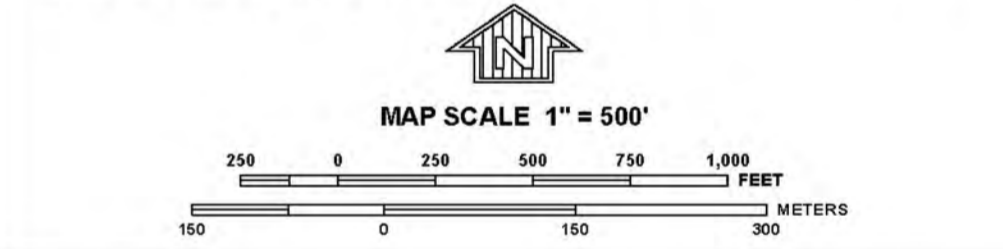
**LEGEND**

- SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**
- The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
- ZONE A** No Base Flood Elevations determined.
  - ZONE AE** Base Flood Elevations determined.
  - ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
  - ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
  - ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently deteriorated. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
  - ZONE A99** Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
  - ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
  - ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
- FLOODWAY AREAS IN ZONE AE**
- The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
- OTHER FLOOD AREAS**
- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- OTHER AREAS**
- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
  - ZONE D** Areas in which flood hazards are undetermined, but possible.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**
- OTHERWISE PROTECTED AREAS (OPAs)**
- CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
- 1% annual chance floodplain boundary
  - 0.2% annual chance floodplain boundary
  - Floodway boundary
  - Zone D boundary
  - CBRS and OPA boundary
  - Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
  - Limit of Moderate Wave Action Delineation
  - Base Flood Elevation line and value; elevation in feet\*
  - Base Flood Elevation value where uniform within zone; elevation in feet\*

- \* Referenced to the North American Vertical Datum of 1988
  - A Cross section line
  - 97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
  - 4775'00"E 1000-meter Universal Transverse Mercator grid ticks, zone 15
  - 6000000 FT 5000-foot grid values: Mississippi State Plane coordinate system, West Zone (FIPSZONE = 2302), Transverse Mercator projection
  - DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
  - M1.5 River Mile
- MAP REPOSITORIES**  
Refer to Map Repositories list on Map Index
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP**  
NOVEMBER 18, 2009
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL**

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.



**NATIONAL FLOOD INSURANCE PROGRAM**

PANEL 0189H

**FIRM**  
FLOOD INSURANCE RATE MAP  
HINDS COUNTY,  
MISSISSIPPI  
AND INCORPORATED AREAS

PANEL 189 OF 600  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

**CONTAINS:**

COMMUNITY	NUMBER	PANEL	SUFFIX
JACKSON, CITY OF	280072	0189	H
PEARL RIVER VALLEY	280338	0189	H
WATER SUPPLY DISTRICT			

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER**  
28049C0189H

**EFFECTIVE DATE**  
NOVEMBER 18, 2009

**Federal Emergency Management Agency**



**NOTES TO USERS**

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National Geodetic Survey SSMC-3, #5202  
1315 East-West Highway  
Silver Spring, Maryland 20910-3282  
(301) 713-3242

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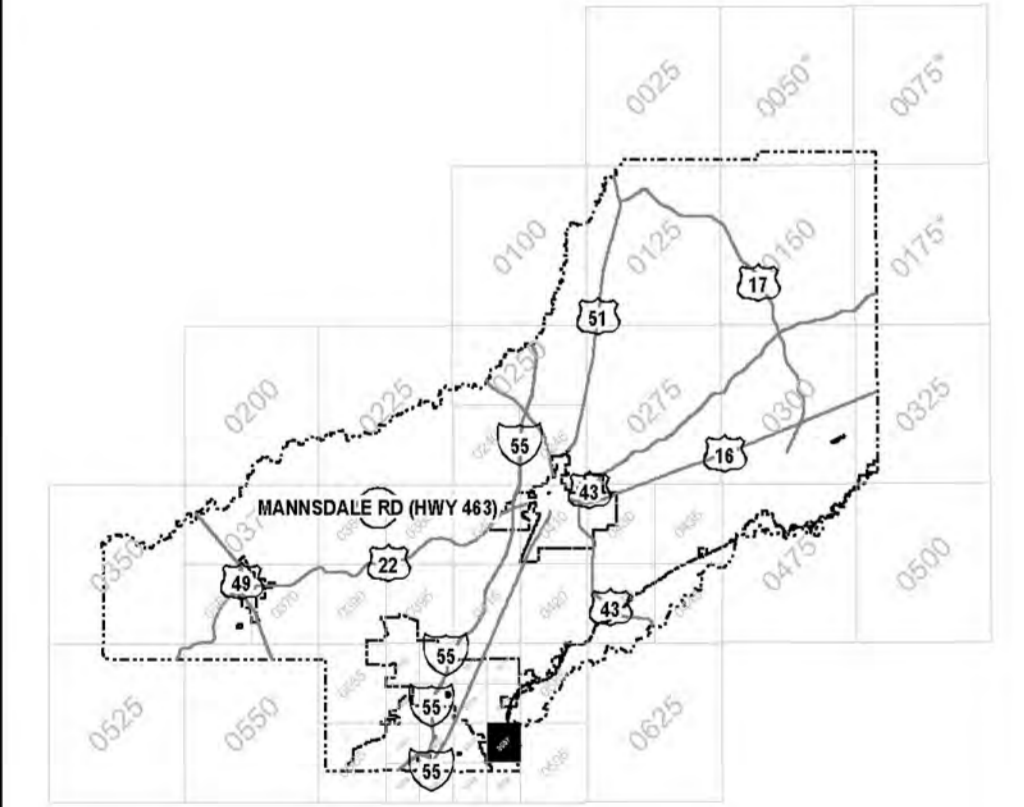
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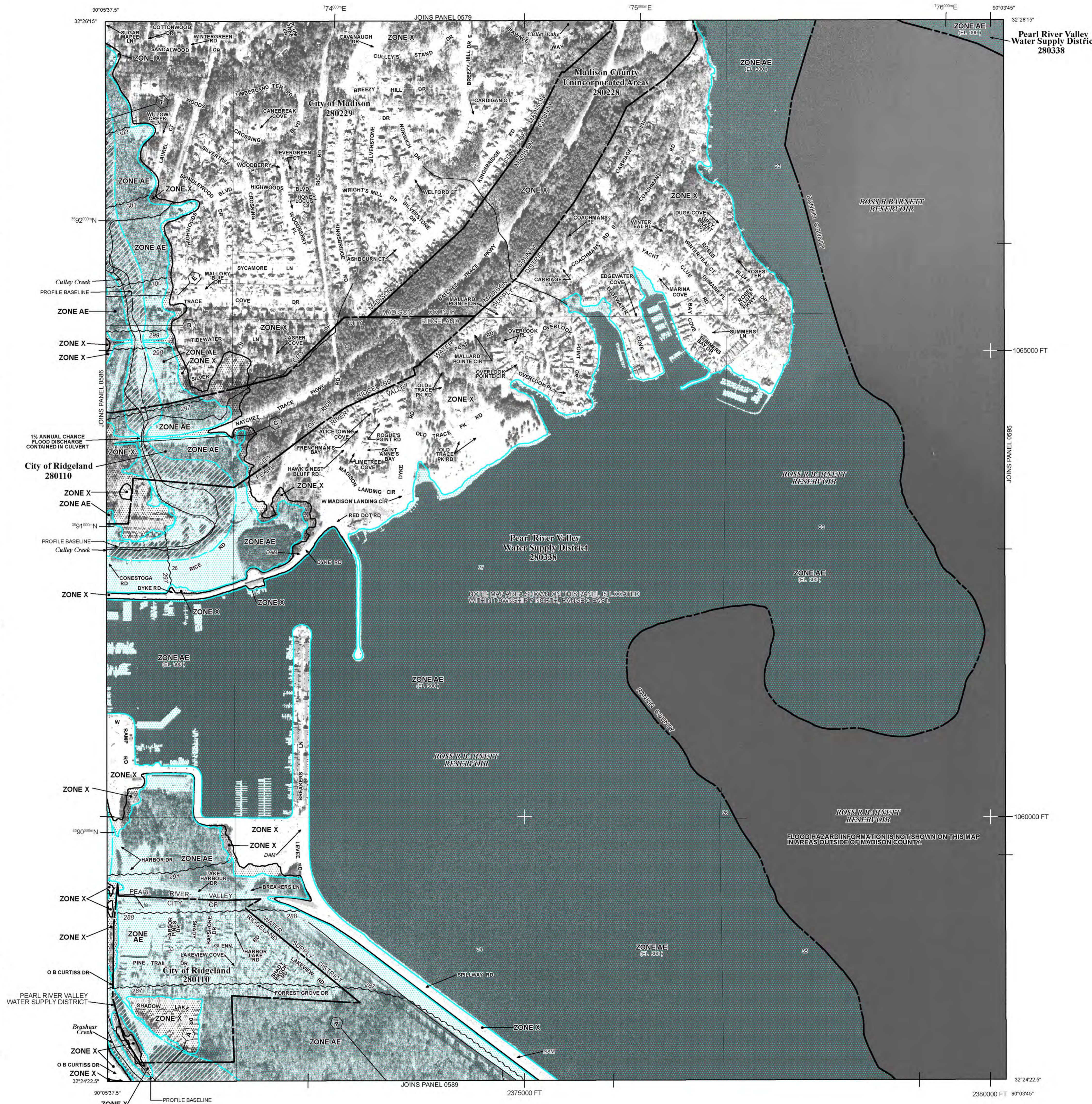
**Elevation Reference Marks**



**MADISON COUNTY AND INCORPORATED COMMUNITIES FIRM PANEL LOCATOR**



This map was produced through the Mississippi Flood Map Modernization Initiative, a cooperative partnership between the State of Mississippi and Department of Homeland Security - Federal Emergency Management Agency.



**LEGEND**

- SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**
  - ZONE A** No Base Flood Elevations determined.
  - ZONE AE** Base Flood Elevations determined.
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  - ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
  - ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
  - ZONE A99** Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
  - ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
  - ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
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  - The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
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  - ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
  - ZONE D** Areas in which flood hazards are undetermined, but possible.
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- OTHERWISE PROTECTED AREAS (OPAs)**
  - CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
- 1% annual chance floodplain boundary**
- 0.2% annual chance floodplain boundary**
- Floodway boundary**
- Zone D boundary**
- CBRS and OPA boundary**
- Boundary dividing Special Flood Hazard Area Zones and boundaries dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities**
- Limit of Moderate Wave Action Delineation**
- 513** Base Flood Elevation line and value; elevation in feet\*  
Base Flood Elevation value where uniform within zone; elevation in feet\*
- A** Referenced to the North American Vertical Datum of 1988
- ⊕** Cross section line
- ⊕** Transect line
- 97°07'30", 32°22'30"** Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 4775000E** 1000-meter Universal Transverse Mercator grid ticks, zone 15
- 6000000 FT** 5000-foot grid values; Mississippi State Plane coordinate system, West Zone (FIPS ZONE = 2302), Transverse Mercator projection.
- DX5510, X** Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5** River Mile
- MAP REPOSITORIES**  
Refer to Map Repositories list on Map Index
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP**  
APRIL 15, 1994
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL**  
FEBRUARY 4, 1998 - to decrease base flood elevations, to add roads and road names, and to change special flood hazard areas and floodway  
MARCH 17, 2010 - to decrease base flood elevations, to add roads and road names, and to change special flood hazard areas and floodway.



**NATIONAL FLOOD INSURANCE PROGRAM**

**PANEL 0587F**

**FIRM**

**FLOOD INSURANCE RATE MAP**

**MADISON COUNTY, MISSISSIPPI**

**AND INCORPORATED AREAS**

**PANEL 587 OF 625**

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MADISON COUNTY	280228	0587	F
MADISON, CITY OF	280229	0587	F
PEARL RIVER VALLEY WATER SUPPLY DISTRICT	280338	0587	F
RIDGELAND, CITY OF	280110	0587	F

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER 28089C0587F**

**MAP REVISED MARCH 17, 2010**

**Federal Emergency Management Agency**



**NOTES TO USERS**

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIS report represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIS report for purposes of construction and/or floodplain management.

**Coastal Base Flood Elevations (CBFEs)** shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was State Plane Mississippi West FIPS Zone 2302. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Services, NOAA, NNGS12  
National Geodetic Survey SSMC-3, #5202  
1315 East-West Highway  
Silver Spring, Maryland 20910-3282  
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at <http://www.ngs.noaa.gov/>.

**Base map** information shown on this FIRM was provided in digital format by the State of Mississippi. This information was photogrammetrically compiled at a scale of 1:400 from aerial photography dated March 2006.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the *Flood Insurance Study report (which contains authoritative hydraulic data)* may reflect stream channel distances that differ from what is shown on this map.

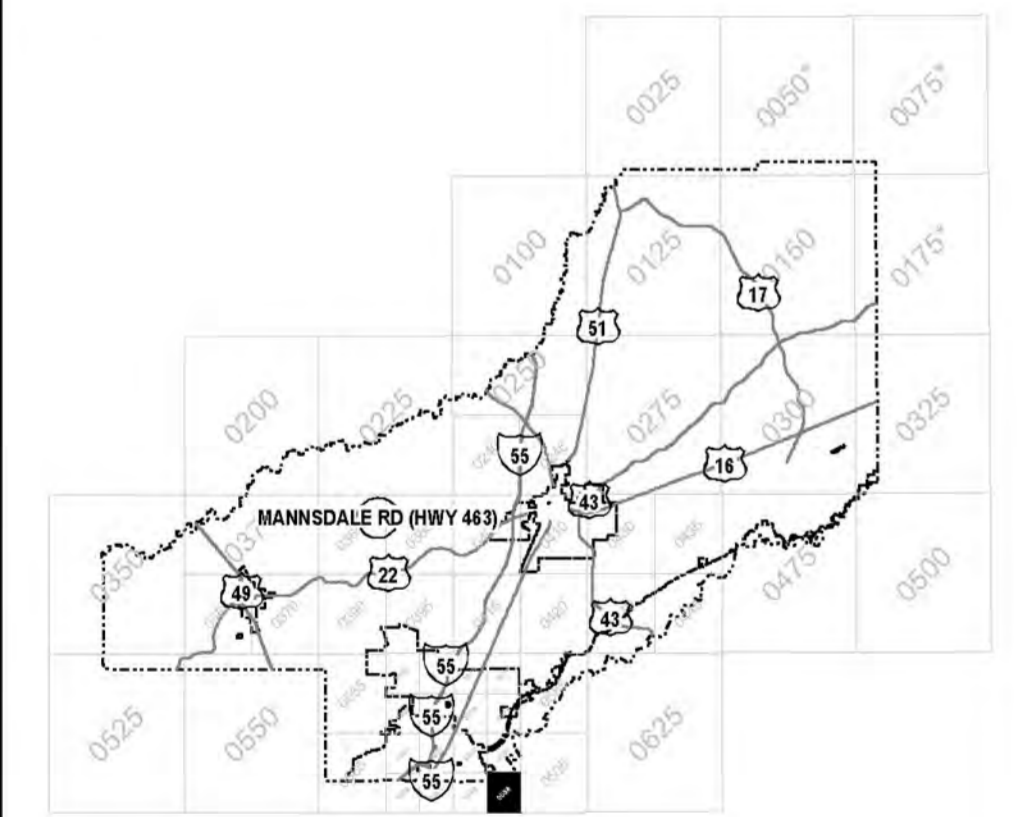
**Corporate limits** shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

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Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a *Flood Insurance Study report*, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://www.msc.fema.gov/>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/nfip/>.

**Elevation Reference Marks**



**MADISON COUNTY AND INCORPORATED COMMUNITIES FIRM PANEL LOCATOR**

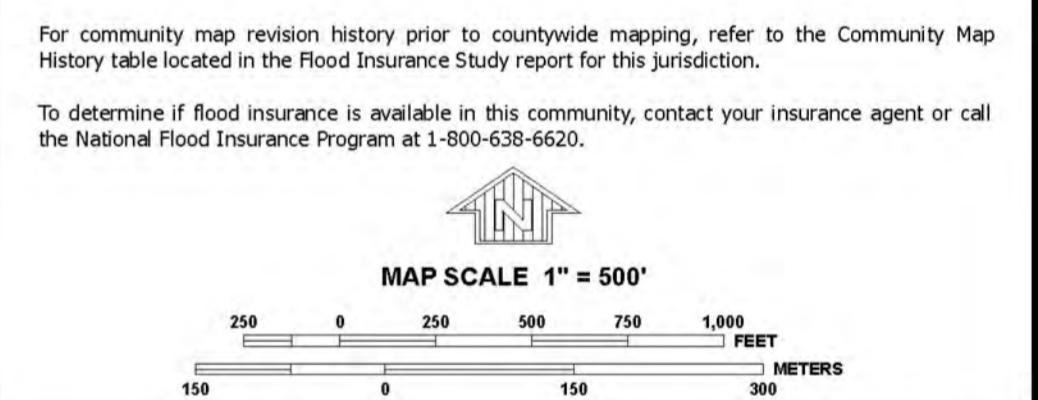


This map was produced through the Mississippi Flood Map Modernization Initiative, a cooperative partnership between the State of Mississippi and Department of Homeland Security - Federal Emergency Management Agency.



**LEGEND**

- SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**
- The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
- FLOODWAY AREAS IN ZONE AE**
- The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
- OTHER FLOOD AREAS**
- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- OTHER AREAS**
- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**
- OTHERWISE PROTECTED AREAS (OPAs)**
- CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- Zone X boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
- Limit of Moderate Wave Action Delineation
- 513 (EL 987) Base Flood Elevation line and value; elevation in feet\*  
Base Flood Elevation value where uniform within zone; elevation in feet\*
- \* Referenced to the North American Vertical Datum of 1988
- A-A Cross section line
- Transect line
- 97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 475000E 1000-meter Universal Transverse Mercator grid ticks, zone 15
- 6000000 FT 5000-foot grid values; Mississippi State Plane coordinate system, West Zone (GPRZONE = 2302), Transverse Mercator projection.
- DX5510, X Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River Mile
- MAP REPOSITORIES**
- Refer to Map Repositories list on Map Index
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP**
- APRIL 15, 1994
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL**
- FEBRUARY 4, 1998 - to decrease base flood elevations, to add roads and road names, and to change special flood hazard areas and floodway.
- MARCH 17, 2010 - to decrease base flood elevations, to add roads and road names, and to change special flood hazard areas and floodway.



**NATIONAL FLOOD INSURANCE PROGRAM**

**PANEL 0589F**

**FIRM**

**FLOOD INSURANCE RATE MAP**

**MADISON COUNTY, MISSISSIPPI**

**AND INCORPORATED AREAS**

**PANEL 589 OF 625**

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL SUFFIX
PEARL RIVER VALLEY WATER SUPPLY DISTRICT	280338	0589 F
RIDGELAND, CITY OF	280110	0589 F

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**MAP NUMBER 28089C0589F**

**MAP REVISED MARCH 17, 2010**

**Federal Emergency Management Agency**



**NOTES TO USERS**

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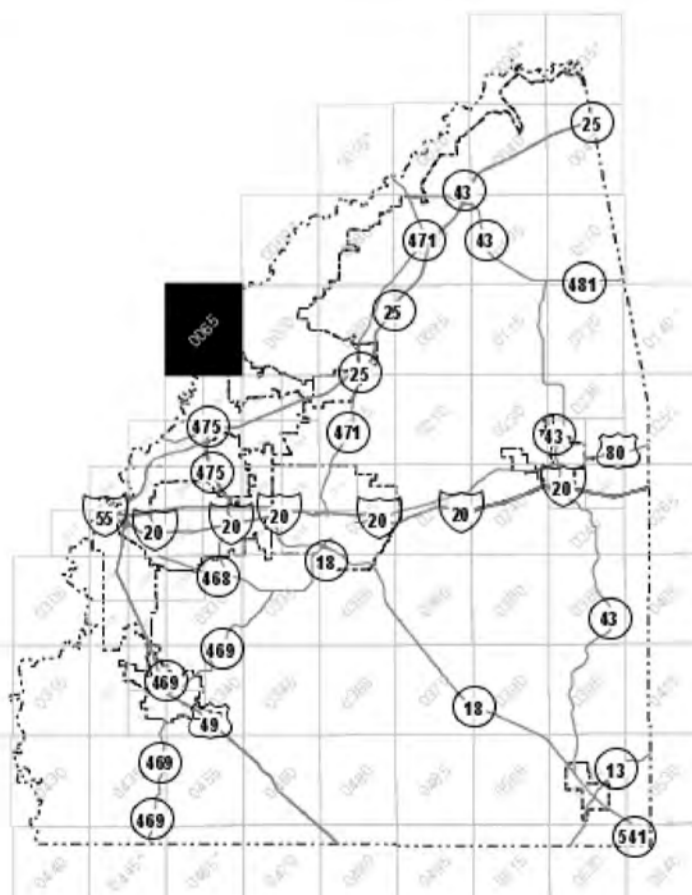
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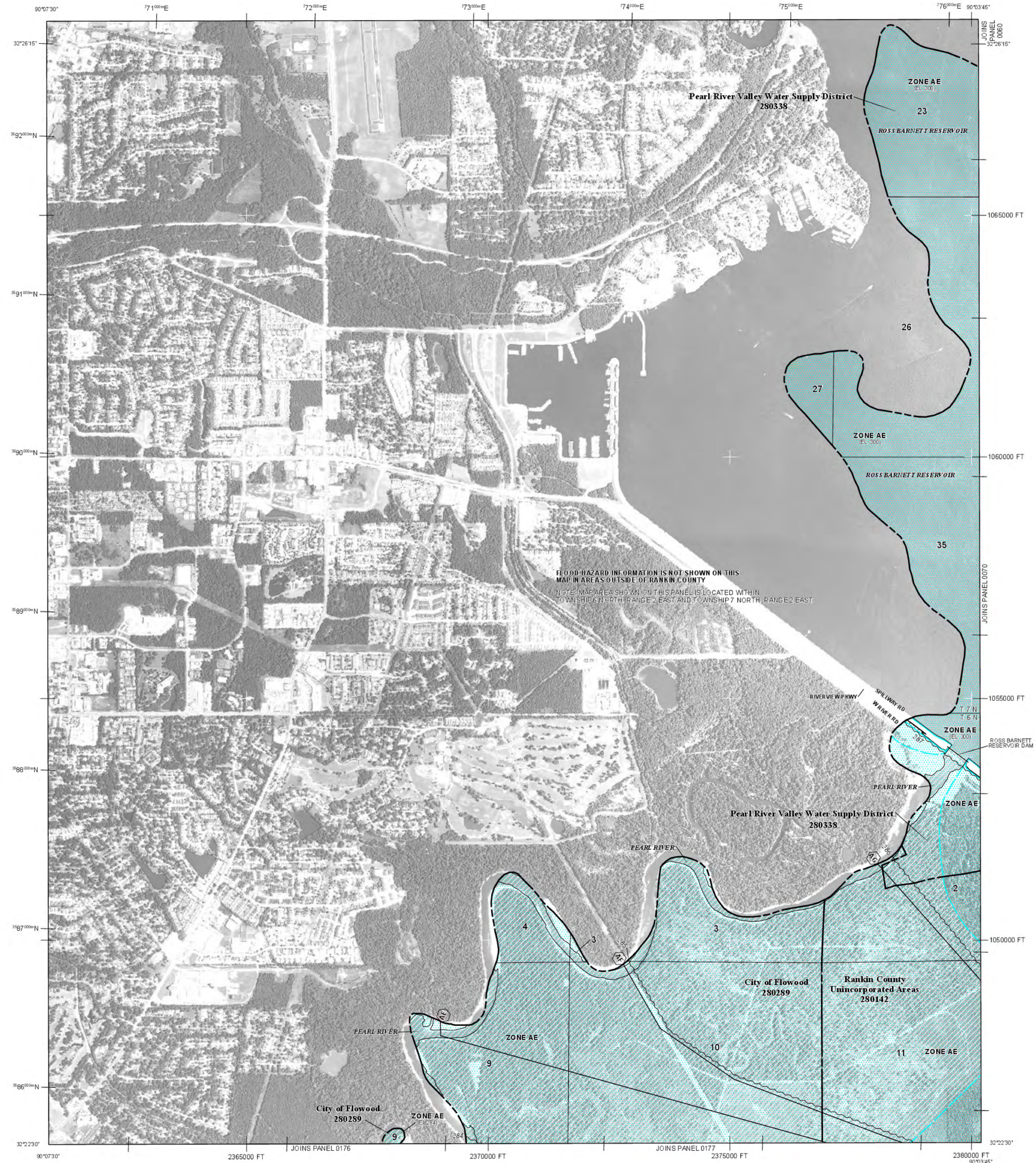
**Elevation Reference Marks**



**RANKIN COUNTY AND INCORPORATED COMMUNITIES FIRM PANEL LOCATOR**



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**LEGEND**

**SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**

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- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently deteriorated. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
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- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

**FLOODWAY AREAS IN ZONE AE**

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

**OTHER FLOOD AREAS**

- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

**OTHER AREAS**

- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
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**COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**

**OTHERWISE PROTECTED AREAS (OPAs)**

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
- Limit of Moderate Wave Action Delineation

513 (EL 987) Base Flood Elevation line and value; elevation in feet\*  
Base Flood Elevation value where uniform within zone; elevation in feet\*  
\* Referenced to the North American Vertical Datum of 1988

A-A Cross section line

2-2 Transect line

87°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere

475000E 1000-meter Universal Transverse Mercator grid ticks, zone 15

6000000 FT 5000-foot grid values; Mississippi State Plane coordinate system, West Zone FIPSZONE = 2302, Transverse Mercator projection

DX5510, X Bench mark (see explanation in Notes to Users section of this FIRM panel)

M1.5 River Mile

**MAP REPOSITORIES**  
Refer to Map Repositories List on Map Index

**EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP**  
NOVEMBER 5, 2010

**EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL**  
JUNE 9, 2014 - to add roads and road names, change special flood hazard areas, and to update corporate limits.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in the community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6630.

**MAP SCALE 1" = 1000'**

0 500 1,000 1,500 2,000 FEET  
0 300 600 METERS

**NATIONAL FLOOD INSURANCE PROGRAM**

**PANEL 0065F**

**FIRM**

**FLOOD INSURANCE RATE MAP**

**RANKIN COUNTY, MISSISSIPPI**

**AND INCORPORATED AREAS**

**PANEL 65 OF 540**

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

**CONTAINS:**

COMMUNITY	NUMBER	PANEL SUFFIX
FLOWOOD, CITY OF	280289	0065 F
RANKIN COUNTY	280142	0065 F
PEARL RIVER VALLEY WATER SUPPLY DISTRICT	280338	0065 F

Notice to User: The Map Number shown below should be used when ordering maps. The Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER 28121C0065F**

**MAP REVISED JUNE 9, 2014**

**Federal Emergency Management Agency**



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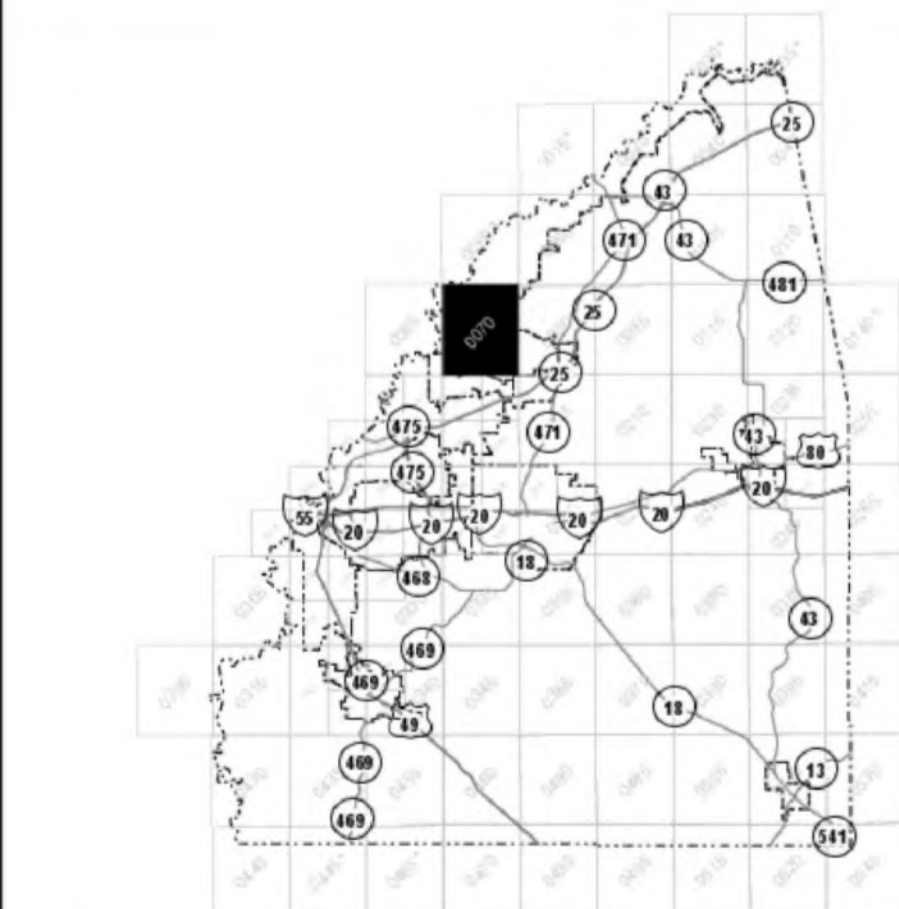
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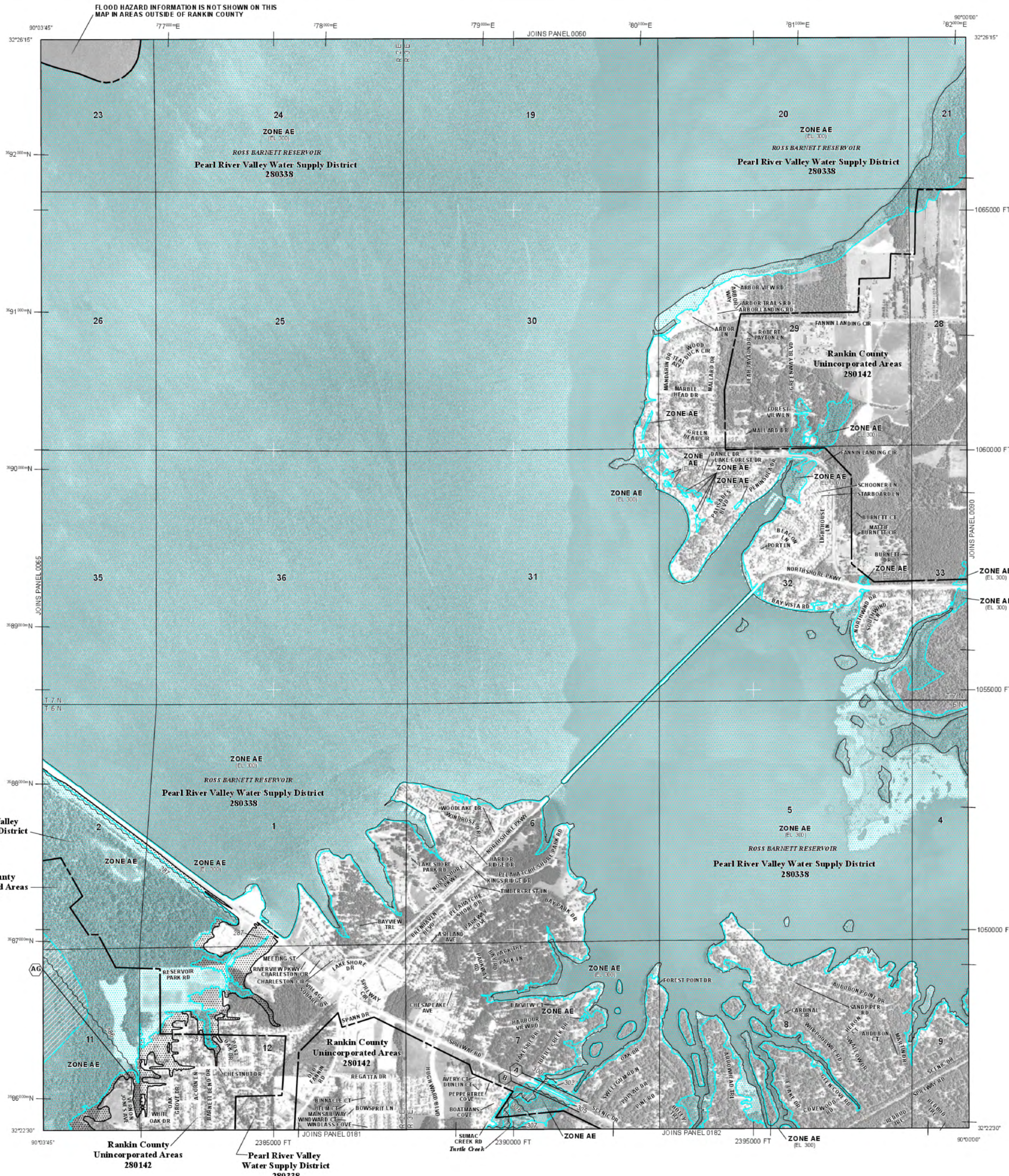
**Elevation Reference Marks**



**RANKIN COUNTY AND INCORPORATED COMMUNITIES FIRM PANEL LOCATOR**

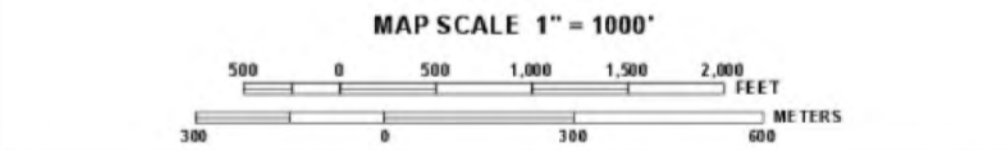


This map was produced through the Mississippi Flood Map Modernization Initiative, a cooperative partnership between the State of Mississippi and Department of Homeland Security - Federal Emergency Management Agency.



**LEGEND**

- SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
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- ZONE AV** Areas to be protected from 1% annual chance flood event by a federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- FLOODWAY AREAS IN ZONE AE
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- M1.5 River Mile
- MAP REPOSITORIES**
- Refer to Map Repositories List on Map Index
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP**
- NOVEMBER 5, 2010
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL**
- JUNE 9, 2014 - to add roads and road names, change special flood hazard areas, and to update corporate limits.



**NATIONAL FLOOD INSURANCE PROGRAM**

PANEL 0070F

**FIRM**

**FLOOD INSURANCE RATE MAP**

**RANKIN COUNTY, MISSISSIPPI AND INCORPORATED AREAS**

PANEL 70 OF 540

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PEARL RIVER VALLEY WATER SUPPLY DISTRICT	280338	0070	F
RANKIN COUNTY	280142	0070	F

Note to User: The Map Number shown below should be used when placing maps orders. The Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER 28121C0070F**

**MAP REVISED JUNE 9, 2014**

Federal Emergency Management Agency



**APPENDIX B  
TRAFFIC REPORT**



# **Bob Anthony Parkway**

**Final Traffic Report  
December 2023**







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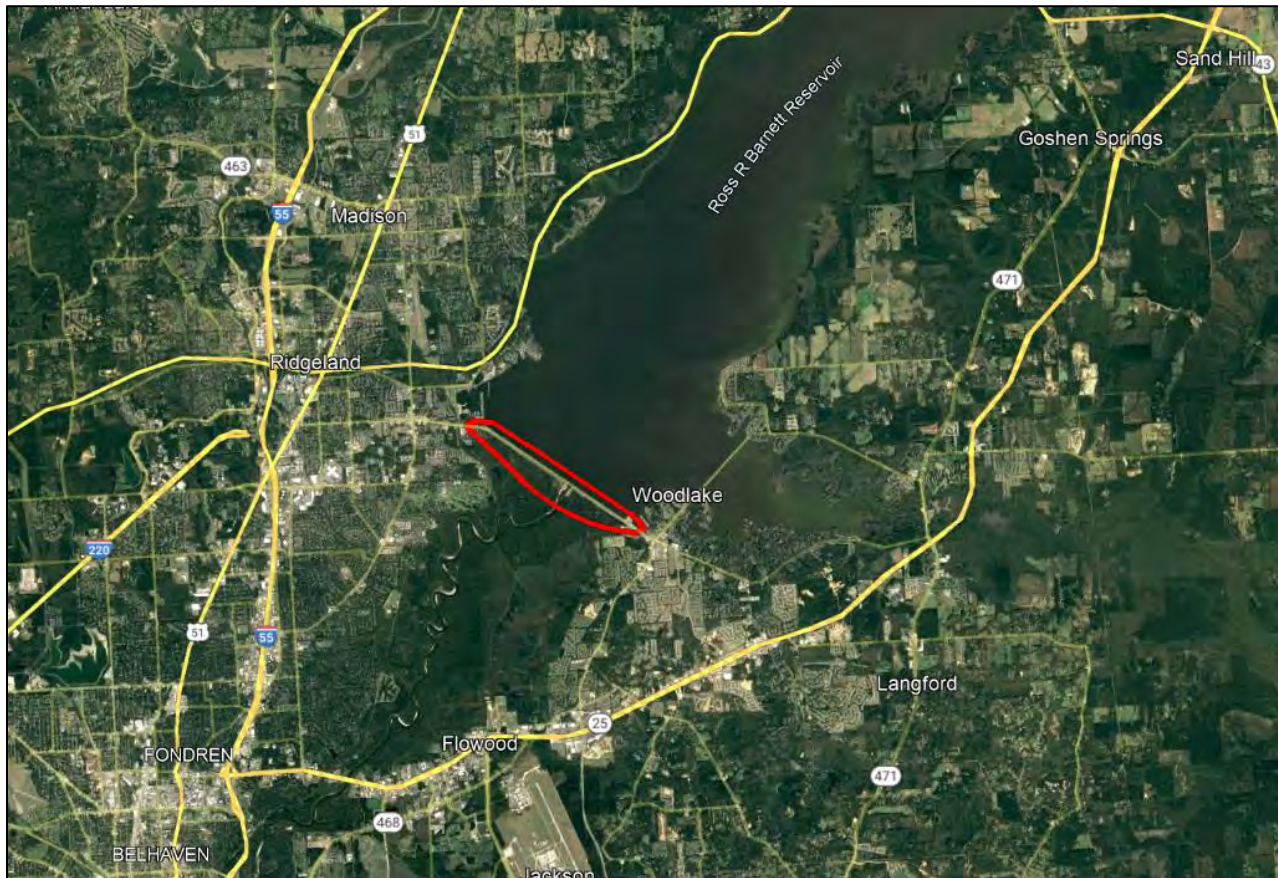


## 1.0 Introduction

### 1.1 Background

At the request of the Pearl River Valley Water Supply District, a traffic and safety study was conducted to be included in the National Environmental Policy Act (NEPA) documentation for improvements to Bob Anthony Parkway/Spillway Road from west of Breakers Lane to east of Reservoir Park Road in Madison, Hinds, and Rankin Counties. **Figure 1** shows the study area outlined in red. The purpose of this report is to present the evaluation results for the traffic and safety conditions along Bob Anthony Parkway for the current and future design year under Existing, No Build, and Build conditions.

**Figure 1: Study Area**



As part of the study, this document presents the findings from the transportation needs that were identified based on the following analyses:

- **Existing Conditions** – Existing conditions were modeled and evaluated using the following data:
  - **Data Compilation** – 12-hour turning movement counts were reviewed for 2 intersections and used to develop AM and PM peak hour volumes for the study area. Additionally, 2017-2021 crash data were reviewed.



- **Volume Development** – Raw volumes were adjusted and balanced to develop 2022 volumes. A growth rate of 1.3% based on historical growth was utilized to develop 2045 volumes.
- **Operational Analysis** – *Synchro 11* and *SimTraffic* software were used to analyze the level of service (LOS) for 2022 Existing, 2045 No Build, 2022 Build, and 2045 Build conditions.
- **Safety Analysis** – Crash data and crash reports, which were provided by MDOT, were reviewed and evaluated. The evaluation included the following:
  - Geographic Information Systems (GIS) maps with the type, location, and severity of crashes
  - Identification of high crash locations
  - Calculation of corridor crash rates

## 1.2 Existing Conditions

Bob Anthony Parkway/Spillway Road is located on the Ross R Barnett Reservoir dam. The corridor currently does not allow heavy vehicles to cross. The study area begins on Lake Harbour Drive west of Breakers Lane on the west end, continues as the route turns to the southeast as Bob Anthony Parkway/Spillway Road, and terminates east of Reservoir Park Road on the east end. The corridor is a four-lane divided facility with a speed limit is 55 miles per hour across most of the route, which drops to 45 miles per hour near the west end of the study area. The intersections of Lake Harbour Drive at Breakers Lane and Spillway Road at Reservoir Park Road are stop-controlled on the minor approaches.

## 2.0 Volume Development

Design volumes were developed throughout the study area for 2022 and 2045 based on turning movement counts which were collected on April 7, 2022, and April 11, 2022, respectively, at the following locations:

- Lake Harbour Drive at Breakers Lane
- Spillway Road at Reservoir Park Road

Based on the turning movement data, the AM peak occurs from 7:15-8:15 AM with a peak hour factor (PHF) of 0.93, and the PM peak occurs from 4:45-5:45 PM with a PHF of 0.95. Heavy vehicles are not allowed to use the existing Lake Harbour Drive/Spillway Road corridor across the dam, so the existing percentage of heavy vehicles is 0%.

The annual growth rate (AGR) for the study area was evaluated using historical counts from MDOT's website along with travel demand model data provided by the Central Mississippi Planning and Development District (CMPDD), the Metropolitan Planning Organization for the area. **Table 1** displays the historic data compiled. The trend function was used in Excel to project future volumes based on the historic volumes. This function is based on the equation  $y=mx+b$ , where  $y$  represents the traffic volume and  $x$  represents the year. For these calculations, the true "b" value was selected. Future volumes were also projected using the growth rate calculated based on the equation below:

$$VF = VP * GF^n$$

$$GF = (1+AGR)$$

Where: VF = future volume, VP = present volume, GF = growth factor, AGR = annual growth rate (%), and n = number of years. A summary of all the calculated growth rates and projected ADT are shown in **Table 2**.



A 1.3% AGR was recommended for use based on historic traffic data and AGR from the travel demand model.

**Table 1: Historic ADT Data**

Approach	Bob Anthony Parkway
Site ID	455215
2011	28,000
2012	29,000
2013	29,000
2014	29,000
2015	29,000
2016	30,000
2017	30,000
2018	32,000
2019	32,000
2020	31,500
2021	31,000
Using Trend Function	
AGR (%)	1.03%
2022	32,282
2045	40,855
Travel Demand Model	
AGR (%) min	1.34%
AGR (%) max	1.66%
AGR (%) average	1.50%
2022	31,465
2045	44,315

**Table 2: Summary of AGR and ADT**

Bob Anthony Parkway				
Method	Trend Function	Equation	Average	Recommended
2021	31,000			
AGR (%)	1.03%	1.50%	1.26%	1.30%
2045	40,855	44,315	42,000	42,500

The recommended AGR of 1.3% was applied to the 2022 design volumes to develop the 2045 design volumes. The 2022 Existing and 2045 No Build design volumes are shown in **Figure 2**. For this study, the 2022 Build and 2045 Build design volumes were assumed to be the same as the Existing and No Build design volumes, respectively. The Spillway Road/Lakeshore Drive intersection is included in the graphic, though it is not included in the analysis section of this document. Those results are included in **Appendix A – Operational Analysis Results** if needed.





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**Figure 2: 2022 Existing and 2045 No Build Design Volumes**  
{INSERT FIGURE HERE}





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### 3.0 Operational Analysis of Intersections- Existing/No Build Conditions

Figure 3: Level of Service (LOS) Categories

The study area was evaluated under 2022 Existing and 2045 No Build conditions to identify a baseline for comparison for operational performance of traffic without improvements.

Level of Service (LOS) was the key performance measure used for the analysis and was determined at key intersections and along Lake Harbour Drive/Spillway Road within the study area.

LOS is a qualitative measure used to depict operational conditions within a traffic stream or at an intersection. LOS is typically designated into six categories. These range from LOS A indicating free-flow, low density, or nearly negligible delay conditions to LOS F where demand exceeds capacity and large queues are experienced. A graphical representation of LOS is presented in **Figure 3**. For this study, LOS D is the threshold for acceptable level of service for any movement at a major intersection. LOS at an intersection is based on control delay, which is the average stopped time per vehicle traveling through the intersection plus the movements at slower speeds due to the vehicles moving up in the queue or slowing upstream of the approach. **Table 3** provides the LOS delay thresholds as stated in the latest version of the *Highway Capacity Manual (HCM)*.

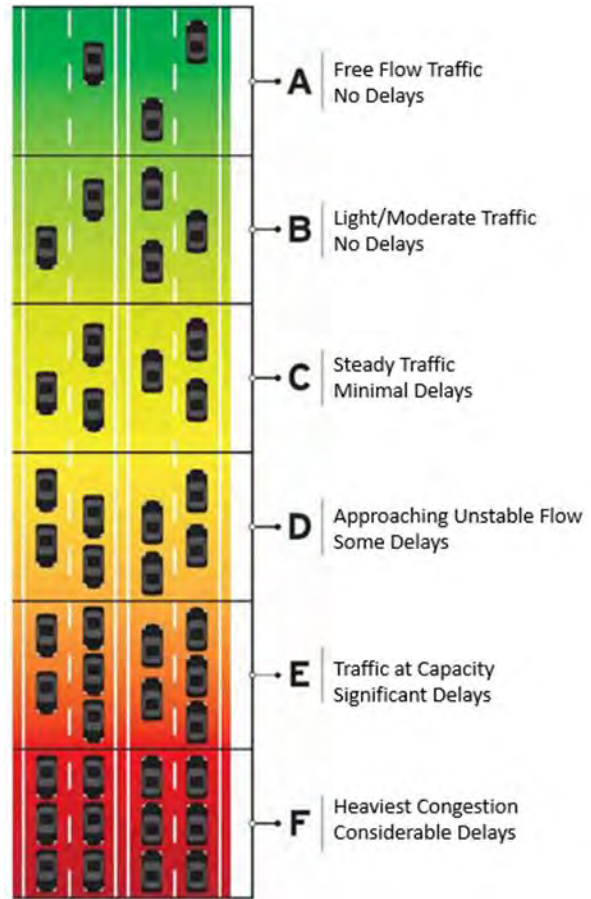


Table 3: LOS Criteria for Intersections

Level of Service	Description	Signalized Intersection Control Delay (sec/veh)	Stop Controlled Intersection
A	Most vehicles do not stop	0 to 10	0 to 10
B	Some vehicles stop	> 10 to 20	> 10 to 15
C	Significant number of stops	> 20 to 35	> 15 to 25
D	Many stop, individual cycle failure	> 35 to 55	> 25 to 35
E	Frequent individual cycle failure, at capacity	> 55 to 80	> 35 to 50
F	Arrival rate exceeds capacity	> 80 or v/c > 1	> 50 or v/c > 1

*Synchro 11* software along with its companion *SimTraffic* software were used to determine the expected delays and LOS at each intersection within the study area based on *HCM* methodology and *SimTraffic* microsimulation methodology. Microsimulation allows the user to analyze intersection operations both



individually and in context of the entire study network. Additionally, microsimulation gives the user a powerful visualization tool to trace any sources of vehicle delay and queuing as well as the opportunity to perform multiple simulation runs with varying traffic loading within the peak hour to account for the expected variability within a system. This variation also accounts for the various types of drivers (aggressiveness, gap acceptance tolerance) and vehicles (performance on grades, general acceleration/ deceleration). Finally, microsimulation provides the best means to demonstrate the impacts of queues on nearby intersections.

The results from the operational analyses of 2022 Existing conditions and 2045 No Build conditions for the study intersections are discussed in the following subsections.

### 3.1 Operational Analysis – 2022 Existing Conditions

Existing conditions were analyzed using 2022 Existing peak hour volumes. The *Synchro* models were checked for proper calibration to simulate what was observed in the field as accurately as possible. The results based on *HCM* methodology and *SimTraffic* methodology are summarized in **Tables 4 and 5**. The complete results are provided in **Appendix A - Operational Analysis Results**.

The *HCM* and *SimTraffic* methodologies showed the through movements along Lake Harbour Drive/Spillway Road operating acceptably. However, several of the minor approach turning movements experience unacceptable LOS E or LOS F conditions. The most notable issue is listed below:

- The left turning movements at the intersection of Lake Harbour Drive/Spillway Road at Breakers Lane – both methodologies show unacceptable LOS E/F conditions during one or both peak periods. This is due to inadequate gaps in the through traffic along Lake Harbor Drive/Spillway Road.

**Table 4: 2022 Existing Conditions – HCM Results**

Intersection	Control	Time Period	MOE	EB Movement			WB Movement			NB Movement			SB Movement			Overall	
				Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Lake Harbour Dr / Spillway Rd @ Breakers Ln	One-Way Stop	AM	LOS	C	n/a <sup>1</sup>			n/a <sup>1</sup>					D		D	A	
			Delay	17.7										27.7		27.7	0.2
		PM	LOS	B	n/a <sup>1</sup>			n/a <sup>1</sup>						F		F	A
			Delay	12.1											60.8		60.8
Spillway Rd @ Reservoir Park Rd	One-Way Stop	AM	LOS		n/a <sup>1</sup>		B	n/a <sup>1</sup>		C		C				A	
			Delay				10.5			18.5		18.5					0.1
		PM	LOS		n/a <sup>1</sup>		C	n/a <sup>1</sup>		C		C					A
			Delay				18.6			21.2		21.2					

n/a<sup>1</sup> – Free movement, no delay reported

**Table 5: 2022 Existing Conditions – SimTraffic Results**

Intersection	Control	Time Period	MOE	EB Movement			WB Movement			NB Movement			SB Movement			Overall	
				Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Lake Harbour Dr / Spillway Rd @ Breakers Ln	One-Way Stop	AM	LOS	E	A			A	A				F		A	A	
			Delay	45.8	1.0			8.9	6.4					115.3		2.0	6.2
		PM	LOS	B	A			A	A					E		A	A
			Delay	10.6	2.0			5.6	5.3					46.4		2.0	3.5
Spillway Rd @ Reservoir Park Rd	One-Way Stop	AM	LOS		A	n/a <sup>1</sup>	A	A		n/a <sup>1</sup>		A				A	
			Delay		0.7	n/a <sup>1</sup>	7.6	1.0		n/a <sup>1</sup>		5.6					0.9
		PM	LOS		A	A	D	A		n/a <sup>1</sup>		C					A
			Delay		1.4	0.3	27.6	0.8		n/a <sup>1</sup>		15.7					

n/a<sup>1</sup> – No volume modeled making this movement





### 3.2 Operational Analysis – 2045 No Build Conditions

For the 2045 No Build conditions, peak hour factors and peak periods were assumed to remain unchanged from 2022 Existing conditions. Analyses were performed using the same methodology and assumptions as were used for the 2022 Existing conditions. The results are summarized in **Tables 6 and 7**. The complete results are provided in **Appendix A - Operational Analysis Results**.

Both the *HCM* and the *SimTraffic* results show deterioration of performance by 2045. Both methodologies indicate LOS F conditions for the southbound turning movements off Breakers Lane. The *SimTraffic* methodology shows LOS F conditions also for left turning movements off Spillway Road onto the cross streets at each of the study intersections. These results indicate a need for improvements to address the lack of adequate gaps in traffic to complete turning movements.

**Table 6: 2045 No Build Conditions – HCM Results**

Intersection	Control	Time Period	MOE	EB Movement			WB Movement			NB Movement			SB Movement			Overall
				Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Lake Harbour Dr / Spillway Rd @ Breakers Ln	One-Way Stop	AM	LOS	D	n/a <sup>1</sup>			n/a <sup>1</sup>				F		F	A	
			Delay	29.2								116.1		116.1	0.7	
		PM	LOS	C	n/a <sup>1</sup>			n/a <sup>1</sup>					F		F	A
			Delay	16.0									569		569	3.5
Spillway Rd @ Reservoir Park Rd	One-Way Stop	AM	LOS		n/a <sup>1</sup>		B	n/a <sup>1</sup>		D		D			A	
			Delay				12.7			31.1		31.1			0.2	
		PM	LOS		n/a <sup>1</sup>		D	n/a <sup>1</sup>		D		D			A	
			Delay				32.2			34.6		34.6			0.2	

n/a<sup>1</sup> – Free movement, no delay reported

**Table 7: 2045 No Build Conditions – SimTraffic Results**

Intersection	Control	Time Period	MOE	EB Movement			WB Movement			NB Movement			SB Movement			Overall
				Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Lake Harbour Dr / Spillway Rd @ Breakers Ln	One-Way Stop	AM	LOS	F	A		B	B				F		D	A	
			Delay	138.9	1.1		13.9	12.9				476.6		33.8	10.0	
		PM	LOS	C	A		A	A				F		A	A	
			Delay	17.1	4.1		6.9	6.3				161.2		7.2	5.6	
Spillway Rd @ Reservoir Park Rd	One-Way Stop	AM	LOS		A	n/a <sup>1</sup>	B	A		n/a <sup>1</sup>		B			A	
			Delay		0.9	n/a <sup>1</sup>	13.2	1.2		n/a <sup>1</sup>		11.8			1.2	
		PM	LOS		C	A	F	A		n/a <sup>1</sup>		F			C	
			Delay		24.5	6.9	91.1	0.9		n/a <sup>1</sup>		357.2			16.4	

n/a<sup>1</sup> – No volume modeled making this movement

### 4.0 Operational Analysis of Corridor- Existing/No Build Conditions

The multilane highways module of the *Highway Capacity Software (HCS)* was utilized to determine the LOS of the Bob Anthony Parkway corridor for the segment along the reservoir between west of Breakers Lane and east of Reservoir Park Road. LOS for a multilane highway is based on density in passenger cars per mile per lane (pc/mi/ln). **Table 8** provides the LOS density thresholds as stated in *HCM 7<sup>th</sup> Edition*, chapter 12.





**Table 8: LOS Criteria for Multilane Highways**

Level of Service	Description	Density (pc/mi/ln)
		Multilane Highways
A	Free flow	≤ 11
B	Slight restriction to free flow	> 11 - 18
C	Restrictions to free flow	> 18 - 26
D	Noticeable restriction, declining speeds	> 26 - 35
E	No gaps in traffic, volatile speeds	> 35 - 45
F	Breakdown, large queues, recurring congestion	> 45 or Demand > Capacity

Analysis was performed for the 2022 Existing conditions and 2045 No Build conditions using volumes developed from turning movement counts and an AGR of 1.3%. It should be noted that 0% trucks were used since trucks are currently restricted from travelling across the reservoir. The results are summarized in **Table 9**. Analysis was also conducted for 2045 No Build conditions with an anticipated truck percentage of 3.5%, which was calculated based on truck information provided by CMPDD.

As shown in **Table 9**, the corridor operates at acceptable LOS C or better conditions in 2022 and at acceptable LOS D or better conditions in 2045. However, it should be noted that the movements with LOS D are close to the threshold of unacceptable LOS E conditions. Additionally, the corridor analysis does not account for any impacts from nearby intersections which may cause spillback queueing or significant platooning.



**Table 9: Corridor Analysis Results**

Segment	Time Period	MOE	Eastbound	Westbound
<b>2022 Existing Conditions</b>				
Bob Anthony Parkway: Between Breaker Ln and Reservoir Park Rd	AM	LOS	B	C
		Density	12.8	24.1
	PM	LOS	C	B
		Density	24.8	15.6
<b>2045 No Build Conditions</b>				
Bob Anthony Parkway: Between Breaker Ln and Reservoir Park Rd	AM	LOS	B	D
		Density	17.2	32.4
	PM	LOS	D	C
		Density	33.4	21.1
<b>2045 No Build Conditions <sup>1</sup></b>				
Bob Anthony Parkway: Between Breaker Ln and Reservoir Park Rd	AM	LOS	B	D
		Density	17.8	33.6
	PM	LOS	D	C
		Density	34.6	21.8

<sup>1</sup> with 3.5% trucks

### 5.0 Operational Analysis of Intersections- Build Conditions

The study area was analyzed under build conditions using the same methodology as was used for the Existing/No Build analysis. Since the operational analysis of the corridor showed LOS D or better through the 2045 design year with four lanes, the Build alternatives maintained a four-lane divided typical section. The study intersections showed inadequate performance for minor approach turning movements and major approach left turning movements under the Existing/No Build conditions. Therefore, the following intersection improvements were modeled for the Build condition:

- At Lake Harbour Drive/ Spillway Road and Breakers Lane (as shown in **Figure 4**)
  - Prohibit southbound left turn. (This movement will make a southbound right turn and then a westbound u-turn at the signalized intersection of Lake Harbour Drive at Harbor Pines Drive/Harbor Drive.)
  - Convert the southbound yielding right turn into a free right turn with a receiving lane addition. This lane will tie into a free flow right turn outside the study area, from the EOP to the Lake Harbour Drive/Harbor Drive intersection, a distance of approximately 700 feet.





**Figure 4: Build Layout at Breakers Lane**

- At Spillway Road and Reservoir Park Road (as shown in **Figure 5**)
  - Prohibit northbound left turn and make the northbound right turn a yield-controlled channelized right.
  - Provide a westbound u/left turn bay. Provided an inside dedicated receiving lane for the westbound u-turning movement. This inside lane will continue to the downstream eastbound u-turn.
- At Rankin Landing (as shown in **Figure 5**)
  - Provide an eastbound left turn lane.
  - Provide a yield-controlled channelized westbound right turn.
  - Prohibit southbound left turns. Provide a yield-controlled southbound channelized right turn with a downstream westbound u-turn bay. The inside eastbound receiving lane will be dedicated for the westbound u-turning movement. This inside lane will continue to the eastbound left turn at Rankin Landing.

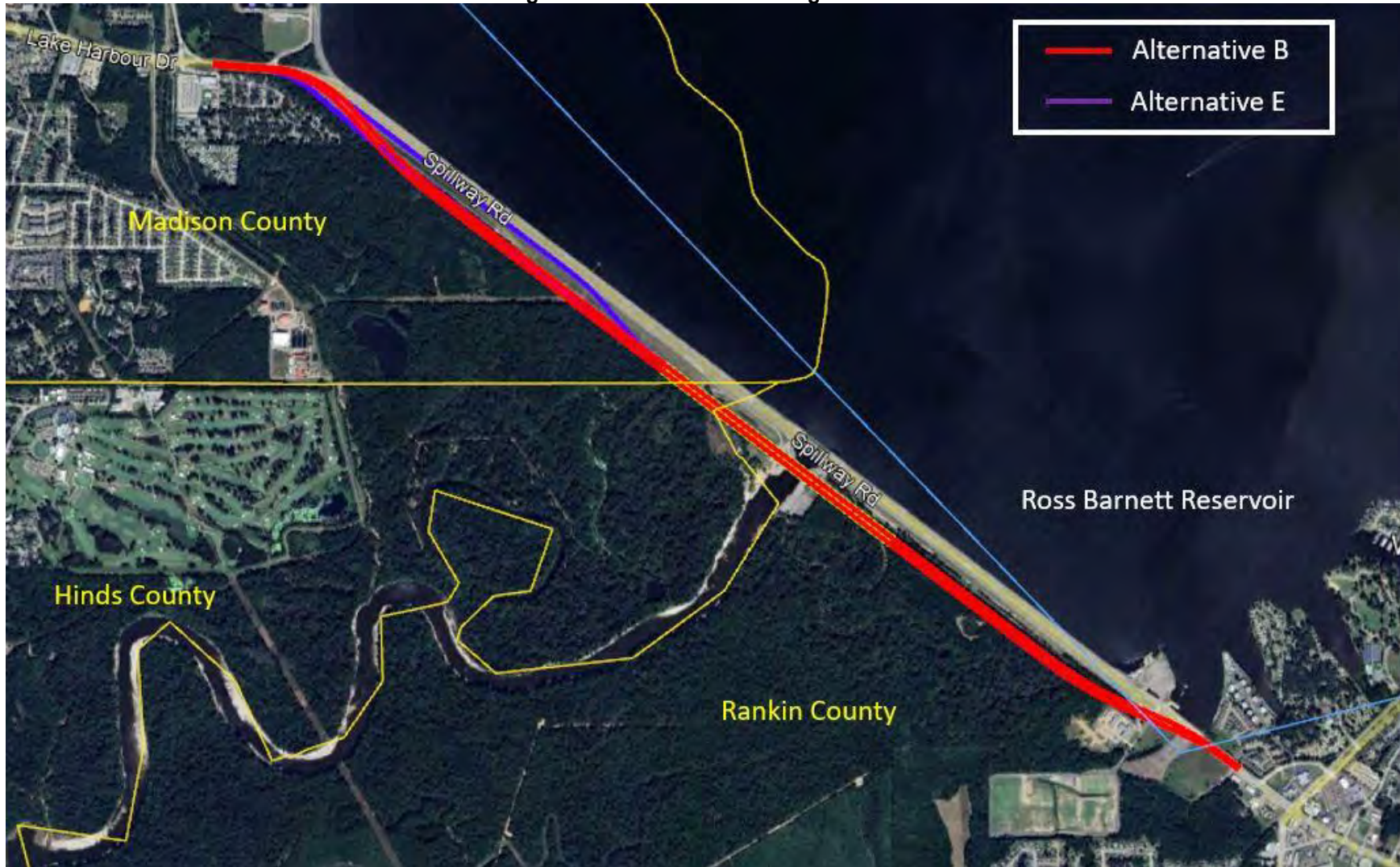


**Figure 5: Build Layout at Reservoir Park Road and at Rankin Landing**

Two Build Alternatives were considered; the only difference between the two alternatives is the alignment of the corridor. Alternative B utilizes all new alignment south of the toe ditch. Alternative E has two lanes north of the toe ditch and two lanes south of the toe ditch west of the Pearl River, and then follows the alignment of Alternative B east of the Pearl River. Both Build Alternatives will operate identically in terms of traffic operations. The alignments of these Build Alternatives are shown in **Figure 6**. The results of the Build operational analysis are summarized in the following subsections.



Figure 6: Build Alternative Alignments





### 5.1 Operational Analysis – 2022 Build Conditions

For the 2022 Build conditions, no changes were assumed from the 2022 Existing peak hour volumes other than diverting the prohibited left movement volumes. The results based on *HCM* methodology and *SimTraffic* methodology are summarized in **Tables 10 and 11**. The complete results are provided in **Appendix A - Operational Analysis Results**.

The proposed improvements resolved the existing issues with unacceptable delays for minor approach turning movements and major approach left turning movements. The *HCM* and *SimTraffic* methodologies showed acceptable performance for all movements during both peak periods in 2022 with one exception. The *HCM* methodology showed performance issues for the westbound left/u turning lane group at the intersection of Spillway Road and Reservoir Park Road. It should be noted, however, that the *HCM* methodology does not model u-turns or capture the dedicated u-turn receiving lane usage as accurately as the *SimTraffic* methodology which showed acceptable LOS D at this location.

**Table 10: 2022 Build Conditions – HCM Results**

Intersection	Control	Time Period	MOE	EB Movement			WB Movement			NB Movement			SB Movement			Overall		
				Left	Thru	Right	U	Left	Thru	Right	Left	Thru	Right	Left	Thru		Right	
Lake Harbour Dr / Spillway Rd @ Breakers Ln	One-Way Stop	AM	LOS	C	n/a <sup>1</sup>					n/a <sup>1</sup>	n/a <sup>1</sup>					n/a <sup>1</sup>	A	
			Delay	17.7	n/a <sup>1</sup>						n/a <sup>1</sup>	n/a <sup>1</sup>					n/a <sup>1</sup>	0.0
		PM	LOS	B	n/a <sup>1</sup>						n/a <sup>1</sup>	n/a <sup>1</sup>					n/a <sup>1</sup>	A
			Delay	12.1	n/a <sup>1</sup>						n/a <sup>1</sup>	n/a <sup>1</sup>					n/a <sup>1</sup>	0.1
Spillway Rd @ Rankin Landing	One-Way Stop	AM	LOS	C	n/a <sup>1</sup>					n/a <sup>1</sup>	n/a <sup>1</sup>					C	A	
			Delay	17.6	n/a <sup>1</sup>						n/a <sup>1</sup>	n/a <sup>1</sup>					19.9	0.0
		PM	LOS	A	n/a <sup>1</sup>						n/a <sup>1</sup>	n/a <sup>1</sup>					B	A
			Delay	0.0	n/a <sup>1</sup>						n/a <sup>1</sup>	n/a <sup>1</sup>					14.8	0.2
Spillway Rd @ Reservoir Park Rd	One-Way Stop	AM	LOS					B						B			A	
			Delay					11.2						12.5				0.1
		PM	LOS					F						C				A
			Delay					58.9						21.2				

n/a<sup>1</sup> – Free movement, no delay reported

**Table 11: 2022 Build Conditions – SimTraffic Results**

Intersection	Control	Time Period	MOE	EB Movement			WB Movement			NB Movement			SB Movement			Overall		
				Left	Thru	Right	U	Left	Thru	Right	Left	Thru	Right	Left	Thru		Right	
Lake Harbour Dr / Spillway Rd @ Breakers Ln	One-Way Stop	AM	LOS	A	A					A	A					A	A	
			Delay	3.8	1.0					7.7	8.9						2.0	5.4
		PM	LOS	A	A					A	A						A	A
			Delay	10.0	1.9					5.1	4.8						2.0	3.2
Spillway Rd @ Rankin Landing	One-Way Stop	AM	LOS	A	A					A	A			A <sup>1</sup>		A	A	
			Delay	0	0.9					0.5	0.0					3.1	2.2	0.6
		PM	LOS	A	A					A	A					D <sup>1</sup>	A	A
			Delay	0.0	1.4					0.4	0					26.2	3.4	1.1
Spillway Rd @ Reservoir Park Rd	One-Way Stop	AM	LOS		A	A	A	A	A			A <sup>1</sup>		A			A	
			Delay		0.6	0.0	0.0	8.2	1.0			2.0		1.0				0.9
		PM	LOS		A	A	D	D	A			A <sup>1</sup>		A				A
			Delay		0.9	1.3	30.2	33.9	0.8			1.8		1				

A<sup>1</sup>- minor approach left turn is prohibited; delay for this movement is estimated as the sum of delays from right + u-turn + thru.

### 5.2 Operational Analysis – 2045 Build Conditions

The same volumes and methodology were used for the 2045 Build conditions as were used for the 2045 No Build conditions. The results are summarized in **Tables 12 and 13**. The complete results are provided in **Appendix A - Operational Analysis Results**.

When compared to 2045 No Build conditions, the Build conditions resolve the performance issues for the southbound turning movements at the intersection of Lake Harbour Drive/Spillway Road at Breakers Lane. However, the eastbound left movement still experiences unacceptable delays. It should be noted that this





movement only has 4 vehicles per hour in the AM peak and 19 vehicles per hour in the PM peak, and storage is not an issue for this small demand.

At the intersection of Spillway Road at Reservoir Park Road, the Build conditions improve performance for the problematic northbound turning movements. However, the westbound u-turn/left turn movements still show unacceptable LOS F during the PM peak due to inadequate gaps in the eastbound through traffic. The southbound to eastbound trips from Rankin Landing (southbound right plus u-turn plus eastbound through) also show unacceptable delays during the PM peak. A signal will likely be needed at some point in the future to resolve these issues.

**Table 12: 2045 Build Conditions – HCM Results**

Intersection	Control	Time Period	MOE	EB Movement			WB Movement			NB Movement			SB Movement			Overall
				Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Lake Harbour Dr / Spillway Rd @ Breakers Ln	One-Way Stop	AM	LOS	D	n/a <sup>1</sup>			n/a <sup>1</sup>	n/a <sup>1</sup>						A	A
			Delay	29.2	n/a <sup>1</sup>			n/a <sup>1</sup>	n/a <sup>1</sup>						0	0.0
		PM	LOS	C	n/a <sup>1</sup>			n/a <sup>1</sup>	n/a <sup>1</sup>						n/a <sup>1</sup>	A
			Delay	16.0	n/a <sup>1</sup>			n/a <sup>1</sup>	n/a <sup>1</sup>						n/a <sup>1</sup>	0.1
Spillway Rd @ Rankin Landing	One-Way Stop	AM	LOS	D	n/a <sup>1</sup>			n/a <sup>1</sup>	n/a <sup>1</sup>						D	A
			Delay	29	n/a <sup>1</sup>			n/a <sup>1</sup>	n/a <sup>1</sup>						30.5	0.0
		PM	LOS	B	n/a <sup>1</sup>			n/a <sup>1</sup>	n/a <sup>1</sup>						C	A
			Delay	15.0	n/a <sup>1</sup>			n/a <sup>1</sup>	n/a <sup>1</sup>						19.9	0.2
Spillway Rd @ Reservoir Park Rd	One-Way Stop	AM	LOS		n/a <sup>1</sup>		B	n/a <sup>1</sup>				C				A
			Delay		n/a <sup>1</sup>		12.7	n/a <sup>1</sup>				15.1				0.1
		PM	LOS		n/a <sup>1</sup>		F	n/a <sup>1</sup>				D				A
			Delay		n/a <sup>1</sup>		372.7	n/a <sup>1</sup>				34.6				

n/a<sup>1</sup> – Free movement, no delay reported

**Table 13: 2045 Build Conditions – SimTraffic Results**

Intersection	Control	Time Period	MOE	EB Movement			WB Movement			NB Movement			SB Movement			Overall
				Left	Thru	Right	U	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Lake Harbour Dr / Spillway Rd @ Breakers Ln	One-Way Stop	AM	LOS	F	A			B	A						A	A
			Delay	129.1	1.2			11.1	9.7						2.0	7.6
		PM	LOS	C	A			A	A						A	A
			Delay	18.1	4.0			6.4	6.5						2.0	5.0
Spillway Rd @ Rankin Landing	One-Way Stop	AM	LOS	D	A			A	A				C <sup>1</sup>		A	A
			Delay	26	1.2			0.5	2.5				20.4		3.4	0.8
		PM	LOS	A	B			A	A				F <sup>1</sup>		A	A
			Delay	0.0	10.7			0.6	0.7				120.1		1.4	6.8
Spillway Rd @ Reservoir Park Rd	One-Way Stop	AM	LOS		A	A	A	B	A		A <sup>1</sup>		A			A
			Delay		0.7	0.0	0.0	11.0	1.2		2.3		1.1			1.0
		PM	LOS		A	A	F	F	A		C <sup>1</sup>	A				A
			Delay		7.2	6.6	202.2	271.9	1		16.1		1.1			6.3

A<sup>1</sup>- minor approach left turn is prohibited; delay for this movement is estimated as the sum of delays from right + u-turn + thru.

## 6.0 Safety Analysis

### 6.1 Crash Frequency, Severity and Type

Crash data from 2017 to 2021 (the latest five years of available data) were reviewed for the Bob Anthony Parkway from west of Breakers Lane to east of Reservoir Park Road. As shown in **Table 14**, the frequency of crashes decreased slightly within the five-year analysis period.

**Tables 15 and 16** summarize the number of crashes by severity and the number of crashes by major type of collision along the corridor. As shown in **Table 15**, most crashes that occurred were property damage only (O) type crashes. Within the five (5) years, 38 injuries crashes occurred, and no fatal crashes were reported. Rear-end type crash was the leading crash type (46%) followed by Run Off Road crashes (23%) as displayed in **Table 16**. The high occurrence of rear-end crashes can be attributed to slowing or stopped





traffic along the corridor as cited in the crash data. Rear-end crashes are generally caused by driving in heavy traffic conditions, distracted driving, and speeding.

**Table 14: Crash Frequency**

Year	No. of crashes
2017	29
2018	39
2019	33
2020	22
2021	28
Percent change	-0.87%

**Table 15: Crashes by Severity**

Hwy/Limits: West of Breakers Lane to East of Reservoir Park Road							
Year	Property Damage Only (O)	Possible Injury (C)	Suspected Minor Injury (B)	Suspected Serious Injury (A)	Fatal (K)	Other	Total
2017	23	5	1	0	0	0	29
2018	34	3	2	0	0	0	39
2019	26	5	2	0	0	0	33
2020	9	11	2	0	0	0	22
2021	21	4	3	0	0	0	28
Total	113	28	10	0	0	0	151
% of Total	74.83%	18.54%	6.62%	0.00%	0.00%	0.00%	100.00%

**Table 16: Crashes by Major Type of Collision**

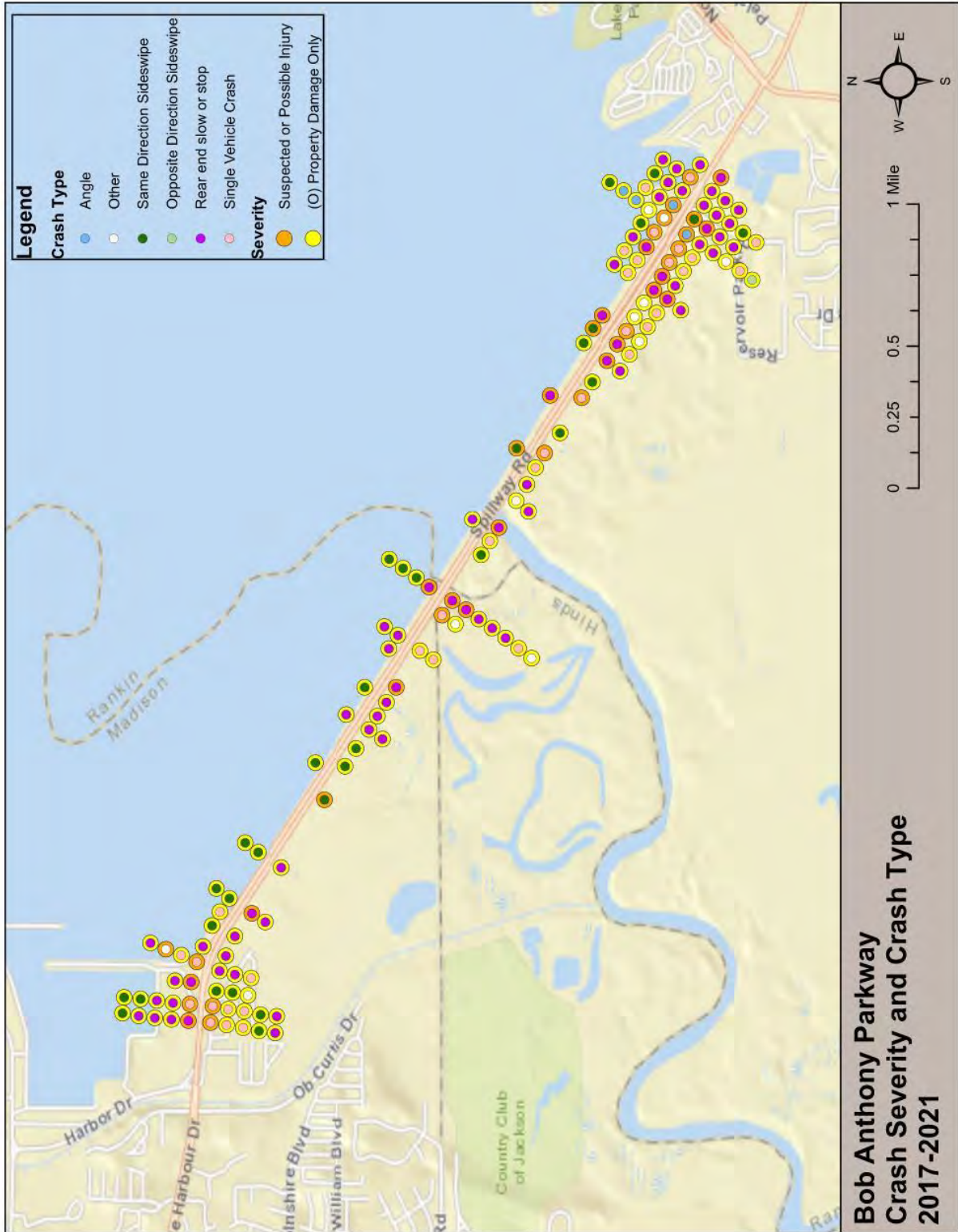
Hwy/Limits: West of Breakers Lane to East of Reservoir Park Road									
Year	Run Off Road (ROR)	Fixed Object (FO)	Head On	Side-swipe	Angle	Rear End	Backing	Other	Total
2017	6	0	0	8	0	14	0	1	29
2018	6	0	0	6	1	23	0	3	39
2019	5	0	0	5	1	19	0	3	33
2020	9	0	0	4	2	6	0	1	22
2021	9	2	0	7	2	7	0	1	28
Total	35	2	0	30	6	69	0	9	151
% of Total	23.18%	1.32%	0.00%	19.87%	3.97%	45.70%	0.00%	5.96%	100.00%

Figure 7 shows the crash severities and crash types for all crashes in the study area from 2017 – 2021.





Figure 7: Crash Severity and Crash Type 2017 - 2021





## 6.2 Crash Rates

The Bob Anthony Parkway corridor is a four-lane divided facility from west of Breakers Lane to east of Reservoir Park Road. Average crash rates were calculated for the five years of crash data to evaluate the safety performance of the study corridor as compared to statewide crash rates for similar facilities. **Table 17** displays the corridor crash rates for total crashes and KA crashes for the Bob Anthony Parkway corridor. Mississippi does not track crash rates for similar corridors; therefore, statewide crash rates from Arkansas were used for comparison. The corridor crash rates for total crashes shown in **Table 17** were below the statewide crash rates for Arkansas for similar corridors. There were no KA crashes in the study area during the study period.

**Table 17: Corridor Crash Rates**

Route	Segment	Weighted ADT	Total Crashes			KA Crashes		
			Number of Crashes	Crash Rate (per MVM) <sup>1</sup>	Statewide Average (per MVM) <sup>1,2</sup>	Number of Crashes	Crash Rate (per 100 MVM) <sup>1</sup>	Statewide Average (per 100 MVM) <sup>1,2</sup>
Bob Anthony Parkway	W of Breakers Ln. to E of Reservoir Park Rd.	31,250	151	0.84	2.09	0	0.00	4.73

<sup>1</sup>MVM - Million Vehicle Miles  
<sup>2</sup>Arkansas statewide average

## 7.0 Summary

The analyses showed that poor LOS conditions already exist for cross street turning movements within the study area. By 2045, the delays for turning movements become extremely high without improvements. Due to the congestion and stop and go traffic along Harbor Drive/Spillway Road, rear-end crashes are common within the study area. However, because the congestion along Harbor Drive/Spillway Road is caused by nearby intersections which are not included within the study area, this issue was not considered in the development of Build Alternatives. The following improvements are recommended:

At the intersection of Lake Harbour Drive/Spillway Road and Breakers Lane:

- Prohibit southbound left turning movement. (Instead, this movement will make a southbound right and u-turn at the adjacent signalized intersection.)
- Add a westbound lane between this intersection and the adjacent signalized intersection at Harbor Pines Drive to allow the southbound right turning movement to turn freely. (This lane addition was necessary to achieve adequate performance for the southbound right turn movement with 2045 volumes).

At the intersection of Spillway Road at Reservoir Park Road:

- Prohibit northbound left turn and make the northbound right turn a yield-controlled channelized right.
- Provide a westbound u/left turn bay. Provided an inside dedicated receiving lane for the westbound u-turning movement. This inside lane will continue to the downstream eastbound u-turn.

At the intersection of Spillway Road at Rankin Landing

- Provide an eastbound left turn lane.
- Provide a yield-controlled channelized westbound right turn.





- Prohibit southbound left turns. Provide a yield-controlled southbound channelized right turn with a downstream westbound u-turn bay. The inside eastbound receiving lane will be dedicated for the westbound u-turning movement. This inside lane will continue to the eastbound left turn at Rankin Landing.

These improvements will provide adequate performance for all movements within the study area with current volumes. However, as volumes grow, additional intersection improvements such as signalization will likely become necessary in the future to avoid unacceptable delays for the minor approach turning movements and major approach u/left turning movements. It is recommended to acquire right-of-way for six lanes along Lake Harbour Drive/Spillway Road so that capacity may be added along the corridor and through the intersections when it becomes needed.



**Bob Anthony Parkway**  
**Appendix A**  
**Operational Analysis Results**



HCM 6th TWSC  
4: Lake Harbour Dr & Breakers Ln

12/13/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑			↗
Traffic Vol, veh/h	3	994	1869	4	0	16
Future Vol, veh/h	3	994	1869	4	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	140	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	1069	2010	4	0	17

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	2014	0	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	4.1	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	-	-
Pot Cap-1 Maneuver	287	-	-	0	0
Stage 1	-	-	-	0	0
Stage 2	-	-	-	0	0
Platoon blocked, %		-	-	-	-
Mov Cap-1 Maneuver	287	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	287	-	-	-	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	17.7	-	-	-	0
HCM Lane LOS	C	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-



HCM 6th TWSC  
5: Reservoir Park Rd & Spillway Rd

12/13/2023

Intersection							
Int Delay, s/veh	0.1						
Movement	SET	SER	NWU	NWL	NWT	NEL	NER
Lane Configurations	↑↑			↔	↑↑		↗
Traffic Vol, veh/h	992	0	1	10	1872	0	13
Future Vol, veh/h	992	0	1	10	1872	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	-	None	-	Yield
Storage Length	-	-	-	350	-	-	0
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0
Mvmt Flow	1067	0	1	11	2013	0	14

Major/Minor	Major1	Major2	Minor1				
Conflicting Flow All	0	0	1067	1067	0	-	534
Stage 1	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.4	4.1	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.5	2.2	-	-	3.3
Pot Cap-1 Maneuver	-	-	306	661	-	0	496
Stage 1	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	595	595	-	-	496
Mov Cap-2 Maneuver	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.1	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	496	595	-	-	-
HCM Lane V/C Ratio	0.028	0.02	-	-	-
HCM Control Delay (s)	12.5	11.2	-	-	-
HCM Lane LOS	B	B	-	-	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-	-



Intersection						
Int Delay, s/veh	2.9					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	23	976	1717	13	5	165
Future Vol, veh/h	23	976	1717	13	5	165
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	25	1049	1846	14	5	177

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1860	0	-	0	2428 930
Stage 1	-	-	-	-	1853 -
Stage 2	-	-	-	-	575 -
Critical Hdwy	4.1	-	-	-	6.8 6.9
Critical Hdwy Stg 1	-	-	-	-	5.8 -
Critical Hdwy Stg 2	-	-	-	-	5.8 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	329	-	-	-	27 273
Stage 1	-	-	-	-	112 -
Stage 2	-	-	-	-	532 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	329	-	-	-	25 273
Mov Cap-2 Maneuver	-	-	-	-	85 -
Stage 1	-	-	-	-	103 -
Stage 2	-	-	-	-	532 -

Approach	SE	NW	SW
HCM Control Delay, s	0.4	0	47.8
HCM LOS			E

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	329	- 256
HCM Lane V/C Ratio	-	-	0.075	- 0.714
HCM Control Delay (s)	-	-	16.8	- 47.8
HCM Lane LOS	-	-	C	- E
HCM 95th %tile Q(veh)	-	-	0.2	- 4.9



Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↗			↗
Traffic Vol, veh/h	0	0	42	0	0	606
Future Vol, veh/h	0	0	42	0	0	606
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	45	0	0	652

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	697	-	0	-	-	-
Stage 1	45	-	-	-	-	-
Stage 2	652	-	-	-	-	-
Critical Hdwy	6.4	-	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	-	-	-	-	-
Pot Cap-1 Maneuver	410	0	-	0	0	-
Stage 1	983	0	-	0	0	-
Stage 2	522	0	-	0	0	-
Platoon blocked, %		-				
Mov Cap-1 Maneuver	410	-	-	-	-	-
Mov Cap-2 Maneuver	410	-	-	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	522	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	-	-
HCM Lane V/C Ratio	-	-
HCM Control Delay (s)	-	0
HCM Lane LOS	-	A
HCM 95th %tile Q(veh)	-	-



Intersection						
Int Delay, s/veh	0					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations	↘	↑↑	↑↑			↗
Traffic Vol, veh/h	1	992	1872	0	0	1
Future Vol, veh/h	1	992	1872	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	1067	2013	0	0	1

Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	2013	0	-	0	-	1007
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	-	-	3.3
Pot Cap-1 Maneuver	287	-	-	-	0	242
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	287	-	-	-	-	242
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	SE	NW	SW
HCM Control Delay, s	0	0	19.9
HCM LOS			C

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1	
Capacity (veh/h)	-	-	287	-	242
HCM Lane V/C Ratio	-	-	0.004	-	0.004
HCM Control Delay (s)	-	-	17.6	-	19.9
HCM Lane LOS	-	-	C	-	C
HCM 95th %tile Q(veh)	-	-	0	-	0



HCM 6th TWSC  
4: Lake Harbour Dr & Breakers Ln

12/13/2023

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑			↗
Traffic Vol, veh/h	14	1859	1257	11	0	19
Future Vol, veh/h	14	1859	1257	11	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	140	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	15	1957	1323	12	0	20

Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	1335	0	-	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	-	-	-
Pot Cap-1 Maneuver	523	-	-	-	0	0
Stage 1	-	-	-	-	0	0
Stage 2	-	-	-	-	0	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	523	-	-	-	-	-
Mov Cap-2 Maneuver		-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	523	-	-	-	-
HCM Lane V/C Ratio	0.028	-	-	-	-
HCM Control Delay (s)	12.1	-	-	-	0
HCM Lane LOS	B	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	-



HCM 6th TWSC  
5: Reservoir Park Rd & Spillway Rd

12/13/2023

Intersection							
Int Delay, s/veh	0.4						
Movement	SET	SER	NWU	NWL	NWT	NEL	NER
Lane Configurations	↑↑			↓	↑↑		↑
Traffic Vol, veh/h	1969	2	14	7	1242	0	8
Future Vol, veh/h	1969	2	14	7	1242	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	-	None	-	Yield
Storage Length	-	-	-	350	-	-	0
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0
Mvmt Flow	2073	2	15	7	1307	0	8

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1038
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.4	6.9
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	2.5	3.3
Pot Cap-1 Maneuver	-	68	231
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	88	231
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SE	NW	NE
HCM Control Delay, s	0	1	21.2
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	231	88	-	-	-
HCM Lane V/C Ratio	0.036	0.251	-	-	-
HCM Control Delay (s)	21.2	58.9	-	-	-
HCM Lane LOS	C	F	-	-	-
HCM 95th %tile Q(veh)	0.1	0.9	-	-	-



Intersection						
Int Delay, s/veh	0.5					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	32	1953	1183	20	3	80
Future Vol, veh/h	32	1953	1183	20	3	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	34	2056	1245	21	3	84

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1266	0	-	0	2352 633
Stage 1	-	-	-	-	1256 -
Stage 2	-	-	-	-	1096 -
Critical Hdwy	4.1	-	-	-	6.8 6.9
Critical Hdwy Stg 1	-	-	-	-	5.8 -
Critical Hdwy Stg 2	-	-	-	-	5.8 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	556	-	-	-	31 427
Stage 1	-	-	-	-	235 -
Stage 2	-	-	-	-	286 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	556	-	-	-	29 427
Mov Cap-2 Maneuver	-	-	-	-	127 -
Stage 1	-	-	-	-	221 -
Stage 2	-	-	-	-	286 -

Approach	SE	NW	SW
HCM Control Delay, s	0.2	0	16.8
HCM LOS			C

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	556	- 393
HCM Lane V/C Ratio	-	-	0.061	- 0.222
HCM Control Delay (s)	-	-	11.9	- 16.8
HCM Lane LOS	-	-	B	- C
HCM 95th %tile Q(veh)	-	-	0.2	- 0.8



Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↑			↑
Traffic Vol, veh/h	0	0	117	0	0	641
Future Vol, veh/h	0	0	117	0	0	641
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	123	0	0	675

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	798	-	0
Stage 1	123	-	-
Stage 2	675	-	-
Critical Hdwy	6.4	-	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	-	-
Pot Cap-1 Maneuver	358	0	0
Stage 1	907	0	0
Stage 2	510	0	0
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	358	-	-
Mov Cap-2 Maneuver	358	-	-
Stage 1	907	-	-
Stage 2	510	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	-	-
HCM Lane V/C Ratio	-	-
HCM Control Delay (s)	-	0
HCM Lane LOS	-	A
HCM 95th %tile Q(veh)	-	-



Intersection						
Int Delay, s/veh	0.2					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	0	1971	1242	0	0	46
Future Vol, veh/h	0	1971	1242	0	0	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	2075	1307	0	0	48

Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	1307	0	-	0	-	654
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	-	-	3.3
Pot Cap-1 Maneuver	536	-	-	-	0	414
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	536	-	-	-	-	414
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	SE	NW	SW
HCM Control Delay, s	0	0	14.8
HCM LOS			B

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1	
Capacity (veh/h)	-	-	536	-	414
HCM Lane V/C Ratio	-	-	-	-	0.117
HCM Control Delay (s)	-	-	0	-	14.8
HCM Lane LOS	-	-	A	-	B
HCM 95th %tile Q(veh)	-	-	0	-	0.4



3: Harbor Pines Dr/Harbor Dr & Lake Harbour Dr Performance by movement

Movement	EBL	EBT	EBR	WBU	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.5	0.1	1.7	0.0	0.0	0.0	3.9	0.4	3.8	0.0	0.0	0.0
Total Delay (hr)	0.1	1.7	0.0	0.0	0.0	4.4	0.9	0.3	0.0	7.3	0.3	0.4
Total Del/Veh (s)	21.2	11.9	3.0	13.6	14.7	14.9	44.9	47.0	7.4	53.8	61.6	17.2
Stop Delay (hr)	0.1	1.1	0.0	0.0	0.0	2.9	0.9	0.3	0.0	6.9	0.3	0.3
Stop Del/Veh (s)	18.0	7.7	1.4	11.8	12.8	9.7	42.3	43.5	7.1	51.2	57.5	15.4
Total Stops	15	193	13	1	9	455	65	21	17	367	15	31
Stop/Veh	0.75	0.38	0.39	1.00	0.82	0.43	0.88	0.91	0.89	0.76	0.83	0.38
Vehicles Entered	19	505	32	1	11	1065	74	22	19	479	18	82
Vehicles Exited	20	503	32	1	11	1059	74	23	19	476	18	82
Hourly Exit Rate	20	503	32	1	11	1059	74	23	19	476	18	82
Input Volume	20	474	30	2	9	1112	69	22	19	502	18	87
% of Volume	101	106	108	50	119	95	108	106	99	95	99	94
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

3: Harbor Pines Dr/Harbor Dr & Lake Harbour Dr Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.2
Total Delay (hr)	15.5
Total Del/Veh (s)	23.9
Stop Delay (hr)	12.9
Stop Del/Veh (s)	19.8
Total Stops	1202
Stop/Veh	0.51
Vehicles Entered	2327
Vehicles Exited	2318
Hourly Exit Rate	2318
Input Volume	2364
% of Volume	98
Denied Entry Before	0
Denied Entry After	0



4: Lake Harbour Dr & Breakers Ln Performance by movement

Movement	EBL	EBT	WBT	WBR	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay (hr)	0.0	0.3	4.0	0.0	0.0	4.3
Total Del/Veh (s)	3.8	1.0	7.7	8.9	2.0	5.4
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	3.2	0.0	0.0	0.0	0.0	0.0
Total Stops	1	0	1	0	0	2
Stop/Veh	1.00	0.00	0.00	0.00	0.00	0.00
Vehicles Entered	1	997	1838	4	13	2853
Vehicles Exited	1	997	1810	4	13	2825
Hourly Exit Rate	1	997	1810	4	13	2825
Input Volume	3	994	1869	4	16	2886
% of Volume	33	100	97	100	80	98
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0

5: Reservoir Park Rd & Spillway Rd Performance by movement

Movement	SET	NWU	NWL	NWT	NER	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0		0.0	0.0	0.1	0.0
Total Delay (hr)	0.2	0.0	0.0	0.5	0.0	0.7
Total Del/Veh (s)	0.6		8.2	1.0	1.0	0.9
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.0		6.9	0.0	0.0	0.0
Total Stops	0	0	7	0	0	7
Stop/Veh	0.00		0.64	0.00	0.00	0.00
Vehicles Entered	969	0	11	1886	16	2882
Vehicles Exited	968	0	11	1887	16	2882
Hourly Exit Rate	968	0	11	1887	16	2882
Input Volume	992	1	10	1872	13	2888
% of Volume	98	0	107	101	121	100
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0



6: Spillway Rd & Lakeshore Dr Performance by movement

Movement	SEL	SET	NWT	NWR	SWL	SWR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.2	0.0
Total Delay (hr)	0.1	0.6	1.8	0.0	0.2	2.4	5.0
Total Del/Veh (s)	18.3	2.2	3.6	3.3	146.1	54.2	6.2
Stop Delay (hr)	0.1	0.0	0.1	0.0	0.2	2.4	2.7
Stop Del/Veh (s)	16.3	0.0	0.1	0.1	145.0	53.9	3.3
Total Stops	19	0	1	0	4	155	179
Stop/Veh	0.79	0.00	0.00	0.00	1.00	0.98	0.06
Vehicles Entered	24	954	1759	10	4	154	2905
Vehicles Exited	24	949	1759	10	4	157	2903
Hourly Exit Rate	24	949	1759	10	4	157	2903
Input Volume	23	982	1742	13	5	165	2929
% of Volume	105	97	101	75	80	95	99
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0



7: Old Fannin Rd/N Shore Pkwy & Spillway Rd Performance by movement

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	2.5	0.2	0.5	0.0	0.0	0.0	2.9	0.2	0.3
Total Delay (hr)	0.3	3.5	2.5	1.0	8.9	0.2	17.0	1.0	0.1	1.3	5.3	2.0
Total Del/Veh (s)	32.5	33.5	16.3	32.3	34.8	27.1	102.2	34.1	12.6	57.5	41.9	23.5
Stop Delay (hr)	0.3	2.9	1.9	0.8	6.5	0.1	15.7	0.9	0.1	1.2	4.5	1.8
Stop Del/Veh (s)	29.2	27.9	12.7	26.4	25.6	22.0	94.3	31.5	12.5	53.7	35.5	21.1
Total Stops	33	249	376	89	610	11	604	62	16	70	341	228
Stop/Veh	0.97	0.66	0.69	0.84	0.67	0.55	1.01	0.59	0.67	0.88	0.75	0.76
Vehicles Entered	34	380	546	106	911	20	580	102	23	79	443	297
Vehicles Exited	34	372	541	105	894	19	575	103	24	78	449	300
Hourly Exit Rate	34	372	541	105	894	19	575	103	24	78	449	300
Input Volume	37	395	564	95	873	18	587	104	25	85	444	295
% of Volume	92	94	96	110	102	104	98	99	97	92	101	102
Denied Entry Before	0	0	0	1	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

7: Old Fannin Rd/N Shore Pkwy & Spillway Rd Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.3
Total Delay (hr)	42.8
Total Del/Veh (s)	43.3
Stop Delay (hr)	36.7
Stop Del/Veh (s)	37.1
Total Stops	2689
Stop/Veh	0.76
Vehicles Entered	3521
Vehicles Exited	3494
Hourly Exit Rate	3494
Input Volume	3522
% of Volume	99
Denied Entry Before	1
Denied Entry After	0



10: Spillway Rd Performance by movement

Movement	SET	NWU	NWT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0		0.0	0.0
Total Delay (hr)	5.3	0.0	0.5	5.7
Total Del/Veh (s)	18.3		0.9	7.0
Stop Delay (hr)	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.0		0.0	0.0
Total Stops	0	0	1	1
Stop/Veh	0.00		0.00	0.00
Vehicles Entered	990	0	1886	2876
Vehicles Exited	975	0	1881	2856
Hourly Exit Rate	975	0	1881	2856
Input Volume	994	1	1872	2867
% of Volume	98	0	100	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

19: Lake Harbour Dr & Access to Harbor Dr Performance by movement

Movement	EBT	WBT	WBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Delay (hr)	0.4	0.6	1.2	2.2
Total Del/Veh (s)	1.6	1.9	5.6	2.8
Stop Delay (hr)	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	0.1	0.0	0.1	0.1
Total Stops	2	10	70	82
Stop/Veh	0.00	0.01	0.09	0.03
Vehicles Entered	999	1086	738	2823
Vehicles Exited	998	1078	734	2810
Hourly Exit Rate	998	1078	734	2810
Input Volume	997	1124	761	2882
% of Volume	100	96	96	97
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0



20: Access from Lake Harbour Dr WB to Harbor Dr SB/Access to Harbor Dr & Access from Lake Harbour

Movement	WBR	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.4	0.4
Total Del/Veh (s)	1.8	1.8
Stop Delay (hr)	0.0	0.0
Stop Del/Veh (s)	0.0	0.0
Total Stops	2	2
Stop/Veh	0.00	0.00
Vehicles Entered	734	734
Vehicles Exited	732	732
Hourly Exit Rate	732	732
Input Volume	761	761
% of Volume	96	96
Denied Entry Before	0	0
Denied Entry After	0	0

21: Harbor Dr/Harbor Drive & Access from Lake Harbour Dr WB to Harbour Drive NB Performance by mo

Movement	NBT	SBT	NWR	All
Denied Delay (hr)	0.0	2.6	0.0	2.6
Denied Del/Veh (s)	0.0	15.9	0.0	6.9
Total Delay (hr)	0.0	4.8	0.5	5.3
Total Del/Veh (s)	2.1	29.4	2.4	14.0
Stop Delay (hr)	0.0	3.8	0.1	3.9
Stop Del/Veh (s)	0.0	23.5	0.5	10.4
Total Stops	0	188	74	262
Stop/Veh	0.00	0.32	0.10	0.19
Vehicles Entered	43	585	732	1360
Vehicles Exited	42	582	730	1354
Hourly Exit Rate	42	582	730	1354
Input Volume	42	606	761	1409
% of Volume	100	96	96	96
Denied Entry Before	0	0	0	0
Denied Entry After	0	3	0	3



22: Harbor Dr & Access from Lake Harbour Dr WB to Harbor Dr SB Performance by movement

Movement	NBT	SBT	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	0.0	4.2	4.2
Total Del/Veh (s)	1.9	25.9	24.2
Stop Delay (hr)	0.0	3.3	3.3
Stop Del/Veh (s)	0.5	20.6	19.2
Total Stops	0	241	241
Stop/Veh	0.00	0.41	0.38
Vehicles Entered	43	582	625
Vehicles Exited	43	578	621
Hourly Exit Rate	43	578	621
Input Volume	42	606	648
% of Volume	102	95	96
Denied Entry Before	0	0	0
Denied Entry After	0	0	0

23: Spillway Rd Performance by movement

Movement	SEL	SET	NWT	SWR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)		0.0	0.0	0.1	0.0
Total Delay (hr)	0.0	0.3	0.2	0.0	0.5
Total Del/Veh (s)		0.9	0.5	2.2	0.6
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)		0.0	0.0	0.0	0.0
Total Stops	0	0	0	0	0
Stop/Veh		0.00	0.00	0.00	0.00
Vehicles Entered	0	973	1887	1	2861
Vehicles Exited	0	969	1886	1	2856
Hourly Exit Rate	0	969	1886	1	2856
Input Volume	1	992	1872	1	2866
% of Volume	0	98	101	100	100
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0



24: Spillway Rd Performance by movement

Movement	SEU	SET	NWT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)		0.0	0.0	0.0
Total Delay (hr)	0.0	0.4	0.9	1.3
Total Del/Veh (s)		1.4	1.8	1.7
Stop Delay (hr)	0.0	0.0	0.0	0.1
Stop Del/Veh (s)		0.1	0.1	0.1
Total Stops	0	12	1	13
Stop/Veh		0.01	0.00	0.00
Vehicles Entered	0	984	1886	2870
Vehicles Exited	0	979	1897	2876
Hourly Exit Rate	0	979	1897	2876
Input Volume	1	1005	1882	2888
% of Volume	0	97	101	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

Total Network Performance

Denied Delay (hr)	8.3
Denied Del/Veh (s)	7.4
Total Delay (hr)	112.2
Total Del/Veh (s)	94.7
Stop Delay (hr)	65.8
Stop Del/Veh (s)	55.6
Total Stops	4998
Stop/Veh	1.17
Vehicles Entered	4026
Vehicles Exited	3833
Hourly Exit Rate	3833
Input Volume	37546
% of Volume	10
Denied Entry Before	1
Denied Entry After	5



Intersection: 3: Harbor Pines Dr/Harbor Dr & Lake Harbour Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	UL	T	T	L	T	R	L	LTR
Maximum Queue (ft)	51	133	136	39	31	274	278	114	125	20	184	185
Average Queue (ft)	14	71	76	11	7	144	152	49	28	8	169	141
95th Queue (ft)	41	114	124	34	26	249	257	94	94	23	209	192
Link Distance (ft)		2837	2837			272	272		454		119	119
Upstream Blk Time (%)						0	0				49	34
Queuing Penalty (veh)						1	2				149	104
Storage Bay Dist (ft)	330			140	200			50		50		
Storage Blk Time (%)			0			2		22	3			
Queuing Penalty (veh)			0			0		9	3			

Intersection: 4: Lake Harbour Dr & Breakers Ln

Movement	EB
Directions Served	L
Maximum Queue (ft)	18
Average Queue (ft)	0
95th Queue (ft)	5
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	140
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Reservoir Park Rd & Spillway Rd

Movement	NW
Directions Served	UL
Maximum Queue (ft)	37
Average Queue (ft)	6
95th Queue (ft)	26
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	350
Storage Blk Time (%)	
Queuing Penalty (veh)	



Intersection: 6: Spillway Rd & Lakeshore Dr

Movement	SE	SW
Directions Served	L	LR
Maximum Queue (ft)	59	277
Average Queue (ft)	17	109
95th Queue (ft)	45	235
Link Distance (ft)		637
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	100	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Old Fannin Rd/N Shore Pkwy & Spillway Rd

Movement	SE	SE	SE	SE	NW	NW	NW	NE	NE	NE	NE	B25
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	T
Maximum Queue (ft)	115	215	253	351	252	453	402	200	377	103	94	317
Average Queue (ft)	28	100	104	153	65	271	238	197	363	43	26	221
95th Queue (ft)	74	173	183	287	149	377	354	209	427	81	69	429
Link Distance (ft)		464	464			815	815		306	306	306	302
Upstream Blk Time (%)									52			36
Queuing Penalty (veh)									0			0
Storage Bay Dist (ft)	100			265	220			100				
Storage Blk Time (%)	0	9		2		16		67	74			
Queuing Penalty (veh)	0	3		4		15		195	217			

Intersection: 7: Old Fannin Rd/N Shore Pkwy & Spillway Rd

Movement	B25	SW	SW	SW	SW
Directions Served	T	L	T	T	R
Maximum Queue (ft)	317	124	256	242	234
Average Queue (ft)	115	58	163	128	113
95th Queue (ft)	361	110	235	214	198
Link Distance (ft)	302		766	766	766
Upstream Blk Time (%)	11				
Queuing Penalty (veh)	0				
Storage Bay Dist (ft)		230			
Storage Blk Time (%)				1	
Queuing Penalty (veh)				1	



Intersection: 10: Spillway Rd

Movement

Directions Served  
 Maximum Queue (ft)  
 Average Queue (ft)  
 95th Queue (ft)  
 Link Distance (ft)  
 Upstream Blk Time (%)  
 Queuing Penalty (veh)  
 Storage Bay Dist (ft)  
 Storage Blk Time (%)  
 Queuing Penalty (veh)

Intersection: 19: Lake Harbour Dr & Access to Harbor Dr

Movement	WB	WB	WB
Directions Served	T	T	R
Maximum Queue (ft)	26	50	80
Average Queue (ft)	1	3	24
95th Queue (ft)	10	23	65
Link Distance (ft)	888	888	888
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Access from Lake Harbour Dr WB to Harbor Dr SB/Access to Harbor Dr & Access from L

Movement	WB
Directions Served	R
Maximum Queue (ft)	28
Average Queue (ft)	1
95th Queue (ft)	13
Link Distance (ft)	217
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	



Intersection: 21: Harbor Dr/Harbor Drive & Access from Lake Harbour Dr WB to Harbour Drive NB

Movement	SB	NW
Directions Served	T	R
Maximum Queue (ft)	306	143
Average Queue (ft)	161	47
95th Queue (ft)	439	117
Link Distance (ft)	368	182
Upstream Blk Time (%)	17	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 22: Harbor Dr & Access from Lake Harbour Dr WB to Harbor Dr SB

Movement	SB
Directions Served	T
Maximum Queue (ft)	208
Average Queue (ft)	158
95th Queue (ft)	273
Link Distance (ft)	118
Upstream Blk Time (%)	39
Queuing Penalty (veh)	237
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 23: Spillway Rd

Movement	SE
Directions Served	L
Maximum Queue (ft)	10
Average Queue (ft)	0
95th Queue (ft)	6
Link Distance (ft)	493
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	



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Intersection: 24: Spillway Rd

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Movement	SE
Directions Served	U
Maximum Queue (ft)	10
Average Queue (ft)	1
95th Queue (ft)	6
Link Distance (ft)	642
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

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Network Summary

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Network wide Queuing Penalty: 940



3: Harbor Pines Dr/Harbor Dr & Lake Harbour Dr Performance by movement

Movement	EBL	EBT	EBR	WBU	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.3	0.3	1.3	0.0	0.0	0.0	4.1	0.3	4.0	0.0	0.0	0.0
Total Delay (hr)	0.5	6.2	0.1	0.0	0.1	2.2	0.7	0.2	0.1	8.9	0.2	0.2
Total Del/Veh (s)	17.8	17.5	7.3	19.2	18.6	14.0	48.1	47.1	16.8	60.4	57.8	24.1
Stop Delay (hr)	0.4	3.2	0.0	0.0	0.1	1.6	0.7	0.1	0.1	8.5	0.1	0.2
Stop Del/Veh (s)	12.1	8.9	1.8	19.0	17.1	10.1	46.0	43.5	16.8	57.6	53.6	22.2
Total Stops	75	523	24	5	16	243	45	11	12	405	7	13
Stop/Veh	0.71	0.41	0.39	1.00	0.94	0.42	0.88	0.92	0.86	0.76	0.70	0.39
Vehicles Entered	104	1252	60	5	17	572	49	12	14	529	10	33
Vehicles Exited	103	1254	60	5	17	570	50	12	14	522	10	33
Hourly Exit Rate	103	1254	60	5	17	570	50	12	14	522	10	33
Input Volume	104	1259	59	7	18	643	52	13	13	594	11	36
% of Volume	99	100	102	71	93	89	96	91	106	88	89	92
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

3: Harbor Pines Dr/Harbor Dr & Lake Harbour Dr Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.3
Total Delay (hr)	19.4
Total Del/Veh (s)	26.0
Stop Delay (hr)	15.0
Stop Del/Veh (s)	20.1
Total Stops	1379
Stop/Veh	0.51
Vehicles Entered	2657
Vehicles Exited	2650
Hourly Exit Rate	2650
Input Volume	2810
% of Volume	94
Denied Entry Before	0
Denied Entry After	0



4: Lake Harbour Dr & Breakers Ln Performance by movement

Movement	EBL	EBT	WBT	WBR	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay (hr)	0.0	0.9	1.6	0.0	0.0	2.6
Total Del/Veh (s)	10.0	1.9	5.1	4.8	2.0	3.2
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	7.5	0.0	0.0	0.0	0.0	0.0
Total Stops	10	0	0	0	0	10
Stop/Veh	0.67	0.00	0.00	0.00	0.00	0.00
Vehicles Entered	15	1779	1117	9	20	2940
Vehicles Exited	15	1773	1103	9	20	2920
Hourly Exit Rate	15	1773	1103	9	20	2920
Input Volume	14	1860	1257	11	19	3162
% of Volume	105	95	88	80	104	92
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0

5: Reservoir Park Rd & Spillway Rd Performance by movement

Movement	SET	SER	NWU	NWL	NWT	NER	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay (hr)	0.5	0.0	0.1	0.0	0.2	0.0	0.8
Total Del/Veh (s)	0.9	1.3	30.2	33.9	0.8	1.0	1.0
Stop Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	0.0	0.0	30.2	32.5	0.0	0.0	0.2
Total Stops	0	0	10	3	0	0	13
Stop/Veh	0.00	0.00	0.83	0.75	0.00	0.00	0.00
Vehicles Entered	1827	2	12	4	1132	10	2987
Vehicles Exited	1823	2	12	4	1130	10	2981
Hourly Exit Rate	1823	2	12	4	1130	10	2981
Input Volume	1969	2	14	7	1242	8	3242
% of Volume	93	100	84	57	91	125	92
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0



6: Spillway Rd & Lakeshore Dr Performance by movement

Movement	SEL	SET	NWT	NWR	SWL	SWR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.2	0.2	0.0
Total Delay (hr)	0.2	7.1	0.8	0.0	0.1	0.8	9.0
Total Del/Veh (s)	19.3	14.1	2.9	2.8	131.5	34.7	10.8
Stop Delay (hr)	0.1	3.4	0.0	0.0	0.1	0.8	4.5
Stop Del/Veh (s)	14.2	6.8	0.1	0.2	129.3	34.3	5.3
Total Stops	21	341	1	0	4	80	447
Stop/Veh	0.70	0.19	0.00	0.00	1.00	1.00	0.15
Vehicles Entered	30	1808	1063	19	4	80	3004
Vehicles Exited	30	1793	1063	19	4	80	2989
Hourly Exit Rate	30	1793	1063	19	4	80	2989
Input Volume	32	1959	1183	20	3	80	3277
% of Volume	94	92	90	94	133	100	91
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0



7: Old Fannin Rd/N Shore Pkwy & Spillway Rd Performance by movement

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	3.2	0.2	0.2	0.0	0.0	0.0	3.4	0.1	0.2
Total Delay (hr)	8.8	10.0	4.0	1.1	4.7	0.5	18.8	4.4	0.4	1.7	2.3	0.2
Total Del/Veh (s)	103.3	44.6	21.1	37.6	39.9	23.8	115.0	40.3	28.3	60.1	39.2	8.9
Stop Delay (hr)	8.2	7.7	2.7	1.0	3.8	0.4	17.5	4.0	0.3	1.6	2.1	0.2
Stop Del/Veh (s)	95.7	34.1	14.6	33.0	32.4	20.0	106.5	36.5	26.8	56.4	34.4	8.5
Total Stops	419	711	542	96	302	52	561	229	27	95	149	73
Stop/Veh	1.36	0.88	0.80	0.92	0.71	0.75	0.95	0.58	0.57	0.92	0.69	0.74
Vehicles Entered	308	808	675	104	423	69	571	388	47	102	213	98
Vehicles Exited	297	792	669	104	418	69	567	386	47	101	213	98
Hourly Exit Rate	297	792	669	104	418	69	567	386	47	101	213	98
Input Volume	327	880	749	111	413	65	690	478	49	107	210	100
% of Volume	91	90	89	94	101	106	82	81	96	94	102	98
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

7: Old Fannin Rd/N Shore Pkwy & Spillway Rd Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.2
Total Delay (hr)	57.0
Total Del/Veh (s)	53.5
Stop Delay (hr)	49.4
Stop Del/Veh (s)	46.4
Total Stops	3256
Stop/Veh	0.85
Vehicles Entered	3806
Vehicles Exited	3761
Hourly Exit Rate	3761
Input Volume	4179
% of Volume	90
Denied Entry Before	0
Denied Entry After	0



10: Spillway Rd Performance by movement

Movement	SET	NWU	NWT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Delay (hr)	13.6	0.1	0.3	14.0
Total Del/Veh (s)	25.2	21.4	0.9	16.2
Stop Delay (hr)	0.0	0.1	0.0	0.1
Stop Del/Veh (s)	0.0	16.2	0.1	0.1
Total Stops	2	16	19	37
Stop/Veh	0.00	0.84	0.02	0.01
Vehicles Entered	1871	19	1150	3040
Vehicles Exited	1817	19	1148	2984
Hourly Exit Rate	1817	19	1148	2984
Input Volume	1951	20	1268	3240
% of Volume	93	94	91	92
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

19: Lake Harbour Dr & Access to Harbor Dr Performance by movement

Movement	EBT	WBT	WBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Delay (hr)	1.3	0.2	0.6	2.1
Total Del/Veh (s)	2.6	1.3	4.0	2.6
Stop Delay (hr)	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.1	0.0	0.0	0.0
Total Stops	1	4	19	24
Stop/Veh	0.00	0.01	0.04	0.01
Vehicles Entered	1795	596	527	2918
Vehicles Exited	1794	593	521	2908
Hourly Exit Rate	1794	593	521	2908
Input Volume	1874	668	609	3150
% of Volume	96	89	86	92
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0



20: Access from Lake Harbour Dr WB to Harbor Dr SB/Access to Harbor Dr & Access from Lake Harbour

Movement	WBR	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.2	0.2
Total Del/Veh (s)	1.4	1.4
Stop Delay (hr)	0.0	0.0
Stop Del/Veh (s)	0.0	0.0
Total Stops	4	4
Stop/Veh	0.01	0.01
Vehicles Entered	521	521
Vehicles Exited	518	518
Hourly Exit Rate	518	518
Input Volume	609	609
% of Volume	85	85
Denied Entry Before	0	0
Denied Entry After	0	0

21: Harbor Dr/Harbor Drive & Access from Lake Harbour Dr WB to Harbour Drive NB Performance by mo

Movement	NBT	SBT	NWR	All
Denied Delay (hr)	0.0	20.8	0.0	20.8
Denied Del/Veh (s)	0.0	118.1	0.0	59.1
Total Delay (hr)	0.1	11.7	0.4	12.2
Total Del/Veh (s)	1.6	71.0	3.0	35.7
Stop Delay (hr)	0.0	10.2	0.2	10.4
Stop Del/Veh (s)	0.0	62.0	1.4	30.6
Total Stops	0	279	114	393
Stop/Veh	0.00	0.47	0.22	0.32
Vehicles Entered	115	589	518	1222
Vehicles Exited	115	577	515	1207
Hourly Exit Rate	115	577	515	1207
Input Volume	117	641	609	1367
% of Volume	98	90	85	88
Denied Entry Before	0	0	0	0
Denied Entry After	0	46	0	46



22: Harbor Dr & Access from Lake Harbour Dr WB to Harbor Dr SB Performance by movement

Movement	NBT	SBT	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	0.0	6.7	6.7
Total Del/Veh (s)	0.9	41.4	34.7
Stop Delay (hr)	0.0	5.6	5.7
Stop Del/Veh (s)	0.3	35.0	29.3
Total Stops	0	256	256
Stop/Veh	0.00	0.44	0.37
Vehicles Entered	115	577	692
Vehicles Exited	115	572	687
Hourly Exit Rate	115	572	687
Input Volume	117	641	758
% of Volume	98	89	91
Denied Entry Before	0	0	0
Denied Entry After	0	0	0

23: Spillway Rd Performance by movement

Movement	SET	NWT	SWR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Delay (hr)	0.7	0.1	0.0	0.9
Total Del/Veh (s)	1.4	0.4	3.4	1.1
Stop Delay (hr)	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.0	0.0	0.0	0.0
Total Stops	0	0	0	0
Stop/Veh	0.00	0.00	0.00	0.00
Vehicles Entered	1836	1130	40	3006
Vehicles Exited	1830	1129	40	2999
Hourly Exit Rate	1830	1129	40	2999
Input Volume	1972	1242	46	3259
% of Volume	93	91	87	92
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0



24: Spillway Rd Performance by movement

Movement	SET	NWT	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	0.9	0.4	1.3
Total Del/Veh (s)	1.8	1.3	1.6
Stop Delay (hr)	0.0	0.0	0.0
Stop Del/Veh (s)	0.1	0.0	0.1
Total Stops	10	0	10
Stop/Veh	0.01	0.00	0.00
Vehicles Entered	1845	1143	2988
Vehicles Exited	1838	1148	2986
Hourly Exit Rate	1838	1148	2986
Input Volume	1991	1263	3254
% of Volume	92	91	92
Denied Entry Before	0	0	0
Denied Entry After	0	0	0

Total Network Performance

Denied Delay (hr)	131.8
Denied Del/Veh (s)	102.7
Total Delay (hr)	148.4
Total Del/Veh (s)	115.6
Stop Delay (hr)	95.6
Stop Del/Veh (s)	74.5
Total Stops	6295
Stop/Veh	1.36
Vehicles Entered	4354
Vehicles Exited	4100
Hourly Exit Rate	4100
Input Volume	42310
% of Volume	10
Denied Entry Before	0
Denied Entry After	265



Intersection: 3: Harbor Pines Dr/Harbor Dr & Lake Harbour Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	UL	T	T	L	T	R	L	LTR
Maximum Queue (ft)	96	351	358	198	41	196	195	84	62	28	184	185
Average Queue (ft)	44	174	187	28	14	76	90	35	15	7	169	157
95th Queue (ft)	80	283	293	112	34	153	170	70	48	23	210	205
Link Distance (ft)		2837	2837			272	272		454		119	119
Upstream Blk Time (%)							0				50	56
Queuing Penalty (veh)							0				159	179
Storage Bay Dist (ft)	330			140	200			50		50		
Storage Blk Time (%)		0	14			0		16	1	0		
Queuing Penalty (veh)		0	9			0		4	1	0		

Intersection: 4: Lake Harbour Dr & Breakers Ln

Movement	EB
Directions Served	L
Maximum Queue (ft)	47
Average Queue (ft)	9
95th Queue (ft)	34
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	140
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Reservoir Park Rd & Spillway Rd

Movement	NW
Directions Served	UL
Maximum Queue (ft)	52
Average Queue (ft)	12
95th Queue (ft)	39
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	350
Storage Blk Time (%)	
Queuing Penalty (veh)	



Intersection: 6: Spillway Rd & Lakeshore Dr

Movement	SE	SE	SE	NW	SW
Directions Served	L	T	T	TR	LR
Maximum Queue (ft)	78	263	303	4	202
Average Queue (ft)	26	96	99	0	53
95th Queue (ft)	109	426	436	3	145
Link Distance (ft)		1086	1086	464	637
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100				
Storage Blk Time (%)		15			
Queuing Penalty (veh)		5			

Intersection: 7: Old Fannin Rd/N Shore Pkwy & Spillway Rd

Movement	SE	SE	SE	SE	NW	NW	NW	NE	NE	NE	NE	B25
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	T
Maximum Queue (ft)	200	476	499	365	141	255	241	200	377	236	250	317
Average Queue (ft)	185	344	315	223	64	158	139	198	376	112	115	305
95th Queue (ft)	251	544	524	403	116	230	226	207	391	196	204	387
Link Distance (ft)		464	464			815	815		306	306	306	302
Upstream Blk Time (%)		9	2						68		0	68
Queuing Penalty (veh)		92	20						0		0	0
Storage Bay Dist (ft)	100			265	220			100				
Storage Blk Time (%)	65	32	11	5		1		72	78			
Queuing Penalty (veh)	281	106	80	21		1		249	268			

Intersection: 7: Old Fannin Rd/N Shore Pkwy & Spillway Rd

Movement	B25	SW	SW	SW	SW
Directions Served	T	L	T	T	R
Maximum Queue (ft)	317	166	169	123	72
Average Queue (ft)	273	82	81	42	24
95th Queue (ft)	447	146	145	102	53
Link Distance (ft)	302		766	766	766
Upstream Blk Time (%)	33				
Queuing Penalty (veh)	0				
Storage Bay Dist (ft)		230			
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	



Intersection: 10: Spillway Rd

Movement	NW
Directions Served	U
Maximum Queue (ft)	48
Average Queue (ft)	13
95th Queue (ft)	39
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 19: Lake Harbour Dr & Access to Harbor Dr

Movement	WB	WB
Directions Served	T	R
Maximum Queue (ft)	167	60
Average Queue (ft)	6	10
95th Queue (ft)	122	38
Link Distance (ft)	888	888
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 20: Access from Lake Harbour Dr WB to Harbor Dr SB/Access to Harbor Dr & Access from L

Movement	WB
Directions Served	R
Maximum Queue (ft)	52
Average Queue (ft)	3
95th Queue (ft)	22
Link Distance (ft)	217
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	



Intersection: 21: Harbor Dr/Harbor Drive & Access from Lake Harbour Dr WB to Harbour Drive NB

Movement	SB	NW
Directions Served	T	R
Maximum Queue (ft)	383	181
Average Queue (ft)	339	64
95th Queue (ft)	523	139
Link Distance (ft)	368	182
Upstream Blk Time (%)	63	0
Queuing Penalty (veh)	0	1
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 22: Harbor Dr & Access from Lake Harbour Dr WB to Harbor Dr SB

Movement	SB
Directions Served	T
Maximum Queue (ft)	208
Average Queue (ft)	203
95th Queue (ft)	237
Link Distance (ft)	118
Upstream Blk Time (%)	66
Queuing Penalty (veh)	426
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 23: Spillway Rd

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)



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Intersection: 24: Spillway Rd

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Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

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Network Summary

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Network wide Queuing Penalty: 1903



Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑↑	↑↑			↗
Traffic Vol, veh/h	4	1337	2515	5	0	21
Future Vol, veh/h	4	1337	2515	5	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	140	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	4	1438	2704	5	0	23

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	2709	0	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	4.1	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	-	-
Pot Cap-1 Maneuver	153	-	-	-	0
Stage 1	-	-	-	-	0
Stage 2	-	-	-	-	0
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	153	-	-	-	-
Mov Cap-2 Maneuver		-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	153	-	-	-	-
HCM Lane V/C Ratio	0.028	-	-	-	-
HCM Control Delay (s)	29.2	-	-	-	0
HCM Lane LOS	D	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	-



HCM 6th TWSC  
5: Reservoir Park Rd & Spillway Rd

12/13/2023

Intersection						
Int Delay, s/veh	0.1					
Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑↑		↔	↑↑		↗
Traffic Vol, veh/h	1335	0	13	2520	0	17
Future Vol, veh/h	1335	0	13	2520	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	350	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1435	0	14	2710	0	18

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1435	0	718
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	4.1	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	2.2	-	3.3
Pot Cap-1 Maneuver	-	-	479	0	376
Stage 1	-	-	-	0	-
Stage 2	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	479	-	376
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.1	15.1
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	376	479	-	-	-
HCM Lane V/C Ratio	0.049	0.029	-	-	-
HCM Control Delay (s)	15.1	12.7	-	-	-
HCM Lane LOS	C	B	-	-	-
HCM 95th %tile Q(veh)	0.2	0.1	-	-	-



Intersection						
Int Delay, s/veh	22.5					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	31	1313	2311	17	7	222
Future Vol, veh/h	31	1313	2311	17	7	222
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	33	1412	2485	18	8	239

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	2503	0	0 3266 1252
Stage 1	-	-	- 2494 -
Stage 2	-	-	- 772 -
Critical Hdwy	4.1	-	- 6.8 6.9
Critical Hdwy Stg 1	-	-	- 5.8 -
Critical Hdwy Stg 2	-	-	- 5.8 -
Follow-up Hdwy	2.2	-	- 3.5 3.3
Pot Cap-1 Maneuver	185	-	- ~7 ~166
Stage 1	-	-	- 49 -
Stage 2	-	-	- 422 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	185	-	- ~6 ~166
Mov Cap-2 Maneuver	-	-	- 34 -
Stage 1	-	-	- 40 -
Stage 2	-	-	- 422 -

Approach	SE	NW	SW
HCM Control Delay, s	0.7	0	\$ 380
HCM LOS			F

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	185	- 148
HCM Lane V/C Ratio	-	-	0.18	- 1.664
HCM Control Delay (s)	-	-	28.7	- \$ 380
HCM Lane LOS	-	-	D	- F
HCM 95th %tile Q(veh)	-	-	0.6	- 17.5

Notes  
 ~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon



Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↑			↑
Traffic Vol, veh/h	0	0	57	0	0	816
Future Vol, veh/h	0	0	57	0	0	816
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	61	0	0	877

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	938	-	0
Stage 1	61	-	-
Stage 2	877	-	-
Critical Hdwy	6.4	-	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	-	-
Pot Cap-1 Maneuver	296	0	0
Stage 1	967	0	0
Stage 2	410	0	0
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	296	-	-
Mov Cap-2 Maneuver	296	-	-
Stage 1	967	-	-
Stage 2	410	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	-	-
HCM Lane V/C Ratio	-	-
HCM Control Delay (s)	-	0
HCM Lane LOS	-	A
HCM 95th %tile Q(veh)	-	-



Intersection						
Int Delay, s/veh	0					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations	↘	↑↑	↑↑			↗
Traffic Vol, veh/h	3	1335	2520	1	0	1
Future Vol, veh/h	3	1335	2520	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	1435	2710	1	0	1

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	2710	0	-	0	- 1356
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	4.1	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	-	3.3
Pot Cap-1 Maneuver	153	-	-	- 0	142
Stage 1	-	-	-	- 0	-
Stage 2	-	-	-	- 0	-
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	153	-	-	-	142
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	SE	NW	SW
HCM Control Delay, s	0.1	0	30.5
HCM LOS			D

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	153	- 142
HCM Lane V/C Ratio	-	-	0.021	- 0.008
HCM Control Delay (s)	-	-	29	- 30.5
HCM Lane LOS	-	-	D	- D
HCM 95th %tile Q(veh)	-	-	0.1	- 0







HCM 6th TWSC  
4: Lake Harbour Dr & Breakers Ln

12/13/2023

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	2503	1692	15	0	26
Future Vol, veh/h	19	2503	1692	15	0	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	140	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	20	2635	1781	16	0	27

Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	1797	0	-	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	-	-	-
Pot Cap-1 Maneuver	348	-	-	-	0	0
Stage 1	-	-	-	-	0	0
Stage 2	-	-	-	-	0	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	348	-	-	-	-	-
Mov Cap-2 Maneuver		-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	348	-	-	-	-
HCM Lane V/C Ratio	0.057	-	-	-	-
HCM Control Delay (s)	16	-	-	-	0
HCM Lane LOS	C	-	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	-



HCM 6th TWSC  
5: Reservoir Park Rd & Spillway Rd

12/13/2023

Intersection							
Int Delay, s/veh	2.5						
Movement	SET	SER	NWU	NWL	NWT	NEL	NER
Lane Configurations	↑↑			↔	↑↑		↗
Traffic Vol, veh/h	2650	3	19	9	1672	0	11
Future Vol, veh/h	2650	3	19	9	1672	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	-	None	-	Yield
Storage Length	-	-	-	350	-	-	0
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0
Mvmt Flow	2789	3	20	9	1760	0	12

Major/Minor	Major1	Major2	Minor1				
Conflicting Flow All	0	0	2793	2789	0	-	1396
Stage 1	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.4	4.1	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.5	2.2	-	-	3.3
Pot Cap-1 Maneuver	-	-	23	142	-	0	133
Stage 1	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	29	29	-	-	133
Mov Cap-2 Maneuver	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-

Approach	SE	NW	NE
HCM Control Delay, s	0	6.1	34.6
HCM LOS			D

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	133	29	-	-	-
HCM Lane V/C Ratio	0.087	1.016	-	-	-
HCM Control Delay (s)	34.6	372.7	-	-	-
HCM Lane LOS	D	F	-	-	-
HCM 95th %tile Q(veh)	0.3	3.4	-	-	-



Intersection						
Int Delay, s/veh	0.9					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	43	2628	1592	27	4	108
Future Vol, veh/h	43	2628	1592	27	4	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	45	2766	1676	28	4	114

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1704	0	-	0	3163 852
Stage 1	-	-	-	-	1690 -
Stage 2	-	-	-	-	1473 -
Critical Hdwy	4.1	-	-	-	6.8 6.9
Critical Hdwy Stg 1	-	-	-	-	5.8 -
Critical Hdwy Stg 2	-	-	-	-	5.8 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	378	-	-	-	8 307
Stage 1	-	-	-	-	138 -
Stage 2	-	-	-	-	180 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	378	-	-	-	7 307
Mov Cap-2 Maneuver	-	-	-	-	69 -
Stage 1	-	-	-	-	122 -
Stage 2	-	-	-	-	180 -

Approach	SE	NW	SW
HCM Control Delay, s	0.3	0	27.8
HCM LOS			D

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	378	- 273
HCM Lane V/C Ratio	-	-	0.12	- 0.432
HCM Control Delay (s)	-	-	15.8	- 27.8
HCM Lane LOS	-	-	C	- D
HCM 95th %tile Q(veh)	-	-	0.4	- 2.1



Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↗			↗
Traffic Vol, veh/h	0	0	157	0	0	863
Future Vol, veh/h	0	0	157	0	0	863
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	165	0	0	908

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1073	-	0	-	-	-
Stage 1	165	-	-	-	-	-
Stage 2	908	-	-	-	-	-
Critical Hdwy	6.4	-	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	-	-	-	-	-
Pot Cap-1 Maneuver	246	0	-	0	0	-
Stage 1	869	0	-	0	0	-
Stage 2	397	0	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	246	-	-	-	-	-
Mov Cap-2 Maneuver	246	-	-	-	-	-
Stage 1	869	-	-	-	-	-
Stage 2	397	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	-	-
HCM Lane V/C Ratio	-	-
HCM Control Delay (s)	-	0
HCM Lane LOS	-	A
HCM 95th %tile Q(veh)	-	-



Intersection						
Int Delay, s/veh	0.2					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations	↘	↑↑	↑↑			↗
Traffic Vol, veh/h	1	2653	1671	1	0	50
Future Vol, veh/h	1	2653	1671	1	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	2793	1759	1	0	53

Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	1759	0	-	0	-	880
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	-	-	3.3
Pot Cap-1 Maneuver	360	-	-	-	0	294
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	360	-	-	-	-	294
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	SE	NW	SW
HCM Control Delay, s	0	0	19.9
HCM LOS			C

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1	
Capacity (veh/h)	-	-	360	-	294
HCM Lane V/C Ratio	-	-	0.003	-	0.179
HCM Control Delay (s)	-	-	15	-	19.9
HCM Lane LOS	-	-	C	-	C
HCM 95th %tile Q(veh)	-	-	0	-	0.6



3: Harbor Pines Dr/Harbor Dr & Lake Harbour Dr Performance by movement

Movement	EBL	EBT	EBR	WBU	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.4	0.1	1.5	0.0	0.0	0.0	4.0	0.6	4.0	0.0	0.0	0.1
Total Delay (hr)	0.2	4.1	0.1	0.0	0.1	9.0	1.6	0.5	0.1	7.6	0.3	0.5
Total Del/Veh (s)	33.2	22.4	4.2	22.9	21.8	25.3	59.7	61.9	9.8	47.6	46.0	16.7
Stop Delay (hr)	0.2	3.0	0.0	0.0	0.1	6.5	1.5	0.5	0.1	7.2	0.3	0.4
Stop Del/Veh (s)	29.8	16.3	1.6	22.0	18.2	18.3	56.6	57.8	8.9	45.1	41.7	14.7
Total Stops	24	328	18	2	9	618	86	25	22	291	11	25
Stop/Veh	0.92	0.50	0.41	1.00	0.75	0.48	0.91	0.86	0.88	0.51	0.50	0.24
Vehicles Entered	25	652	43	2	12	1283	94	29	25	564	21	103
Vehicles Exited	25	646	43	2	12	1274	94	29	25	563	21	104
Hourly Exit Rate	25	646	43	2	12	1274	94	29	25	563	21	104
Input Volume	27	638	41	2	12	1497	93	30	26	675	26	116
% of Volume	93	101	105	100	98	85	101	97	97	83	82	90
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

3: Harbor Pines Dr/Harbor Dr & Lake Harbour Dr Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.2
Total Delay (hr)	24.0
Total Del/Veh (s)	30.0
Stop Delay (hr)	19.7
Stop Del/Veh (s)	24.6
Total Stops	1459
Stop/Veh	0.51
Vehicles Entered	2853
Vehicles Exited	2838
Hourly Exit Rate	2838
Input Volume	3182
% of Volume	89
Denied Entry Before	0
Denied Entry After	0



4: Lake Harbour Dr & Breakers Ln Performance by movement

Movement	EBL	EBT	WBT	WBR	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay (hr)	0.1	0.4	6.9	0.0	0.0	7.4
Total Del/Veh (s)	129.1	1.2	11.1	9.7	2.0	7.6
Stop Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	127.2	0.0	0.0	0.1	0.0	0.1
Total Stops	3	0	3	0	0	6
Stop/Veh	1.00	0.00	0.00	0.00	0.00	0.00
Vehicles Entered	3	1233	2222	5	21	3484
Vehicles Exited	3	1238	2185	5	22	3453
Hourly Exit Rate	3	1238	2185	5	22	3453
Input Volume	4	1337	2515	5	21	3882
% of Volume	75	93	87	100	106	89
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0

5: Reservoir Park Rd & Spillway Rd Performance by movement

Movement	SET	NWL	NWT	NER	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Delay (hr)	0.2	0.0	0.7	0.0	1.0
Total Del/Veh (s)	0.7	11.0	1.2	1.1	1.0
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.0	9.7	0.0	0.0	0.0
Total Stops	0	8	0	0	8
Stop/Veh	0.00	0.62	0.00	0.00	0.00
Vehicles Entered	1207	13	2276	16	3512
Vehicles Exited	1205	13	2274	16	3508
Hourly Exit Rate	1205	13	2274	16	3508
Input Volume	1335	13	2520	17	3886
% of Volume	90	98	90	93	90
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0



6: Spillway Rd & Lakeshore Dr Performance by movement

Movement	SEL	SET	NWT	NWR	SWL	SWR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	1.8	54.3	56.1
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	915.6	865.4	54.8
Total Delay (hr)	0.5	1.3	3.0	0.0	0.7	26.7	32.2
Total Del/Veh (s)	54.1	4.1	4.9	4.1	823.3	807.9	32.4
Stop Delay (hr)	0.4	0.2	0.0	0.0	0.7	27.1	28.5
Stop Del/Veh (s)	52.1	0.6	0.1	0.1	832.4	819.4	28.6
Total Stops	31	43	12	0	0	33	119
Stop/Veh	1.00	0.04	0.01	0.00	0.00	0.28	0.03
Vehicles Entered	31	1185	2220	14	3	113	3566
Vehicles Exited	30	1179	2227	14	2	91	3543
Hourly Exit Rate	30	1179	2227	14	2	91	3543
Input Volume	31	1320	2345	17	7	222	3942
% of Volume	98	89	95	81	28	41	90
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	4	113	117



7: Old Fannin Rd/N Shore Pkwy & Spillway Rd Performance by movement

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	2.7	13.5	9.1
Denied Del/Veh (s)	0.1	0.0	0.0	2.6	0.4	0.5	0.0	0.0	0.0	81.9	84.0	82.5
Total Delay (hr)	0.5	4.9	6.2	1.8	19.7	0.4	16.7	1.6	0.1	2.0	14.5	28.7
Total Del/Veh (s)	46.4	37.0	32.9	52.1	59.3	56.4	83.4	44.4	14.5	60.6	92.8	265.2
Stop Delay (hr)	0.5	4.1	5.0	1.4	14.5	0.3	15.2	1.5	0.1	1.7	12.8	27.8
Stop Del/Veh (s)	42.3	30.7	26.4	41.1	43.7	45.1	75.6	41.6	14.3	53.3	82.2	257.4
Total Stops	39	313	549	141	1064	23	582	76	14	122	641	239
Stop/Veh	1.00	0.66	0.81	1.15	0.89	0.92	0.81	0.59	0.50	1.03	1.14	0.61
Vehicles Entered	39	476	679	122	1182	25	703	127	28	114	551	378
Vehicles Exited	39	468	667	120	1172	25	706	128	28	118	547	357
Hourly Exit Rate	39	468	667	120	1172	25	706	128	28	118	547	357
Input Volume	50	532	759	128	1175	24	790	140	34	114	598	397
% of Volume	78	88	88	94	100	105	89	92	82	104	91	90
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	5	28	21

7: Old Fannin Rd/N Shore Pkwy & Spillway Rd Performance by movement

Movement	All
Denied Delay (hr)	25.6
Denied Del/Veh (s)	20.6
Total Delay (hr)	97.0
Total Del/Veh (s)	77.8
Stop Delay (hr)	84.8
Stop Del/Veh (s)	68.0
Total Stops	3803
Stop/Veh	0.85
Vehicles Entered	4424
Vehicles Exited	4375
Hourly Exit Rate	4375
Input Volume	4741
% of Volume	92
Denied Entry Before	0
Denied Entry After	54



10: Spillway Rd Performance by movement

Movement	SET	NWU	NWT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Delay (hr)	7.2	0.0	0.6	7.8
Total Del/Veh (s)	20.2	15.8	1.0	7.9
Stop Delay (hr)	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.0	11.8	0.0	0.0
Total Stops	0	1	1	2
Stop/Veh	0.00	1.00	0.00	0.00
Vehicles Entered	1235	1	2271	3507
Vehicles Exited	1213	1	2269	3483
Hourly Exit Rate	1213	1	2269	3483
Input Volume	1337	1	2520	3858
% of Volume	91	100	90	90
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

19: Lake Harbour Dr & Access to Harbor Dr Performance by movement

Movement	EBT	WBT	WBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Delay (hr)	0.7	1.6	2.1	4.4
Total Del/Veh (s)	1.9	4.5	8.4	4.6
Stop Delay (hr)	0.0	0.4	0.3	0.7
Stop Del/Veh (s)	0.1	1.0	1.0	0.7
Total Stops	1	114	201	316
Stop/Veh	0.00	0.09	0.22	0.09
Vehicles Entered	1235	1307	900	3442
Vehicles Exited	1236	1297	893	3426
Hourly Exit Rate	1236	1297	893	3426
Input Volume	1341	1512	1024	3876
% of Volume	92	86	87	88
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0



20: Access from Lake Harbour Dr WB to Harbor Dr SB/Access to Harbor Dr & Access from Lake Harbour

Movement	WBR	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.6	0.6
Total Del/Veh (s)	2.4	2.4
Stop Delay (hr)	0.0	0.0
Stop Del/Veh (s)	0.2	0.2
Total Stops	29	29
Stop/Veh	0.03	0.03
Vehicles Entered	893	893
Vehicles Exited	888	888
Hourly Exit Rate	888	888
Input Volume	1024	1024
% of Volume	87	87
Denied Entry Before	0	0
Denied Entry After	0	0

21: Harbor Dr/Harbor Drive & Access from Lake Harbour Dr WB to Harbour Drive NB Performance by mo

Movement	NBT	SBT	NWR	All
Denied Delay (hr)	0.0	45.7	0.0	45.7
Denied Del/Veh (s)	0.0	202.8	0.0	93.8
Total Delay (hr)	0.0	11.3	0.8	12.1
Total Del/Veh (s)	2.5	57.4	3.3	26.4
Stop Delay (hr)	0.0	9.0	0.3	9.3
Stop Del/Veh (s)	0.0	45.8	1.1	20.2
Total Stops	0	401	128	529
Stop/Veh	0.00	0.57	0.14	0.32
Vehicles Entered	54	705	888	1647
Vehicles Exited	54	693	886	1633
Hourly Exit Rate	54	693	886	1633
Input Volume	57	816	1024	1897
% of Volume	94	85	87	86
Denied Entry Before	0	0	0	0
Denied Entry After	0	106	0	106



22: Harbor Dr & Access from Lake Harbour Dr WB to Harbor Dr SB Performance by movement

Movement	NBT	SBT	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	0.0	6.2	6.2
Total Del/Veh (s)	1.9	32.0	29.9
Stop Delay (hr)	0.0	5.0	5.0
Stop Del/Veh (s)	0.5	25.7	23.9
Total Stops	0	238	238
Stop/Veh	0.00	0.34	0.32
Vehicles Entered	54	693	747
Vehicles Exited	54	688	742
Hourly Exit Rate	54	688	742
Input Volume	57	816	874
% of Volume	94	84	85
Denied Entry Before	0	0	0
Denied Entry After	0	0	0

23: Spillway Rd Performance by movement

Movement	SEL	SET	NWT	NWR	SWR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay (hr)	0.0	0.4	0.3	0.0	0.0	0.8
Total Del/Veh (s)	26.0	1.2	0.5	2.5	3.4	0.8
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	20.0	0.0	0.0	0.0	0.0	0.0
Total Stops	2	0	0	0	0	2
Stop/Veh	1.00	0.00	0.00	0.00	0.00	0.00
Vehicles Entered	2	1211	2274	1	1	3489
Vehicles Exited	2	1207	2271	1	1	3482
Hourly Exit Rate	2	1207	2271	1	1	3482
Input Volume	3	1336	2520	1	1	3861
% of Volume	67	90	90	100	100	90
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0



24: Spillway Rd Performance by movement

Movement	SEU	SET	NWT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)		0.0	0.0	0.0
Total Delay (hr)	0.0	0.5	1.6	2.1
Total Del/Veh (s)		1.5	2.4	2.1
Stop Delay (hr)	0.0	0.0	0.0	0.1
Stop Del/Veh (s)		0.1	0.0	0.1
Total Stops	0	12	1	13
Stop/Veh		0.01	0.00	0.00
Vehicles Entered	0	1221	2289	3510
Vehicles Exited	0	1217	2289	3506
Hourly Exit Rate	0	1217	2289	3506
Input Volume	1	1352	2533	3886
% of Volume	0	90	90	90
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

Total Network Performance

Denied Delay (hr)	167.3
Denied Del/Veh (s)	112.4
Total Delay (hr)	229.4
Total Del/Veh (s)	155.1
Stop Delay (hr)	157.1
Stop Del/Veh (s)	106.2
Total Stops	7030
Stop/Veh	1.32
Vehicles Entered	4987
Vehicles Exited	4698
Hourly Exit Rate	4698
Input Volume	50533
% of Volume	9
Denied Entry Before	0
Denied Entry After	373



Intersection: 3: Harbor Pines Dr/Harbor Dr & Lake Harbour Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	UL	T	T	L	T	R	L	LTR
Maximum Queue (ft)	51	237	244	49	127	298	310	133	120	28	184	169
Average Queue (ft)	21	139	146	14	11	244	253	67	41	11	179	124
95th Queue (ft)	47	207	219	41	66	336	343	120	96	28	200	151
Link Distance (ft)		2837	2837			272	272		454		119	119
Upstream Blk Time (%)					0	5	7				58	36
Queuing Penalty (veh)					0	37	53				238	146
Storage Bay Dist (ft)	330			140	200			50		50		
Storage Blk Time (%)			10			17		39	9	0		
Queuing Penalty (veh)			4			2		22	11	0		

Intersection: 4: Lake Harbour Dr & Breakers Ln

Movement	EB	WB
Directions Served	L	TR
Maximum Queue (ft)	41	4
Average Queue (ft)	5	0
95th Queue (ft)	29	3
Link Distance (ft)		2414
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	140	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Reservoir Park Rd & Spillway Rd

Movement	NW
Directions Served	UL
Maximum Queue (ft)	29
Average Queue (ft)	8
95th Queue (ft)	28
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	350
Storage Blk Time (%)	
Queuing Penalty (veh)	



Intersection: 6: Spillway Rd & Lakeshore Dr

Movement	SE	SE	SE	NW	SW
Directions Served	L	T	T	T	LR
Maximum Queue (ft)	70	42	186	4	652
Average Queue (ft)	27	2	22	0	618
95th Queue (ft)	62	22	115	3	772
Link Distance (ft)		1086	1086	464	637
Upstream Blk Time (%)					87
Queuing Penalty (veh)					0
Storage Bay Dist (ft)	100				
Storage Blk Time (%)		0			
Queuing Penalty (veh)		0			

Intersection: 7: Old Fannin Rd/N Shore Pkwy & Spillway Rd

Movement	SE	SE	SE	SE	NW	NW	NW	NE	NE	NE	NE	B25
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	T
Maximum Queue (ft)	148	317	471	365	320	737	705	200	377	106	98	317
Average Queue (ft)	37	146	229	262	178	477	439	195	374	49	34	292
95th Queue (ft)	96	264	477	431	388	719	673	209	401	93	80	416
Link Distance (ft)		464	464			815	815		306	306	306	302
Upstream Blk Time (%)		0	2			1	1		57			65
Queuing Penalty (veh)		0	14			0	0		0			0
Storage Bay Dist (ft)	100			265	220			100				
Storage Blk Time (%)	0	20	0	20	0	41		64	66			
Queuing Penalty (veh)	0	10	0	54	0	53		253	261			

Intersection: 7: Old Fannin Rd/N Shore Pkwy & Spillway Rd

Movement	B25	SW	SW	SW	SW
Directions Served	T	L	T	T	R
Maximum Queue (ft)	317	330	774	781	781
Average Queue (ft)	250	135	422	601	708
95th Queue (ft)	457	300	802	1033	927
Link Distance (ft)	302		766	766	766
Upstream Blk Time (%)	24		0	37	64
Queuing Penalty (veh)	0		0	0	0
Storage Bay Dist (ft)		230			
Storage Blk Time (%)		0	27		
Queuing Penalty (veh)		0	31		



Intersection: 10: Spillway Rd

Movement	NW
Directions Served	U
Maximum Queue (ft)	16
Average Queue (ft)	1
95th Queue (ft)	9
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 19: Lake Harbour Dr & Access to Harbor Dr

Movement	WB	WB	WB
Directions Served	T	T	R
Maximum Queue (ft)	187	183	210
Average Queue (ft)	35	47	50
95th Queue (ft)	117	139	156
Link Distance (ft)	888	888	888
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Access from Lake Harbour Dr WB to Harbor Dr SB/Access to Harbor Dr & Access from L

Movement	WB
Directions Served	R
Maximum Queue (ft)	122
Average Queue (ft)	16
95th Queue (ft)	69
Link Distance (ft)	217
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	



Intersection: 21: Harbor Dr/Harbor Drive & Access from Lake Harbour Dr WB to Harbour Drive NB

Movement	SB	NW
Directions Served	T	R
Maximum Queue (ft)	383	187
Average Queue (ft)	343	80
95th Queue (ft)	515	176
Link Distance (ft)	368	182
Upstream Blk Time (%)	57	0
Queuing Penalty (veh)	0	3
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 22: Harbor Dr & Access from Lake Harbour Dr WB to Harbor Dr SB

Movement	SB
Directions Served	T
Maximum Queue (ft)	208
Average Queue (ft)	204
95th Queue (ft)	237
Link Distance (ft)	118
Upstream Blk Time (%)	58
Queuing Penalty (veh)	473
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 23: Spillway Rd

Movement	SE
Directions Served	L
Maximum Queue (ft)	24
Average Queue (ft)	2
95th Queue (ft)	14
Link Distance (ft)	493
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	



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Intersection: 24: Spillway Rd

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Movement	SE
Directions Served	U
Maximum Queue (ft)	11
Average Queue (ft)	0
95th Queue (ft)	6
Link Distance (ft)	642
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

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Network Summary

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Network wide Queuing Penalty: 1667



3: Harbor Pines Dr/Harbor Dr & Lake Harbour Dr Performance by movement

Movement	EBL	EBT	EBR	WBU	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.2	0.5	1.1	0.0	0.0	0.0	4.0	0.4	4.2	0.0	0.0	0.0
Total Delay (hr)	3.2	48.0	1.8	0.1	0.2	5.9	1.1	0.3	0.1	8.2	0.1	0.2
Total Del/Veh (s)	84.9	101.4	79.1	37.7	36.6	29.3	56.7	61.9	27.3	47.4	39.2	20.3
Stop Delay (hr)	2.1	32.0	1.1	0.1	0.2	4.7	1.1	0.3	0.1	7.8	0.1	0.2
Stop Del/Veh (s)	56.7	67.6	50.0	36.8	33.8	23.4	54.1	58.1	27.0	45.0	35.6	18.4
Total Stops	207	2269	114	10	22	437	63	16	17	300	4	10
Stop/Veh	1.52	1.33	1.42	1.00	1.00	0.60	0.86	0.84	0.89	0.48	0.36	0.26
Vehicles Entered	135	1663	79	10	22	726	71	19	19	610	11	38
Vehicles Exited	130	1630	77	10	22	724	70	19	19	612	10	38
Hourly Exit Rate	130	1630	77	10	22	724	70	19	19	612	10	38
Input Volume	140	1695	79	10	25	865	71	17	18	800	15	48
% of Volume	93	96	97	98	87	84	98	110	104	76	66	79
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

3: Harbor Pines Dr/Harbor Dr & Lake Harbour Dr Performance by movement

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	0.4
Total Delay (hr)	69.4
Total Del/Veh (s)	72.2
Stop Delay (hr)	49.9
Stop Del/Veh (s)	51.9
Total Stops	3469
Stop/Veh	1.00
Vehicles Entered	3403
Vehicles Exited	3361
Hourly Exit Rate	3361
Input Volume	3785
% of Volume	89
Denied Entry Before	0
Denied Entry After	0



4: Lake Harbour Dr & Breakers Ln Performance by movement

Movement	EBL	EBT	WBT	WBR	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay (hr)	0.1	2.5	2.6	0.0	0.0	5.2
Total Del/Veh (s)	18.1	4.0	6.4	6.5	2.0	5.0
Stop Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	14.2	0.0	0.0	0.0	0.0	0.1
Total Stops	14	3	1	0	0	18
Stop/Veh	0.70	0.00	0.00	0.00	0.00	0.00
Vehicles Entered	20	2250	1428	12	25	3735
Vehicles Exited	20	2247	1407	11	25	3710
Hourly Exit Rate	20	2247	1407	11	25	3710
Input Volume	19	2503	1692	15	26	4256
% of Volume	104	90	83	72	95	87
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0

5: Reservoir Park Rd & Spillway Rd Performance by movement

Movement	SET	SER	NWU	NWL	NWT	NER	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay (hr)	4.5	0.0	1.1	0.5	0.4	0.0	6.5
Total Del/Veh (s)	7.2	6.6	202.2	271.9	1.0	1.1	6.3
Stop Delay (hr)	1.8	0.0	1.1	0.5	0.0	0.0	3.4
Stop Del/Veh (s)	2.9	3.5	201.5	269.8	0.0	0.0	3.3
Total Stops	353	1	19	7	0	0	380
Stop/Veh	0.16	0.33	1.00	1.00	0.00	0.00	0.10
Vehicles Entered	2258	3	19	7	1402	14	3703
Vehicles Exited	2241	3	17	7	1400	14	3682
Hourly Exit Rate	2241	3	17	7	1400	14	3682
Input Volume	2650	3	19	9	1672	11	4366
% of Volume	85	100	88	78	84	124	84
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0



6: Spillway Rd & Lakeshore Dr Performance by movement

Movement	SEL	SET	NWT	NWR	SWL	SWR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.3	6.7	7.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	264.5	217.6	6.7
Total Delay (hr)	0.7	37.1	1.2	0.0	1.1	12.1	52.2
Total Del/Veh (s)	58.8	60.9	3.1	2.7	1330.7	536.6	50.3
Stop Delay (hr)	0.4	21.7	0.0	0.0	1.1	12.0	35.3
Stop Del/Veh (s)	37.5	35.7	0.1	0.1	1327.9	534.9	34.1
Total Stops	53	1805	2	1	3	80	1944
Stop/Veh	1.29	0.82	0.00	0.04	1.00	0.99	0.52
Vehicles Entered	41	2190	1386	25	3	81	3726
Vehicles Exited	39	2127	1383	25	1	54	3629
Hourly Exit Rate	39	2127	1383	25	1	54	3629
Input Volume	43	2637	1593	27	4	108	4412
% of Volume	91	81	87	92	25	50	82
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	1	30	31



7: Old Fannin Rd/N Shore Pkwy & Spillway Rd Performance by movement

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	2.9	0.2	0.3	0.0	0.0	0.0	3.2	0.2	0.2
Total Delay (hr)	8.5	14.3	9.6	1.9	8.2	0.9	17.0	8.3	0.7	3.5	4.8	0.6
Total Del/Veh (s)	85.8	53.7	42.8	45.4	52.0	39.2	83.9	59.7	49.6	80.7	61.6	16.8
Stop Delay (hr)	7.4	10.9	7.4	1.7	6.7	0.8	15.4	7.5	0.6	3.3	4.3	0.6
Stop Del/Veh (s)	74.8	40.8	33.2	39.4	42.7	33.2	76.1	54.1	46.6	75.5	54.9	15.7
Total Stops	456	916	782	142	439	67	566	362	37	152	256	121
Stop/Veh	1.28	0.95	0.97	0.94	0.78	0.81	0.78	0.73	0.74	0.97	0.91	0.87
Vehicles Entered	356	960	803	151	556	81	706	492	50	149	276	138
Vehicles Exited	343	942	791	147	557	83	716	493	49	153	270	138
Hourly Exit Rate	343	942	791	147	557	83	716	493	49	153	270	138
Input Volume	440	1184	1008	149	556	87	929	643	66	144	283	135
% of Volume	78	80	78	99	100	96	77	77	74	106	95	102
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

7: Old Fannin Rd/N Shore Pkwy & Spillway Rd Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.2
Total Delay (hr)	78.3
Total Del/Veh (s)	59.0
Stop Delay (hr)	66.6
Stop Del/Veh (s)	50.2
Total Stops	4296
Stop/Veh	0.90
Vehicles Entered	4718
Vehicles Exited	4682
Hourly Exit Rate	4682
Input Volume	5624
% of Volume	83
Denied Entry Before	0
Denied Entry After	0



10: Spillway Rd Performance by movement

Movement	SET	NWU	NWT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Delay (hr)	28.0	1.0	0.5	29.4
Total Del/Veh (s)	41.1	108.0	1.1	27.1
Stop Delay (hr)	3.5	1.0	0.1	4.6
Stop Del/Veh (s)	5.2	107.7	0.2	4.2
Total Stops	337	31	33	401
Stop/Veh	0.14	0.94	0.02	0.10
Vehicles Entered	2353	32	1413	3798
Vehicles Exited	2257	32	1415	3704
Hourly Exit Rate	2257	32	1415	3704
Input Volume	2616	38	1684	4337
% of Volume	86	85	84	85
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

19: Lake Harbour Dr & Access to Harbor Dr Performance by movement

Movement	EBT	WBT	WBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Delay (hr)	2.9	0.4	1.0	4.3
Total Del/Veh (s)	4.5	1.9	5.6	4.2
Stop Delay (hr)	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	0.1	0.1	0.2	0.1
Total Stops	13	9	66	88
Stop/Veh	0.01	0.01	0.10	0.02
Vehicles Entered	2271	760	672	3703
Vehicles Exited	2271	758	669	3698
Hourly Exit Rate	2271	758	669	3698
Input Volume	2523	900	819	4242
% of Volume	90	84	82	87
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0



20: Access from Lake Harbour Dr WB to Harbor Dr SB/Access to Harbor Dr & Access from Lake Harbour

Movement	WBR	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.4	0.4
Total Del/Veh (s)	2.0	2.0
Stop Delay (hr)	0.0	0.0
Stop Del/Veh (s)	0.2	0.2
Total Stops	24	24
Stop/Veh	0.04	0.04
Vehicles Entered	669	669
Vehicles Exited	667	667
Hourly Exit Rate	667	667
Input Volume	819	819
% of Volume	81	81
Denied Entry Before	0	0
Denied Entry After	0	0

21: Harbor Dr/Harbor Drive & Access from Lake Harbour Dr WB to Harbour Drive NB Performance by mo

Movement	NBT	SBT	NWR	All
Denied Delay (hr)	0.0	87.4	0.0	87.4
Denied Del/Veh (s)	0.0	362.0	0.0	186.8
Total Delay (hr)	0.1	12.2	0.8	13.1
Total Del/Veh (s)	1.9	64.6	4.3	31.5
Stop Delay (hr)	0.0	10.0	0.4	10.4
Stop Del/Veh (s)	0.0	53.0	2.3	25.1
Total Stops	0	437	182	619
Stop/Veh	0.00	0.64	0.27	0.41
Vehicles Entered	148	676	667	1491
Vehicles Exited	148	663	664	1475
Hourly Exit Rate	148	663	664	1475
Input Volume	157	863	819	1839
% of Volume	94	77	81	80
Denied Entry Before	0	0	0	0
Denied Entry After	0	193	0	193



22: Harbor Dr & Access from Lake Harbour Dr WB to Harbor Dr SB Performance by movement

Movement	NBT	SBT	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	0.0	6.5	6.5
Total Del/Veh (s)	1.0	35.1	28.9
Stop Delay (hr)	0.0	5.3	5.3
Stop Del/Veh (s)	0.3	28.7	23.5
Total Stops	0	244	244
Stop/Veh	0.00	0.37	0.30
Vehicles Entered	149	663	812
Vehicles Exited	149	659	808
Hourly Exit Rate	149	659	808
Input Volume	158	863	1020
% of Volume	95	76	79
Denied Entry Before	0	0	0
Denied Entry After	0	0	0

23: Spillway Rd Performance by movement

Movement	SEL	SET	NWT	NWR	SWR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)		0.0	0.0	0.0	0.1	0.0
Total Delay (hr)	0.0	6.8	0.2	0.0	0.0	7.0
Total Del/Veh (s)		10.7	0.6	0.7	1.4	6.8
Stop Delay (hr)	0.0	3.0	0.0	0.0	0.0	3.0
Stop Del/Veh (s)		4.7	0.0	0.0	0.0	2.9
Total Stops	0	324	0	0	0	324
Stop/Veh		0.14	0.00	0.00	0.00	0.09
Vehicles Entered	0	2288	1399	1	45	3733
Vehicles Exited	0	2260	1401	1	45	3707
Hourly Exit Rate	0	2260	1401	1	45	3707
Input Volume	1	2653	1671	1	50	4376
% of Volume	0	85	84	100	90	85
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0



24: Spillway Rd Performance by movement

Movement	SEU	SET	NWT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	13.9	0.6	14.5
Total Del/Veh (s)	14.0	22.0	1.5	14.0
Stop Delay (hr)	0.0	7.2	0.0	7.2
Stop Del/Veh (s)	10.7	11.4	0.0	7.0
Total Stops	1	922	0	923
Stop/Veh	1.00	0.41	0.00	0.25
Vehicles Entered	1	2271	1435	3707
Vehicles Exited	1	2231	1428	3660
Hourly Exit Rate	1	2231	1428	3660
Input Volume	1	2680	1700	4381
% of Volume	100	83	84	84
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

Total Network Performance

Denied Delay (hr)	285.6
Denied Del/Veh (s)	166.2
Total Delay (hr)	313.4
Total Del/Veh (s)	188.8
Stop Delay (hr)	195.4
Stop Del/Veh (s)	117.7
Total Stops	13339
Stop/Veh	2.23
Vehicles Entered	5580
Vehicles Exited	5120
Hourly Exit Rate	5120
Input Volume	56898
% of Volume	9
Denied Entry Before	1
Denied Entry After	607



Intersection: 3: Harbor Pines Dr/Harbor Dr & Lake Harbour Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	UL	T	T	L	T	R	L	LTR
Maximum Queue (ft)	430	1311	1316	240	57	274	273	129	93	36	184	152
Average Queue (ft)	248	904	912	88	21	167	182	51	24	9	183	118
95th Queue (ft)	549	1645	1640	261	48	267	280	97	69	27	194	139
Link Distance (ft)		2837	2837			272	272		454		119	119
Upstream Blk Time (%)						0	1				61	31
Queuing Penalty (veh)						2	3				264	133
Storage Bay Dist (ft)	330			140	200			50		50		
Storage Blk Time (%)		38	47			5		31	3	0		
Queuing Penalty (veh)		53	37			2		11	3	0		

Intersection: 4: Lake Harbour Dr & Breakers Ln

Movement	EB	EB	WB
Directions Served	L	T	TR
Maximum Queue (ft)	43	4	4
Average Queue (ft)	11	0	0
95th Queue (ft)	36	3	3
Link Distance (ft)		888	2414
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	140		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Reservoir Park Rd & Spillway Rd

Movement	SE	SE	NW	NW
Directions Served	T	TR	UL	T
Maximum Queue (ft)	240	238	150	49
Average Queue (ft)	67	69	49	2
95th Queue (ft)	259	264	130	36
Link Distance (ft)	264	264		642
Upstream Blk Time (%)	2	3		
Queuing Penalty (veh)	21	39		
Storage Bay Dist (ft)			350	
Storage Blk Time (%)				
Queuing Penalty (veh)				



Intersection: 6: Spillway Rd & Lakeshore Dr

Movement	SE	SE	SE	NW	SW
Directions Served	L	T	T	TR	LR
Maximum Queue (ft)	199	1102	1112	13	644
Average Queue (ft)	51	638	685	0	307
95th Queue (ft)	163	1365	1387	5	734
Link Distance (ft)		1086	1086	464	637
Upstream Blk Time (%)		3	6		29
Queuing Penalty (veh)		36	73		0
Storage Bay Dist (ft)	100				
Storage Blk Time (%)	0	29			
Queuing Penalty (veh)	0	13			

Intersection: 7: Old Fannin Rd/N Shore Pkwy & Spillway Rd

Movement	SE	SE	SE	SE	NW	NW	NW	NE	NE	NE	NE	B25
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	T
Maximum Queue (ft)	200	494	525	365	277	370	359	200	377	308	318	317
Average Queue (ft)	188	432	451	333	101	227	215	197	377	187	184	317
95th Queue (ft)	243	606	622	474	193	336	325	209	379	282	282	318
Link Distance (ft)		464	464			815	815		306	306	306	302
Upstream Blk Time (%)		13	14						61	1	1	62
Queuing Penalty (veh)		176	183						0	0	0	0
Storage Bay Dist (ft)	100			265	220			100				
Storage Blk Time (%)	58	39	26	36	0	12		65	67			
Queuing Penalty (veh)	338	171	259	207	1	18		300	313			

Intersection: 7: Old Fannin Rd/N Shore Pkwy & Spillway Rd

Movement	B25	SW	SW	SW	SW
Directions Served	T	L	T	T	R
Maximum Queue (ft)	317	253	246	180	153
Average Queue (ft)	305	141	136	94	47
95th Queue (ft)	385	238	225	166	105
Link Distance (ft)	302		766	766	766
Upstream Blk Time (%)	31				
Queuing Penalty (veh)	0				
Storage Bay Dist (ft)		230			
Storage Blk Time (%)		4	0		
Queuing Penalty (veh)		5	0		



Intersection: 10: Spillway Rd

Movement	SE	SE	NW	NW
Directions Served	T	T	U	T
Maximum Queue (ft)	652	682	126	50
Average Queue (ft)	91	91	39	5
95th Queue (ft)	514	510	112	56
Link Distance (ft)	12168	12168		493
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	
Storage Blk Time (%)			1	0
Queuing Penalty (veh)			7	0

Intersection: 19: Lake Harbour Dr & Access to Harbor Dr

Movement	EB	WB	WB	WB
Directions Served	T	T	T	R
Maximum Queue (ft)	11	38	47	91
Average Queue (ft)	0	2	3	24
95th Queue (ft)	8	19	28	70
Link Distance (ft)	272	888	888	888
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 20: Access from Lake Harbour Dr WB to Harbor Dr SB/Access to Harbor Dr & Access from L

Movement	WB
Directions Served	R
Maximum Queue (ft)	122
Average Queue (ft)	16
95th Queue (ft)	72
Link Distance (ft)	217
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	



Intersection: 21: Harbor Dr/Harbor Drive & Access from Lake Harbour Dr WB to Harbour Drive NB

Movement	SB	NW
Directions Served	T	R
Maximum Queue (ft)	383	190
Average Queue (ft)	364	92
95th Queue (ft)	488	181
Link Distance (ft)	368	182
Upstream Blk Time (%)	64	1
Queuing Penalty (veh)	0	6
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 22: Harbor Dr & Access from Lake Harbour Dr WB to Harbor Dr SB

Movement	SB
Directions Served	T
Maximum Queue (ft)	208
Average Queue (ft)	207
95th Queue (ft)	212
Link Distance (ft)	118
Upstream Blk Time (%)	62
Queuing Penalty (veh)	536
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 23: Spillway Rd

Movement	SE	SE	SE	SW
Directions Served	L	T	T	R
Maximum Queue (ft)	294	412	416	11
Average Queue (ft)	14	93	95	0
95th Queue (ft)	149	399	407	8
Link Distance (ft)	493	493	493	338
Upstream Blk Time (%)	0	1	2	
Queuing Penalty (veh)	0	12	17	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				



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Intersection: 24: Spillway Rd

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Movement	SE	SE	SE
Directions Served	U	T	T
Maximum Queue (ft)	517	552	567
Average Queue (ft)	98	212	218
95th Queue (ft)	453	691	698
Link Distance (ft)	642	642	642
Upstream Blk Time (%)	0	2	5
Queuing Penalty (veh)	0	21	46
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

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Network wide Queuing Penalty: 3304