

ENVIRONMENTAL ASSESSMENT

Project Number: STPMB-4918 (250)

Project Name: McDonald Road from Old Pascagoula Road to Three Notch-Kroner Road and Three Notch-Kroner Road from McDonald Road to McFarland Road

City/County: Mobile County

	<u>PE #</u>	<u>ROW #</u>	<u>CN #</u>
Federal:	STPMB-4918(250)	STPMB-4918(250)	STPMB-4918(250)
CPMS:	100059788	100059789	100059791

Organization: Mobile County Commission

SECTION 1.0 INTRODUCTION

1.1 Project Area Description

The project is in southwest Mobile County and is in the community of Theodore, Alabama. The project begins just north of the intersection of Old Pascagoula Road and McDonald Road and ends at the intersection of Three Notch-Kroner Road/Ben Hamilton Road/McFarland Road. The project area is predominately residential with flat terrain (Refer to the Maps in Appendix A).

The functional classification for McDonald Road is a Minor Arterial and Three Notch-Kroner is a Major Collector as shown on the ALDOT Highway Functional Classification Map for the Mobile MPO 2010.

The South Alabama Regional Planning Commission (SARPC) travel demand model predicts vehicle traffic along the McDonald Road/Three Notch Road/McFarland Road Corridor will increase. The 2045 Long Range Transportation Plan notes the opening of the McDonald Road interchange at Interstate 10 and recent improvements on Dawes Road from Three Notch-Kroner Road to Cottage Hill Road are contributing to the increase in vehicle traffic along the McDonald Road/Three Notch Road/McFarland Road Corridor. While these projects have improved travel times to the City of Mobile downtown area, residential and commercial growth along this corridor is expected to increase and future roadway capacity issues are predicted. A detailed discussion of projected growth and travel patterns between the study area and downtown Mobile is included in Section 4.9.

1.2 Project Purpose and Need

The purpose of the proposed project is to relieve traffic congestion along McDonald Road and Three Notch-Kroner Road in Mobile County. Congestion often means stopped or stop-and-go traffic and usually relates to an excess of vehicles on a portion of roadway at a particular time resulting in speeds that are slower than normal or “free flow” speeds (Traffic Congestion and Reliability: Trends and Advanced Strategies for Congestion Mitigation, FHWA 2017). Congestion and vehicle speeds are discussed below in Section 1.4 Traffic Study and Capacity Analysis and additional supporting information is included in the Traffic Memorandum Report located in Appendix C.

1.3 Proposed Project Description

The proposed project is to provide congestion relief by adding capacity within the project corridor of McDonald Road and Three Notch-Kroner Road. In addition to the No-Build alternative, two (2) Build Alternatives are being considered for detailed study and are being carried forward in the environmental assessment (Refer to the Alternatives Map in Appendix A).

The two (2) Build Alternatives are being studied to provide congestion relief in the corridor to satisfy the Purpose and Need for the project. Alternative 1 (Preferred) (Refer to Section 7.0 Preferred Alternative) would widen McDonald Road from just north of Old Pascagoula Road to Three Notch-Kroner Road and along Three Notch-Kroner Road to the McFarland Road/Ben Hamilton Road intersection. This alternative would widen existing roads to add more capacity.

Alternative 2 would be constructed on a new two-lane roadway alignment beginning at the intersection of McDonald Road just north of Old Pascagoula Road and ending at the Three Notch-Kroner Road/Ben Hamilton Road/McFarland Road intersection. This alternative would add capacity with a new location road allowing traffic to travel on two different routes.

The Mobile Metropolitan Planning Organization Bicycle and Pedestrian Comprehensive Plan (Adopted on March 4, 2015) recommends sidewalks and bike lanes. On Alternative 1 (Preferred), a five (5) foot sidewalk will be provided on both sides of the roadway. Crosswalks will be provided at all side road intersections as well as at the intersections at Three Notch-Kroner Road, Dawes Lane, and McFarland Road.

On Alternate 2, farmland is predominant along the west side of the alternate with residential development occurring mostly to the east. A five (5) foot sidewalk will be provided on the east side of Alternate 2. Crosswalks will be provided at the McDonald Road intersection, at all side roads, and the Three Notch-Kroner Road intersection.

Shared Lane Markings will be provided to accommodate bicyclists on both alternates.

The proposed project is included in the ALDOT STIP Plan 2020 (Refer to Appendix B STIP: 2020).

1.4 Traffic Study and Capacity Analysis

A traffic analysis was performed for the No-Build Alternative and the two (2) Build Alternatives (Refer to the Traffic Memorandum Report in Appendix C). The purpose of the traffic study is to develop and analyze alternative routes to alleviate the congestion within the McFarland Road, McDonald Road, and Three Notch-Kroner Road Corridors. The study area includes the area from Old Pascagoula Road to the south, Three Notch-Kroner Road to the north, and McDonald Road to the east. The Traffic Study Report documents the methodology used in developing traffic forecast volumes and the level of service analysis.

The traffic volumes for the alternatives being studied were developed from the travel demand model utilized in Mobile Long Range Transportation Plan adopted on April 22, 2020 (Refer to the Traffic Memorandum Report in Appendix C). Year 2045 traffic volumes were evaluated using traffic modeling software for each of the three alternatives.

Year 2045 Level-of-Service Summary

Alternate	Road	Segment		Speed (mph)	Segment LOS
No-Build	McDonald Road	Old Pascagoula to Theodore Dawes		30.31	C
		Theodore Dawes to Three Notch		9.77	F
	Three Notch-Kroner Road	McFarland to Dawes Lane		33.43	B
		Dawes Lane to McDonald Rd		9.22	F
1	McDonald Road	Old Pascagoula to Theodore Dawes		41.46	A
		Theodore Dawes to Three Notch		28.64	C
	Three Notch-Kroner Road	McFarland to Dawes Lane		44.45	A
		Dawes Lane to McDonald Rd		25.83	C
2	McFarland Road	McDonald to Three Notch		41.53	A
	McDonald Road	Old Pascagoula to Theodore Dawes		41.78	A
		Theodore Dawes to Three Notch		24.60	C
	Three Notch-Kroner Road	McFarland to Dawes Lane		45.05	A
		Dawes Lane to McDonald Rd		26.80	C

The capacity and level of service (LOS) of a roadway segment is evaluated based on the traffic turning movement volumes, traffic composition, and roadway geometrics. The LOS, as outlined in the Highway Capacity Manual, 6th Edition, is evaluated based on average vehicular delay for an intersection and average speed for an arterial and is reported as a letter designation of A through F (LOS A has the least delay per vehicle, and LOS F has the most). For standard design purposes, a LOS C or better is desirable, with LOS D being allowable. LOS E represents the capacity of the roadway section, while LOS F represents a failing condition with excessive traffic congestion and unlimited delays.

As shown in the table above, if no improvements are made by 2045 both McDonald Road and Three Notch-Kroner Road will deteriorate to LOS F in the project area. Based on the traffic analysis, Alternatives 1 and 2 both will relieve congestion in the study limits and will satisfy the Purpose and Need. Alternative 1 (Preferred) provides a noticeable benefit by improving mobility and decreasing travel time with LOS C and increased vehicle speeds to 25.83 mph. Alternative 2 also provides similar benefits with a LOS C and improved vehicle speeds to 26.80 mph.

1.5 Logical Termini

The south terminus will be just north of the Old Pascagoula intersection on McDonald Road with 4 (Alternative 2) or 5 (Alternative 1) lanes and tie to the STPMP-7612(600) project that ends at this location with 5-lanes. The Categorical Exclusion environmental study for the STPMP-7612(600) project was approved on December 18, 2018, and currently right of way is being purchased to construct the project. The STPMP-7612(600) project is designed to relieve congestion on McDonald Road south of Old Pascagoula Road to the interchange on I-10. The project will widen McDonald Road for a distance of 0.7 mile from north of I-10 to north of Old Pascagoula Road South of Haskew Drive. The widening will entail construction of a 5-lane urban, curb and gutter section. This includes two travel lanes in each direction and a continuous, two-way, center left-turn lane. At the McDonald Road/Old Pascagoula Road intersection, work will extend approximately 500 feet north of the intersection along McDonald Road. The STPMP-7612(600) project improvements will serve as the logical south terminus for this STPMB-4925 (250) project.

The north terminus for the STPMB-4925 (250) project was determined to be at the Three Notch-Kroner/Ben Hamilton /McFarland Road intersection. The South Alabama Regional Planning Commission (SARPC) was consulted to perform a travel demand analysis for McFarland Road north of the Three Notch-Kroner/Ben Hamilton/McFarland Road intersection as part of the 2021 Traffic Memorandum Report in Appendix C. The staff at SARPC produced two Year 2045 travel demand model results for McFarland Road north the Three Notch-Kroner/Ben Hamilton /McFarland Road intersection. One “run” included Alternate 2 (McFarland Road on new alignment) and the second “run” included Alternate 1 (widening of McDonald Road and Three Notch Kroner Road). The anticipated future traffic volume for McFarland Road north of Three Notch Kroner Road was 14,525 vpd for Alternative 2 and 12,741 vpd for Alternative 1. The resulting level of service for McFarland Road north of Three Notch-Kroner Road as a two-lane roadway was LOS B (32.26 mph) for Alternative 2 and LOS B (33.78 mph) for Alternative 1. The north terminus is logical since the LOS north of the project is acceptable through 2045.

1.6 Alternatives Analysis

A No-Build Alternative and two (2) Build Alternatives were evaluated.

No-Build Alternative

The “No-Build” Alternative would require vehicular traffic to continue utilizing McDonald Road and Three Notch-Kroner Road as the connection to I-10. This alternative does not address the need to relieve traffic congestion along McDonald Road and Three Notch-Kroner Road. The No-Build Alternative will be carried forward as a reasonable alternative throughout the environmental review process to provide a benchmark in which to compare impacts with the proposed alternatives.

Build Alternatives

Alternative 1 - Preferred

Alternative 1 (Preferred) will be a best fit widening of the existing two-lane roadway, with a total length of approximately 3.8 miles. The proposed project would add two additional lanes to provide four travel lanes with a center turn lane. Beginning at the Old Pascagoula Road and McDonald Road intersection, widening would be along both sides of McDonald Road for approximately 0.75 miles, near Stratford Drive. North of Stratford Drive, the widening transitions to widening to the east. Widening to the east would eliminate impacts to the spillway and dam associated with a 67 acre lake located just south of Belmont Park Drive. The spillway and dam are located 50 feet west of the existing southbound travel lane on McDonald Road. Transitioning to the east avoids reconstructing the existing spillway and 800 feet of dam. Once past the lake, Alternative 1 (Preferred) continues to the Three Notch-Kroner Road Intersection and the alignment transitions from widening to the east to widening to the west. This alignment transition minimizes impacts to residences located on the east side of McDonald Road. The widening impacts some open farmland on the west side of the roadway. At the Three Notch-Kroner Road intersection, Alternative 1 (Preferred) then proceeds west along Three Notch-Kroner Road. Widening would occur along both sides of Three Notch-Kroner Road providing four travel lanes with a center turn to the Three Notch-Kroner Road/Ben Hamilton Road intersection. Alternative 1 (Preferred) also includes the construction of a larger roundabout at the intersection of Dawes Lane as well as a new roundabout at the Three Notch-Kroner Road/Ben Hamilton Road and McFarland Road intersection. Alternative 1 (Preferred) has developed residential neighborhoods located on both sides throughout its length, approximately 3.8 miles (Refer to the Maps in Appendix A).

Alternative 2

Alternative 2 would consist of constructing a new two-lane roadway on new alignment that would begin at the intersection of Old Pascagoula Road and McDonald Road and end at the intersection of Three Notch-Kroner Road/Ben Hamilton Road. North of the intersection of Old Pascagoula Road and McDonald Road, the alignment would traverse to the west and cross Maurice Poiroux Road. From this point the alignment turns to the north and ends at the intersection of Three Notch-Kroner Road/Ben Hamilton Road. Alternative 2 would also include the construction of two new roundabouts at the

intersection of McDonald Road and Three Notch-Kroner Road. Alternative 2 runs primarily through open farmland except where it traverses through a small residential area, Labrador Run, located about midway along the alignment. Alternative 2 has a total length of approximately 3.6 miles (Refer to the Maps in Appendix A).

SECTION 2.0 IMPACT SUMMARY – HUMAN ENVIRONMENT

2.1 Relocations

Alternative 1 (Preferred) would require approximately 10.1 acres of right-of-way. Preliminary studies indicate that one (1) residence and one (1) business will be displaced. The business is currently vacant and for sale.

Alternative 2 would require approximately 38.4 acres of right-of-way. Preliminary studies indicate that one (1) business will be displaced. The business is currently vacant and for sale.

ROW-RA-1 forms for each alternative are included in Appendix D.

2.2 Prime and Unique Farmlands

Alternative 1 (Preferred) will convert approximately 0.25 acres of farmland. A Farmland Conversion Impact Rating was determined (Form AD-1006 (10-83)) and the Total Site Assessment Points for Alternative 1 (Preferred) is 22. Since the points score is less than 160, no further consideration for protection is required.

Alternative 2 will convert approximately 28 acres of farmland. The new alignment will divide some farmland, however access for farm equipment will be maintained. A Farmland Conversion Impact Rating was determined (Form AD-1006 (10-83)) and the Total Site Assessment Points for Alternative 2 is 57. Since the points score is less than 160, no further consideration for protection is required (Refer to Appendix E).

2.3 Community Cohesion

Alternative 1 (Preferred), the preferred alternative, would be a best fit widening of the existing roadway. Due to the nature and scope of the work on Alternative 1 (Preferred), it is not anticipated that it will divide any neighborhoods along existing McDonald Road. Community facilities along Alternative 1 (Preferred) may experience temporary impacts during construction.

Alternative 2 would consist of constructing a new two-lane roadway on new alignment that would begin at the intersection of Old Pascagoula Road and McDonald Road and end at the intersection of Three Notch-Kroner Road/Ben Hamilton Road. Alternative 2 would connect to an existing internal circulation road in the Labrador Run Subdivision which would essentially divide the neighborhood. Alternative 2 would add new sidewalk in Labrador Run in areas where sidewalk currently does not exist. Alternative 2 would connect the new sidewalk to the one existing sidewalk in Labrador Run at Maxwell Drive North. Alternative 2 would also provide the opportunity for pass through traffic to use Maurice Poiroux Road as a shortcut to Old Pascagoula Road. The increased traffic volume would

impact the local residents living along Maurice Poiroux Road but is not anticipated to impact community cohesion along existing Maurice Poiroux Road.

2.4 Environmental Justice (EJ)

Executive Order (EO) 12898, Federal Actions to Address EJ in Minority Populations and Low-Income Populations directs Federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of Federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Minority and low-income populations exist in the project area. The project is anticipated to impact those populations, but the impacts are not anticipated to be disproportionately high and adverse to the EJ populations. Furthermore, analysis of the study area during field surveys, demographic studies, and the public involvement process indicates minority and low-income residents are not clustered in any discrete location(s) but distributed throughout the study area. Due to a lack of EJ clusters, it is reasonable to conclude impacts are not disproportionately high and adverse to the EJ populations. However, Alternative 2 has greater impacts with more than three times the amount of right-of-way acquisition and substantial noise increases as compared to Alternative 1 (Preferred). Therefore, Alternative 2 has a greater potential to impact the EJ population. In accordance with the provisions of EO 12898 and FHWA Order 6640.23A, no further EJ analysis is required. An EJ evaluation is included in Appendix F.

2.5 Noise

The 2019 Existing, 2045 No Build, 2045 Build Alternative 1 (Preferred), and 2045 Build Alternative 2 noise levels were analyzed as part of the noise study. This analysis was conducted in accordance with procedures for noise studies as set forth in the 2021 ALDOT *Highway Traffic Noise Analysis and Abatement Policy and Guidance* and in Title 23, Part 772 of the Code of Federal Regulation (23 CFR 772). The scope of the analysis was to determine and analyze traffic noise impacts on properties near the project and to analyze alternative noise abatement measures to mitigate these impacts, giving weight to the benefits and costs of abatement and to overall social, economic, and environmental effects (Refer to Appendix G to view the Noise Impact Analysis Report).

According to 23 CFR 772 and ALDOT practice, a traffic noise impact occurs when the predicted levels approach or exceed the noise abatement criteria (NAC) or when predicted noise levels substantially increase relative to the existing noise level, even though the predicted levels may not exceed the NAC. Section 2 of the 2021 ALDOT Highway Traffic Noise Analysis and Abatement Policy and Guidance defines “approach” as used in 23 CFR 772.11(e) to mean levels one decibel below the NAC levels and a “substantial noise increase” to mean an increase of 15 dBA over the existing noise level. Per FHWA guidance, the determination of “approach” is expressed as a whole decibel.

The TNM 2.5 Model was used to predict noise levels for noise analysis areas containing noise-sensitive land uses. One hundred and sixty-one (161) Category B receptors were sited to represent residences within the identified noise analysis areas. Two (2) Category C receptors were sited to represent Victory Baptist Church and the Cross & Crown Family Worship Center. Noise levels were also predicted for 43 undeveloped parcels for the build scenarios by siting 132 Category G receptors. A summary of the sound level impacts predicted by TNM 2.5 for each scenario is shown in the table below:

Traffic Noise Impact Summary

Condition	Total Impacted Receptors	Substantial Noise Increases
2019 EXISTING	1	-
2045 NO BUILD	2	0
2045 BUILD ALTERNATIVE 1	4	0
2045 BUILD ALTERNATIVE 2	38	36

Alternative 1 (Preferred) includes the addition of through-traffic lanes to an existing highway and Alternative 2 includes the construction of a highway on a new location; therefore, the project is defined by 23 CFR 772 as a Type I project.

Mitigation and abatement measures were analyzed for both alternatives. It was determined that alteration of a portion of the horizontal alignment along Alternative 2 to mitigate one impacted receptor is reasonable. If Alternative 2 is carried forward in the environmental process, alteration of the horizontal alignment in the vicinity of the impacted receptor would be evaluated to mitigate this impact. Noise barriers were evaluated at 5 locations. None of the noise barriers were found to be reasonable. No additional reasonable mitigation or abatement measures were identified. A noise barrier is not likely to be included in the project plans to provide noise abatement for impacted receptors. Changes made during the final design process for the project could affect conclusions regarding noise impacts and abatement; therefore, final noise abatement decisions will be made during the final design process.

The modeled undeveloped land receptors that approached or exceeded the NAC of 67 dB(A) for Categories B or C at 100 feet were analyzed. None of the modeled undeveloped land receptors approached or exceeded the NAC of 67 dB(A) for Categories B or C at 150 feet or 200 feet from the edge of pavement. This information is intended to be used by local officials for better land use development planning and is meant to serve as a basic guideline to reduce future noise impacts.

Construction noise will temporarily increase noise levels in the immediate vicinity of the construction site. The major construction elements of this project are expected to be earth removal, pavement removal, drilling, hauling, grading, and paving. General construction noise impacts, such as temporary speech interference for passersby and individuals living or working near the project can be expected. Considering the relatively short-term nature of construction noise, these impacts are not expected to

be substantial. If construction noise becomes a concern, restrictions can be placed on the contractor to limit times for certain types of construction operations.

2.6 Hazardous Materials

A field reconnaissance was performed of the proposed project area to observe the current uses of property within and in close proximity to the proposed right-of-way. The majority of the Alternative 1 (Preferred) area is current right-of-way with parking lots, parking ingress and egress, driveway ingress and egress, and grassed land. Trash and discarded debris were observed along the current right-of-way. The majority of Alternative 2 is proposed right-of-way through undeveloped agricultural land (Refer to the Hazardous Materials Assessment report in Appendix H).

In addition to the field reconnaissance, selected federal and state regulatory lists were reviewed to identify recorded information concerning potential hazardous materials sites or environmental impacts within the proposed project area or in close proximity such that contamination could potentially impact the proposed project area. The regulatory lists obtained from Environmental Data Resources (EDR) were also reviewed.

ALDOT Hazardous Materials Forms were completed following the guidelines set forth in the State of Alabama Highway Department Guidelines for Operation, Procedures for Handling Hazardous/Toxic Material Sites Involved with Highway Projects.

On Alternative 1 (Preferred), seven potential hazardous material sites were identified in proximity such that contamination would be likely to impact property located within the proposed Alternative 1 (Preferred) right-of-way. There were five other EDR-listed facilities that are not considered potential hazardous materials sites, due to distance from the project right-of-way, relative topographic elevation, records information, and intervening local topographic features.

On Alternative 2, four potential hazardous material sites were identified in proximity such that contamination would be likely to impact property located within the proposed Alternative 2 right-of-way. One other EDR-listed facility is not considered a potential hazardous materials site, due to distance from the project right-of-way, relative topographic elevation, records information, and intervening local topographic features.

ALDOT Materials and Tests Bureau performed an evaluation of the identified potential hazardous materials sites for both alternatives. Personnel from the Materials and Tests Bureau Environmental Services Section visited the project area on February 17, 2022 and determined that one (1) of the sites along on Alternative 1 (Preferred) would warrant further investigation. The site was environmentally cleared for construction with an environmental remediation cost of \$38,500.00.

Based on the evaluation, the project is environmentally cleared for construction work with an associated environmental remediation cost for Alternative 1 (Preferred) of \$38,500.00 and no associated environmental remediation costs for Alternative 2 (Refer to the Hazardous Materials Clearance Letter in Appendix H).

SECTION 3.0 IMPACT SUMMARY – HUMAN ENVIRONMENT – SECTION 4(F) AND RELATED

3.1 Cultural Resources

A cultural resources assessment was performed for the build alternatives on the proposed project. The proposed project's survey area is approximately 178.8 acres in size. Field investigations for the project were undertaken between September 24 and October 2, 2020. A copy of the Cultural Resources Assessment is on file with ALDOT.

During the cultural resources survey, no new archaeological resources were located within the boundaries of the survey area. The proposed project area was found to be extensively impacted by prior roadway and related infrastructure construction, residential/commercial development, and agricultural activities. Three historic structures were identified, were evaluated, and are considered ineligible for listing to the NRHP due to lack of historic integrity and/or lack of significance.

Based on these findings, it was concluded that the proposed project build alternatives will not affect any NHRP eligible historic properties, and a finding of no historic properties affected was recommended.

The cultural resources assessment was submitted to the State Historic Preservation Officer (SHPO) for review and concurrence. The SHPO concurred on April 20, 2021, that the project build alternatives will have no adverse effect on any property on or eligible for the National Register of Historic Places (Refer the SHPO concurrence letter in Appendix I).

3.2 Tribal Coordination

The FHWA initiated tribal coordination by email to the tribes dated September 27, 2021. A response from the Choctaw Nation of Oklahoma has been received (Refer to Appendix J). The Cedar Grove Church and Cemetery and two cemeteries located southwest of the area of potential affect noted in the Choctaw Nation of Oklahoma response, will not be impacted by the project. A response from the Muskogee Creek Nation was also received with no substantive comments offered.

3.3 Section 6(f)

The proposed project will not require the acquisition of lands under the protection of Section 6(f) of the Land and Water Conservation (LWCF) Act of 1965 or other unique areas or special lands that were acquired in fee or easement with public-use money and have deed restrictions or covenants on the property.

3.4 Wildlife and Waterfowl Refuges

No wildlife and/or waterfowl refuges are in the vicinity of the proposed project build alternatives.

3.5 Section 4(f)

The proposed project build alternatives will not require the use of properties protected by Section 4(f) of the Department of Transportation Act (49 U.S.C. 303).

SECTION 4.0 IMPACT SUMMARY – NATURAL RESOURCES

4.1 Water Quality

The proposed project build alternatives will not impact any stream listed on the 303(d) report for the State of Alabama. ALDOT's standard Best Management Practices (BMP's) will be implemented for erosion and/or siltation control.

4.2 Wetlands and Streams

On Alternative 1 (Preferred), approximately 3.17 acres of jurisdictional wetlands and approximately 605 linear feet of streams would be impacted.

On Alternative 2, approximately 3.84 acres of jurisdictional wetlands would be impacted. No streams would be impacted by Alternative 2. (Refer to the Wetlands and Waters Assessment Report in Appendix L)

An individual US Army Corps of Engineers permit will be required.

4.3 Waterways

The project will not require a U.S. Coast Guard bridge permit and/or a Tennessee Valley Authority permit.

4.4 Floodplain/Floodway

The proposed project is anticipated to have potentially minor adverse impacts to floodplains. Please see the attached Location Risk Assessment Record Form and FIRM Maps in Appendix M.

4.5 Wild and Scenic Rivers

The project will not impact Wild and Scenic Rivers.

4.6 Coastal Zone

The project is located in Mobile County however, it is not located in the Coastal Zone.

4.7 Air Quality

Carbon Dioxide

An Air Quality Impact Analysis was conducted for each build alternative at the intersection with the lowest level of service to predict carbon monoxide (CO) emissions associated with the increased traffic the proposed improvements are expected to generate. The intersection of McDonald Road and Three Notch-Kroner Road was chosen as the location with the lowest level of service for both Alternative 1 (Preferred) and Alternative 2 based on traffic patterns in 2019. McDonald Road runs North-South and Three Notch-Kroner Road runs East-West.

The NAAQS for CO are 35 parts per million (ppm) for the one-hour standard and 9 ppm for the eight-hour standard. Using dispersion modeling, worst-case one-hour concentrations were modeled for multiple receptors in the vicinity of the intersection.

Modeling was conducted at the selected intersection for 2019 existing conditions (2019 Existing) and the 2045 design year build alternative (2045 Build). Peak-hour traffic volumes (design hour volumes) were calculated from the provided 2019 and 2045 traffic data.

For the analyzed intersection, one-hour and eight-hour CO concentrations were predicted with CAL3QHC at each receptor for each wind direction using an ambient background CO concentration of 3 ppm.

- Based on the analysis performed, carbon monoxide concentrations for the proposed project will not exceed the one-hour National Ambient Air Quality Standards under the existing condition in 2019 or under the build alternatives in the Design Year 2045. Results of the analysis indicate that one-hour CO concentrations at all receptor locations are below the one-hour 35 ppm standard for both the 2019 Existing condition and the design year 2045 Build alternatives. Since predicted one-hour CO concentrations range from 3.0 ppm to 3.5 ppm and do not exceed the 9 ppm eight-hour standard, an eight-hour CO analysis was not performed (Refer to Appendix N for the Air Quality Impact Analysis Report).

Particulate Matter (PM) 2.5

The proposed project is in Mobile County which is not in a PM 2.5 non-attainment area.

Mobile Source Air Toxics (MSATs)

The project is expected to have a low potential MSAT effects in that the design year traffic is projected to be less than 140,000 AADT; therefore, a qualitative analysis was performed (Refer to Appendix N for detailed discussion of the qualitative analysis in the Air Quality Impact Analysis Report).

4.8 Endangered Species

A Biological Assessment was performed for the build alternates in conformance with U.S. Fish and Wildlife Service (USFWS) guidelines. The assessment included research into the prior uses of the property in the study area; prior and current uses of adjacent properties; prior and current permitted activities associated with the properties; a survey of the properties for listed species of concern, their

critical/associated habitats, wetlands, and all other biological aspects within the project study area (Refer to Appendix O for the Biological Assessment Report).

Critical Habitats within Project Area

The Alternative 1 (Preferred) project corridor exhibits habitat that may be considered suitable for gopher tortoises (*Gopherus polyphemus*) (which can be found in agriculturally developed fields and cleared areas adjacent to wooded areas. Additionally, the sandy streams Alternative 1 (Preferred) crosses may be considered suitable habitat for southern clubshell mussel (*Pleurobema decisum*) and inflated heelsplitter mussel (*Potamilus inflatus*). Gopher tortoise and mussel surveys were performed by walking the entirety of the corridor. No individuals of these species were observed on the days of the site investigation.

The Alternative 2 project corridor contains agricultural fields suitable for gopher tortoises and slow moving, sandy streams suitable for southern clubshell mussel and inflated heelsplitter mussel. Gopher tortoise and mussel surveys were performed by walking the entirety of the corridor. No individuals of these species were observed on the days of the site investigation.

Plant Communities

Plant communities in the Alternative 1 (Preferred) study area ranged from barren uplands, forested uplands, and bottomland hardwoods. Barren uplands were located adjacent to residential areas and were predominated by Broomsedge bluestem (*Andropogon virginicus*), Bahiagrass (*Paspalum notatum*), Vasey's grass (*Paspalum urvillei*), and St. Augustine grass (*Stenotaphrum secundatum*). Forested uplands were dominated by Yaupon (*Ilex vomitoria*), Japanese climbing fern (*Lygodium japonicum*), southern magnolia (*Magnolia grandiflora*), Shortleaf pine (*Pinus echinata*), Loblolly pine (*Pinus taeda*), Live oak (*Quercus virginiana*), Sawtooth blackberry (*Rubus argutus*), Greenbriar (*Smilax* spp.), and Chinese tallow (*Triadica sebifera*). Bottomland hardwoods were predominated by Southern waxy sedge (*Carex glaucescens*), Swamp titi (*Cyrilla racemiflora*), Velvet panicum (*Dichanthelium coparium*), Sweetbay (*Magnolia virginiana*), Wax myrtle (*Morella cerifera*), Cinnamon fern (*Osmunda cinnamomea*), and Shortleaf pine (*Pinus elliottii*).

Alternative 2 exhibited similar habitats as Alternative 1 (Preferred) except for agriculturally developed fields producing cotton at the time of the survey. Plant communities in bottomland hardwoods differed as well to include Water tupelo (*Nyssa aquatica*), Swamp tupelo (*Nyssa biflora*), Pond cypress (*Taxodium ascendens*), and Bald cypress (*Taxodium distichum*).

Species Impacts

The biological assessment report was coordinated with the USFWS. The USFWS provided a response by letter dated August 10, 2021, and an email dated September 23, 2022 (Refer to USFWS email and letter in Appendix O). No individuals of these species were observed while performing the biological assessment. The project corridor of the selected alternative will be reinvestigated prior to construction to determine the presence of the gopher tortoise prior to construction.

4.9 Indirect and Cumulative Impacts

Indirect and cumulative impacts are a potential concern in any transportation improvement project. Indirect impacts are “caused by the action and occur later in time or farther removed in distance” as opposed to direct impacts. These effects are often less predictable than direct project effects but are still “reasonably foreseeable” (40 CFR 1508.8). Cumulative effects encompass all effects related to a project, both direct and indirect, as well as effects of any other actions that may impact the environment in the area under study. The cumulative impact of a project is defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions” (40 CFR 1508.7).

Indirect impacts would mainly be the result of induced development that would be encouraged by construction of the proposed project. Induced development includes development that would not take place if not for the proposed action, or development that would take place at a different location, a smaller scale, or at a later time. For a transportation project in a somewhat undeveloped area such as Alternative 2 (McFarland Road on new alignment), induced development can occur at any location where access is allowed along the roadway. However, induced development for this project will be controlled to some degree by the adjacent existing subdivisions, floodplain, and wetlands.

Actions to be considered in a cumulative effects’ assessment include not only previous or future actions of Mobile County, but actions of other government agencies, private citizens, corporations, and other entities which may be either related or unrelated to the project. It is not the intention of this document to evaluate or identify all impacts associated with the other identified project(s). No other major projects have been identified at this time other than the continued development of this same transportation corridor continuing north of the current study area.

No Build Alternative

Indirect

The No Build Alternative would have no impact on the potential for inducing changes in patterns of land use, population density, or growth rate. The No Build Alternative would result in continued traffic congestion. This may result in localized impacts to businesses and residences and slow the development of vacant and developed properties.

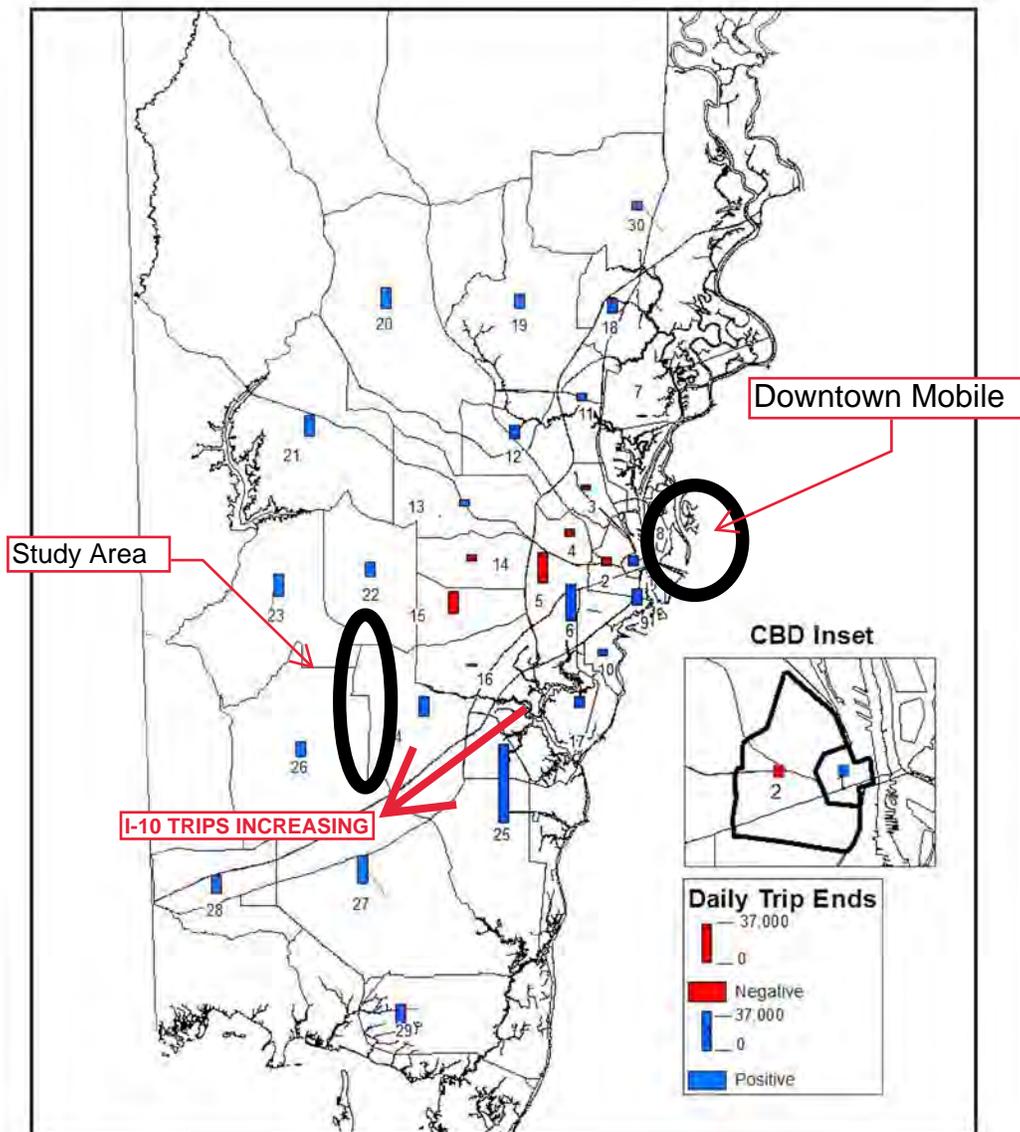
Cumulative

The No Build Alternative would have no incremental impact with respect to cumulative effects of past, current, and future projects on most environmental resources. However minimal, expected degradation levels of service in the 2045 Design Year presented in Appendix C may adversely affect localized air quality due to increased emissions from vehicle delays. Excess emissions resulting from congestion and idling could increase localized levels of carbon monoxide, volatile organic compounds, and nitrogen oxides, although no predicted emissions levels would exceed ambient air quality standards at this time.

Build Alternatives

Indirect

The fastest growing part of Mobile County since the mid-1970's has been the area west of Interstate 65 and north of Interstate 10. Other areas showing strong estimated residential growth between 2015 and 2045, are the suburbs near existing McDonald Road that have projected growth attributed to the completion of the I-10/McDonald Road Interchange and the reduction of travel time to downtown, as well as the availability of residential property. Growth rates across the study area vary, with the highest rates located in sparsely developed areas adjacent to the interstates and other major highway corridors. Housing growth is expected in the planning area of the McFarland/McDonald Road corridor. Part of what is driving the projected growth in West Mobile was the opening of the I-10/McDonald Road interchange and the recently improved Extension (from Three Notch Road to Cottage Hill Road). This has opened up quicker travel times to downtown. During the same time period, areas exhibiting strong employment growth include the Interstate 10 corridor. In addition, downtown Mobile has had a large increase in employment since 2000, due to the Austal ship building expansion and Airbus airplane manufacturing. Residential growth and employment growth combine to increase trips between the McDonald Road study area and downtown Mobile. The figure below, from the Mobile MPO, demonstrates that vehicle trips in the study area are expected to increase by 26,000 trips per day in 2045. Most of Interstate 10 is projected to carry about 20,000 vehicles more per day in 2045 than in 2015, and portions are projected to carry over 30,000 more per day. The Interstate 10 sections in downtown Mobile will have a traffic demand double their normal capacity.

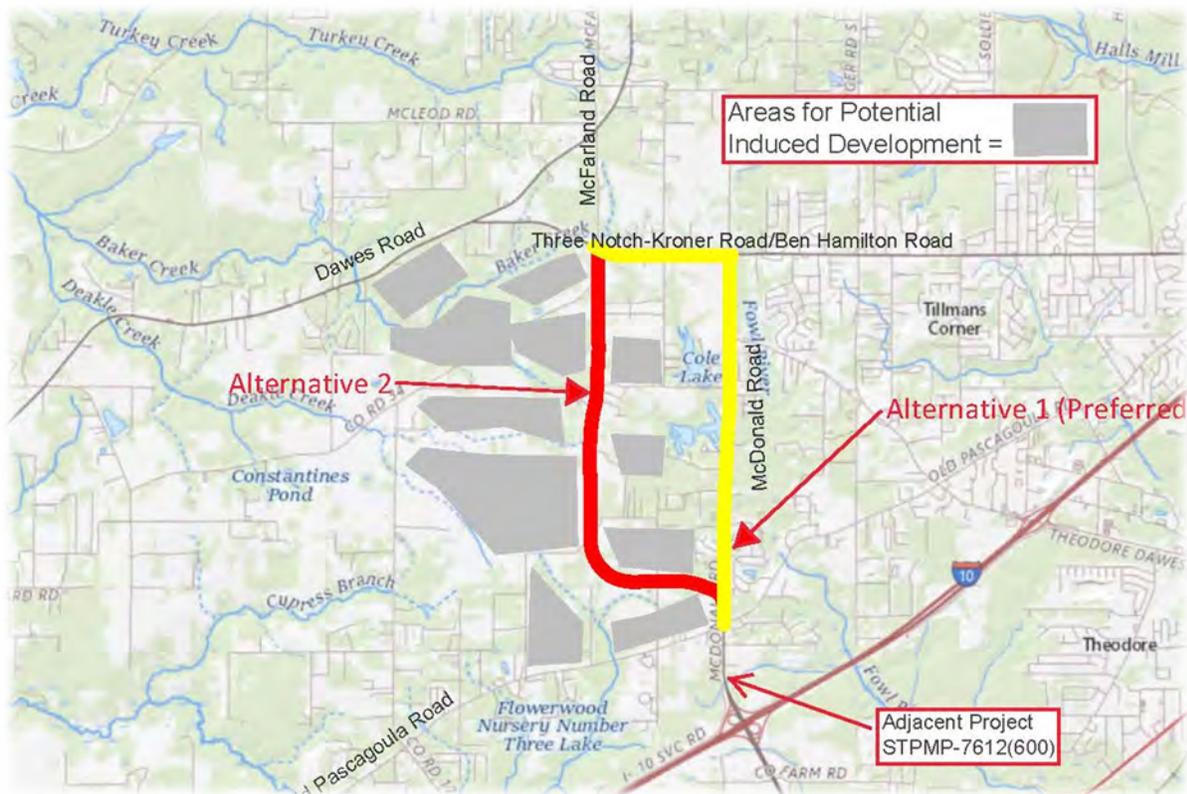


(Mobile MPO)

Trip Increase by Planning District (2015 to 2045) (Mobile MPO)

Alternative 1 (Preferred Alternative) would be constructed predominantly along existing McDonald Road and is not expected to induce changes in patterns of land use or population density along the corridor above what is already expected. The limited availability of land for development on the corridor, as a result of prior decades of residential development, would serve to limit opportunities for induced development. Residential development would be expected to continue to occur along the proposed project corridor in areas available for development or redevelopment. Alternative 1 (Preferred Alternative) may encourage redevelopment to occur by reducing congestion along McDonald Road and allowing more efficient access to the I-10 corridor and to downtown Mobile.

Alternative 2 will be a new location two-lane roadway alignment beginning at the intersection of McDonald Road just north of Old Pascagoula Road and ending at the Three Notch-Kroner Road/Ben Hamilton Road/McFarland Road intersection. Alternative 2 primarily traverses open farmland except where it passes through a small residential area, Labrador Run. Farmland is predominantly along the west side of the alternate with residential development occurring mostly to the east. It is reasonably foreseeable that Alternative 2 would induce development on the surrounding open farmland as shown on the figure below. In addition to converting farmland to residential neighborhoods, induced development could also negatively impact wildlife by reducing foraging or refuge habitat for species utilizing agricultural areas and negatively impact water quality by increasing stormwater runoff. Changes in land use are a possibility as a result of changes in access to individual properties and/or alterations to traffic patterns along the new alignment. It is likely undeveloped areas would be developed as residential neighborhoods, and developed at an increased rate than previously anticipated, to meet Mobile County's demand for additional housing with reasonable access to the I-10 corridor and to downtown Mobile.

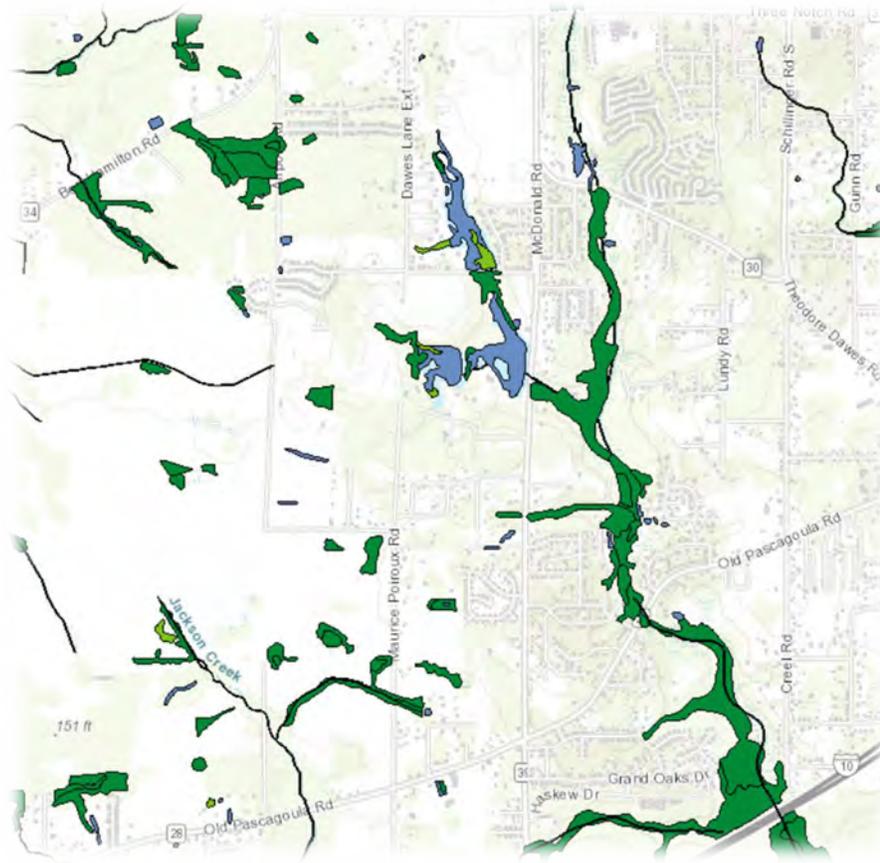


Cumulative

Cumulative impacts of the proposed project may range from socioeconomic impacts to impacts on the natural environment. The project would enhance undeveloped areas by providing better accessibility. In the context of other transportation and development projects, the proposed project would have the potential to result in an incremental impact to wetlands, floodplains, and wildlife habitat.

Wetlands

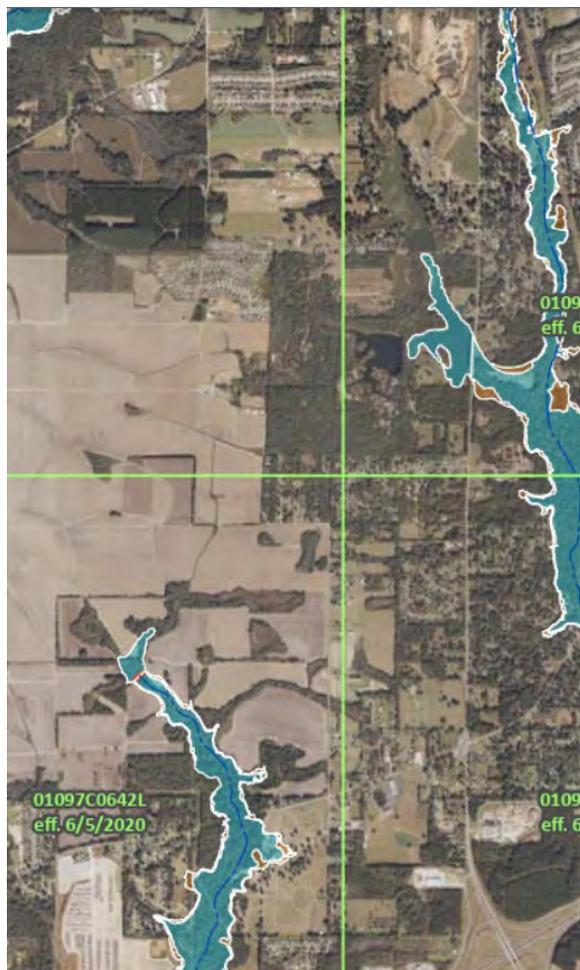
The objective of the Clean Water Act (CWA) is to maintain and restore the chemical, physical, and biological integrity of the Waters of the United States including deep-water habitats, special aquatic sites, and wetlands. Section 404 of the CWA authorizes the U.S. Army Corps of Engineers (USACE) to make decisions regarding the jurisdictional status of a wetland, issue permits to impact wetlands, and to implement mitigation to compensate for potential wetland impacts. As shown in the figure below, wetlands along McDonald Road have been impacted by development and induced development is expected to continue. Existing residential development has been built directly adjacent to wetlands and it is reasonably foreseeable that development will continue in this manner spreading westward throughout the study area. Additional impervious surface adjacent to wetlands would increase the volume of water entering the wetlands and negatively impact flood control, flood storage, and groundwater filtration properties. Section 404 permits are required for all potential future development to ensure jurisdictional wetlands are avoided, minimized, and/or mitigated. Mitigation is required for unavoidable impacts and occurs preferably within the same basin.



www.fws.gov/program/national-wetlands-inventory

Floodplains

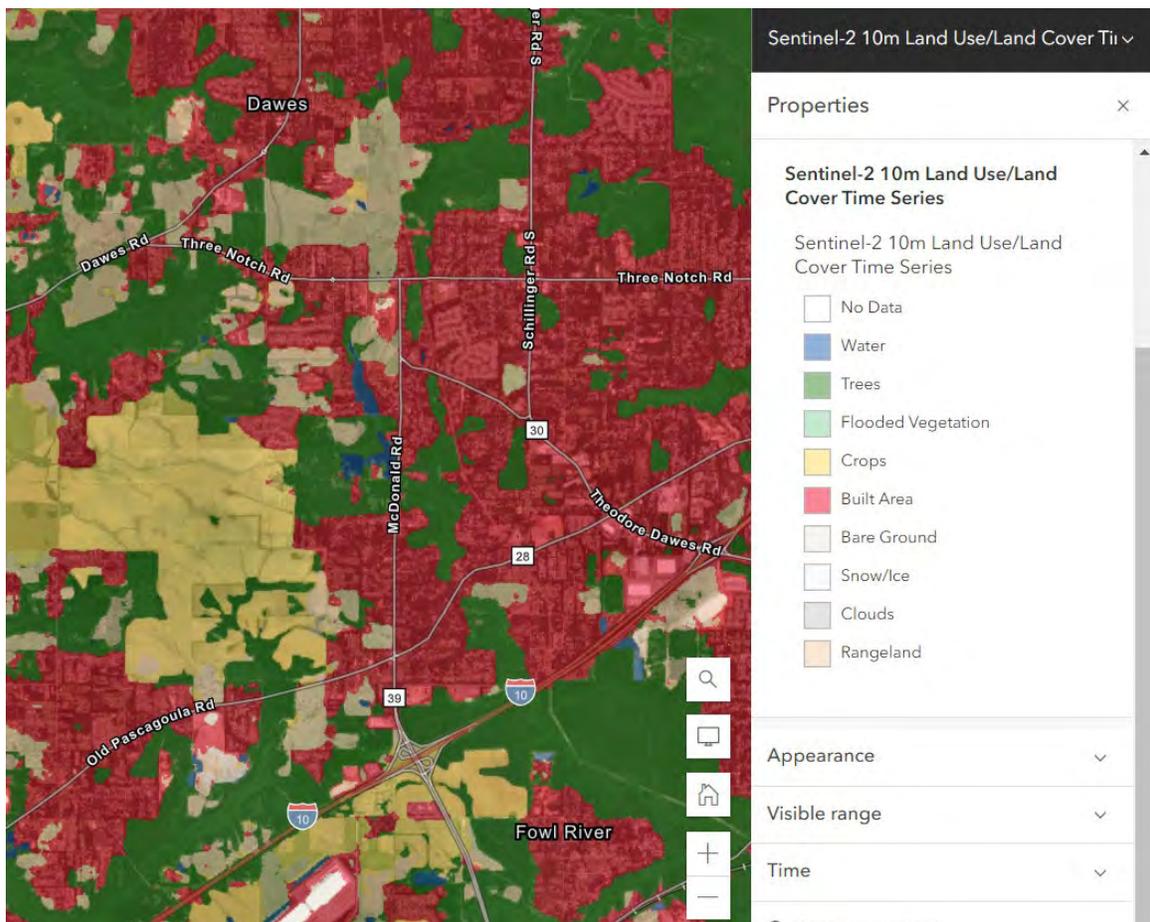
Executive Order 11988 Floodplain Management requires Federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. Projects that potentially impact floodplains will be required to meet Federal Emergency Management Agency (FEMA) standards as required by 23 CFR 650, Subpart A, Location and Hydraulic Design of Encroachment on Floodplains. Floodplains will likely be impacted in a similar manner to wetlands. It is reasonably foreseeable that development will continue spreading westward throughout the study area. Additional impervious surface adjacent to floodplains would increase the volume of water entering the floodplains and negatively impact flood storage. Close coordination and approval from FEMA and Mobile County would be required for any activity potentially affecting floodplains. Coordination with FEMA and Mobile County will identify measures to avoid, minimize, and mitigate flooding. The Mobile County Flood Damage Prevention Ordinance requires potential developments to ensure they will not result in any increase in flood levels or floodway widths. Measures may include the construction of stormwater retention basins to compensate for additional development.



www.hazards-fema.maps.arcgis.com

Wildlife Habitat

The Endangered Species Act of 1973 (ESA) [16 U.S.C. 1531 et. seq.], as amended, was enacted to provide a program for the preservation of endangered and threatened species and to provide protection for the ecosystems upon which these species depend for their survival. The USFWS is the primary agency responsible for implementing the ESA for birds and terrestrial and freshwater species. Potential habitat for protected species is likely to be reduced as development increases in the study area. The figure below shows built areas in red. Built areas occur along existing roadways in the study area. Over time, potential wildlife habitat areas shown as farmland (crops shown in tan) and wooded areas (trees shown in green) are expected to be developed. Reduction in habitat would create species competition for available food and shelter and, eventually, reductions in some populations. The ESA protects listed species and their habitats to ensure impacts from development do not pose additional risk to their survival. Close coordination and approval from USFWS would be required for any activity potentially affecting protected species habitat to ensure adverse effects would be avoided or minimized. USFWS would provide guidance and pertinent conservation measures to ensure listed species and their habitats are protected as mandated by the ESA.



www.arcgis.com

SECTION 5.0 PUBLIC INVOLVEMENT

5.1 Early Coordination

As part of the early coordination procedures for the proposed project, a letter was sent by ALDOT to public officials and agencies to obtain views and comments. The views and comments letters were sent out to the public officials and agencies by letter dated January 15, 2021. Three (3) responses have been received (Refer to Appendix P).

5.2 Public Involvement

Due to public health concerns, an alternative to an in-person, open house Public Involvement Meeting was conducted. An online, open forum meeting using the ALDOT website was conducted. A webpage was created for the public to view project information and submit comments. Additionally, contact information was provided for people to call to discuss the project or request a meeting.

On June 30, 2021, a public notice was published in the Lagniappe advertising the dates and website. A copy of the public notice is included in the Public Involvement Meeting Summary.

On July 6th, 2021, invitations were mailed to local residents and landowners. A copy of an invitation is included in Appendix Q.

The virtual meeting was held between July 15, 2021, and August 15, 2021.

Appendix Q contains the Public Involvement Meeting Summary and responses to the comments received. Individual comment forms are on file with ALDOT.

5.3 Public Hearing

An opportunity for a Public Hearing will be offered upon FHWA concurrence with the Environmental Assessment.

SECTION 6.0 ALTERNATIVES IMPACTS COMPARISON

Alternatives Impacts Comparison Matrix

Environmental Impacts	No-Build Alternative (Existing McDonald Rd)	Alternative 1 (Preferred) (McDonald Road/Three Notch Road Widening)	Alternative 2 (McFarland Road on New Alignment)
Historic Standing Structures	0	0	0
Archaeological Sites	0	0	0
Right-of-Way	0 Acres	10.1 Acres	38.4 Acres
Residential Relocations	0	1	0
Business Relocations	0	1	1
Wetland Impacts (Acres)	0	3.17 acres	3.84 acres
Stream Impacts (LF)	0	605 LF	0 LF
Endangered Species	None	None	None
Noise Impact Sites	2	4	38
Farmland	0 Acres	0.25 Acres	28 Acres
Potential Hazardous Material Sites	0	7	4
Hazardous Materials Remediation Cost	\$0	\$38,500	\$0
2025 Level of Service	LOS F	LOS A	LOS A
2045 Level of Service	LOS F	LOS A - C	LOS A - C
Construction Cost	\$0	\$17,100,000	\$9,700,000
Utility Cost	\$0	\$3,900,000	\$1,100,000
Right of Way Cost	\$0	\$4,700,000	\$6,100,000
Total Cost	\$0	\$25,738,500	\$16,900,000

SECTION 7.0 PREFERRED ALTERNATIVE

7.1 Preferred Alternative

The build alternatives have been comprehensively studied and evaluated as summarized in this environmental assessment. Based on the evaluations, Alternative 1 (Preferred) has been identified as the Preferred Alternative. Factors considered supporting Alternative 1 (Preferred) as the preferred alternative are:

- Public input from the public involvement meeting indicated a majority of opposition to Alternative 2 due primarily to splitting the Labrador Trail Subdivision. Concerns were also expressed that farmland would be impacted. Several commented that Alternative 2 would encourage a cut through for traffic from Old Pascagoula Road along Maurice Poiroux Road.
- Alternative 1 (Preferred) will require less right-of-way (10.1 acres Alt. 1 vs. 38.4 acres Alt. 2)
- Slightly less wetlands will be impacted by Alternative 1 (Preferred).
- Less farmland will be impacted (0.25 acres Alt. 1 vs. 28 acres Alt. 2)
- Alternative 1 (Preferred) will have less noise impacts with 4 sites identified and 38 sites identified on Alternative 2.

The Mobile County Commission is supportive of considering Alternative 1 (Preferred) as the Preferred Alternative.

Preparer's Certification

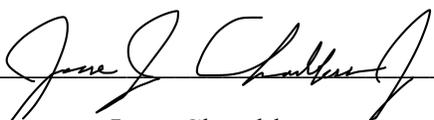
I hereby certify that I have read and understand Federal Highway Administration (FHWA) Regulations for Environmental Impact and Related Procedures 23 CFR 771 and the instructions for preparation of this Environmental Assessment (EA). This document has been reviewed for compliance with applicable federal, state, and local laws and regulations. It has been prepared in compliance with the Council on Environmental Quality Regulations for Implementing the Procedural Provision of the National Environmental Policy Act 40 CFR 1500–1508, 23 CFR 771, FHWA Guidance for Preparing and Processing Environmental and Section 4(f) Documents Technical Advisory 6640.8A. This document has been prepared by experienced, technically competent, and knowledgeable professionals. I can attest to the document's quality, accuracy, and completeness. By signing this document, I am certifying that, to the best of my knowledge, it meets the criteria for an Environmental Assessment.

Prepared By:  9/1/2023
Date

Name: Robert Portera, P.E.
Title: Transportation Engineer
Organization: Neel-Schaffer, Inc.
Phone #: 205-912-8541
E-mail: bob.portera@neel-schaffer.com

Reviewer's Certification

The ALDOT has reviewed the proposed project for compliance with environmental laws and regulations. It is our determination that the proposed project will not, either individually or cumulatively, have any significant environmental impacts. This proposed project meets the criteria of an Environmental Assessment under 23 CFR 771.117.

Reviewed By:  09/01/23
Date

Name: Jesse Chambless
Title: Assistant Environmental Administrator
Organization: Alabama Department of Transportation
Phone #: 334-242-6576
E-mail: chamblessje@dot.state.al.us

FHWA Approval

The FHWA has reviewed the proposed project for compliance with environmental laws and regulations. It is our determination that the proposed project will not, either individually or cumulatively, have any significant environmental impacts. This proposed project meets the criteria of an Environmental Assessment under 23 CFR 771.

Concur: _____

09/01/2023 .

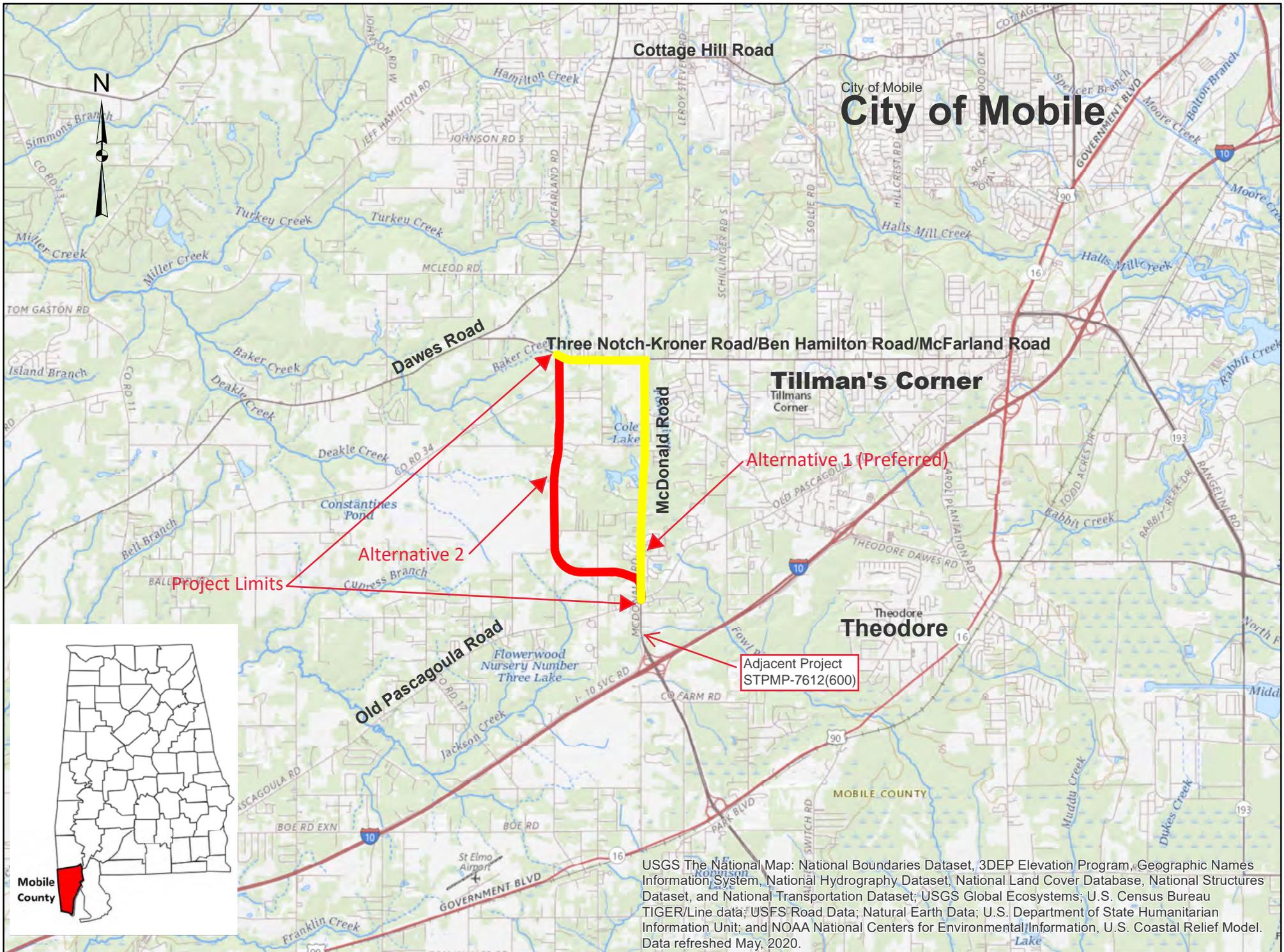
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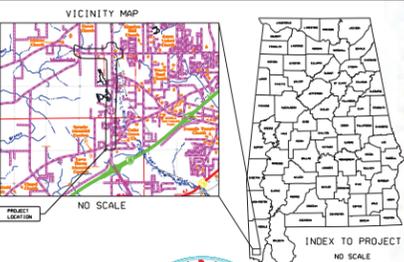
Name: Lynne A. Urquhart
Title: Environmental Engineer
Organization: FHWA, Alabama Division
Phone #: (334) 274-6371
E-mail: lynne.urquhart@dot.gov

For: Mark D. Bartlett, PE
Division Administrator
FHWA, Alabama Division

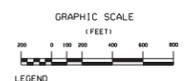
Appendix A

Maps



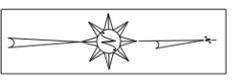


ALABAMA DEPARTMENT OF TRANSPORTATION
 PROJECT NO. STPMB-4918 (250)
 MCFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - KRONER ROAD
 MOBILE COUNTY
 ALTERNATIVE #1



LEGEND

EXISTING PAVEMENT TO BE RETAINED	
EXISTING PAVEMENT TO BE REMOVED	
REMOVE STRUCTURE	
REQUIRED PAVEMENT	
REQUIRED SIDEWALK	
REQUIRED CONCRETE	
REQUIRED RIGHT OF WAY	
EXISTING RIGHT OF WAY	
PROPERTY LINES	

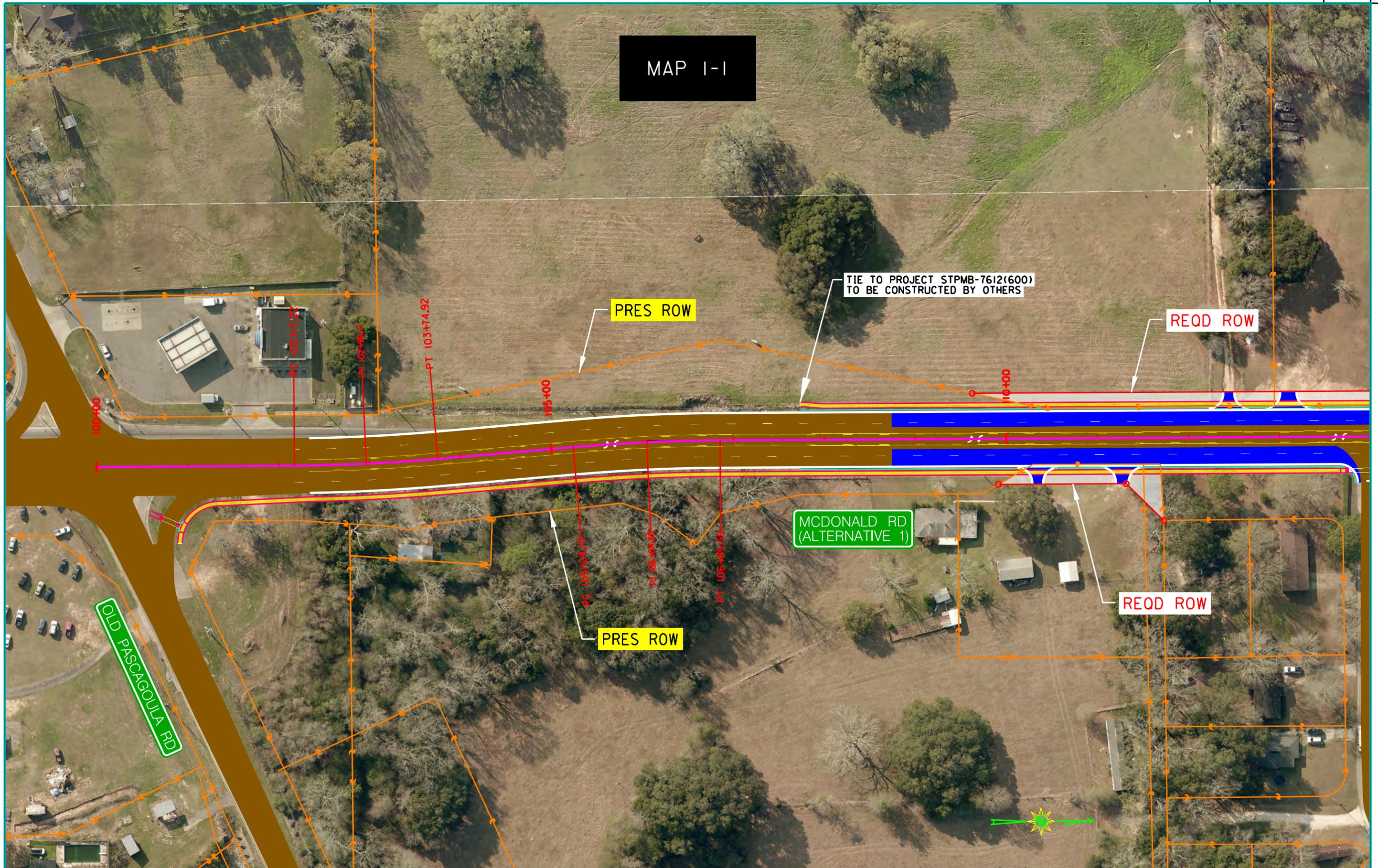


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PLAN - ALTERNATIVE 1

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2022	



MAP 1-1

TIE TO PROJECT STPMB-7612(600)
TO BE CONSTRUCTED BY OTHERS

PRES ROW

REQD ROW

MCDONALD RD
(ALTERNATIVE 1)

PRES ROW

REQD ROW

OLD PASCAGOULA RD

PLAN SUBMITTAL

MOBILE COUNTY COMMISSION
MCFARLAND ROAD FROM 0.1 MILE NORTH
OF OLD PASCAGOULA ROAD TO
THREE NOTCH - BRIDER ROAD



SHEET TITLE

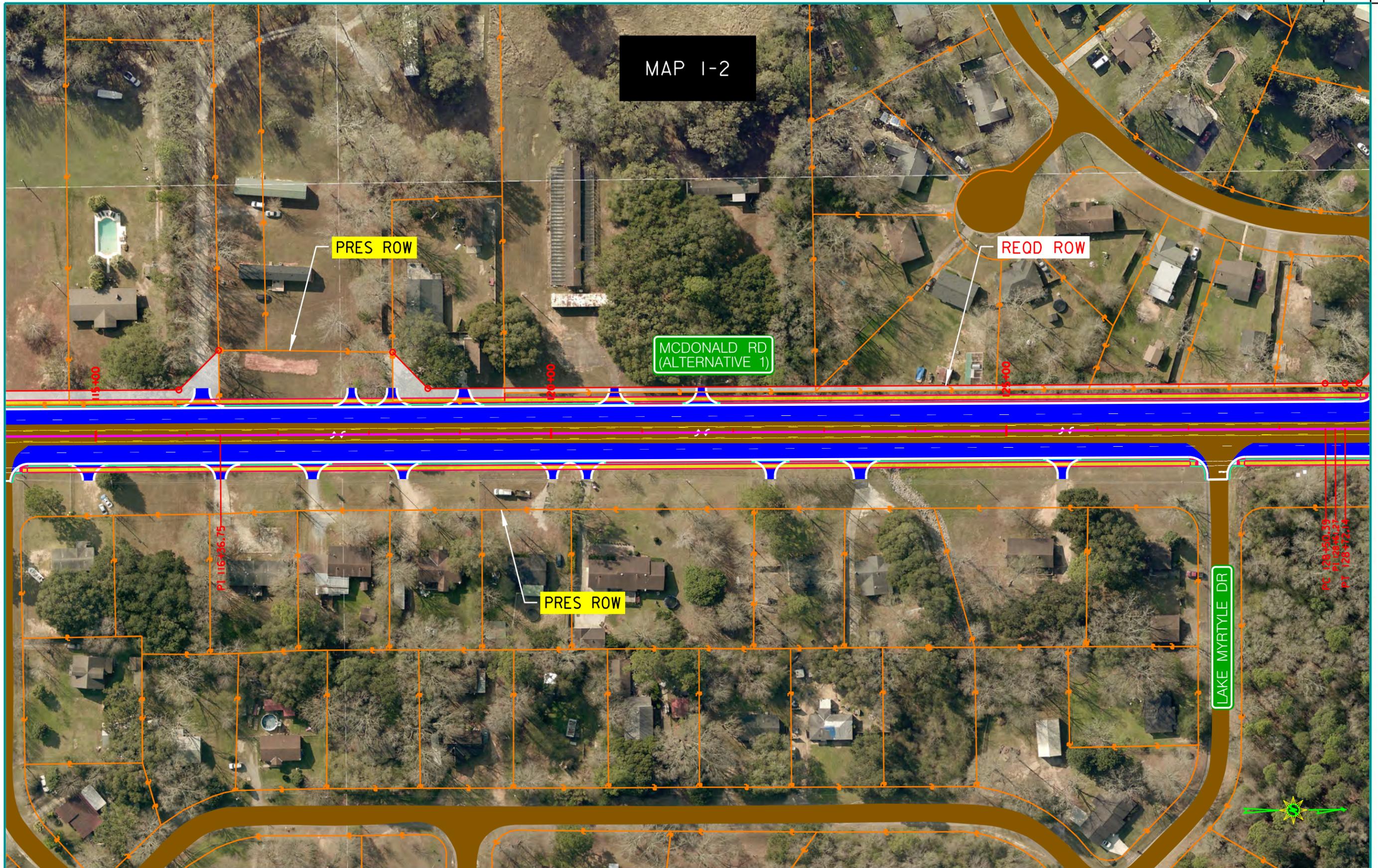
PLAN ALTERNATIVE 1

ROUTE

MCDONALD ROAD

PLAN - ALTERNATIVE 1

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2022	



PLAN SUBMITTAL

MOBILE COUNTY COMMISSION
 MCFARLAND ROAD FROM 0.1 MILE NORTH
 OF OLD PASCAGOULA ROAD TO
 THREE NOTCH - BRONER ROAD

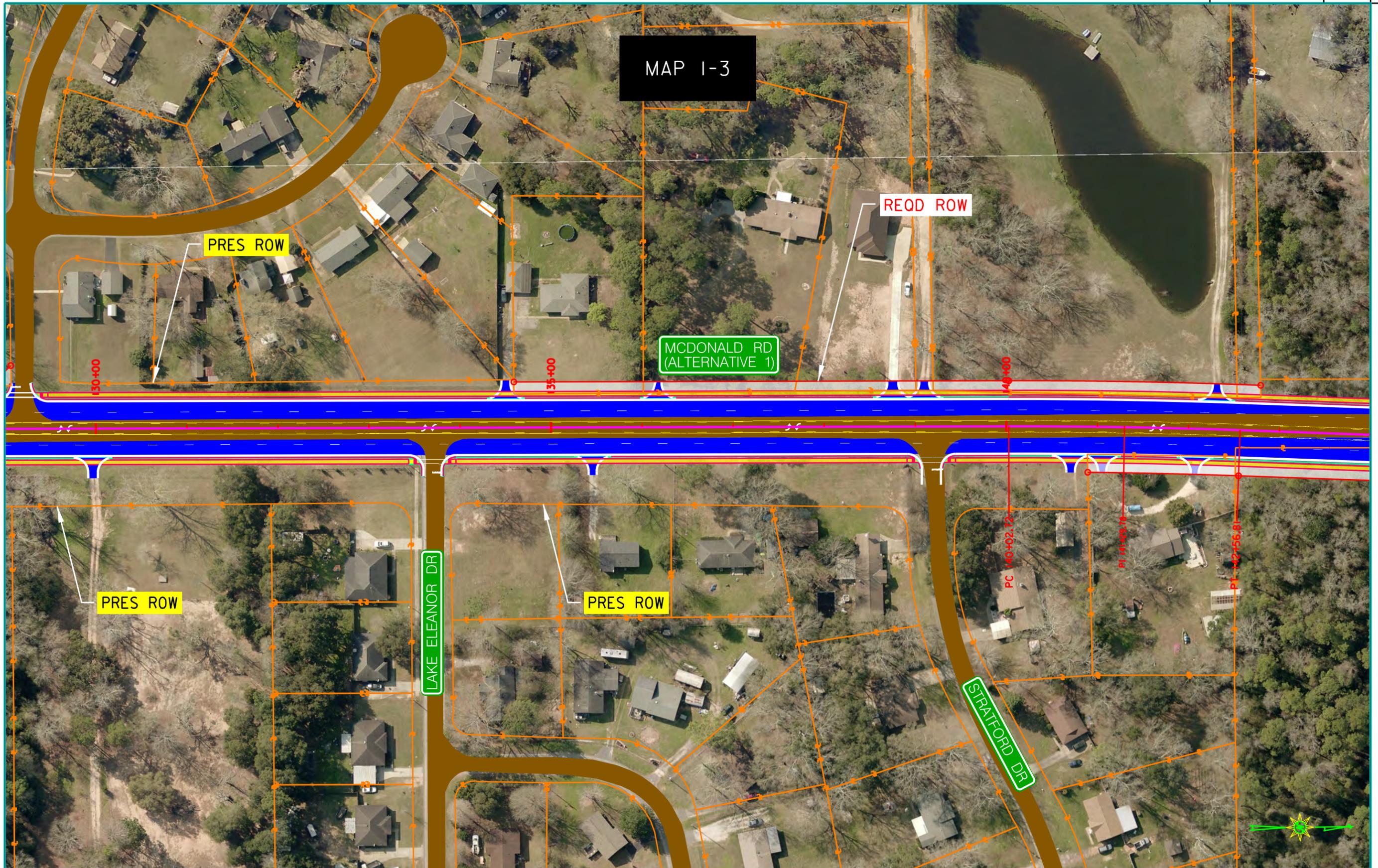


SHEET TITLE
 PLAN ALTERNATIVE 1

ROUTE
 MCDONALD ROAD

PLAN - ALTERNATIVE 1

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2022	



PLAN SUBMITTAL

MOBILE COUNTY COMMISSION
 MCFAIRLAND ROAD FROM 0.1 MILE NORTH
 OF OLD PASCAGOULA ROAD TO
 THREE NOTCH - BRONER ROAD

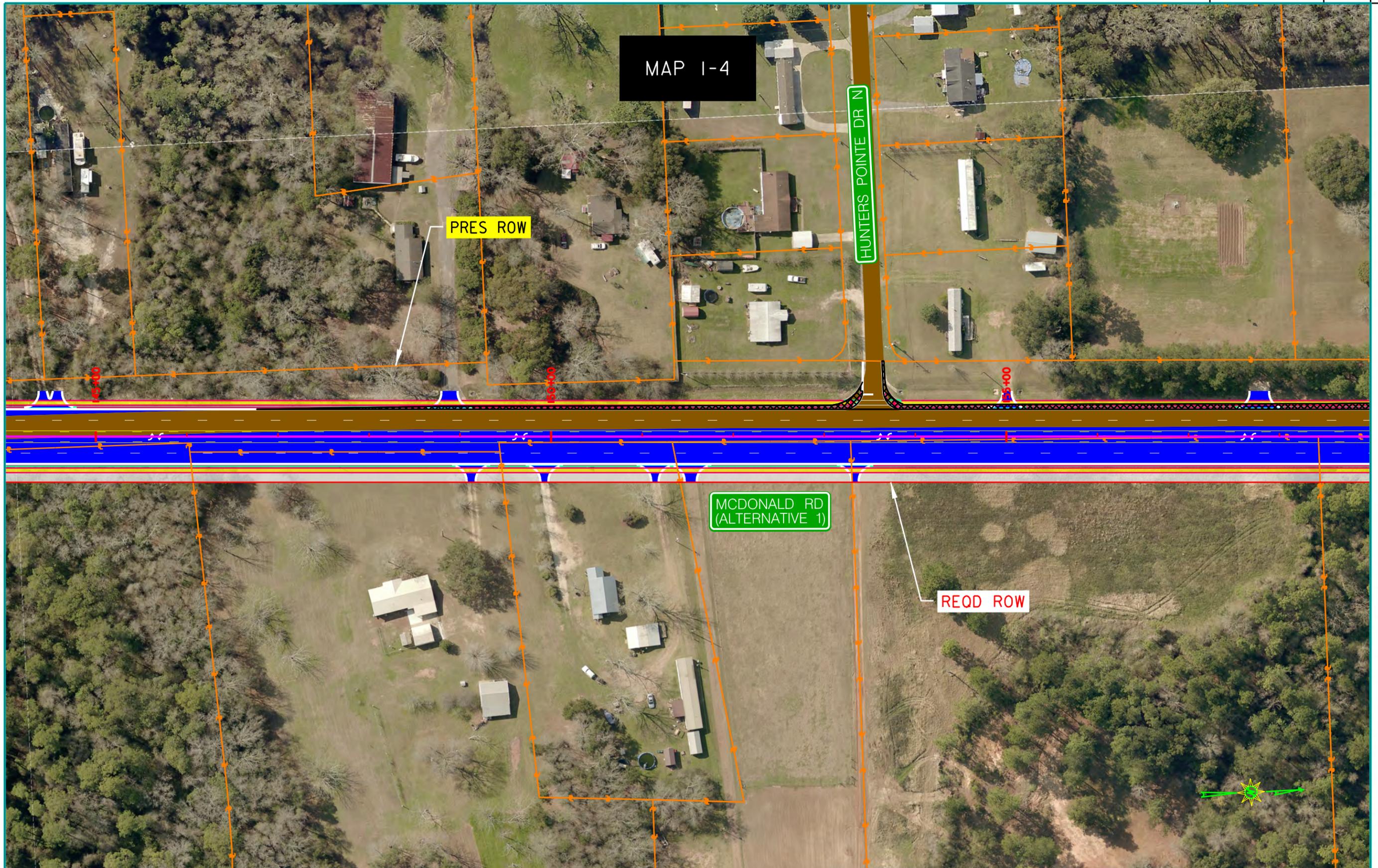


SHEET TITLE
 PLAN ALTERNATIVE 1

ROUTE
 McDONALD ROAD

PLAN - ALTERNATIVE 1

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2022	



PLAN SUBMITTAL

MOBILE COUNTY COMMISSION

MCFAH AND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - BRONER ROAD



SHEET TITLE

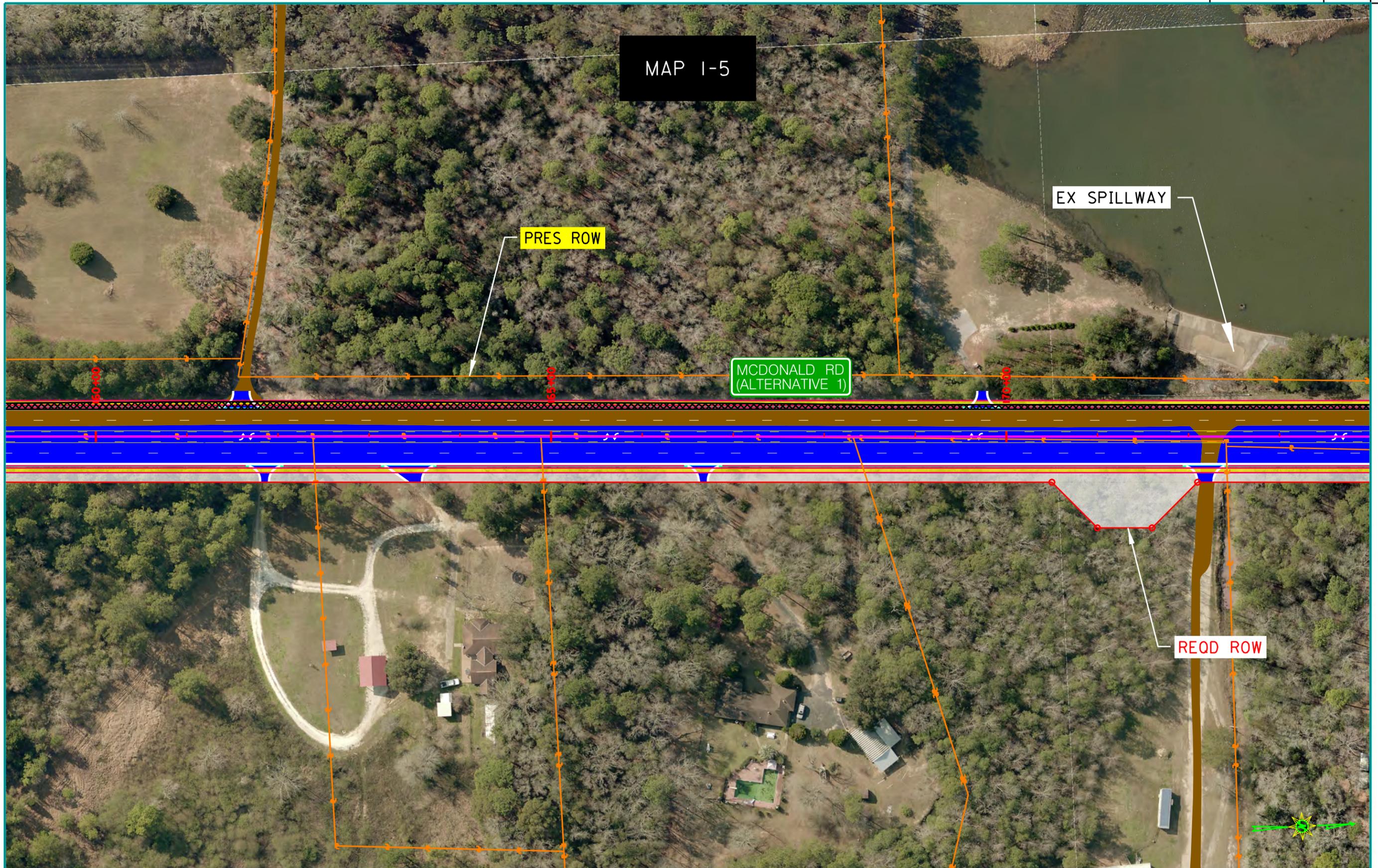
PLAN ALTERNATIVE 1

ROUTE

MCDONALD ROAD

PLAN - ALTERNATIVE 1

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2022	



PLAN SUBMITTAL	MOBILE COUNTY COMMISSION MCDONALD ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - BRONER ROAD	HORIZ SCALE (FEET) 50 0 50	SHEET TITLE PLAN ALTERNATIVE 1	ROUTE MCDONALD ROAD
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PLAN - ALTERNATIVE 1

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2022	



MAP I-6

PRES ROW

MCDONALD RD
(ALTERNATIVE 1)

REQD ROW

PC 175+37.46

PT 176+44.29

PT 177+51.11

PLAN SUBMITTAL

MOBILE COUNTY COMMISSION
 MCFARLAND ROAD FROM 0.1 MILE NORTH
 OF OLD PASCAGOULA ROAD TO
 THREE NOTCH - BROWER ROAD



SHEET TITLE

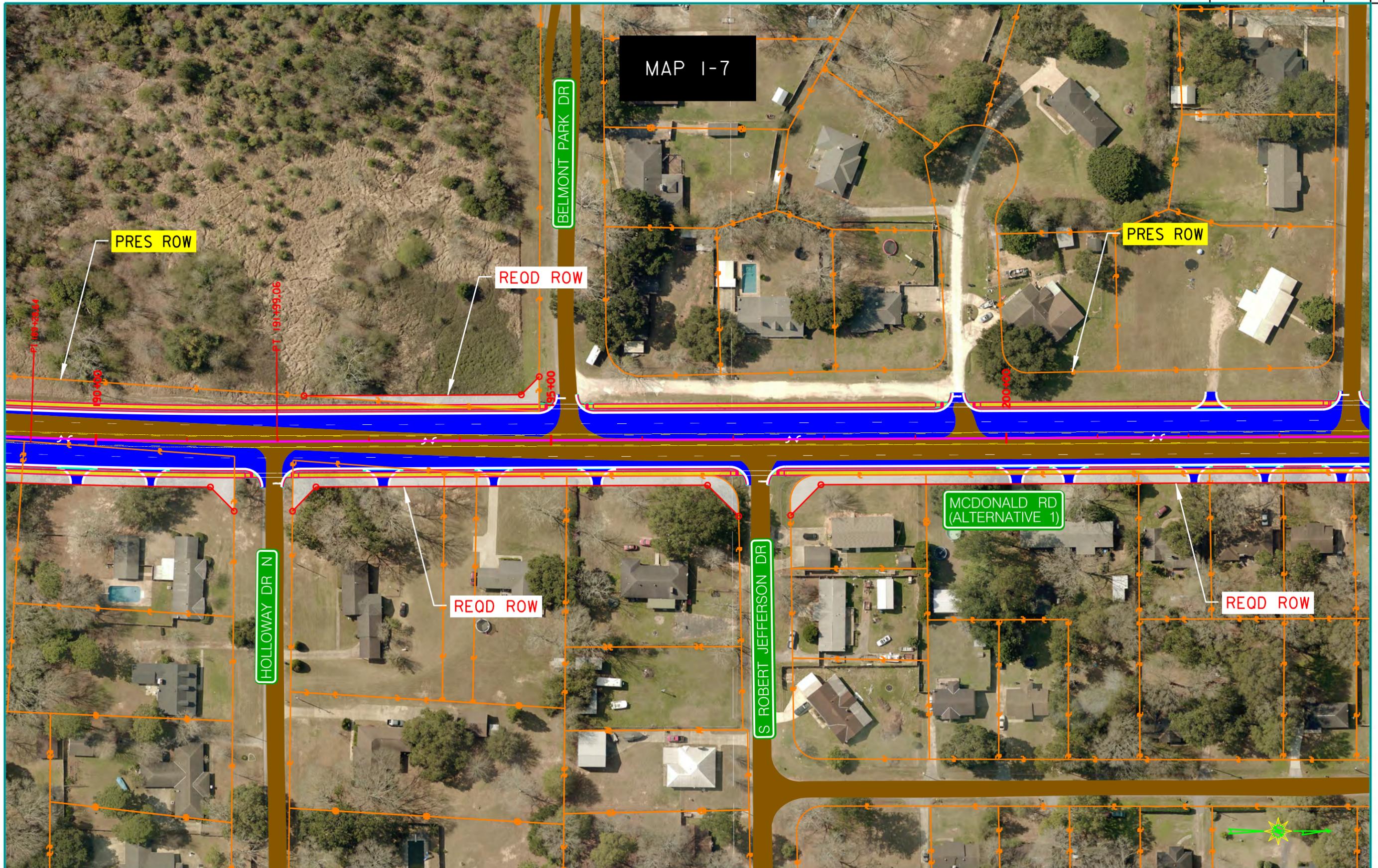
PLAN ALTERNATIVE 1

ROUTE

MCDONALD ROAD

PLAN - ALTERNATIVE 1

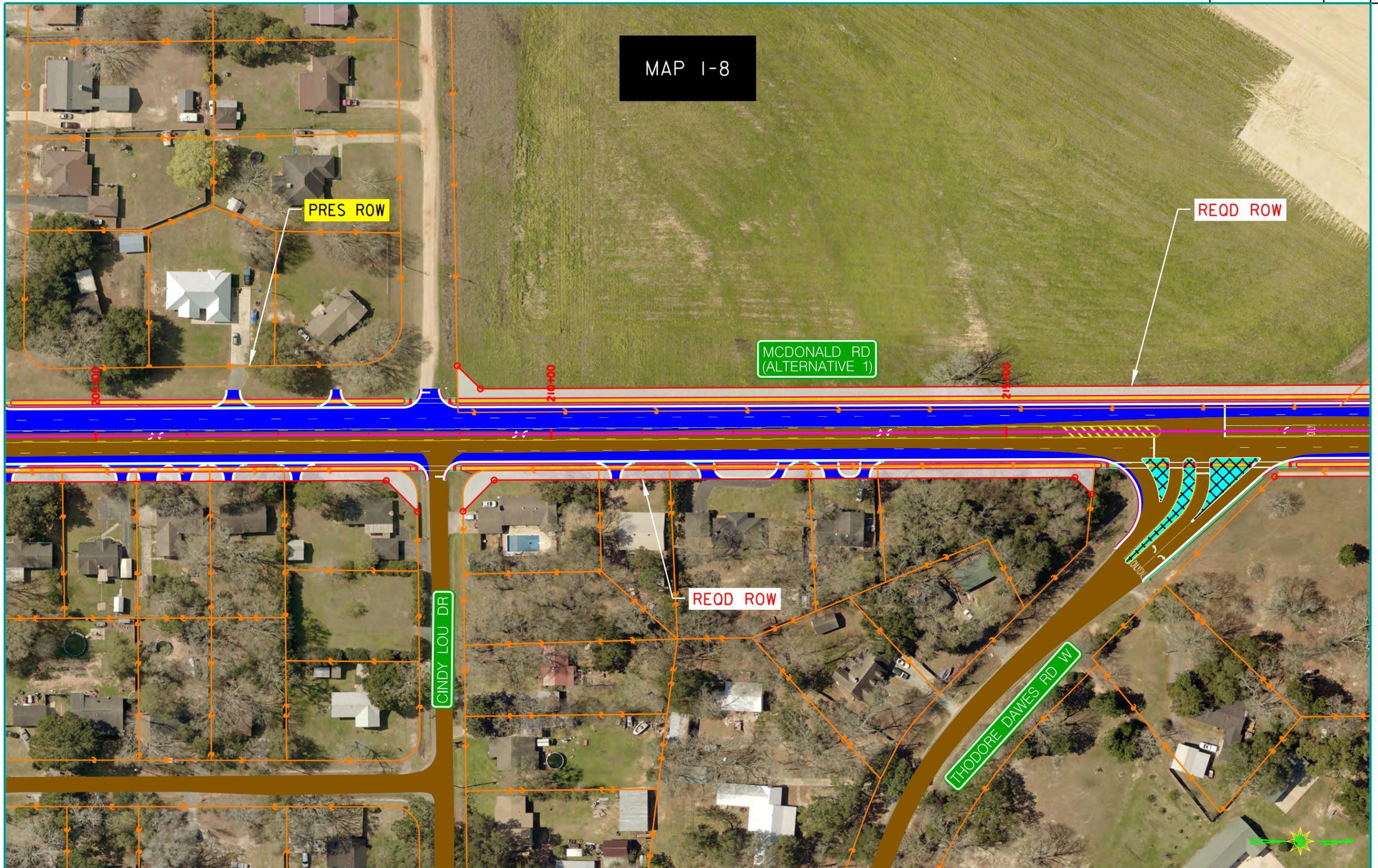
REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2022	



PLAN SUBMITTAL	MOBILE COUNTY COMMISSION MCDONALD ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - BRONER ROAD	HORIZ 50 0 50 SCALE (FEET)	SHEET TITLE PLAN ALTERNATIVE 1	ROUTE MCDONALD ROAD
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PLAN - ALTERNATIVE 1

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2022	



PLAN SUBMITTAL	MOBILE COUNTY COMMISSION MCFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - BRONER ROAD	HORIZ 50 0 50 SCALE (FEET)	SHEET TITLE PLAN ALTERNATIVE 1	ROUTE MCDONALD ROAD
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PLAN - ALTERNATIVE 1

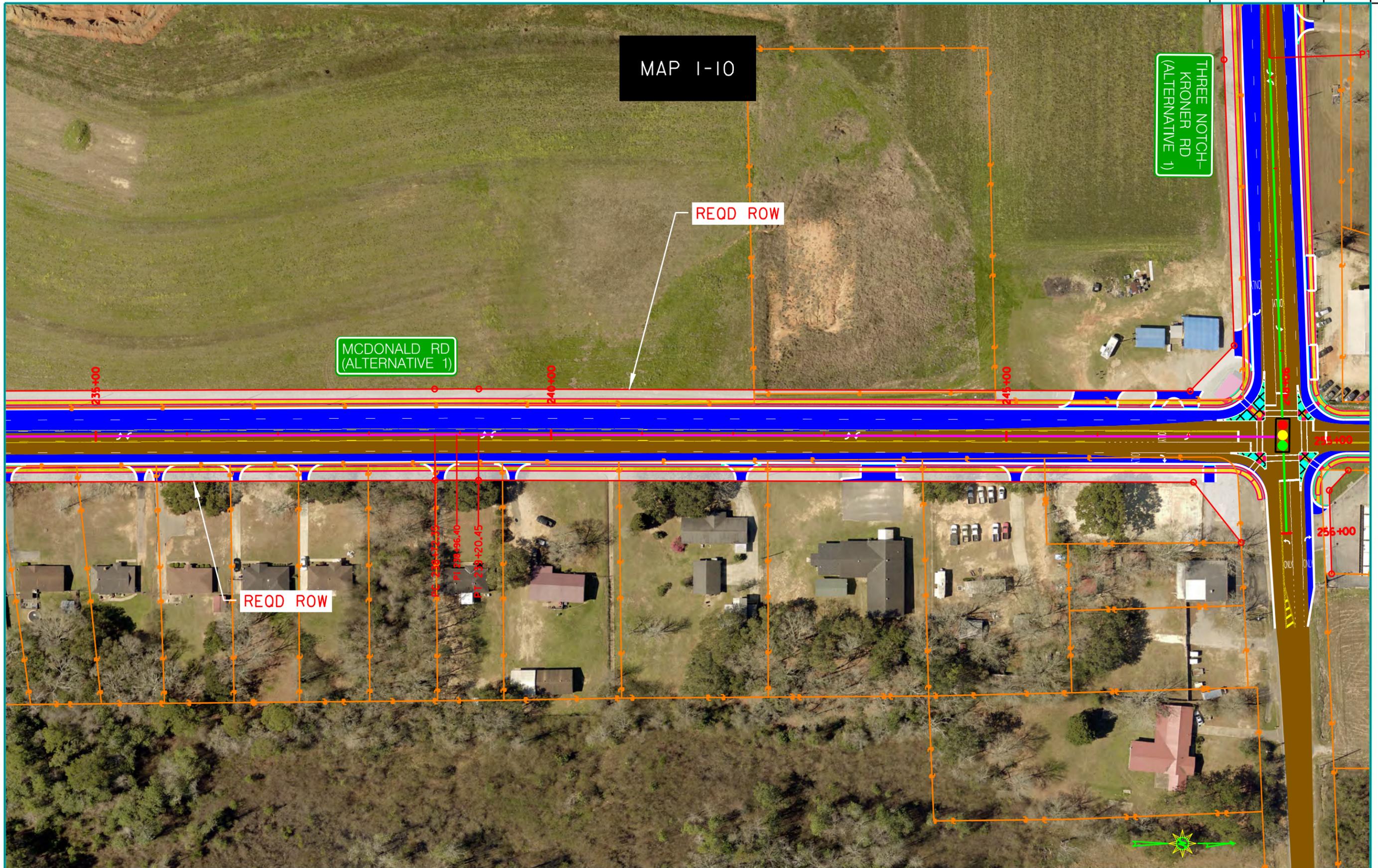
REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2022	



PLAN SUBMITTAL	MOBILE COUNTY COMMISSION MCFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - BROWER ROAD	HORIZ 50 0 50 SCALE (FEET)	SHEET TITLE PLAN ALTERNATIVE 1	ROUTE MCDONALD ROAD
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PLAN - ALTERNATIVE 1

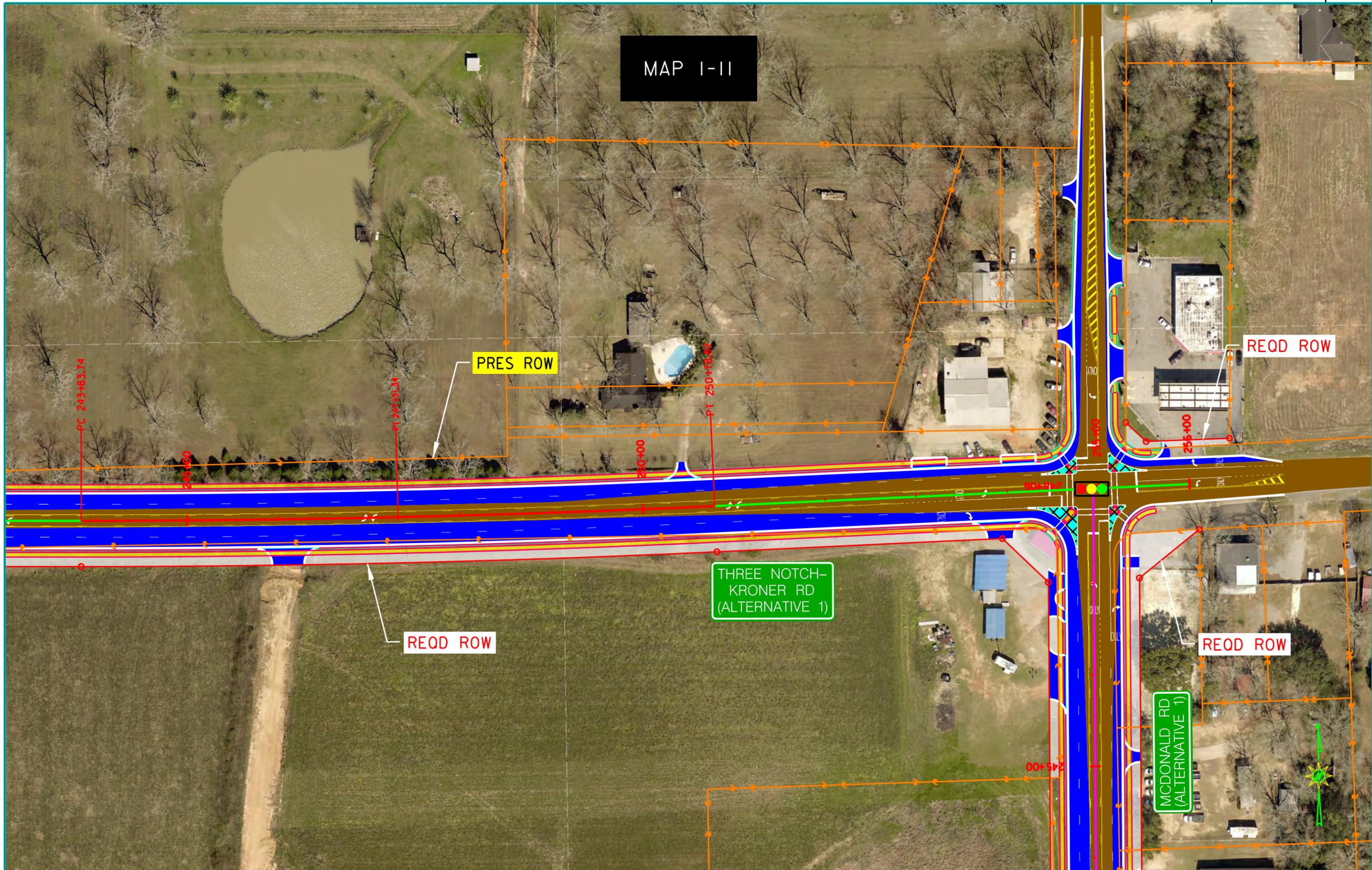
REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2022	



PLAN SUBMITTAL	MOBILE COUNTY COMMISSION McFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - KRONER ROAD	HORIZ SCALE (FEET) 50 0 50	SHEET TITLE PLAN ALTERNATIVE 1	ROUTE MCDONALD ROAD
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PLAN - ALTERNATIVE 1

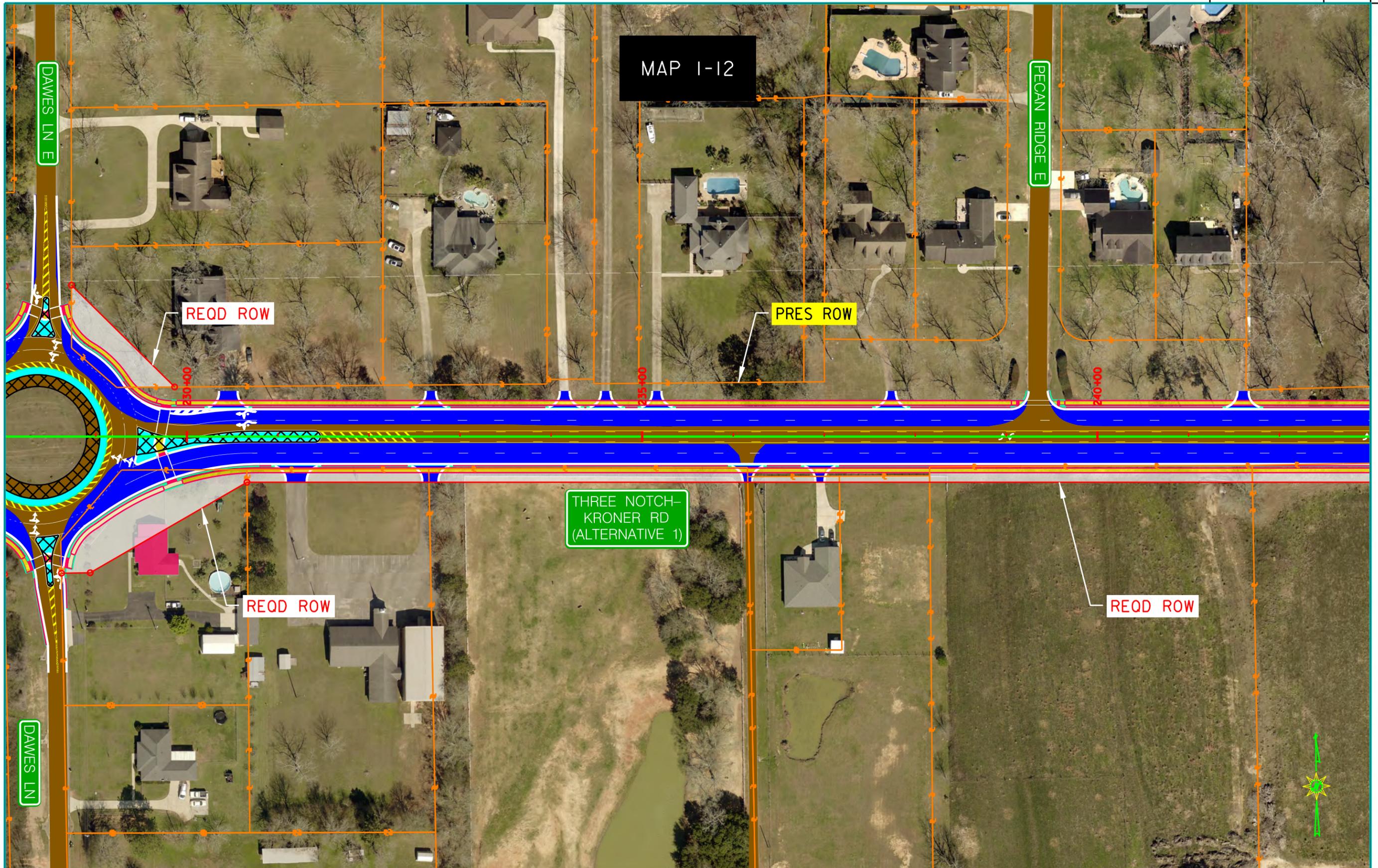
REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2022	



PLAN SUBMITTAL	MOBILE COUNTY COMMISSION MCDONALD ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH-KRONER ROAD	HORIZ SCALE (FEET) 50 0 50	VERT SCALE (FEET) 0	SHEET TITLE PLAN ALTERNATIVE 1	ROUTE MCDONALD ROAD
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PLAN - ALTERNATIVE 1

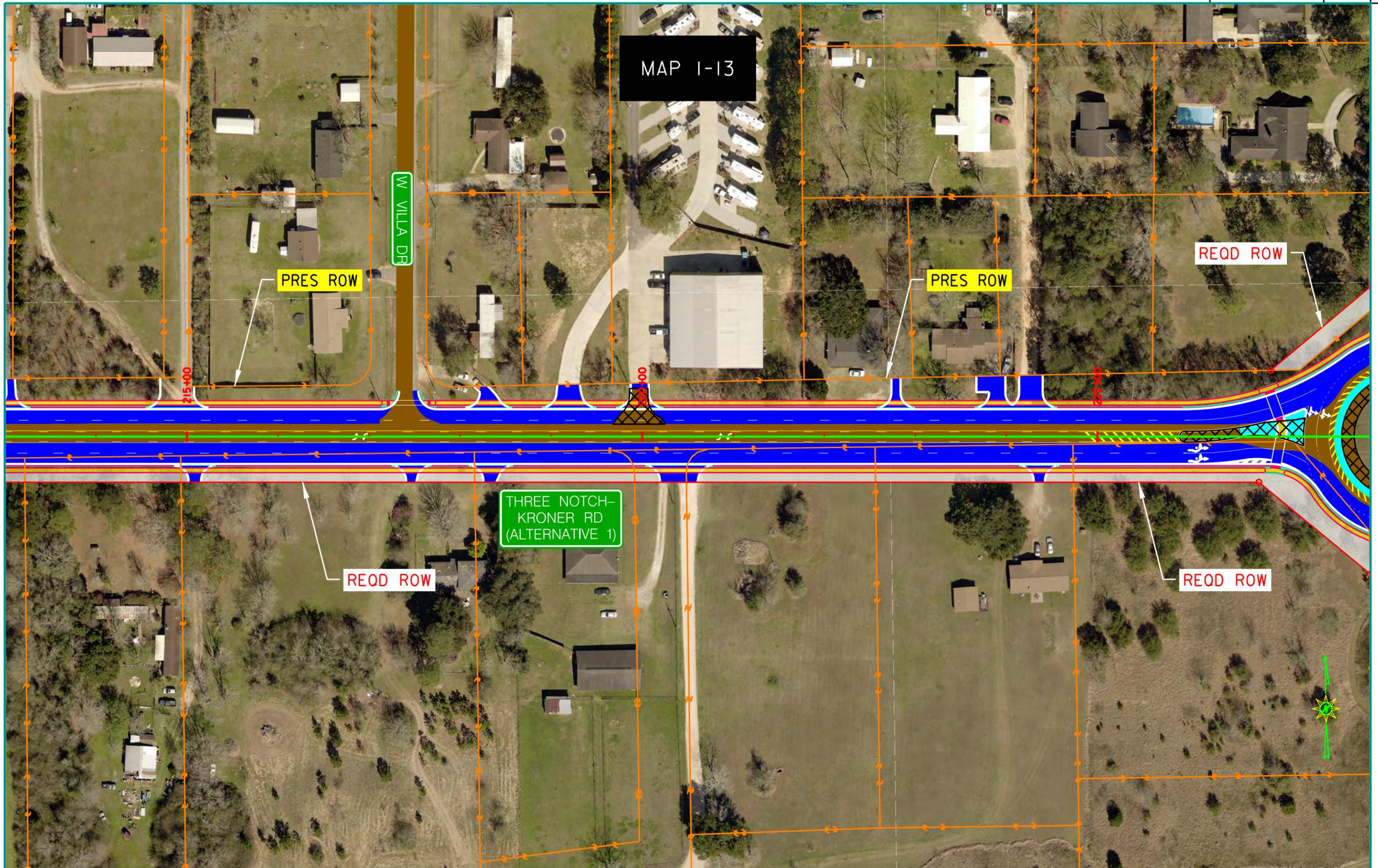
REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2022	



PLAN SUBMITTAL	MOBILE COUNTY COMMISSION MCFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - KRONER ROAD	HORIZ 50 0 50 SCALE (FEET)	SHEET TITLE PLAN ALTERNATIVE 1	ROUTE MCDONALD ROAD
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PLAN - ALTERNATIVE 1

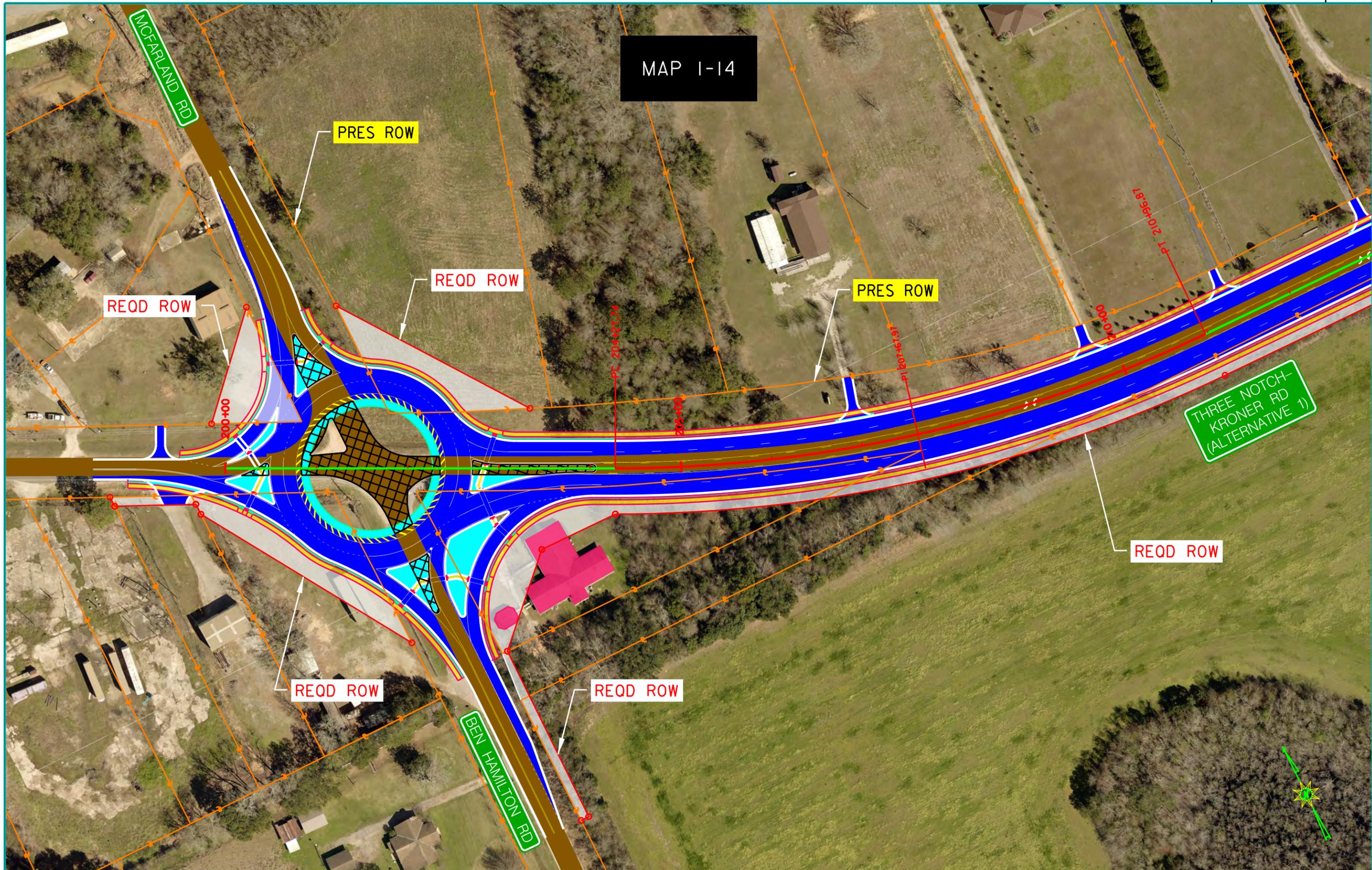
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MCR-2016-003	2022	



PLAN SUBMITTAL	MOBILE COUNTY COMMISSION MCFAH ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - KRONER ROAD	HORIZ 50 0 50 SCALE (FEET)	SHEET TITLE PLAN ALTERNATIVE 1	ROUTE MCDONALD ROAD
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PLAN - ALTERNATIVE 1

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2022	



PLAN SUBMITTAL

MOBILE COUNTY COMMISSION

MCFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - KRONER ROAD



SHEET TITLE

PLAN ALTERNATIVE 1

ROUTE

MCDONALD ROAD

MAP 1-14

THREE NOTCH-KRONER RD (ALTERNATIVE 1)

MCFARLAND PD

BEN HAMILTON PD

PRES ROW

REQD ROW

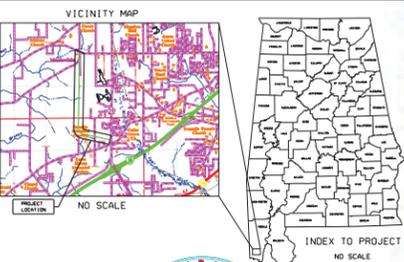
PRES ROW

REQD ROW

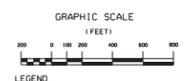
REQD ROW

REQD ROW

REQD ROW

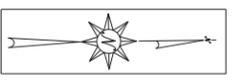


ALABAMA DEPARTMENT OF TRANSPORTATION
 PROJECT NO. STPMB-4918 (250)
 MCFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - KRONER ROAD
 MOBILE COUNTY
 ALTERNATIVE #2

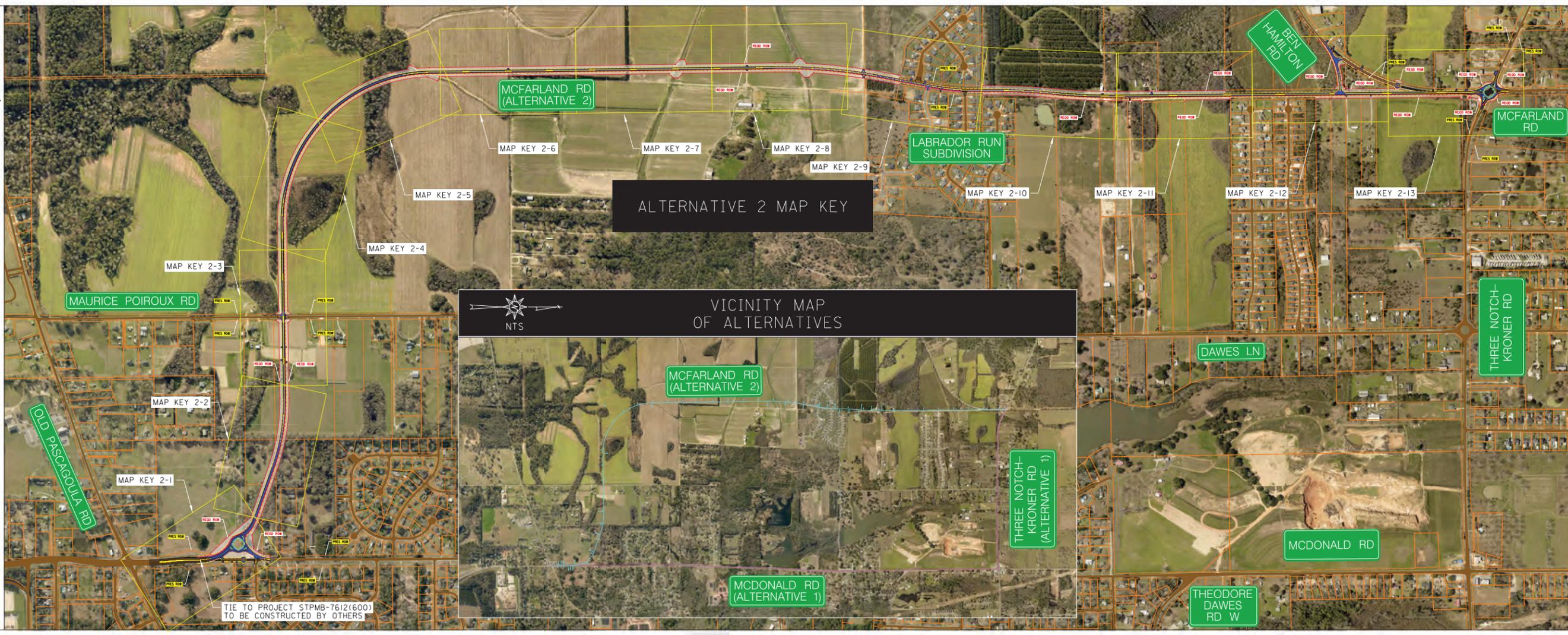


LEGEND

EXISTING PAVEMENT TO BE RETAINED	
EXISTING PAVEMENT TO BE REMOVED	
REMOVE STRUCTURE	
REQUIRED PAVEMENT	
REQUIRED SIDEWALK	
REQUIRED CONCRETE	
REQUIRED RIGHT OF WAY	
EXISTING RIGHT OF WAY	
PROPERTY LINES	



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 Solutions you can build upon



PLAN - ALTERNATIVE 2

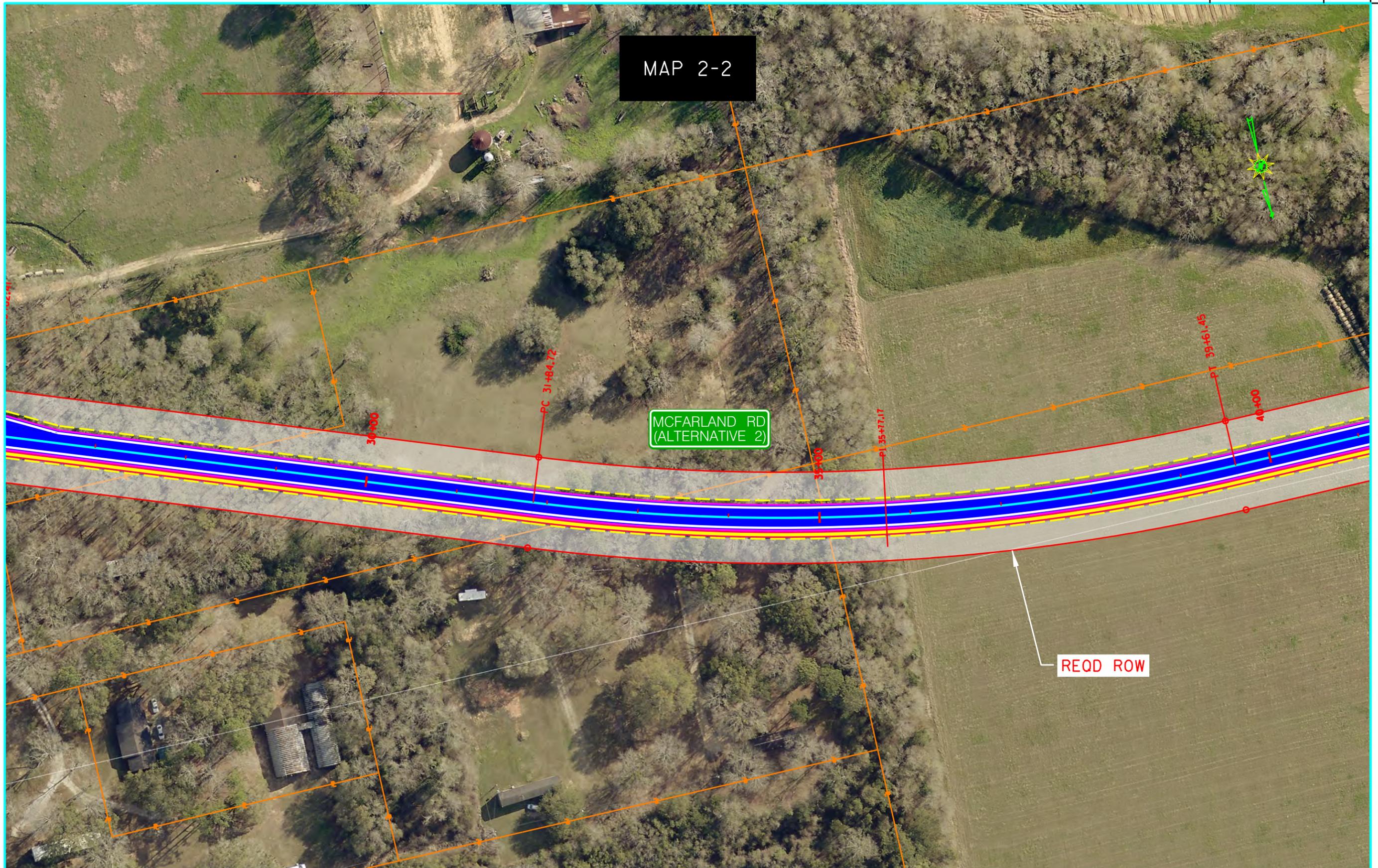
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MCR-2016-003	2021	



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	MCFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - BRIDER ROAD	50 0 50 SCALE (FEET)	PLAN ALTERNATIVE 2	MCFARLAND ROAD

PLAN - ALTERNATIVE 2

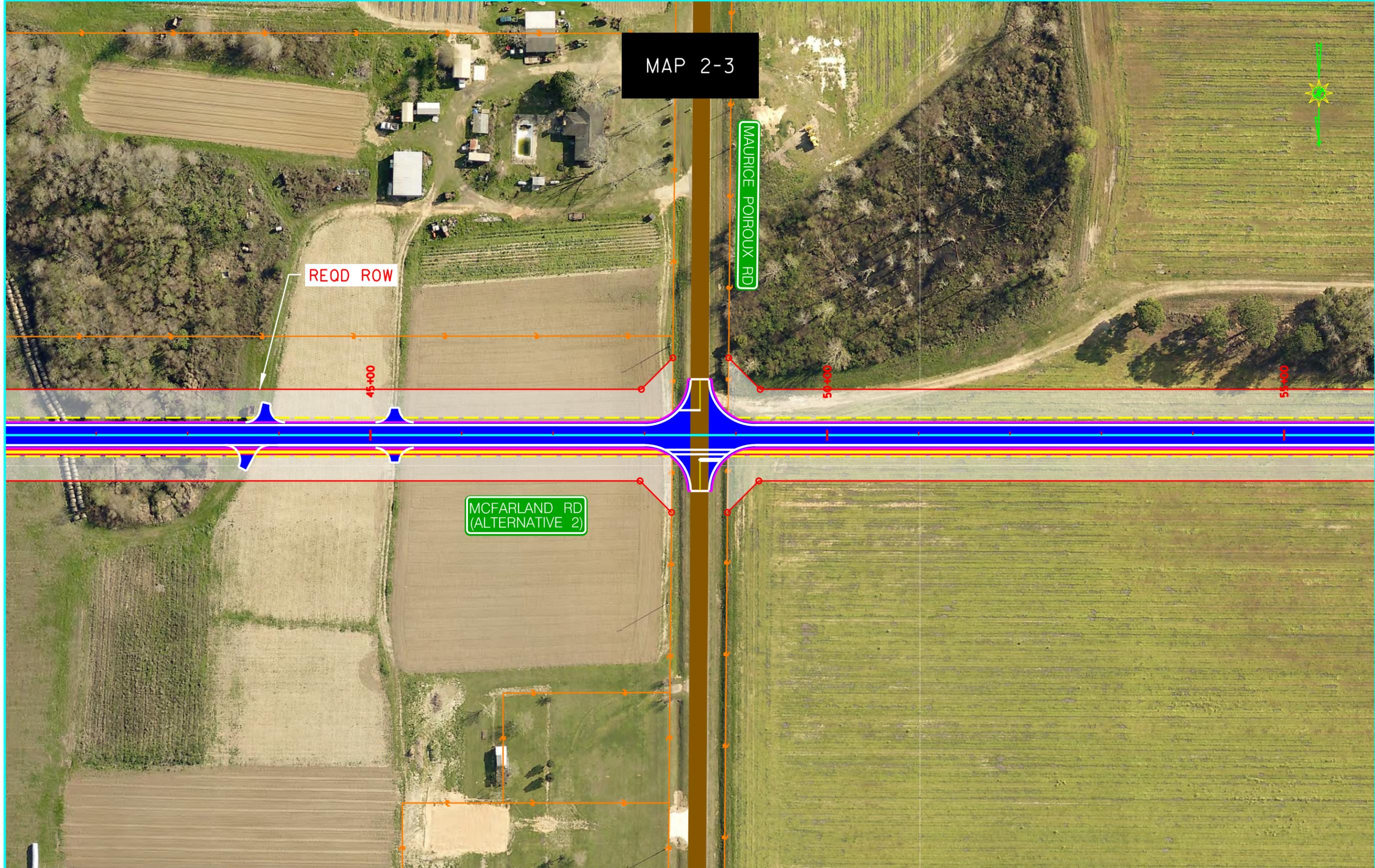
REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2021	



PLAN SUBMITTAL	MOBILE COUNTY COMMISSION MCFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - BRONER ROAD	HORIZ SCALE (FEET)	VERT SCALE (FEET)	SHEET TITLE	ROUTE
				PLAN ALTERNATIVE 2	MCFARLAND ROAD

PLAN - ALTERNATIVE 2

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2021	



MAP 2-3

REQD ROW

MAURICE POIROUX RD

MCFARLAND RD
(ALTERNATIVE 2)

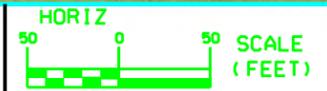
45+00

50+00

55+00

PLAN SUBMITTAL

MOBILE COUNTY COMMISSION
MCFARLAND ROAD FROM 0.1 MILE NORTH
OF OLD PASCAGOULA ROAD TO
THREE NOTCH - BRONER ROAD



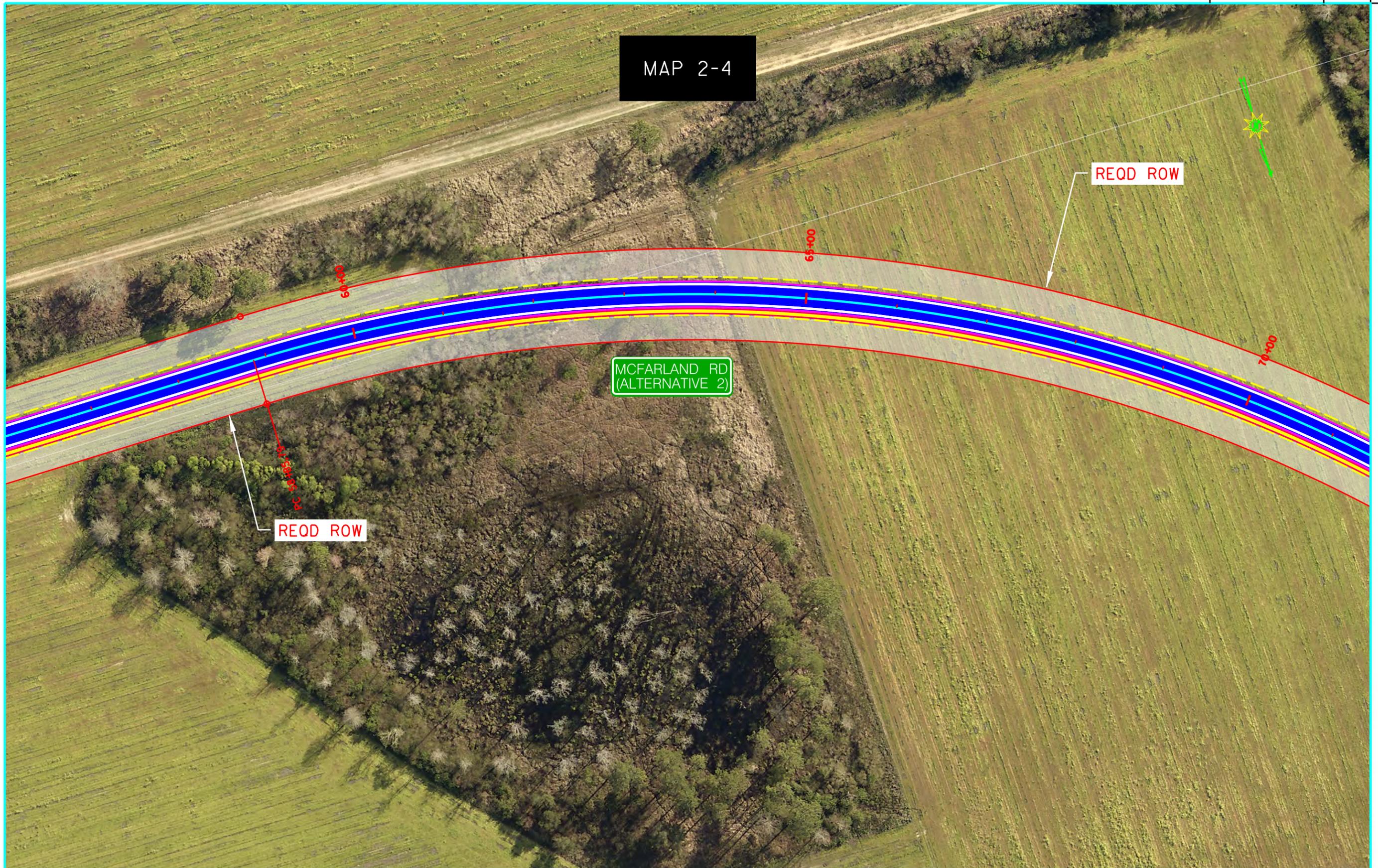
SHEET TITLE
PLAN
ALTERNATIVE 2

ROUTE
MCFARLAND
ROAD

PLAN - ALTERNATIVE 2

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2021	

MAP 2-4



MCFARLAND RD
(ALTERNATIVE 2)

REOD ROW

REOD ROW

PC 56+85.75

60+00

65+00

70+00

PLAN SUBMITTAL

MOBILE COUNTY COMMISSION
 MCFARLAND ROAD FROM 0.1 MILE NORTH
 OF OLD PASCAGOULA ROAD TO
 THREE NOTCH - BRIDER ROAD



SHEET TITLE
 PLAN ALTERNATIVE 2

ROUTE
 MCFARLAND ROAD

PLAN - ALTERNATIVE 2

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2021	



MAP 2-5

MCFARLAND RD
(ALTERNATIVE 2)

REOD ROW

REOD ROW

PT 84+77.60

75+00

81+00

85+00

PLAN SUBMITTAL

MOBILE COUNTY COMMISSION

MCFARLAND ROAD FROM 0.1 MILE NORTH
OF OLD PASCAGOULA ROAD TO
THREE NOTCH - BRONER ROAD



SHEET TITLE

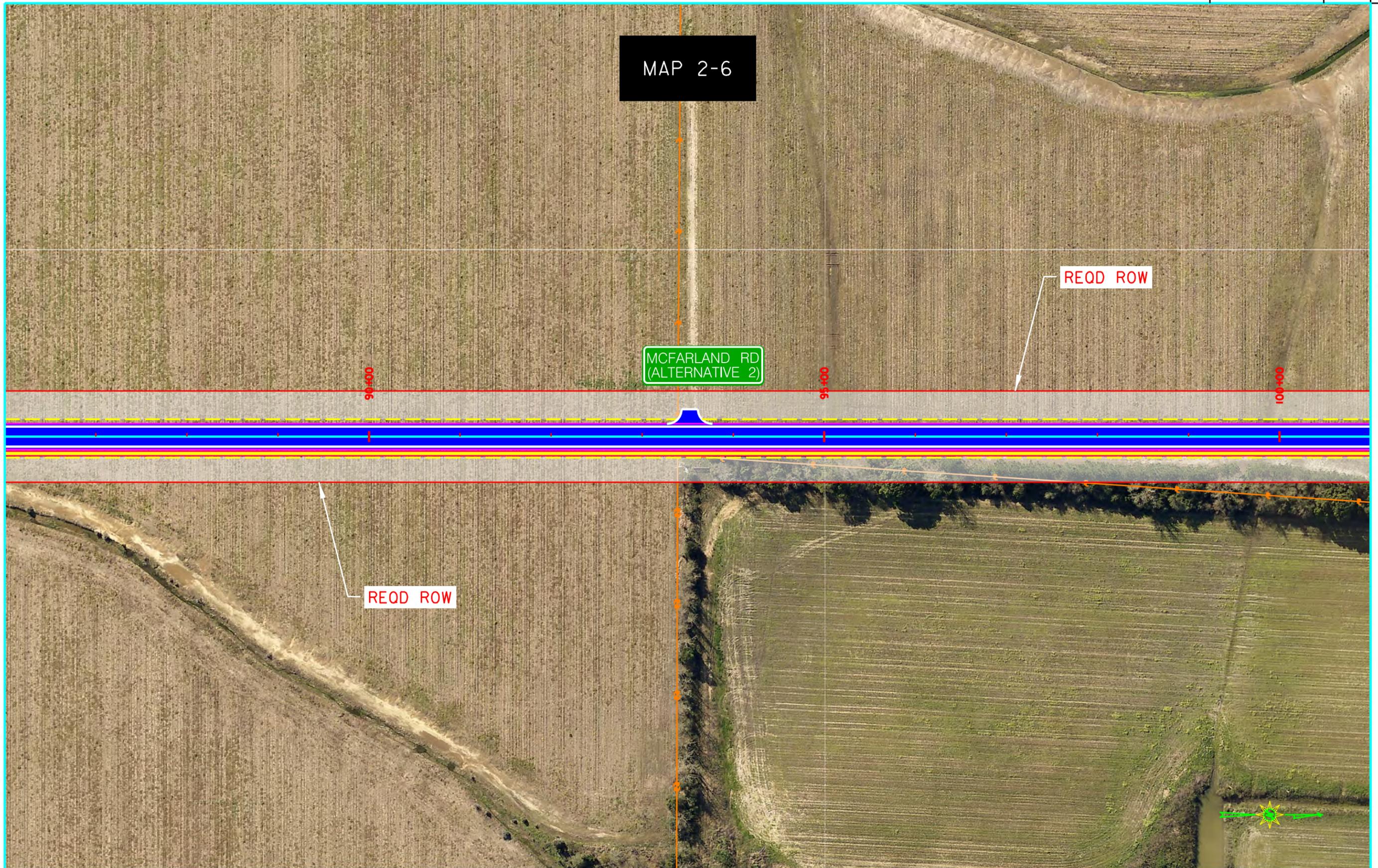
PLAN
ALTERNATIVE 2

ROUTE

MCFARLAND
ROAD

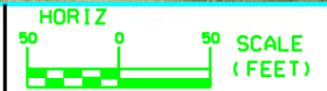
PLAN - ALTERNATIVE 2

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2021	



PLAN SUBMITTAL

MOBILE COUNTY COMMISSION
 MCFARLAND ROAD FROM 0.1 MILE NORTH
 OF OLD PASCAGOULA ROAD TO
 THREE NOTCH - BRONER ROAD



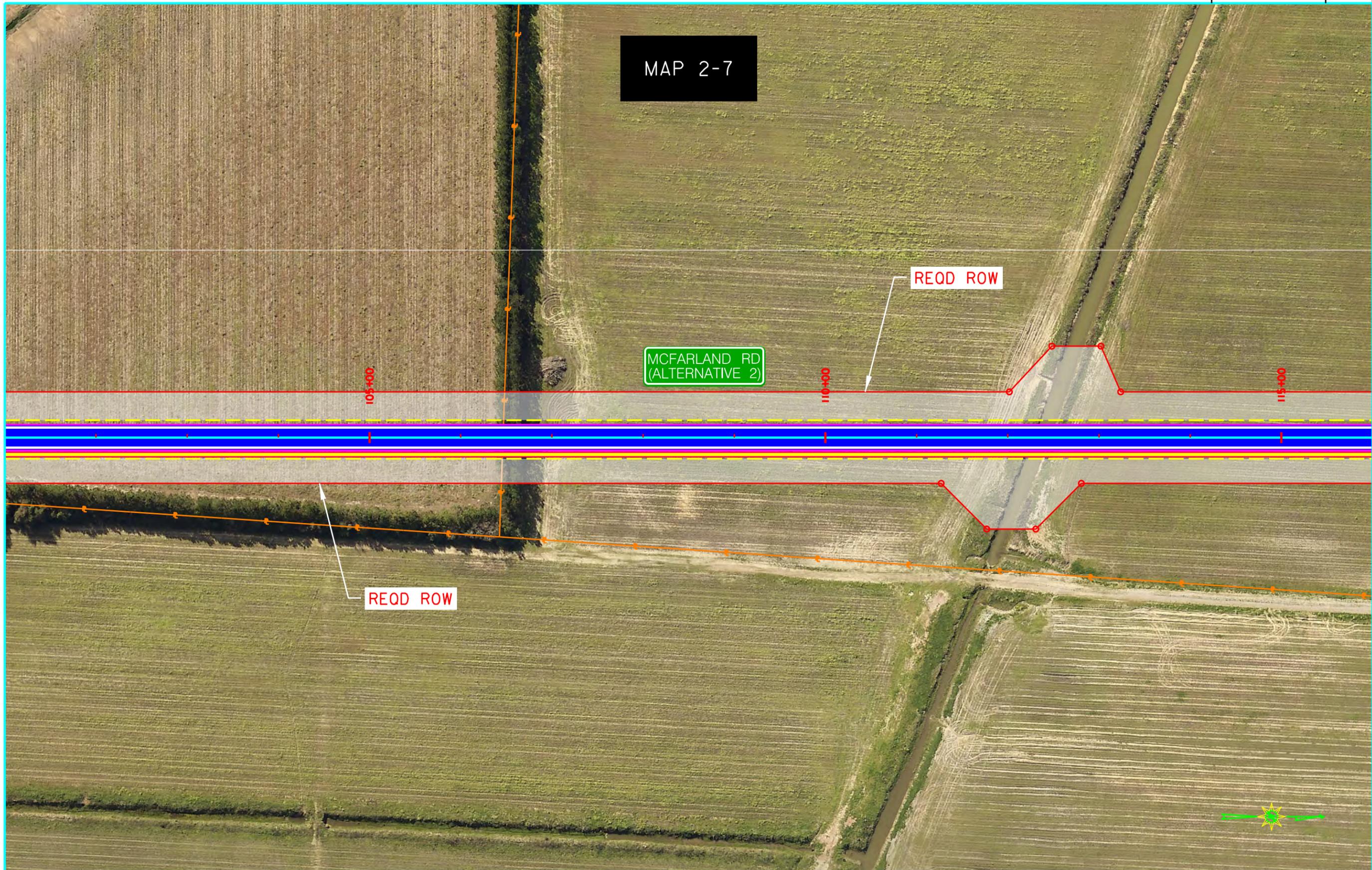
SHEET TITLE
 PLAN ALTERNATIVE 2

ROUTE
 MCFARLAND ROAD

PLAN - ALTERNATIVE 2

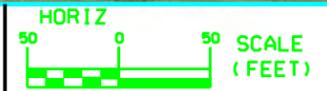
REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2021	

MAP 2-7



PLAN SUBMITTAL

MOBILE COUNTY COMMISSION
 MCFARLAND ROAD FROM 0.1 MILE NORTH
 OF OLD PASCAGOULA ROAD TO
 THREE NOTCH - BRONER ROAD



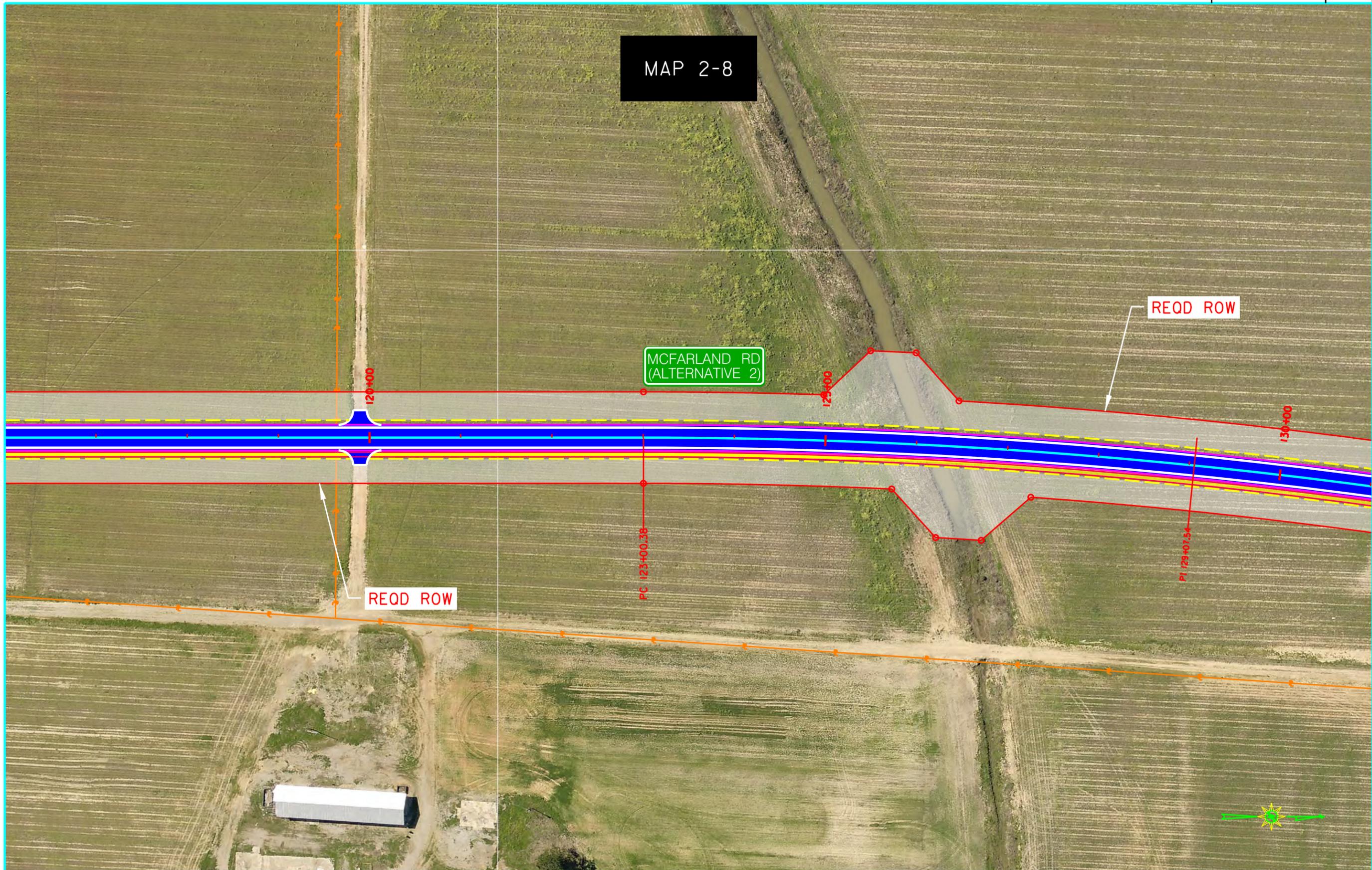
SHEET TITLE
 PLAN ALTERNATIVE 2

ROUTE
 MCFARLAND ROAD

PLAN - ALTERNATIVE 2

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
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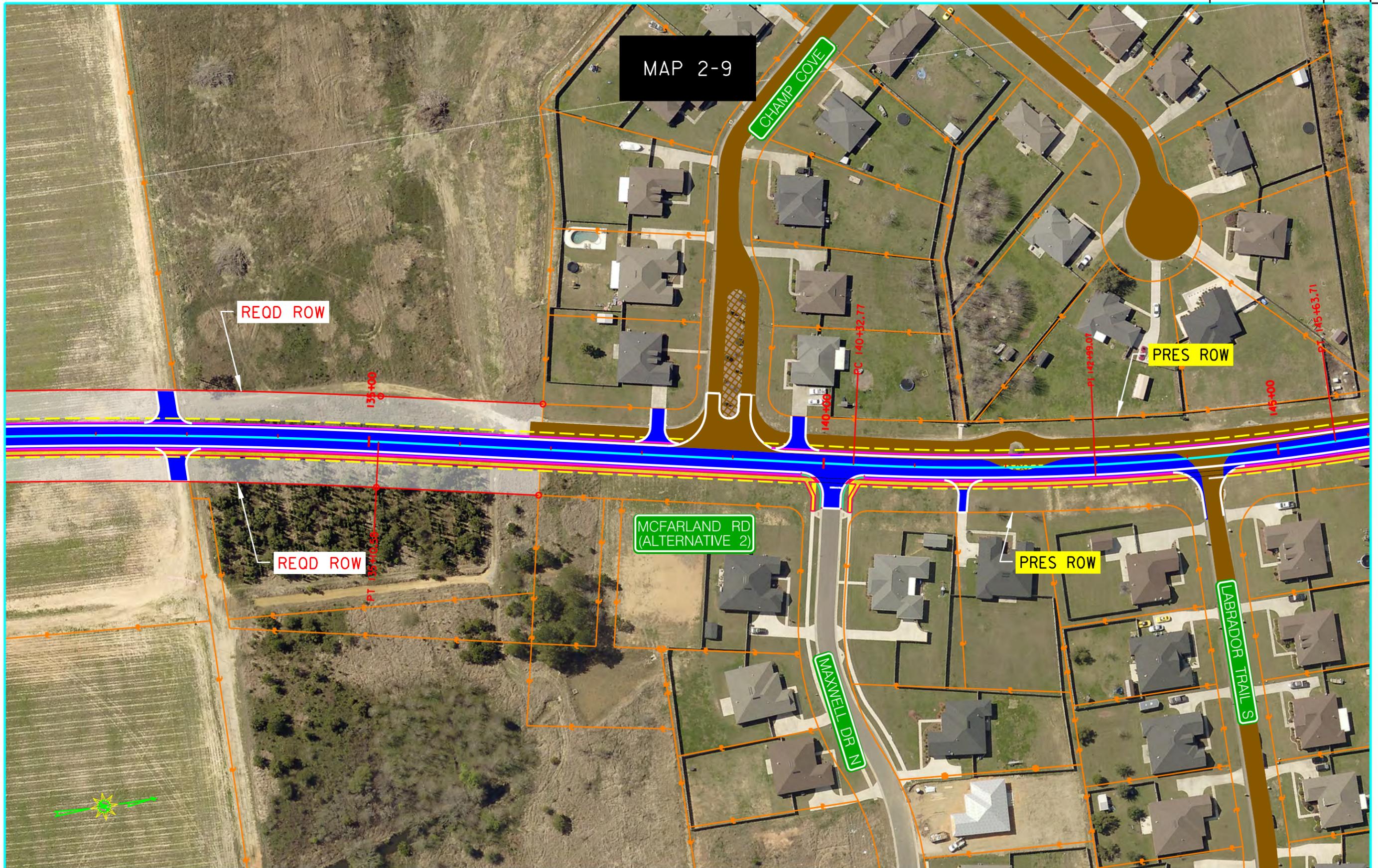
MAP 2-8



PLAN SUBMITTAL	MOBILE COUNTY COMMISSION MCFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - BRONER ROAD	HORIZ SCALE (FEET) 50 0 50	SHEET TITLE PLAN ALTERNATIVE 2	ROUTE MCFARLAND ROAD
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PLAN - ALTERNATIVE 2

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2021	



MAP 2-9

REOD ROW

CHAMP COVE

PRES ROW

REOD ROW

MCFARLAND RD (ALTERNATIVE 2)

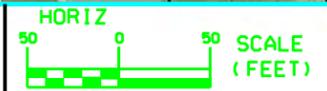
PRES ROW

MAXWELL DR N

LABRADOR TRAIL S

PLAN SUBMITTAL

MOBILE COUNTY COMMISSION
 MCFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - BRIDGE ROAD



SHEET TITLE

PLAN ALTERNATIVE 2

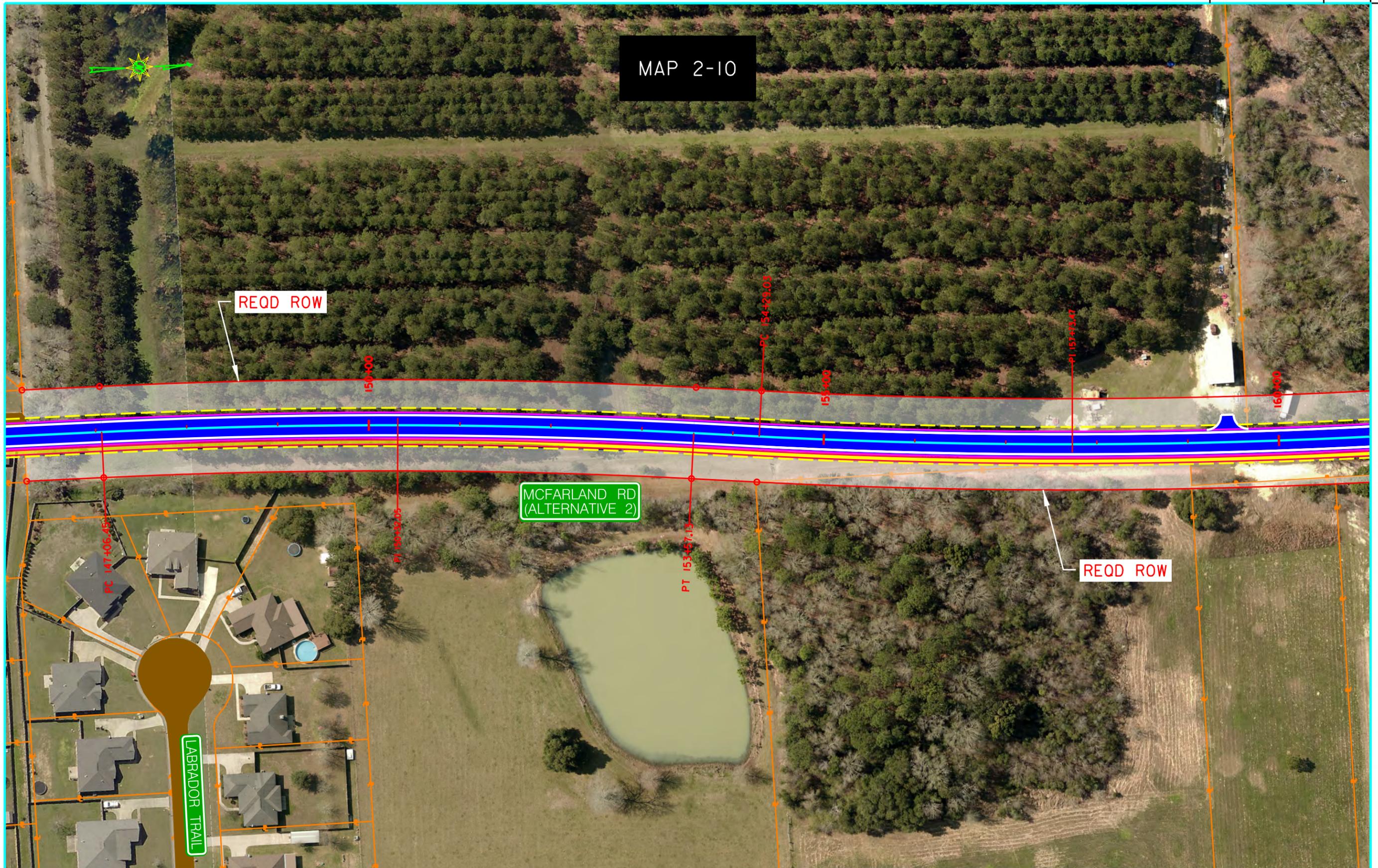
ROUTE

MCFARLAND ROAD

PLAN - ALTERNATIVE 2

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2021	

MAP 2-10



PLAN SUBMITTAL

MOBILE COUNTY COMMISSION
 MCFARLAND ROAD FROM 0.1 MILE NORTH
 OF OLD PASCAGOULA ROAD TO
 THREE NOTCH - BROWER ROAD



SHEET TITLE
 PLAN ALTERNATIVE 2

ROUTE
 MCFARLAND ROAD

PLAN - ALTERNATIVE 2

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2021	



MAP 2-11

MCFARLAND RD
(ALTERNATIVE 2)

REOD ROW

PRES ROW

PRES ROW

REOD ROW

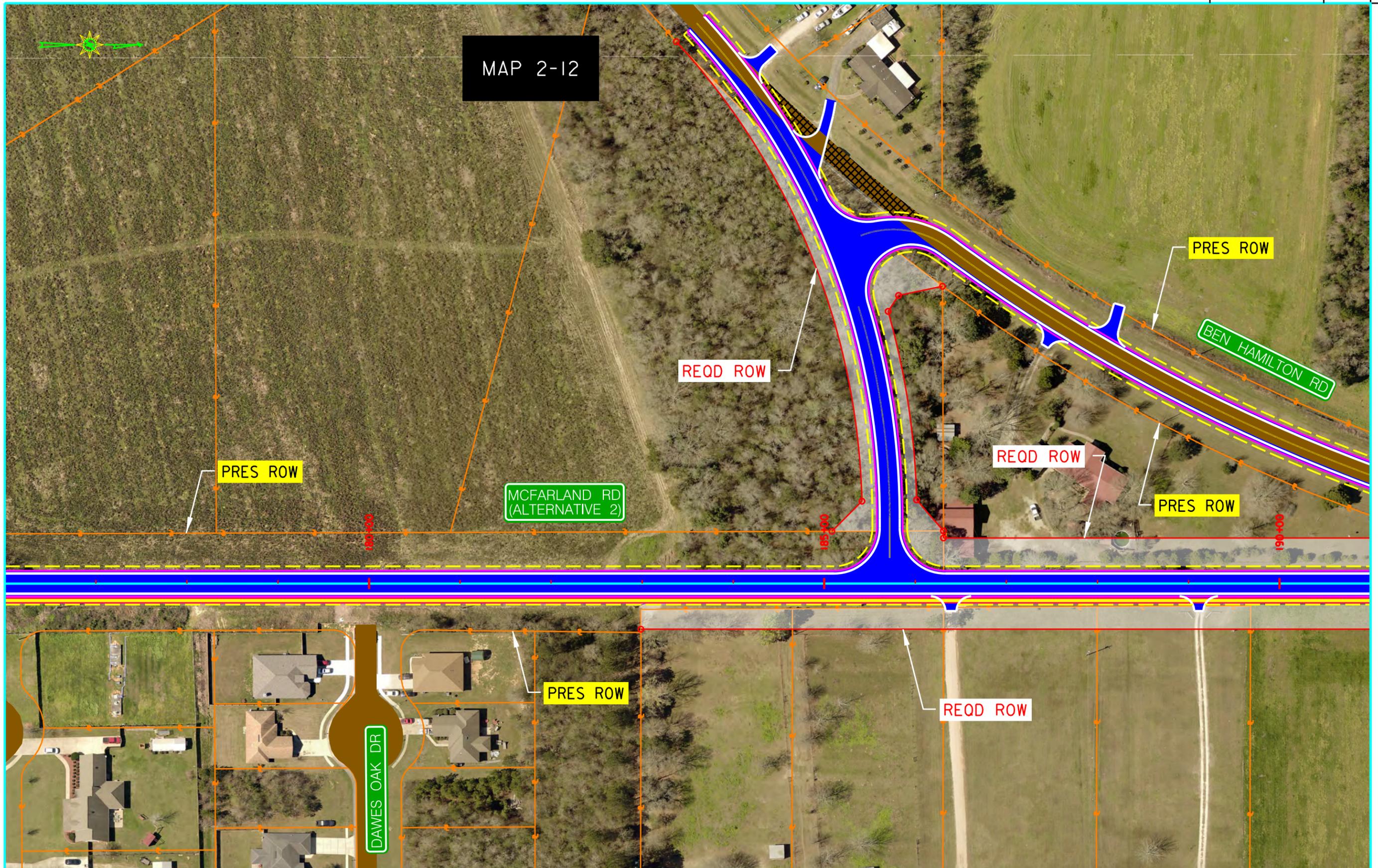
PRES ROW

DAWES CREEK DR

PLAN SUBMITTAL	MOBILE COUNTY COMMISSION MCFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - BROWER ROAD	HORIZ SCALE (FEET) 50 0 50	SHEET TITLE PLAN ALTERNATIVE 2	ROUTE MCFARLAND ROAD
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PLAN - ALTERNATIVE 2

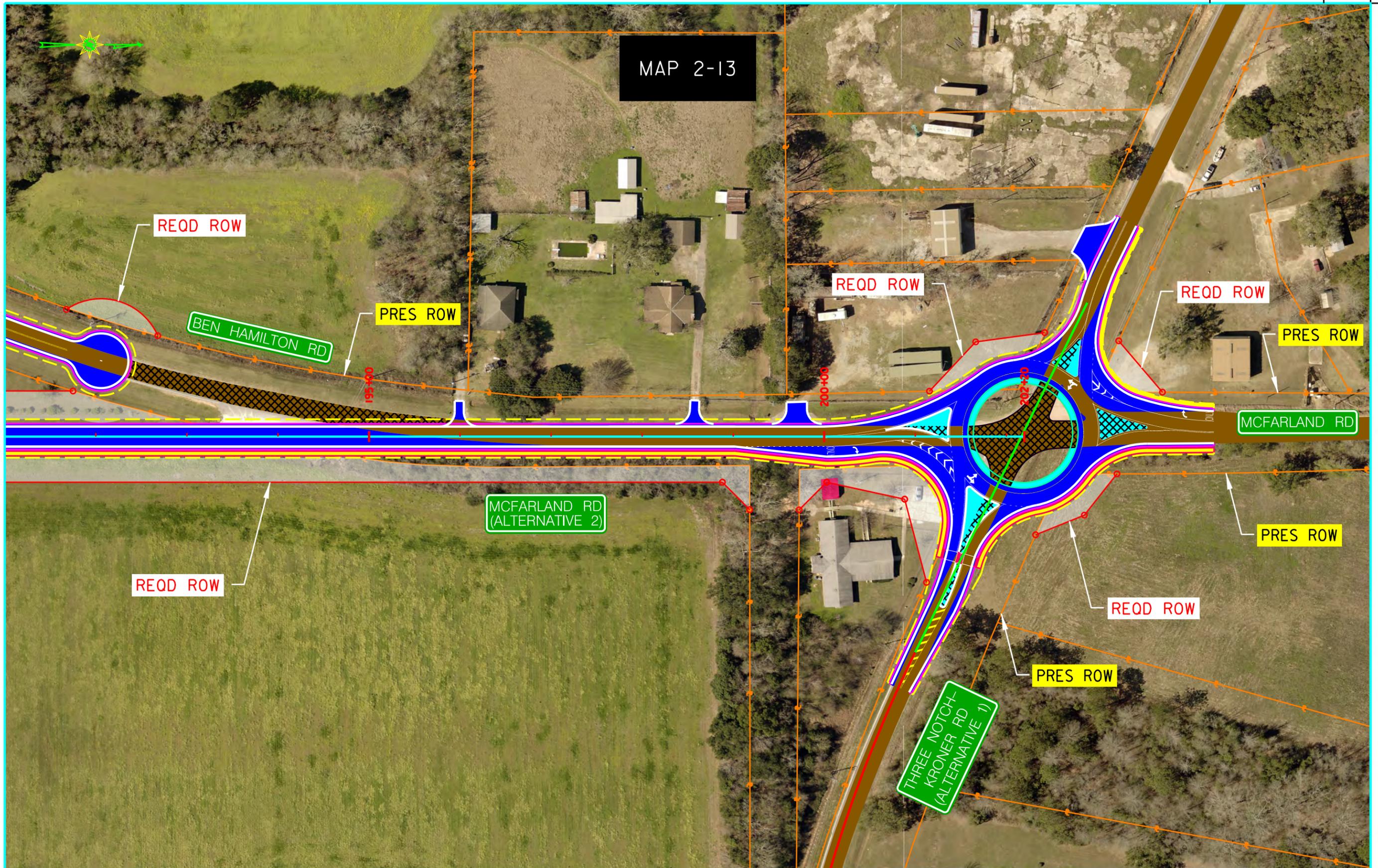
REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2021	



PLAN SUBMITTAL	MOBILE COUNTY COMMISSION	HORIZ SCALE (FEET)	SHEET TITLE	ROUTE
	MCFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - BROWER ROAD	50 0 50	PLAN ALTERNATIVE 2	MCFARLAND ROAD

PLAN - ALTERNATIVE 2

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
MCR-2016-003	2021	



PLAN SUBMITTAL	MOBILE COUNTY COMMISSION	HORIZ SCALE (FEET)	SHEET TITLE	ROUTE
	MCFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - KRONER ROAD	50 0 50	PLAN ALTERNATIVE 2	MCFARLAND ROAD

Appendix B

STIP PLAN: 2020

ALABAMA STATEWIDE TRANSPORTATION IMPROVEMENT PROGRAM

10/1/2019-9/30/2023

STIP PLAN: 2020 - Original

COUNTY HIGHWAY PROJECTS - MOBILE

Route CR-25	Project Description NEW ALIGNMENT OF CR-25 (MCFARLAND ROAD) FROM CR-28 (OLD PASCAGOULA ROAD) TO CR-358 (THREE NOTCH ROAD)									
Project Length in Miles 8.000 Urban Area MOBILE Sponsor MOBILE COUNTY										
Database ID	Project Number	Scope of Work	Type of Work	FY	Federal	State	Other	TOTAL	COST IN THOUSANDS	
/ 100059788 PE 2018 / 100059791 CN 2024										
100059789	STPMB 4918 (250)	RIGHT OF WAY	GRADE, DRAIN, BASE AND PAVE	2022	\$4,800	\$0	\$1,200	\$6,000		
100059790	STPMB 4918 (250)	UTILITIES	GRADE, DRAIN, BASE AND PAVE	2023	\$1,920	\$0	\$480	\$2,400		
				TOTAL COST:	\$6,720	\$0	\$1,680	\$8,400		
Route CR-32	Project Description THREE NOTCH ROAD (CR-32) ADDITIONAL LANES FROM SCHILLINGER ROAD TO MCDONALD ROAD.									
Project Length in Miles 1.000 Urban Area MOBILE Sponsor MOBILE COUNTY										
Database ID	Project Number	Scope of Work	Type of Work	FY	Federal	State	Other	TOTAL	COST IN THOUSANDS	
/ 100052461 PE 2019 / 100052463 UT 2024 / 100052464 CN 2024										
100052462	STPMB 4919 (250)	RIGHT OF WAY	ADDITIONAL ROADWAY LANES	2022	\$732	\$0	\$183	\$915		
				TOTAL COST:	\$732	\$0	\$183	\$915		
Route CR-33	Project Description WIDENING, RESURFACING AND STRIPING ON DAWES ROAD (CR-33) FROM SCOTT DAIRY LOOP ROAD SOUTH TO DIBERVILLE DRIVE WEST									
Project Length in Miles 1.336 Urban Area MOBILE Sponsor MOBILE COUNTY LVOE County										
Database ID	Project Number	Scope of Work	Type of Work	FY	Federal	State	Other	TOTAL	COST IN THOUSANDS	
/ 100068763 RASTPAA 4915 (251)										
100068763	RASTPAA 4915 (251)	CONSTRUCTION	WIDENING AND RESURFACING	2021	\$483	\$0	\$973	\$1,456		
				TOTAL COST:	\$483	\$0	\$973	\$1,456		
Route CR-39	Project Description MCDONALD ROAD (CR-39) ADDITIONAL LANES FROM NORTH OF I-10 TO OLD PASCAGOULA ROAD.									
Project Length in Miles 1.000 Urban Area MOBILE Sponsor MOBILE COUNTY										
Database ID	Project Number	Scope of Work	Type of Work	FY	Federal	State	Other	TOTAL	COST IN THOUSANDS	
/ 100052447 PE 2010 / 100052448 RW 2018										
100052449	STPMB 7612 (600)	UTILITIES	GRADE, DRAIN, BASE AND PAVE	2022	\$560	\$0	\$140	\$700		
100052450	STPMB 7612 (600)	CONSTRUCTION	GRADE, DRAIN, BASE AND PAVE	2022	\$3,840	\$0	\$960	\$4,800		
				TOTAL COST:	\$4,400	\$0	\$1,100	\$5,500		
Route CR-41	Project Description ADDITIONAL LANES ON CR-41 (CELESTE ROAD) FROM FOREST AVENUE TO JUST WEST OF I-65									
Project Length in Miles 3.200 Urban Area MOBILE Sponsor MOBILE COUNTY										
Database ID	Project Number	Scope of Work	Type of Work	FY	Federal	State	Other	TOTAL	COST IN THOUSANDS	
/ 100069498 PE 2019 / 100069501 CN 2025										
100069499	STPMB 4919 (251)	RIGHT OF WAY	ADDITIONAL ROADWAY LANES	2022	\$1,600	\$0	\$400	\$2,000		
100069500	STPMB 4919 (251)	UTILITIES	ADDITIONAL ROADWAY LANES	2023	\$800	\$0	\$200	\$1,000		
				TOTAL COST:	\$2,400	\$0	\$600	\$3,000		

Appendix C

Traffic Study

TRAFFIC TECHNICAL MEMORANDUM
for
McFarland Road
from Old Pascagoula Road to Three Notch
Kroner Road



Final Report
April 2021



Prepared by:



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ARTPLAN Analysis for Alternatives	

Executive Summary

The following traffic analysis was performed as part of the Environmental Assessment for McFarland Road from Old Pascagoula Road to Three Notch Kroner Road. The purpose of the study is to develop and analyze alternative routes to alleviate the congestion in regards to the McFarland Road, McDonald Road, and Three Notch Kroner Road Corridors. The study area includes the area from Old Pascagoula Road to the south, Three Notch Kroner Road to the north, and McDonald Road to the east. This memorandum documents the methodology used in developing traffic forecast volumes and the level of service analysis.

The traffic volumes for the different alternatives were developed from the travel demand model utilized in the newly adopted Long Range Transportation Plan. Year 2045 AADTs were evaluated using ARTPLAN software for each of the three alternates.

Table A – Year 2045 Level-of-Service Summary

Alternate	Road	Segment	Speed (mph)	Segment LOS
No Build	McDonald Road	Old Pascagoula to Theodore Dawes	30.31	C
		Theodore Dawes to Three Notch	9.77	F
	Three Notch Kroner Road	McFarland to Dawes Lane	33.43	B
		Dawes Lane to McDonald Rd	9.22	F
1	McDonald Road	Old Pascagoula to Theodore Dawes	41.46	A
		Theodore Dawes to Three Notch	28.64	C
	Three Notch Kroner Road	McFarland to Dawes Lane	44.45	A
		Dawes Lane to McDonald Rd	25.83	C
2	McFarland Road	McDonald to Three Notch	41.53	A
	McDonald Road	Old Pascagoula to Theodore Dawes	41.78	A
		Theodore Dawes to Three Notch	24.60	C
	Three Notch Kroner Road	McFarland to Dawes Lane	45.05	A
		Dawes Lane to McDonald Rd	26.80	C

Section 1 Introduction

This report summarizes the findings of the traffic analysis performed by Neel-Schaffer, Inc. for the McFarland Road Environmental Study. The purpose of this study is to propose alternative routes to alleviate the congestion issues in regard to the existing McDonald Road and Three Notch Kroner Road. The study area includes the McDonald Road corridor from Old Pascagoula Road to Three Notch Kroner Road, Three Notch Kroner Road corridor from McDonald Road to McFarland Road, and McFarland Road corridor from 0.1 mile north of Old Pascagoula Road to Three Notch Kroner Road.

Figure 1.1 – Project Location Map



Section 2 Existing Conditions

The possible McFarland Road segment in this study is a new roadway/alignment, thus there is no current roadway. McDonald Road and Three Notch Kroner Road are existing roadways that are also part of the study area. The existing portion of McFarland Road north of our study area begins at Three Notch Kroner Road and continues north before changing names to Snow Road and terminating at U.S. Highway 98. Currently, vehicles traveling north or south between U.S. Highway 98 and Interstate 10 can travel the existing Snow Road/McFarland Road, turn onto Three Notch Kroner Road, then turn onto McDonald Road.

2.1 Three Notch Kroner Road

Three Notch Kroner Road is a two-lane county roadway with a posted speed limit of 45 mph within our study limits. According to the Alabama Department of Transportation, Three Notch Kroner Road is classified as a major collector within the study limits and a minor arterial east of the study limits. This classification within the study limits means the corridor serves trips of shorter length and at a higher level of mobility than arterials.

The Three Notch Kroner Road study corridor for this project is approximately one mile in length, from McFarland Road/Ben Hamilton Road to McDonald Road.

2.2 McDonald Road

McDonald Road is a two-lane county roadway with a posted speed limit of 45 mph within our study limits. According to the Alabama Department of Transportation, McDonald Road is Three Notch Kroner Road is classified as a minor arterial. This classification means the corridor serves trips of moderate length and at a lower level of mobility than collectors.

The McDonald Road study corridor for this project is approximately 2.8 miles in length, from Three Notch Kroner Road to Old Pascagoula Road. McDonald Road is currently being widened to a five-lane section from Old Pascagoula Road to Interstate 10.

The intersection of McDonald Road and Three Notch Kroner Road is a signalized four-leg intersection. The eastbound and westbound approaches widen to provide dedicated left turn lanes and the northbound approach widens to provide a channelized right turn lane.

The intersection of McDonald Road and Old Pascagoula Road is a signalized four-leg intersection. All approaches widen to provide dedicated left turn lanes, while the eastbound and westbound approaches also provide a channelized right turn with no storage.

Section 3 Evaluation of Potential Alternatives

3.1 Traffic Projections

The future volumes for the roadway segments for each alternative were provided by the South Alabama Regional Planning Commission (SARPC). SARPC houses the Mobile Metropolitan Planning Organization (MPO). The MPO has a travel demand model that assist them with the Long Range Transportation Plan. The current plan has been updated to 2045 and the new travel demand model produced the 2045 volumes for each alternative utilized in this analysis.

The travel demand model shows a substantial growth around the McFarland/McDonald/Snow Road Corridor. The following is an excerpt from the 2045 Long Range Transportation Plan. "Part of what is driving the projected growth in West Mobile, was the opening of the McDonald Road interchange and the recently improved Extension (from Three Notch Road to Cottage Hill Road). This has opened up quicker travel times to downtown, north, and to other areas attracting home-based work trips causing capacity issues in the future. Add additional lanes along the entire corridor, along with the future McFarland Road New Alignment project (from McDonald Road to Three Notch Road), will alleviate projected capacity issues along the corridor and act as an arterial loop for the region."

3.2 Basis of Analysis

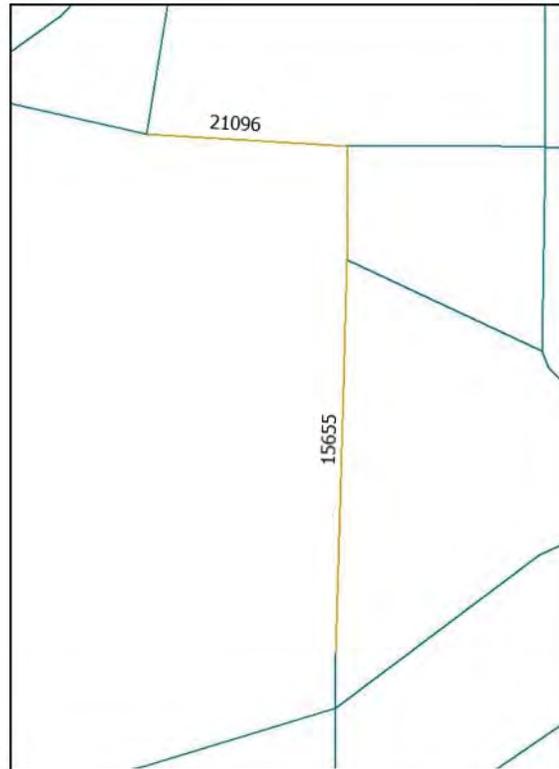
The capacity and level of service (LOS) of a roadway segment is evaluated based on the traffic turning movement volumes, traffic composition, and roadway geometrics. The LOS, as outlined in the Highway Capacity Manual, 6th Edition, is evaluated based on average vehicular delay for an intersection and average speed for an arterial, and is reported as a letter designation of A through F (LOS A has the least delay per vehicle, and LOS F has the most). For standard design purposes, a LOS C or better is desirable, with LOS D being allowable. LOS E represents the capacity of the roadway section, while LOS F represents a failing condition with excessive traffic congestion and unlimited delays.

The analysis utilized during this planning stage of the project is based on a software called ARTPLAN 2012 which is a multimodal arterial level of service analysis tool that is based on the Highway Capacity Manual. This software is intended to be used by engineers, planners, and decision-makers in the development and review of roadway users' level of service (LOS) and capacity at generalized and conceptual planning levels. Each segment was inputted into the software for Year 2045 for each alternative. The software is able to provide a segment LOS based on the projected average speed.

3.3 No Build Alternate

The No Build Alternate does not include any improvements to McDonald Road or Three Notch Kroner Road within the study area nor does it include the construction of McFarland Road on the new alignment. Figure 3.1 graphically shows the 2045 No Build Volumes from the Long Range Transportation Plan.

Figure 3.1 – 2045 No Build Volumes



The analysis revealed the following results.

Table 3.1 – No Build Level of Service

Road	Segment	Speed (mph)	Segment LOS
McDonald Road	Old Pascagoula to Theodore Dawes	30.31	C
	Theodore Dawes to Three Notch	9.77	F
Three Notch Kroner Road	McFarland to Dawes Lane	33.43	B
	Dawes Lane to McDonald Rd	9.22	F

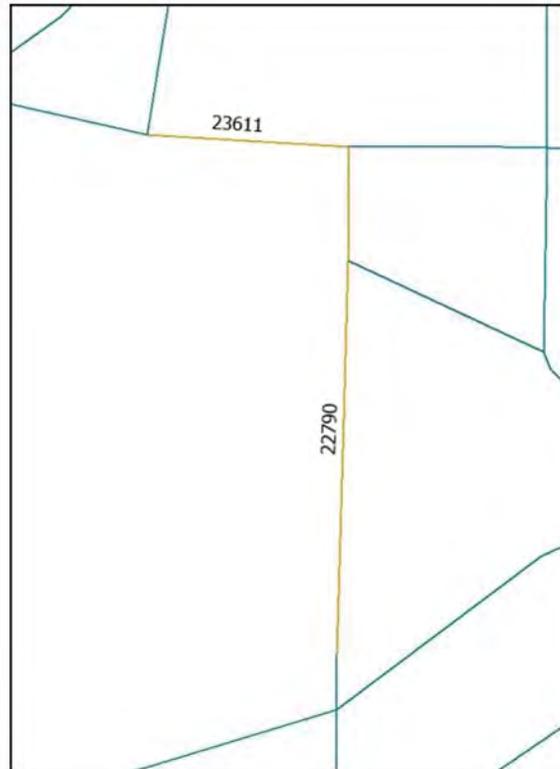
McDonald Road and Three Notch Kroner Road are both anticipated to operate with LOS F during Year 2045 with the No Build Alternative.

3.4 Alternate 1

Alternative 1 would include symmetrical widening of McDonald Road beginning at the intersection of Old Pascagoula Road and McDonald Road continuing north approximately 4,000 ft. At this point the widening would transition from symmetrical widening to widening to the east. Widening to the east would eliminate the impacts to the spillway to the private lake located approximately 7,300 ft North of the intersection of Old Pascagoula Road and McDonald Road. Once past the private lake, the alignment transitions from widening to the east to widening to

the west. This alignment transition would minimize impacts to residences located on the east side of McDonald Road. The widening would impact open farmland on the west side of the roadway. Alternative 1 runs through developed residential areas. Three Notch Kroner Road would also need to be widened under this build alternative and is identified in the Long Range Transportation Plan as a separate project. Figure 3.2 graphically shows the 2045 Alternative 1 Volumes from the Long Range Transportation Plan.

Figure 3.2 – 2045 Alternate 1 Volumes



The analysis revealed the following results.

Table 3.2 – Alternate 1 Level of Service

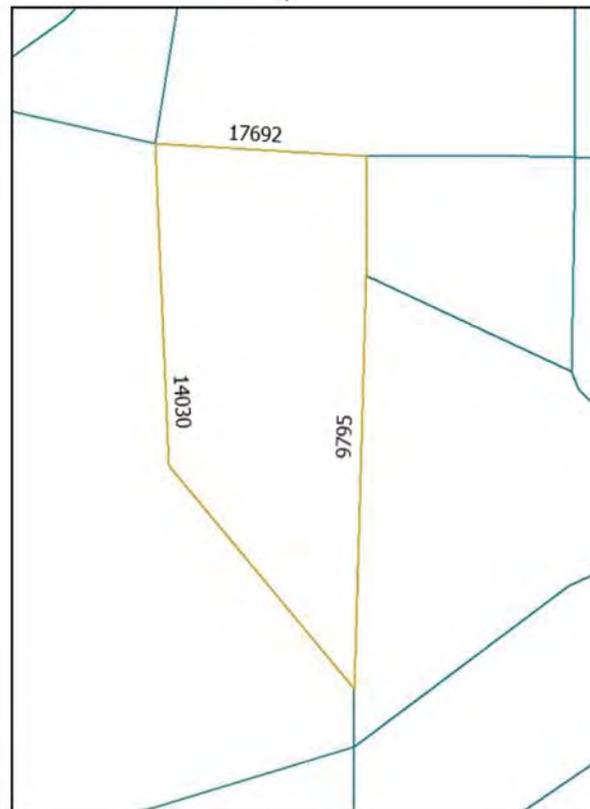
Road	Segment	Speed (mph)	Segment LOS
McDonald Road	Old Pascagoula to Theodore Dawes	41.46	A
	Theodore Dawes to Three Notch	28.64	C
Three Notch Kroner Road	McFarland to Dawes Lane	44.45	A
	Dawes Lane to McDonald Rd	25.83	C

McDonald Road and Three Notch Kroner Road are both anticipated to operate with LOS C or better during Year 2045 with Alternate 1 scenario.

3.5 Alternate 2

Alternative 2 would consist of constructing a new two-lane roadway along a new alignment that would begin at the intersection of Old Pascagoula Road and McDonald Road and ending at the intersection of Three Notch Kroner Road and McFarland Road. North of the intersection of Old Pascagoula Road and McDonald Road, the alignment will run to the west and cross Maurice Poiroux Road. From this point the alignment will turn to the north and end at the intersection of Three Notch Kroner Road and McFarland Road. The new alignment runs primarily through open farmland. Three Notch Kroner Road would also need to be widened under this build alternative and is identified in the Long Range Transportation Plan as a separate project. Figure 3.3 graphically shows the 2045 Alternative 2 Volumes from the Long Range Transportation Plan.

Figure 3.3 – 2045 Alternate 2 Volumes



The analysis revealed the following results.

Table 3.3 – Alternate 2 Level of Service

Road	Segment	Speed (mph)	Segment LOS
McFarland Road	McDonald to Three Notch	41.53	A
McDonald Road	Old Pascagoula to Theodore Dawes	41.78	A
	Theodore Dawes to Three Notch	24.60	C
Three Notch Kroner Road	McFarland to Dawes Lane	45.05	A
	Dawes Lane to McDonald Rd	26.80	C

McFarland Road is anticipated to operate with LOS A and McDonald Road and Three Notch Kroner Road are both anticipated to operate with LOS C or better during Year 2045 with Alternate 2 scenario.

3.6 Logical Termini

The proposed project begins at the intersection of Old Pascagoula Road and McDonald Road and ends at the intersection of Three Notch-Kroner Road and McFarland Road. The logical southern terminus at the intersection of Old Pascagoula Road and McDonald Road will tie into ALDOT Project No. STPMB-7612(600) which is currently in the design phase. This project will consist of a five-lane section beginning on McDonald Road north of I-10 and will terminate just north of Old Pascagoula Road. The logical northern terminus is at the intersection of Three Notch-Kroner Road and McFarland Road. McFarland Road (from Snow Road to Three Notch-Kroner Road) is an existing two-lane dirt road that is currently under construction and being paved on an existing alignment through the Mobile County Engineering Department. SARPC was consulting regarding the travel demand analysis for this section of McFarland Road north of Three Notch Kroner Road. The staff at SARPC produced two travel demand model results for this segment. One “run” included the new McFarland Road in its new alignment and the second “run” included the widening of McDonald Road and Three Notch Kroner Road. The anticipated AADT for the McFarland Road segment north of Three Notch Kroner Road was 14,525 and 12,741, respectively. The resulting level of service for the northern segment at a two-lane roadway was LOS B (32.26) and LOS B (33.78), respectively.

Section 4 Summary

The purpose of this study is to develop and analyze alternative routes to **alleviate the congestion** in regards to the McFarland/McDonald/Three Notch Kroner Road Corridor. Given the scope of the project, traffic analysis and level-of-service should not be the only elements utilized in developing a ranking of the viable concepts.

4.1 Summary of Year 2045 Level-of-Service Analysis

Three alternates were developed for this project area were analyzed to determine the estimated level-of-service for Year 2045. A generalized summary of the analysis is provided in Table 4.1

Table 4.1 – Year 2045 Level-of-Service Summary

Alternate	Road	Segment	Speed (mph)	Segment LOS
No Build	McDonald Road	Old Pascagoula to Theodore Dawes	30.31	C
		Theodore Dawes to Three Notch	9.77	F
	Three Notch Kroner Road	McFarland to Dawes Lane	33.43	B
		Dawes Lane to McDonald Rd	9.22	F
1	McDonald Road	Old Pascagoula to Theodore Dawes	41.46	A
		Theodore Dawes to Three Notch	28.64	C
	Three Notch Kroner Road	McFarland to Dawes Lane	44.45	A
		Dawes Lane to McDonald Rd	25.83	C
2	McFarland Road	McDonald to Three Notch	41.53	A
	McDonald Road	Old Pascagoula to Theodore Dawes	41.78	A
		Theodore Dawes to Three Notch	24.60	C
	Three Notch Kroner Road	McFarland to Dawes Lane	45.05	A
		Dawes Lane to McDonald Rd	26.80	C

Appendix

ARTPLAN Analysis for Alternatives

ARTPLAN Analysis for Alternatives

ARTPLAN 2012 Conceptual Planning Analysis

Project Information

Analyst	S Bergin	Arterial Name	McDonald Road	Study Period	Standard K
Date Prepared	1/29/2020 3:33:49 PM	From	Old Pascagoula	Modal Analysis	Auto Only
Agency	Neel-Schaffer	To	Three Notch	Program	ARTPLAN 2012
Area Type	Transitioning/Urban	Peak Direction	Northbound	Version Date	12/12/2012
Arterial Class	1				
File Name	Y:\Projects\0010000\0014500\14791 McFarland Rd – Mobile Co\Traffic\ARTPLAN\McDonald 2045 No Build.xap				
User Notes	2045 No Build				

Arterial Data

K	0.09	PHF	1	Control Type	CoordinatedActuated
D	0.57	% Heavy Vehicles	3	Base Sat. Flow Rate	1950

Automobile Intersection Data

Cross Street	Cycle Length	Thru g/C	Arr. Type	INT # Dir.Lanes	% Left Turns	% Right Turns	Left Turn Lanes	Left Turn Phasing	# Left Turn Lanes	LT Storage Length	Left g/C	Right Turn Lanes
Theodore Dawes	90	0.42	3	1	0	10	No	None	N/A	N/A	N/A	Yes
Three Notch	120	0.44	3	1	10	10	No	None	N/A	N/A	N/A	Yes

Automobile Segment Data

Segment #	Length	AADT	Hourly Vol.	SEG # Dir.Lanes	Posted Speed	Free Flow Speed	Median Type	On-Street Parking	Parking Activity
1 (to Theodore Dawes)	11500	15700	805	1	45	50	None	No	N/A
2 (to Three Notch)	3000	15700	805	1	45	50	None	No	N/A

Automobile LOS

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	Queue Ratio	Speed (mph)	Segment LOS			
1 (to Theodore Dawes)	725	1513	1.140	94.26	F	0.00	30.31	C			
2 (to Three Notch)	725	1229	1.275	167.85	F	0.00	9.77	F			
Arterial Length	2.7598	Weighted g/C	0.43	FFS Delay	273.64	Threshold Delay	0.00	Auto Speed	###	Auto LOS	###

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 veh/h/ln.

	A	B	C	D	E
Lanes	Hourly Volume In Peak Direction				
1	260	600	***	***	***
2	590	1160	***	***	***
3	940	1760	***	***	***
4	1290	2340	***	***	***
*	260	600	***	***	***
Lanes	Hourly Volume In Both Directions				
2	460	1040	***	***	***
4	1040	2050	***	***	***
6	1650	3090	***	***	***
8	2270	4120	***	***	***
*	460	1040	***	***	***
Lanes	Annual Average Daily Traffic				
2	5100	11600	***	***	***
4	11600	22700	***	***	***
6	18400	34300	***	***	***
8	25200	45800	***	***	***
*	5100	11600	***	***	***

* Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.

** Cannot be achieved based on input data provided.

*** Not applicable for that level of service letter grade. See generalized tables notes for more details.

Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.

Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.

Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2012 Conceptual Planning Analysis

Project Information

Analyst	S. Bergin	Arterial Name	Three Notch	Study Period	Standard K
Date Prepared	1/30/2020 8:57:54 AM	From	McFarland Rd	Modal Analysis	Auto Only
Agency	Neel-Schaffer	To	McDonald Rd	Program	ARTPLAN 2012
Area Type	Transitioning/Urban	Peak Direction	Eastbound	Version Date	12/12/2012
Arterial Class	1				
File Name	Y:\Projects\0010000\0014500\14791 McFarland Rd – Mobile Co\Traffic\ARTPLAN\Three Notch 2045 No Build.xap				
User Notes	2045 No Build				

Arterial Data

K	0.09	PHF	1	Control Type	FullyActuated
D	0.57	% Heavy Vehicles	3	Base Sat. Flow Rate	1950

Automobile Intersection Data

Cross Street	Cycle Length	Thru g/C	Arr. Type	INT # Dir.Lanes	% Left Turns	% Right Turns	Left Turn Lanes	Left Turn Phasing	# Left Turn Lanes	LT Storage Length	Left g/C	Right Turn Lanes
Dawes Ln	120	0.85	3	1	5	10	No	None	N/A	N/A	N/A	No
McDonald Rd	120	0.44	3	1	5	15	Yes	ProtPerm	1	235	0.15	No

Automobile Segment Data

Segment #	Length	AADT	Hourly Vol.	SEG # Dir.Lanes	Posted Speed	Free Flow Speed	Median Type	On-Street Parking	Parking Activity
1 (to Dawes Ln)	2700	21100	1082	1	45	50	None	No	N/A
2 (to McDonald Rd)	2700	21100	1082	1	45	50	None	No	N/A

Automobile LOS

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	Queue Ratio	Speed (mph)	Segment LOS			
1 (to Dawes Ln)	1082	1291	0.986	15.06	B	0.00	33.43	B			
2 (to McDonald Rd)	1028	1607	1.262	161.54	F	0.17	9.22	F			
Arterial Length	1.0364	Weighted g/C	##	FFS Delay	184.46	Threshold Delay	50.82	Auto Speed	###	Auto LOS	###

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 veh/h/ln.

	A	B	C	D	E
Lanes	Hourly Volume In Peak Direction				
1	**	620	720	***	***
2	**	1330	1480	***	***
3	**	2070	2240	***	***
4	**	2810	2980	***	***
*	**	620	720	***	***
Lanes	Hourly Volume In Both Directions				
2	**	1090	1280	***	***
4	**	2340	2600	***	***
6	**	3640	3920	***	***
8	**	4930	5250	***	***
*	**	1090	1280	***	***
Lanes	Annual Average Daily Traffic				
2	**	12100	14300	***	***
4	**	26000	28900	***	***
6	**	40400	43600	***	***
8	**	54800	58300	***	***
*	**	12100	14300	***	***

* Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.

** Cannot be achieved based on input data provided.

*** Not applicable for that level of service letter grade. See generalized tables notes for more details.

Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.

Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.

Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2012 Conceptual Planning Analysis

Project Information

Analyst	S Bergin	Arterial Name	McDonald Road	Study Period	Standard K
Date Prepared	1/29/2020 3:33:49 PM	From	Old Pascagoula	Modal Analysis	Auto Only
Agency	Neel-Schaffer	To	Three Notch	Program	ARTPLAN 2012
Area Type	Transitioning/Urban	Peak Direction	Northbound	Version Date	12/12/2012
Arterial Class	1				
File Name	Y:\Projects\0010000\0014500\14791 McFarland Rd – Mobile Co\Traffic\ARTPLAN\McDonald 2045 Alt 1.xap				
User Notes	2045 McDonald 5-Lane				

Arterial Data

K	0.09	PHF	1	Control Type	CoordinatedActuated
D	0.57	% Heavy Vehicles	3	Base Sat. Flow Rate	1950

Automobile Intersection Data

Cross Street	Cycle Length	Thru g/C	Arr. Type	INT # Dir.Lanes	% Left Turns	% Right Turns	Left Turn Lanes	Left Turn Phasing	# Left Turn Lanes	LT Storage Length	Left g/C	Right Turn Lanes
Theodore Dawes	90	0.42	3	2	0	10	No	None	N/A	N/A	N/A	Yes
Three Notch	120	0.44	3	2	10	10	Yes	Protected	1	235	0.15	Yes

Automobile Segment Data

Segment #	Length	AADT	Hourly Vol.	SEG # Dir.Lanes	Posted Speed	Free Flow Speed	Median Type	On-Street Parking	Parking Activity
1 (to Theodore Dawes)	11500	22800	1170	2	45	50	None	No	N/A
2 (to Three Notch)	3000	22800	1170	2	45	50	None	No	N/A

Automobile LOS

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	Queue Ratio	Speed (mph)	Segment LOS			
1 (to Theodore Dawes)	1053	2937	0.854	26.88	C	0.00	41.46	A			
2 (to Three Notch)	936	2959	0.719	28.93	C	0.40	28.64	C			
Arterial Length	2.7598	Weighted g/C	0.43	FFS Delay	64.26	Threshold Delay	0.00	Auto Speed	37.92	Auto LOS	B

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 veh/h/ln.

	A	B	C	D	E
Lanes	Hourly Volume In Peak Direction				
1	320	700	***	***	***
2	700	1380	***	***	***
3	1120	2080	***	***	***
4	1530	2780	***	***	***
*	700	1380	***	***	***
Lanes	Hourly Volume In Both Directions				
2	570	1240	***	***	***
4	1230	2430	***	***	***
6	1970	3660	***	***	***
8	2690	4890	***	***	***
*	1230	2430	***	***	***
Lanes	Annual Average Daily Traffic				
2	6300	13700	***	***	***
4	13700	27000	***	***	***
6	21900	40600	***	***	***
8	29900	54300	***	***	***
*	13700	27000	***	***	***

* Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.

** Cannot be achieved based on input data provided.

*** Not applicable for that level of service letter grade. See generalized tables notes for more details.

Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.

Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.

Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2012 Conceptual Planning Analysis

Project Information

Analyst	S. Bergin	Arterial Name	Three Notch	Study Period	Standard K
Date Prepared	1/30/2020 8:57:54 AM	From	McFarland Rd	Modal Analysis	Auto Only
Agency	Neel-Schaffer	To	McDonald Rd	Program	ARTPLAN 2012
Area Type	Transitioning/Urban	Peak Direction	Eastbound	Version Date	12/12/2012
Arterial Class	1				
File Name	Y:\Projects\0010000\0014500\14791 McFarland Rd – Mobile Co\Traffic\ARTPLAN\Three Notch 2045 Alt 1.xap				
User Notes	2045 Alt 1				

Arterial Data

K	0.09	PHF	1	Control Type	FullyActuated
D	0.57	% Heavy Vehicles	3	Base Sat. Flow Rate	1950

Automobile Intersection Data

Cross Street	Cycle Length	Thru g/C	Arr. Type	INT # Dir.Lanes	% Left Turns	% Right Turns	Left Turn Lanes	Left Turn Phasing	# Left Turn Lanes	LT Storage Length	Left g/C	Right Turn Lanes
Dawes Ln	120	0.85	3	2	5	10	No	None	N/A	N/A	N/A	No
McDonald Rd	120	0.44	3	2	5	15	Yes	ProtPerm	1	235	0.15	No

Automobile Segment Data

Segment #	Length	AADT	Hourly Vol.	SEG # Dir.Lanes	Posted Speed	Free Flow Speed	Median Type	On-Street Parking	Parking Activity
1 (to Dawes Ln)	2700	23600	1211	2	45	50	None	No	N/A
2 (to McDonald Rd)	2700	23600	1211	2	45	50	None	No	N/A

Automobile LOS

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	Queue Ratio	Speed (mph)	Segment LOS			
1 (to Dawes Ln)	1211	2538	0.561	2.75	A	0.00	44.45	A			
2 (to McDonald Rd)	1150	3151	0.830	32.99	C	0.20	25.83	C			
Arterial Length	1.0364	Weighted g/C	##	FFS Delay	40.54	Threshold Delay	0.00	Auto Speed	32.68	Auto LOS	B

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 veh/h/ln.

	A	B	C	D	E
Lanes	Hourly Volume In Peak Direction				
1	**	620	720	***	***
2	**	1330	1480	***	***
3	**	2070	2240	***	***
4	**	2810	2980	***	***
*	**	1330	1480	***	***
Lanes	Hourly Volume In Both Directions				
2	**	1090	1280	***	***
4	**	2340	2600	***	***
6	**	3640	3920	***	***
8	**	4930	5250	***	***
*	**	2340	2600	***	***
Lanes	Annual Average Daily Traffic				
2	**	12100	14300	***	***
4	**	26000	28900	***	***
6	**	40400	43600	***	***
8	**	54800	58300	***	***
*	**	26000	28900	***	***

* Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.

** Cannot be achieved based on input data provided.

*** Not applicable for that level of service letter grade. See generalized tables notes for more details.

Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.

Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.

Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2012 Conceptual Planning Analysis

Project Information

Analyst	S. Bergin	Arterial Name	McFarland Road	Study Period	Standard K
Date Prepared	1/30/2020 9:13:43 AM	From	McDonald Rd	Modal Analysis	Auto Only
Agency	Neel-Schaffer	To	Three Notch	Program	ARTPLAN 2012
Area Type	Transitioning/Urban	Peak Direction	Northbound	Version Date	12/12/2012
Arterial Class	1				
File Name	Y:\Projects\0010000\0014500\14791 McFarland Rd – Mobile Co\Traffic\ARTPLAN\McFarland 2045 Alt 2.xap				
User Notes	2045 Alt 2				

Arterial Data

K	0.09	PHF	1	Control Type	FullyActuated
D	0.57	% Heavy Vehicles	3	Base Sat. Flow Rate	1950

Automobile Intersection Data

Cross Street	Cycle Length	Thru g/C	Arr. Type	INT # Dir.Lanes	% Left Turns	% Right Turns	Left Turn Lanes	Left Turn Phasing	# Left Turn Lanes	LT Storage Length	Left g/C	Right Turn Lanes
Three Notch	120	0.44	3	1	10	10	Yes	ProtPerm	1	235	0.15	Yes

Automobile Segment Data

Segment #	Length	AADT	Hourly Vol.	SEG # Dir.Lanes	Posted Speed	Free Flow Speed	Median Type	On-Street Parking	Parking Activity
1 (to Three Notch)	15840	14000	718	1	45	50	None	No	N/A

Automobile LOS

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	Queue Ratio	Speed (mph)	Segment LOS			
1 (to Three Notch)	574	1518	0.860	34.78	C	0.23	41.53	A			
Arterial Length	3.0068	Weighted g/C	0.44	FFS Delay	44.67	Threshold Delay	0.00	Auto Speed	41.53	Auto LOS	A

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 veh/h/ln.

	A	B	C	D	E
Lanes	Hourly Volume In Peak Direction				
1	830	***	***	***	***
2	1660	***	***	***	***
3	2500	***	***	***	***
4	3360	***	***	***	***
*	830	***	***	***	***
Lanes	Hourly Volume In Both Directions				
2	1460	***	***	***	***
4	2920	***	***	***	***
6	4400	***	***	***	***
8	5880	***	***	***	***
*	1460	***	***	***	***
Lanes	Annual Average Daily Traffic				
2	16200	***	***	***	***
4	32400	***	***	***	***
6	48900	***	***	***	***
8	65400	***	***	***	***
*	16200	***	***	***	***

* Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.

** Cannot be achieved based on input data provided.

*** Not applicable for that level of service letter grade. See generalized tables notes for more details.

Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.

Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.

Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2012 Conceptual Planning Analysis

Project Information

Analyst	S Bergin	Arterial Name	McDonald Road	Study Period	Standard K
Date Prepared	1/29/2020 3:33:49 PM	From	Old Pascagoula	Modal Analysis	Auto Only
Agency	Neel-Schaffer	To	Three Notch	Program	ARTPLAN 2012
Area Type	Transitioning/Urban	Peak Direction	Northbound	Version Date	12/12/2012
Arterial Class	1				
File Name	Y:\Projects\0010000\0014500\14791 McFarland Rd – Mobile Co\Traffic\ARTPLAN\McDonald 2045 Alt 2.xap				
User Notes	2045 McFarland 2-Lane				

Arterial Data

K	0.09	PHF	1	Control Type	CoordinatedActuated
D	0.57	% Heavy Vehicles	3	Base Sat. Flow Rate	1950

Automobile Intersection Data

Cross Street	Cycle Length	Thru g/C	Arr. Type	INT # Dir.Lanes	% Left Turns	% Right Turns	Left Turn Lanes	Left Turn Phasing	# Left Turn Lanes	LT Storage Length	Left g/C	Right Turn Lanes
Theodore Dawes	90	0.42	3	1	0	10	No	None	N/A	N/A	N/A	Yes
Three Notch	120	0.44	3	1	10	10	No	None	N/A	N/A	N/A	Yes

Automobile Segment Data

Segment #	Length	AADT	Hourly Vol.	SEG # Dir.Lanes	Posted Speed	Free Flow Speed	Median Type	On-Street Parking	Parking Activity
1 (to Theodore Dawes)	11500	9800	503	1	45	50	None	No	N/A
2 (to Three Notch)	3000	9800	503	1	45	50	None	No	N/A

Automobile LOS

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	Queue Ratio	Speed (mph)	Segment LOS			
1 (to Theodore Dawes)	453	1481	0.728	26.37	C	0.00	41.78	A			
2 (to Three Notch)	453	1199	0.858	41.05	D	0.00	24.60	C			
Arterial Length	2.7598	Weighted g/C	0.43	FFS Delay	74.67	Threshold Delay	0.00	Auto Speed	36.47	Auto LOS	B

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 veh/h/ln.

	A	B	C	D	E
Lanes	Hourly Volume In Peak Direction				
1	260	600	***	***	***
2	590	1160	***	***	***
3	940	1760	***	***	***
4	1290	2340	***	***	***
*	260	600	***	***	***
Lanes	Hourly Volume In Both Directions				
2	460	1040	***	***	***
4	1040	2050	***	***	***
6	1650	3090	***	***	***
8	2270	4120	***	***	***
*	460	1040	***	***	***
Lanes	Annual Average Daily Traffic				
2	5100	11600	***	***	***
4	11600	22700	***	***	***
6	18400	34300	***	***	***
8	25200	45800	***	***	***
*	5100	11600	***	***	***

* Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.

** Cannot be achieved based on input data provided.

*** Not applicable for that level of service letter grade. See generalized tables notes for more details.

Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.

Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.

Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2012 Conceptual Planning Analysis

Project Information

Analyst	S. Bergin	Arterial Name	Three Notch	Study Period	Standard K
Date Prepared	1/30/2020 8:57:54 AM	From	McFarland Rd	Modal Analysis	Auto Only
Agency	Neel-Schaffer	To	McDonald Rd	Program	ARTPLAN 2012
Area Type	Transitioning/Urban	Peak Direction	Eastbound	Version Date	12/12/2012
Arterial Class	1				
File Name	Y:\Projects\0010000\0014500\14791 McFarland Rd – Mobile Co\Traffic\ARTPLAN\Three Notch 2045 Alt 2.xap				
User Notes	2025 Alt 2				

Arterial Data

K	0.09	PHF	1	Control Type	FullyActuated
D	0.57	% Heavy Vehicles	3	Base Sat. Flow Rate	1950

Automobile Intersection Data

Cross Street	Cycle Length	Thru g/C	Arr. Type	INT # Dir.Lanes	% Left Turns	% Right Turns	Left Turn Lanes	Left Turn Phasing	# Left Turn Lanes	LT Storage Length	Left g/C	Right Turn Lanes
Dawes Ln	120	0.85	3	1	5	10	No	None	N/A	N/A	N/A	No
McDonald Rd	120	0.44	3	1	5	15	Yes	ProtPerm	1	235	0.15	No

Automobile Segment Data

Segment #	Length	AADT	Hourly Vol.	SEG # Dir.Lanes	Posted Speed	Free Flow Speed	Median Type	On-Street Parking	Parking Activity
1 (to Dawes Ln)	2700	10100	518	1	45	50	None	No	N/A
2 (to McDonald Rd)	2700	10100	518	1	45	50	None	No	N/A

Automobile LOS

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	Queue Ratio	Speed (mph)	Segment LOS			
1 (to Dawes Ln)	518	1239	0.492	2.43	A	0.00	45.05	A			
2 (to McDonald Rd)	492	1539	0.727	30.62	C	0.08	26.80	C			
Arterial Length	1.0364	Weighted g/C	##	FFS Delay	37.38	Threshold Delay	0.00	Auto Speed	33.61	Auto LOS	B

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 veh/h/ln.

	A	B	C	D	E
Lanes	Hourly Volume In Peak Direction				
1	**	620	720	***	***
2	**	1330	1480	***	***
3	**	2070	2240	***	***
4	**	2810	2980	***	***
*	**	620	720	***	***
Lanes	Hourly Volume In Both Directions				
2	**	1090	1280	***	***
4	**	2340	2600	***	***
6	**	3640	3920	***	***
8	**	4930	5250	***	***
*	**	1090	1280	***	***
Lanes	Annual Average Daily Traffic				
2	**	12100	14300	***	***
4	**	26000	28900	***	***
6	**	40400	43600	***	***
8	**	54800	58300	***	***
*	**	12100	14300	***	***

* Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.

** Cannot be achieved based on input data provided.

*** Not applicable for that level of service letter grade. See generalized tables notes for more details.

Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.

Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.

Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2012 Conceptual Planning Analysis

Project Information

Analyst	S. Bergin	Arterial Name	McFarland Road North	Study Period	Standard K
Date Prepared	9/1/2020 9:13:43 AM	From	Three Notch	Modal Analysis	Auto Only
Agency	Neel-Schaffer	To	Dawes	Program	ARTPLAN 2012
Area Type	Transitioning/Urban	Peak Direction	Northbound	Version Date	12/12/2012
Arterial Class	1				
File Name	Y:\Projects\0010000\0014500\14791 McFarland Rd – Mobile Co\Traffic\ARTPLAN\McFarland North 2045 Alt 2.xap				
User Notes	2045 Alt 1				

Arterial Data

K	0.09	PHF	1	Control Type	FullyActuated
D	0.57	% Heavy Vehicles	3	Base Sat. Flow Rate	1950

Automobile Intersection Data

Cross Street	Cycle Length	Thru g/C	Arr. Type	INT # Dir.Lanes	% Left Turns	% Right Turns	Left Turn Lanes	Left Turn Phasing	# Left Turn Lanes	LT Storage Length	Left g/C	Right Turn Lanes
Dawes	120	0.5	3	1	0	10	No	None	N/A	N/A	N/A	Yes

Automobile Segment Data

Segment #	Length	AADT	Hourly Vol.	SEG # Dir.Lanes	Posted Speed	Free Flow Speed	Median Type	On-Street Parking	Parking Activity
1 (to Dawes)	4500	12750	654	1	45	50	None	No	N/A

Automobile LOS

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	Queue Ratio	Speed (mph)	Segment LOS			
1 (to Dawes)	589	1520	0.775	27.00	C	0.00	33.78	B			
Arterial Length	0.8591	Weighted g/C	0.50	FFS Delay	30.20	Threshold Delay	0.00	Auto Speed	33.78	Auto LOS	B

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 veh/h/ln.

	A	B	C	D	E
Lanes	Hourly Volume In Peak Direction				
1	**	800	860	***	***
2	**	1660	1700	***	***
3	**	2530	2560	***	***
4	**	3410	***	***	***
*	**	800	860	***	***
Lanes	Hourly Volume In Both Directions				
2	**	1410	1520	***	***
4	**	2920	2990	***	***
6	**	4440	4500	***	***
8	**	5990	***	***	***
*	**	1410	1520	***	***
Lanes	Annual Average Daily Traffic				
2	**	15600	16900	***	***
4	**	32400	33200	***	***
6	**	49400	50000	***	***
8	**	66500	***	***	***
*	**	15600	16900	***	***

* Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.

** Cannot be achieved based on input data provided.

*** Not applicable for that level of service letter grade. See generalized tables notes for more details.

Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.

Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.

Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2012 Conceptual Planning Analysis

Project Information

Analyst	S. Bergin	Arterial Name	McFarland Road North	Study Period	Standard K
Date Prepared	9/1/2020 9:13:43 AM	From	Three Notch	Modal Analysis	Auto Only
Agency	Neel-Schaffer	To	Dawes	Program	ARTPLAN 2012
Area Type	Transitioning/Urban	Peak Direction	Northbound	Version Date	12/12/2012
Arterial Class	1				
File Name	Y:\Projects\0010000\0014500\14791 McFarland Rd – Mobile Co\Traffic\ARTPLAN\McFarland North 2045 Alt 2.xap				
User Notes	2045 Alt 2				

Arterial Data

K	0.09	PHF	1	Control Type	FullyActuated
D	0.57	% Heavy Vehicles	3	Base Sat. Flow Rate	1950

Automobile Intersection Data

Cross Street	Cycle Length	Thru g/C	Arr. Type	INT # Dir.Lanes	% Left Turns	% Right Turns	Left Turn Lanes	Left Turn Phasing	# Left Turn Lanes	LT Storage Length	Left g/C	Right Turn Lanes
Dawes	120	0.5	3	1	0	10	No	None	N/A	N/A	N/A	Yes

Automobile Segment Data

Segment #	Length	AADT	Hourly Vol.	SEG # Dir.Lanes	Posted Speed	Free Flow Speed	Median Type	On-Street Parking	Parking Activity
1 (to Dawes)	4500	14500	744	1	45	50	None	No	N/A

Automobile LOS

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	Queue Ratio	Speed (mph)	Segment LOS			
1 (to Dawes)	670	1533	0.874	30.88	C	0.00	32.26	B			
Arterial Length	0.8591	Weighted g/C	0.50	FFS Delay	34.50	Threshold Delay	0.00	Auto Speed	32.26	Auto LOS	B

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 veh/h/ln.

	A	B	C	D	E
Lanes	Hourly Volume In Peak Direction				
1	**	800	860	***	***
2	**	1660	1700	***	***
3	**	2530	2560	***	***
4	**	3410	***	***	***
*	**	800	860	***	***
Lanes	Hourly Volume In Both Directions				
2	**	1410	1520	***	***
4	**	2920	2990	***	***
6	**	4440	4500	***	***
8	**	5990	***	***	***
*	**	1410	1520	***	***
Lanes	Annual Average Daily Traffic				
2	**	15600	16900	***	***
4	**	32400	33200	***	***
6	**	49400	50000	***	***
8	**	66500	***	***	***
*	**	15600	16900	***	***

* Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.

** Cannot be achieved based on input data provided.

*** Not applicable for that level of service letter grade. See generalized tables notes for more details.

Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.

Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.

Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

Appendix D

Right-of Way

ALABAMA DEPARTMENT OF TRANSPORTATION
PRELIMINARY PROJECT RELOCATION ANALYSIS

(To be prepared prior to Corridor Public Hearing)

Project No. STPMB-4918 (250) County: Mobile
Description Widen and Resurface CR 39 (McDonald Rd) **Alternate No. 1**

DISPLACEMENT AND REPLACEMENT HOUSING INVENTORY ESTIMATE

ESTIMATED NUMBER DISPLACED				INCOME LEVEL					
Type of Displacees	Owners	Tenants	Total	Minority		*0-15	15-30	30-50	Over 50
				Own.	Ten.				
Individuals and Families	1		1						1
Businesses									
Farms									
Non-Profit Organizations	1		1						
Signs									

OWNERS		VALUE OF DWELLING				
DISPLACED DWELLINGS	*0-40	40-60	60-80	80-100	Over 100	
1 - 3 BEDROOMS					1	
4 - OVER BEDROOMS						
AVAILABLE DWELLINGS						
1 - 3 BEDROOMS					5	
4 - OVER BEDROOMS					4	

TENANTS		MONTHLY RENTAL RATE				
DISPLACED UNITS	\$0-150	\$151-300	\$301-400	\$401-500	\$501 +	
1 - 3 BEDROOMS						
4 - OVER BEDROOMS						
AVAILABLE UNITS						
1 - 3 BEDROOMS						
4 - OVER BEDROOMS						

Items numbered 1 through 7 on the back of this form must be answered and explained. Number the corresponding responses and attach additional pages as needed.

I certify that the above is a realistic estimate.

Date: 02/04/22 Signed: _____ Title: _____

(Submit in duplicate to Bureau of Right of Way)

Attached: Narrative Explanations

*Denotes Thousands

**DSS dwellings currently available.

The information listed below must be furnished as a narrative analysis to the extent appropriate for the project and in accordance with 49 CFR 24.205 and Paragraph G, Section I, of the State's Relocation Assistance Manual.

1. An estimate of the number of households to be displaced, including the family characteristics (e.g. minority, ethnic, handicapped, elderly, large family, income level and owner/tenant status). However, where there are very few displacees, information on race, ethnicity and income levels should not be included in the EIS to protect the privacy of those affected.
2. A discussion comparing available (decent, safe and sanitary) housing in the area with the housing needs of the displacees. The comparison should include: (1) price ranges, (2) sizes (number of bedrooms), and (3) occupancy status (owner/tenant).
3. A discussion of any affected neighborhoods, public facilities, non-profit organizations and families having special composition (e.g. ethnic, minority, elderly, handicapped or other factors) which may require special relocation considerations and the measures proposed to resolve these relocation concerns.
4. A discussion of the measures to be taken where the existing housing inventory is insufficient, does not meet relocation standards or is not within the financial capability of the displacees. A commitment to last resort housing should be included when sufficient comparable replacement housing may not be available.
5. An estimate of the numbers, descriptions, types of occupancy (owner/tenant) and sizes (number of employees) of businesses and farms to be displaced. Additionally, the discussion should identify: (1) sites available in the area to which the affected

businesses may relocate. (2) likelihood of such relocation, and (3) potential impacts on individual businesses and farms caused by displacement or proximity of the proposed highway if not displaced.

6. A discussion of the results of contacts, if any, with local governments, organizations, groups and individuals regarding residential and business relocation impacts, including any measures or coordination needed to reduce general and/or specific impacts. These contacts are encouraged for projects with large numbers of relocatees or complex relocation requirements. Specific financial and incentive programs or opportunities beyond those provided by the Uniforms Relocation Act) to residential and business relocatees to minimize impacts may be identified, if available through other agencies or organizations.

7. A statement that: (1) the acquisition and relocation program will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended by the Surface Transportation & Uniform Relocation Assistance Act of 1987, and (2) relocation resources are available to all residential and business relocatees without discrimination.

Project Number STPMB-4918 (250) Alternate 1 Mobile County

This project is for the widening and resurfacing of CR 39, McDonald Rd., in Mobile County Alabama. There are two alternates being proposed for this project. An on-site visit was conducted on September 28, 2021 and the information gathered is detailed in this report.

Items listed below address requirements stated on the ROW Form RA-1 (Preliminary Project Relocation Analysis) :

1. An estimate of the number of households to be displaced, including the family characteristics (e.g.: minority, ethnic, handicapped, elderly, large family, income level and owner/tenant status). However, where there are very few displacees, information on race, ethnicity and income levels should not be included in the EIS to protect the privacy of those affected.
 - Only one household being displaced therefore race, ethnicity and income levels are not included.
 - The one business is vacant and currently for sale. It is a 501-C(3) organization.
2. A discussion comparing available (decent, safe and sanitary) housing in the area with the housing needs of the displacees. The comparison should include: (1) price ranges, (2) sizes (number of bedrooms), and (3) occupancy status (owner/tenant).
 - A comparable replacement search was done for both the household and business being displaced.
 - The business property is for sale at this time. It had previously been used as a health care facility.
3. A discussion of any affected neighborhoods, public facilities, non-profit organizations and families having special composition (e.g.: ethnic, minority, elderly, handicapped or other factors) which may require special relocation considerations and the measures proposed to resolve these relocation concerns.
 - The business had previously been used as a nursing home and then a health care facility. It has been renovated and could be used as one of these facilities in the future or could be converted back to a household or different business. A search of comparable properties in the area was done.
4. A discussion of the measures to be taken where the existing housing inventory is insufficient, does not meet relocation standards or is not within the financial capability of the displacees. A commitment to last resort housing should be included when sufficient comparable replacement housing may not be available.
 - It appears that the existing housing inventory is sufficient.
5. An estimate of the numbers, descriptions, types of occupancy (owner/tenant) and sizes (number of employees) of businesses and farms to be displaced. Additionally, the discussion should identify: (1) sites available in the area to which the affected businesses may relocate. (2) likelihood of such relocation, and (3) potential impacts on individual businesses and farms caused by displacement or proximity of the proposed highway if not displaced.
 - One home (owner) and one business (for sale) will be displaced. A comparable replacement search was done and it appears there are several options for replacement for both the home and the business.
6. A discussion of the results of contacts, if any, with local governments, organizations, groups and individuals regarding residential and business relocation impacts, including any measures or coordination needed to reduce general and/or specific impacts. These contacts are encouraged for projects with large numbers of relocatees or complex relocation requirements. Specific financial and incentive programs or opportunities beyond those provided by the Uniforms Relocation Act) to residential and business relocatees to minimize impacts may be identified, if available through other agencies or organizations.

- Contact was made with both the homeowner and the business representative for the purpose of conducting an Environmental Assessment Survey.

7. A statement that: (1) the acquisition and relocation program will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended by the Surface Transportation & Uniform Relocation Assistance Act of 1987, and (2) relocation resources are available to all residential and business relocatees without discrimination.

- The acquisition and relocation program will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended by the Surface Transportation & Uniform Relocation Assistance Act of 1987. relocation resources are available to all residential and business relocatees without discrimination.
- Relocation resources will be provided to all residential and business relocatees without discrimination as prescribed by the Uniform Relocation Assistance Program.
- An Online Public Involvement meeting has been held.

We do not anticipate any major problems with the relocations.

ALABAMA DEPARTMENT OF TRANSPORTATION
PRELIMINARY PROJECT RELOCATION ANALYSIS

(To be prepared prior to Corridor Public Hearing)

Project No. STPMB-4918 (250) County: Mobile
Description McFarland Rd - **Alternate No. 2**
Old Pascagoula Rd. to Three Notch Rd.

DISPLACEMENT AND REPLACEMENT HOUSING INVENTORY ESTIMATE

ESTIMATED NUMBER DISPLACED				INCOME LEVEL					
Type of Displacees	Owners	Tenants	Total	Minority		*0-15	15-30	30-50	Over 50
				Own.	Ten.				
Individuals and Families									
Businesses									
Farms									
Non-Profit Organizations	1		1						
Signs									

OWNERS DISPLACED DWELLINGS	VALUE OF DWELLING				
	*0-40	40-60	60-80	80-100	Over 100
1 - 3 BEDROOMS					
4 - OVER BEDROOMS					1
AVAILABLE DWELLINGS					
1 -3 BEDROOMS					
4 - OVER BEDROOMS					4

TENANTS DISPLACED UNITS	MONTHLY RENTAL RATE				
	\$0-150	\$151-300	\$301-400	\$401-500	\$501 +
1 - 3 BEDROOMS					
4 - OVER BEDROOMS					
AVAILABLE UNITS					
1 -3 BEDROOMS					
4 - OVER BEDROOMS					

Items numbered 1 through 7 on the back of this form must be answered and explained. Number the corresponding responses and attach additional pages as needed.

I certify that the above is a realistic estimate.

Date: 02/04/22 Signed: _____ Title: _____

(Submit in duplicate to Bureau of Right of Way)

Attached: Narrative Explanations

*Denotes Thousands

**DSS dwellings currently available.

The information listed below must be furnished as a narrative analysis to the extent appropriate for the project and in accordance with 49 CFR 24.205 and Paragraph G, Section I, of the State's Relocation Assistance Manual.

1. An estimate of the number of households to be displaced, including the family characteristics (e.g.: minority, ethnic, handicapped, elderly, large family, income level and owner/tenant status). However, where there are very few displacees, information on race, ethnicity and income levels should not be included in the EIS to protect the privacy of those affected.
2. A discussion comparing available (decent, safe and sanitary) housing in the area with the housing needs of the displacees. The comparison should include: (1) price ranges, (2) sizes (number of bedrooms), and (3) occupancy status (owner/tenant).
3. A discussion of any affected neighborhoods, public facilities, non-profit organizations and families having special composition (e.g.: ethnic, minority, elderly, handicapped or other factors) which may require special relocation considerations and the measures proposed to resolve these relocation concerns.
4. A discussion of the measures to be taken where the existing housing inventory is insufficient, does not meet relocation standards or is not within the financial capability of the displacees. A commitment to last resort housing should be included when sufficient comparable replacement housing may not be available.

5. An estimate of the numbers, descriptions, types of occupancy (owner/tenant) and sizes (number of employees) of businesses and farms to be displaced. Additionally, the discussion should identify: (1) sites available in the area to which the affected businesses may relocate. (2) likelihood of such relocation, and (3) potential impacts on individual businesses and farms caused by displacement or proximity of the proposed highway if not displaced.
6. A discussion of the results of contacts, if any, with local governments, organizations, groups and individuals regarding residential and business relocation impacts, including any measures or coordination needed to reduce general and/or specific impacts. These contacts are encouraged for projects with large numbers of relocatees or complex relocation requirements. Specific financial and incentive programs or opportunities beyond those provided by the Uniforms Relocation Act) to residential and business relocatees to minimize impacts may be identified, if available through other agencies or organizations.
7. A statement that: (1) the acquisition and relocation program will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended by the Surface Transportation & Uniform Relocation Assistance Act of 1987, and (2) relocation resources are available to all residential and business relocatees without discrimination.

Project Number STPMB-4918 (250) Alternate 1 Mobile County

This project is for the construction of McFarland Rd., in Mobile County Alabama, from Old Pascagoula Rd. to Three Notch Rd. There are two alternates being proposed for this project. An on-site visit was conducted on September 28, 2021 and the information gathered is detailed in this report.

Items listed below address requirements stated on the ROW Form RA-1 (Preliminary Project Relocation Analysis) :

1. An estimate of the number of households to be displaced, including the family characteristics (e.g.: minority, ethnic, handicapped, elderly, large family, income level and owner/tenant status). However, where there are very few displacees, information on race, ethnicity and income levels should not be included in the EIS to protect the privacy of those affected.
 - There is one business that is vacant and currently for sale. It is a 501-C(3) organization.
2. A discussion comparing available (decent, safe and sanitary) housing in the area with the housing needs of the displacees. The comparison should include: (1) price ranges, (2) sizes (number of bedrooms), and (3) occupancy status (owner/tenant).
 - A comparable replacement search was done for business being displaced.
 - The business property is for sale at this time. It had previously been used as a health care facility.
3. A discussion of any affected neighborhoods, public facilities, non-profit organizations and families having special composition (e.g.: ethnic, minority, elderly, handicapped or other factors) which may require special relocation considerations and the measures proposed to resolve these relocation concerns.
 - The business had previously been used as a nursing home and then a health care facility. It has been renovated and could be used as one of these facilities in the future or could be converted back to a household or different business. A search of comparable properties in the area was done.
4. A discussion of the measures to be taken where the existing housing inventory is insufficient, does not meet relocation standards or is not within the financial capability of the displacees. A commitment to last resort housing should be included when sufficient comparable replacement housing may not be available.
 - It appears that the existing replacement inventory is sufficient.
5. An estimate of the numbers, descriptions, types of occupancy (owner/tenant) and sizes (number of employees) of businesses and farms to be displaced. Additionally, the discussion should identify: (1) sites available in the area to which the affected businesses may relocate. (2) likelihood of such relocation, and (3) potential impacts on individual businesses and farms caused by displacement or proximity of the proposed highway if not displaced.
 - One business (for sale) will be displaced. A comparable replacement search was done and it appears there are several options for replacement for the business.
6. A discussion of the results of contacts, if any, with local governments, organizations, groups and individuals regarding residential and business relocation impacts, including any measures or coordination needed to reduce general and/or specific impacts. These contacts are encouraged for projects with large numbers of relocatees or complex relocation requirements. Specific financial and incentive programs or opportunities beyond those provided by the Uniforms Relocation Act) to residential and business relocatees to minimize impacts may be identified, if available through other agencies or organizations.

- Contact was made with the business representative for the purpose of obtaining information for the Environmental Assessment Survey

7. A statement that: (1) the acquisition and relocation program will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended by the Surface Transportation & Uniform Relocation Assistance Act of 1987, and (2) relocation resources are available to all residential and business relocatees without discrimination.

- The acquisition and relocation program will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended by the Surface Transportation & Uniform Relocation Assistance Act of 1987. relocation resources are available to all residential and business relocatees without discrimination.
- Relocation resources will be provided to all residential and business relocatees without discrimination as prescribed by the Uniform Relocation Assistance Program.
- An Online Public Involvement meeting has been held.

We do not anticipate any major problems with the relocations.

Appendix E

Farmlands

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request 09/24/2021				
Name of Project STPMB-4918(250)		Federal Agency Involved FHWA				
Proposed Land Use New Alignment of CR-25 (McFarland Rd.)		County and State Mobile County, Alabama				
PART II (To be completed by NRCS)		Date Request Received By NRCS		Person Completing Form:		
Does the site contain Prime, Unique, Statewide or Local Important Farmland? <i>(If no, the FPPA does not apply - do not complete additional parts of this form)</i>		YES <input type="checkbox"/>	NO <input type="checkbox"/>	Acres Irrigated	Average Farm Size	
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %	Amount of Farmland As Defined in FPPA Acres: %				
Name of Land Evaluation System Used	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS				
PART III (To be completed by Federal Agency)		Alternative Site Rating				
		Alternative 1	Alternative 2	Site C	Site D	
A. Total Acres To Be Converted Directly		0.25	28			
B. Total Acres To Be Converted Indirectly						
C. Total Acres In Site						
PART IV (To be completed by NRCS) Land Evaluation Information						
A. Total Acres Prime And Unique Farmland						
B. Total Acres Statewide Important or Local Important Farmland						
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted						
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value						
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)						
PART VI (To be completed by Federal Agency) Site Assessment Criteria <i>(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)</i>		Maximum Points	Alternative 1	Alternative 2	Site C	Site D
1. Area In Non-urban Use		(15)	2	8		
2. Perimeter In Non-urban Use		(10)	2	8		
3. Percent Of Site Being Farmed		(20)	2	10		
4. Protection Provided By State and Local Government		(20)	0	0		
5. Distance From Urban Built-up Area		(15)	0	0		
6. Distance To Urban Support Services		(15)	0	0		
7. Size Of Present Farm Unit Compared To Average		(10)	1	6		
8. Creation Of Non-farmable Farmland		(10)	2	4		
9. Availability Of Farm Support Services		(5)	5	5		
10. On-Farm Investments		(20)	5	4		
11. Effects Of Conversion On Farm Support Services		(10)	1	6		
12. Compatibility With Existing Agricultural Use		(10)	2	6		
TOTAL SITE ASSESSMENT POINTS		160	22	57	0	0
PART VII (To be completed by Federal Agency)						
Relative Value Of Farmland (From Part V)		100			0	0
Total Site Assessment (From Part VI above or local site assessment)		160	22	57	0	0
TOTAL POINTS (Total of above 2 lines)		260	0	0	0	0
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>				
Reason For Selection:						
Name of Federal agency representative completing this form: Bob Portera, P.E., Neel-schaffer, Inc.					Date: 09/24/2021	

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

- Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, <http://fppa.nrcs.usda.gov/lesa/>.
- Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s) of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)
- Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.
- Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.
- Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.
- Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.
- Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.
2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.

Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

Appendix F

Environmental Justice

ENVIRONMENTAL JUSTICE EVALUATION

for

**McDonald Road from Old Pascagoula Road to Three
Notch-Kroner Road and Three Notch-Kroner Road from
McDonald Road to McFarland Road,**

Mobile County, Alabama

PROJECT NO. STPMB-4918(250)

PREPARED BY

Neel-Schaffer, Inc.

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1.0 - Environmental Justice Background

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice (EJ) in Minority Populations and Low-Income Populations (February 11, 1994) directs Federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of Federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law.

The EO directed all Federal departments and Federal agency heads to take the appropriate steps to identify and address any disproportionately high and adverse human health or environmental effects of Federal programs, policies, and activities on minority and low-income populations. The U.S. Department of Transportation (DOT) and the Federal Highway Administration (FHWA) have enacted orders to ensure compliance with the EO.

2.0- Environmental Justice Evaluation Methodology

To assess a projects effect on EJ and in accordance with DOT Order 5610.2(a) and the FHWA's Order 6640.23A, ALDOT applied a five-step process. Each step in the process contains questions that serve to guide the evaluation. Some of these steps were not triggered because conditions for further analysis were not met. The five-step process and the questions are:

- **Step 1: Determine if an EJ population exists in the project study area.**
 - Question 1: Does an EJ population exist in the project study area?
 - Question 2: If so, where is the EJ population? The area and the boundaries of the EJ population should be defined.

- **Step 2: Determine whether project impacts associated with the identified EJ populations are disproportionately high and adverse.**
 - Question 1: What are the project impacts on the EJ populations? The EJ populations may need to be consulted to answer this question.

- Question 2: Which impacts are adverse and which are beneficial? The EJ populations will need to be consulted to answer this question.

- Question 3: Are the adverse impacts disproportionate on the EJ population? Are the impacts predominately borne by an EJ population? Are the impacts appreciably more severe or greater in magnitude on the EJ population than on the non-EJ population?

- **Step 3: Propose measures that will avoid, minimize, and/or mitigate disproportionately high and adverse impacts and provide offsetting benefits and opportunities to enhance communities, neighborhoods and individuals affected by the proposed project. The EJ populations will need to be consulted.**

- **Step 4: If after further mitigation, enhancements, and off-setting benefits to the affected populations, there remains a disproportionately high and adverse impact to EJ populations then the following questions must be considered:**
 - Question 1: Are there further mitigation measures that could be implemented to avoid or reduce the adverse effect? These must be implemented if practicable.
 - Question 2: Are there other practicable alternatives that would avoid or reduce the impact to EJ populations? If so, then the alternatives must be selected.
 - Question 3: Considering the overall public interest, is there a substantial need for the project?
 - Question 4: Will the other practicable alternatives have other impacts that are more severe than the proposed action or have increased costs of an extraordinary magnitude?

- **Step 5: Provide any additional documentation or methodologies that help substantiate the conclusion.**

3.0 - STUDY AREA, BACKGROUND INFORMATION, IMPACTS, AND ANALYSIS

The study area, background information, impacts on communities and neighborhoods, and analysis of the study area's demographics are discussed in the following sections. This report is based on conceptual design of the proposed project , aerial photography of the project area and:

- I. A visual survey of the project area used with other background information to determine impacts to neighborhoods and communities together with an examination and analysis of the project area's demographics.

- II. A summary of the number and characteristics of displacements.
- III. Coordination with potentially impacted residents through public involvement.

3.1 - Study Area

The project is in southwest Mobile County and is in the community of Theodore, Alabama. The project begins just north of the intersection of Old Pascagoula Road and McDonald Road and ends at the intersection of Three Notch-Kroner Road/Ben Hamilton Road/McFarland Road. Project mapping is included in **Attachment 1, Figure 1**. The project area is made up of residential and agricultural land uses.

A study area of approximately one mile on each side of existing McDonald Road was established for this evaluation. One mile on each side of McDonald Road includes census tracts and census blocks in both suburban areas east of McDonald Road and in rural areas west of McDonald Road. The study area is shown in **Attachment 1, Figure 2**. Census blocks are statistical areas bounded by visible features such as roads, streams, and railroad tracks, and by nonvisible boundaries such as property lines, city, township, school district, county limits and short line-of-sight extensions of roads. In a city, a census block looks like a city block bounded on all sides by streets. Census blocks in suburban and rural areas may be large, irregular, and bounded by a variety of features, such as roads, streams, and transmission lines. In remote areas, census blocks may encompass hundreds of square miles. A census tract is an area that contains at least one census block or block group. Typically, the population of a census tract ranges between 1,200 to 8,000 people. The spatial size of a census tract varies based on the population density of an area. The study area covers 46 census blocks and 4 census tracts. U.S. Census Bureau websites were used for gathering racial (2020 blocks) and income (2021 tracts) demographics shown in **Table 1**. Detailed census block and tract data is available upon request.

Table 1: Study Area Demographics

Parameter	Study Area	Mobile County	Alabama	United States
Population*, total	5,123	414,114	4,876,250	324,697,795
White alone*, percent	74.8	58.6	68.1	72.5
Black or African American alone*, percent	13.1	35.8	26.6	12.7
American Indian and Alaska Native alone*, percent	0.4	0.8	0.5	0.8
Asian alone*, percent	3.7	1.9	1.4	5.5
Native Hawaiian and Other Pacific Islander alone*, percent	0.0	0.0	1.4	0.2
Two or More Races*, percent	2.5	1.8	1.9	3.3
Hispanic or Latino*, percent	0.0	2.9	4.3	18.0
Low-income**, percent	14.4	18.8	16.7	13.4

* U.S. Census Bureau, 2020 Census Redistricting Data (Public Law 94-171)

**U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

3.2 - Purpose and Need

The purpose of the proposed project is to relieve traffic congestion along McDonald Road and Three Notch-Kroner Road in Mobile County. Level of service is expected to range from C to F in the No-Build condition, Level of services is expected to improve to a range from C to A with the build alternatives.

3.3 - Alternatives

An alternatives analysis was performed to assess impacts to minority, low-income, and senior citizen populations.

NO BUILD ALTERNATIVE

The No Build Alternative would avoid relocation, noise, and construction impacts. The No Build Alternative does not provide beneficial impacts related to vehicular facilities along the corridor.

BUILD ALTERNATIVES

Alternative 1 (Preferred)

Alternative 1 (Preferred) will be a best fit widening of the existing two-lane roadway, with a total length of approximately 3.8 miles, beginning at the Old Pascagoula Road and McDonald Road intersection. The widening proceeds north for approximately 0.75 miles, near Stratford Drive, adding two additional lanes to provide four travel lanes with a center turn lane. The widening for Alternative 1 (Preferred) continues to the north along McDonald Road and the widening transitions to widening to the east. Widening to the east would eliminate the impacts to the spillway to the private lake located just south of Belmont Park Drive. Once past the private lake, Alternative 1 (Preferred) continues to the Three Notch-Kroner Road Intersection and the alignment would transition from widening to the east to widening to the west. This alignment transition would minimize impacts to residences located on the east side of McDonald Road. The widening would impact some open farmland on the west side of the roadway. At the Three Notch-Kroner Road intersection, Alternative 1 (Preferred) then proceeds west along Three Notch-Kroner Road to include best fit widening of approximately 1.00 mile from two lanes to provide four travel lanes with a center turn to the Three Notch-Kroner Road/Ben Hamilton Road intersection. Alternative 1 (Preferred) also includes the construction of a larger roundabout at the intersection of Dawes Lane as well as a new roundabout at the Three Notch-Kroner Road and McFarland Road intersection. Alternative 1 (Preferred) has developed residential neighborhoods located on both sides throughout its length, approximately 3.8 miles. (Refer to the Maps in **Attachment 1**).

Alternative 2

Alternative 2 would consist of constructing a new two-lane roadway on new alignment that would begin at the intersection of Old Pascagoula Road and McDonald Road and end at the intersection of Three Notch-Kroner Road/Ben Hamilton Road. North of the intersection of Old Pascagoula Road and McDonald Road, the alignment would traverse to the west and cross Maurice Poiroux Road. From this point the alignment turns to the north and ends at the intersection of Three Notch-Kroner Road/Ben Hamilton Road. Alternative 2 would also include the construction of two new roundabouts at the intersection of McDonald Road and Three Notch-Kroner Road. Alternative 2 runs primarily through open farmland except where it traverses through a small residential area, Labrador Run, located about midway along the alignment. Alternative 2 has a total length of approximately 3.6 miles.(Refer to the Maps in Attachment 1).

3.4 Impacts and Analysis

This evaluation includes the afore-mentioned steps and addresses each question in the following sections. Adverse effects may include but are not limited to physical effects (air impacts, noise impacts, water pollution, destruction, or disruption of natural resources); mobility and safety effects (increased traffic congestion, reduced bicycle, and pedestrian safety, and changes in access); and social and economic effects (disruption of community cohesion, adverse employment effects, and displacement of households and businesses).

Step 1: Determine if an EJ population exists in the study area.

EO 12898, the DOT and the FHWA Orders define EJ as persons belonging to minority and/or low-income groups. The following paragraphs provide definitions of minority and low-income.

Minority: Minority means “a person who is Black (having origins in any of the black racial groups of Africa); Hispanic or Latino (of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race); Asian American (having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); American Indian and Alaskan Native (having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition); or Native Hawaiian and Other Pacific Islander (a person having origins in any of the original peoples of Hawaii, Guam, Samoa or other Pacific Islands)”.

Low-Income: As defined in FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, low-income means “a household income at or below the US Department of Health and Human Services (HHS) poverty guidelines.” The US Census Bureau provides household income information. US Census Bureau household income information was compared to the HHS poverty guidelines to determine if low-income populations exist in the study area. According to the HHS, “the guidelines are a simplification of the poverty thresholds for use for administrative purposes – for instance, determining financial eligibility for certain Federal programs” (HHS, 2021). The poverty guidelines are based on household income compared to household size. The US Census Bureau also provides poverty level information that is mainly used for statistical purposes – e.g., preparing estimates of the number of Americans in poverty each year. The US Census Bureau’s poverty level determination was not used to identify low-income populations for this EJ evaluation.

To determine if an EJ population is present, information was collected from the US Census Bureau regarding minority and low-income populations within the study area at the Census Tract and Census Block levels. **Table 1** illustrates the study area characteristics.

Minority Evaluation: The study area is comprised of 74.8% Caucasian, 13.1% Black or African American, 3.7% Asian, and 2.9% are American Indian, Alaskan Native, some other race, or multiracial. Analysis of the demographic data and field review of the study area indicates that minority residents are not clustered in any discrete location(s) but distributed throughout the study area. The data is further supported by the demographic composition of those that participated in public involvement held for the project.

Income Evaluation: According to the 2019 ACS estimates, 14.4% of the individuals in the study area are low-income. Analysis of the demographic data and field review of the study area indicates that low-income residents are not clustered in any discrete location(s) but distributed throughout the study area.

Minority and low-income individuals are present throughout the study area. There are no specific geographic locations along Alternative 1 (Preferred) or Alternative 2 with greater percentages of minority or low-income residents.

Step 2: Determine whether project impacts associated with the identified EJ populations are disproportionately high and adverse. The table below compares impacts associated with each alternative.

Table 2: Potential EJ Impacts

Impact	Alternative 1 (Preferred)	Alternative 2
Residential Relocation (each)	1	0
Business Relocation (each)	1	1
Right-of-Way Acquisition (acres)	10.1	38.4
Use of existing roadways	Yes	Yes
Proposed road on new location	No	Yes
Bisect neighborhoods	No	Yes
Impacted noise receptors ¹	4	2
Noise receptors with substantial impacts ²	0	36

¹Predicted 3 dBA or greater increase in noise level

²Predicted receptors would be subjected to substantial noise increases of greater than 15 dBA

Alternative 1 (Preferred) requires one residential relocation, one business relocation, and acquires 10.1 acres of new right of way. Alternative 2 does not require a residential relocation, requires one business relocation, and acquires 38.4 acres of right of way. With limited residential and business relocations, it is not feasible to make a definitive statement as to whether relocation impacts are proportionate or disproportionate between the EJ versus the non-EJ populations. Alternative 2 requires more than three times the amount right of way acquisition as compared with Alternative 1 (Preferred). Analysis of the study area indicates minority and low-income residents are not clustered in any discrete location(s) but distributed throughout the study area. Right of way acquisition along Alternative 2 is not expected to impact predominantly minority or low-income property owners. Right of way acquisition impacts are not disproportionately high and adverse to the EJ populations.

The proposed project has been aligned to minimize community impacts. Alternative 1 (Preferred) would be located along existing roadways and does not bisect neighborhoods or communities. A portion of Alternative 2 is on new location and impacts the Labrador Trail Subdivision. The Labrador Trail Subdivision is not predominantly minority or low-income and impacts are not disproportionately high and adverse to EJ populations.

The noise analysis indicates Alternative 1 (Preferred) would impact 4 receptors (residential properties) and Alternative 2 would impact 38 receptor locations. All of the impacted receptors on Alternative 1 (Preferred) and two of the impacted receptors on Alternative 2 would experience a three (3) dBA or less increase in the noise due to the project over the 2045 no-build noise levels. According to FHWA's Highway Traffic Noise: Analysis and Abatement Guidance, 2011, changes in noise levels of 3 dBA are barely perceptible to the human ear. Because the increases in projected noise levels at impacted receptors would be barely or not perceptible to the human ear, the impacts are considered minimal. Thirty-six impacted receptors along Alternative 2 would be subjected to substantial noise increases of greater than 15 dBA. Analysis of the demographic data and field review of the study area indicates minority and low-income residents are not clustered in any discrete location(s) but distributed throughout the study area. Substantial noise increases predicted along Alternative 2 are not expected to occur at predominantly minority or low-income residential properties. Therefore, noise impacts not disproportionately high and adverse to EJ populations.

Step 3: Propose measures that will avoid, minimize, and/or mitigate disproportionately high and adverse impacts and provide offsetting benefits and opportunities to enhance communities, neighborhoods and individuals affected by the proposed project. The EJ populations will need to be consulted.

Impacts are not disproportionately high and adverse to the EJ populations.

Step 4: If after further mitigation, enhancements, and off-setting benefits to the affected populations, there remains a disproportionately high and adverse impact to EJ populations then the following questions must be considered:

Impacts are not disproportionately high and adverse to the EJ populations.

Step 5: Provide any additional documentation or methodologies that help substantiate the conclusion.

Impacts are not disproportionately high and adverse to the EJ populations. No concentration of minority or low- income individuals were identified during field surveys, demographic studies and the public involvement process.

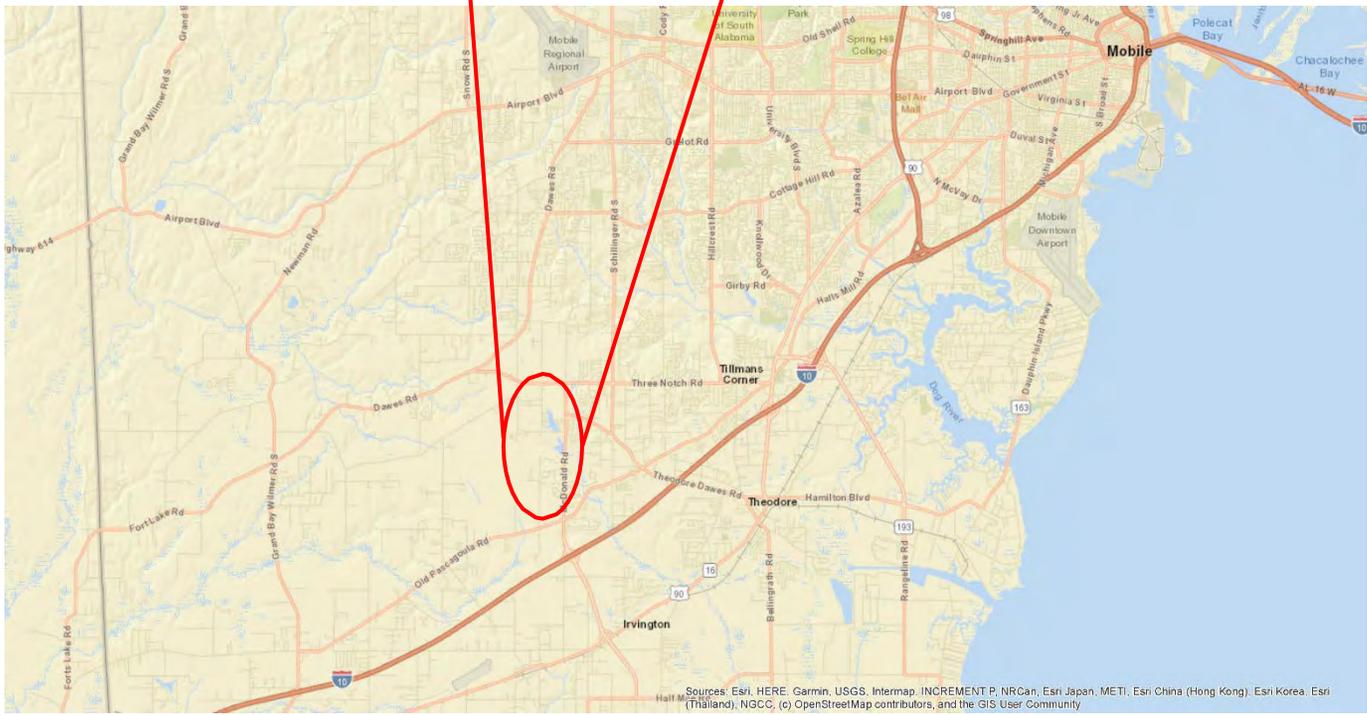
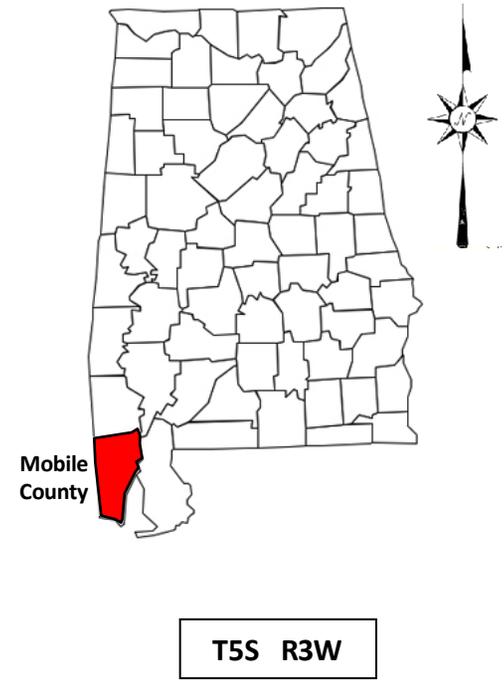
Attachment 1 - Figures

Figure 1 – Project Study Area

Figure 2 - Study Areas Census Blocks

Figure 3 – Study Area Census Tracts

Figure 4 – Labrador Run Subdivision Census Blocks



ALDOT Project
STPMB-4918 (250)

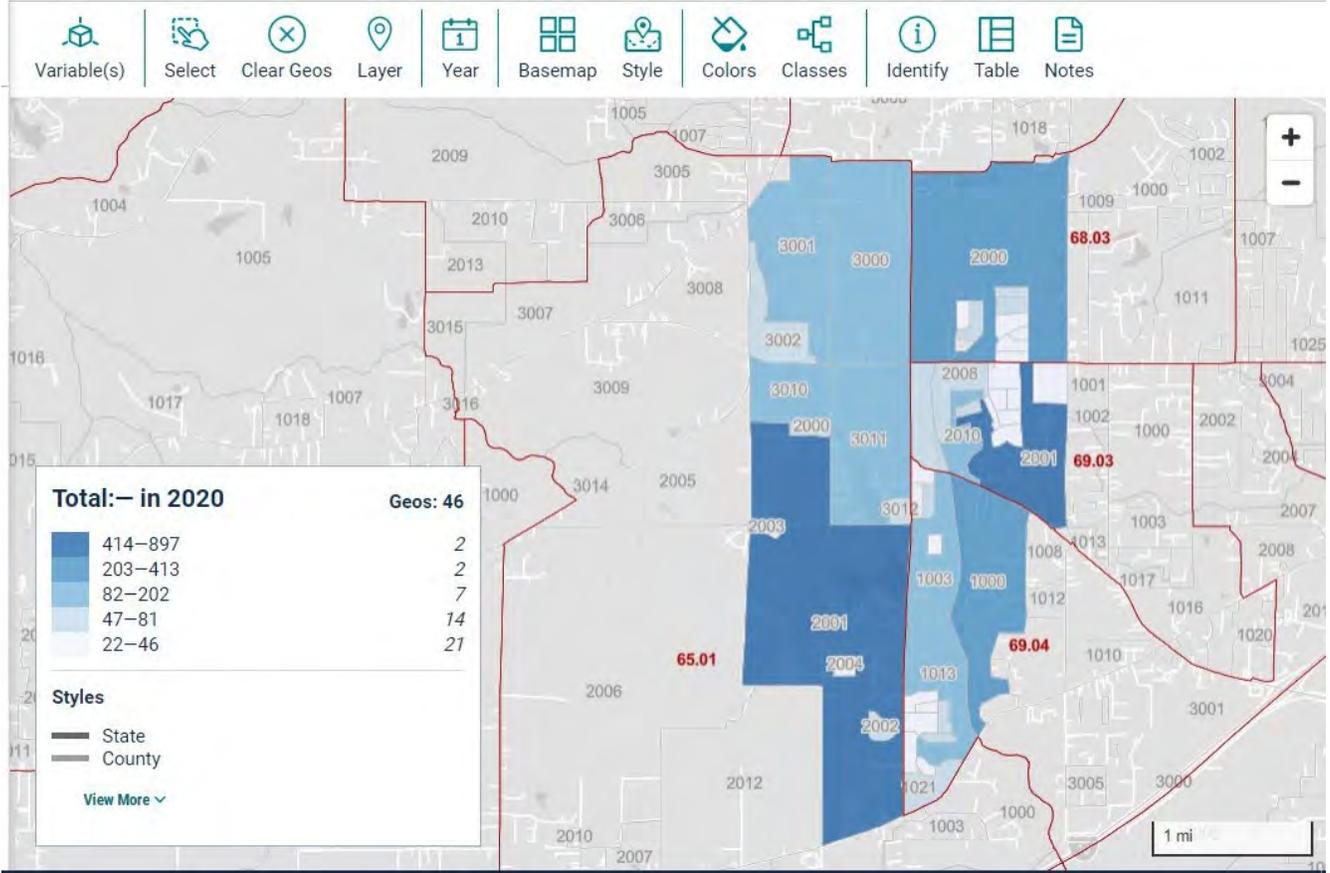
New Alignment of CR-25
(McFarland Road) From CR-
CR-28 (Old Pascagoula Road) to
CR-358 (Three Notch Road)
Mobile County




Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

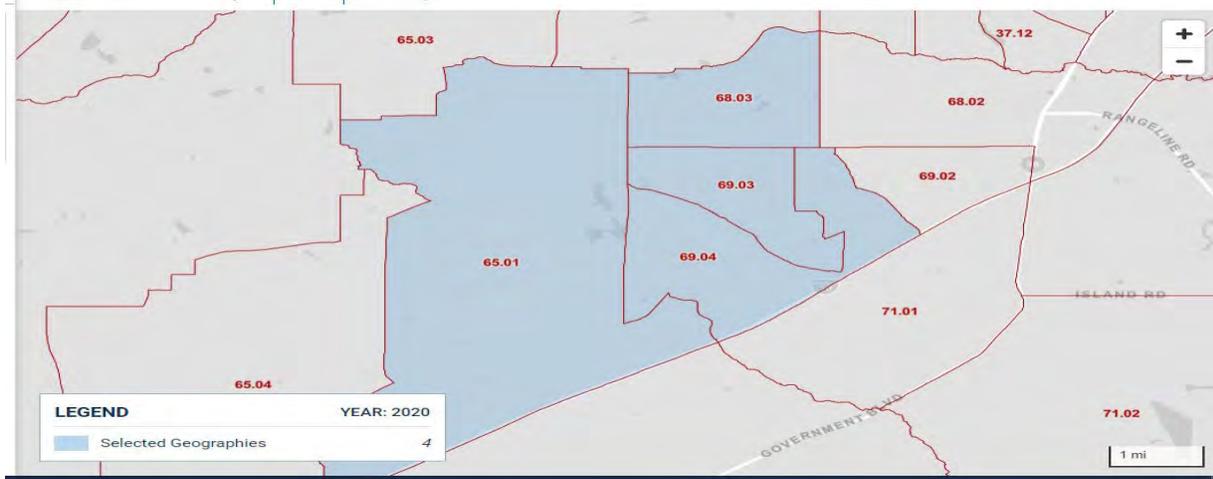
Total:— in 46 Geos in 2020

2020 : DEC Redistricting Data (PL 94-171)



See Excel File Attachment 2 for 46 Census Blocks for RACE Data:

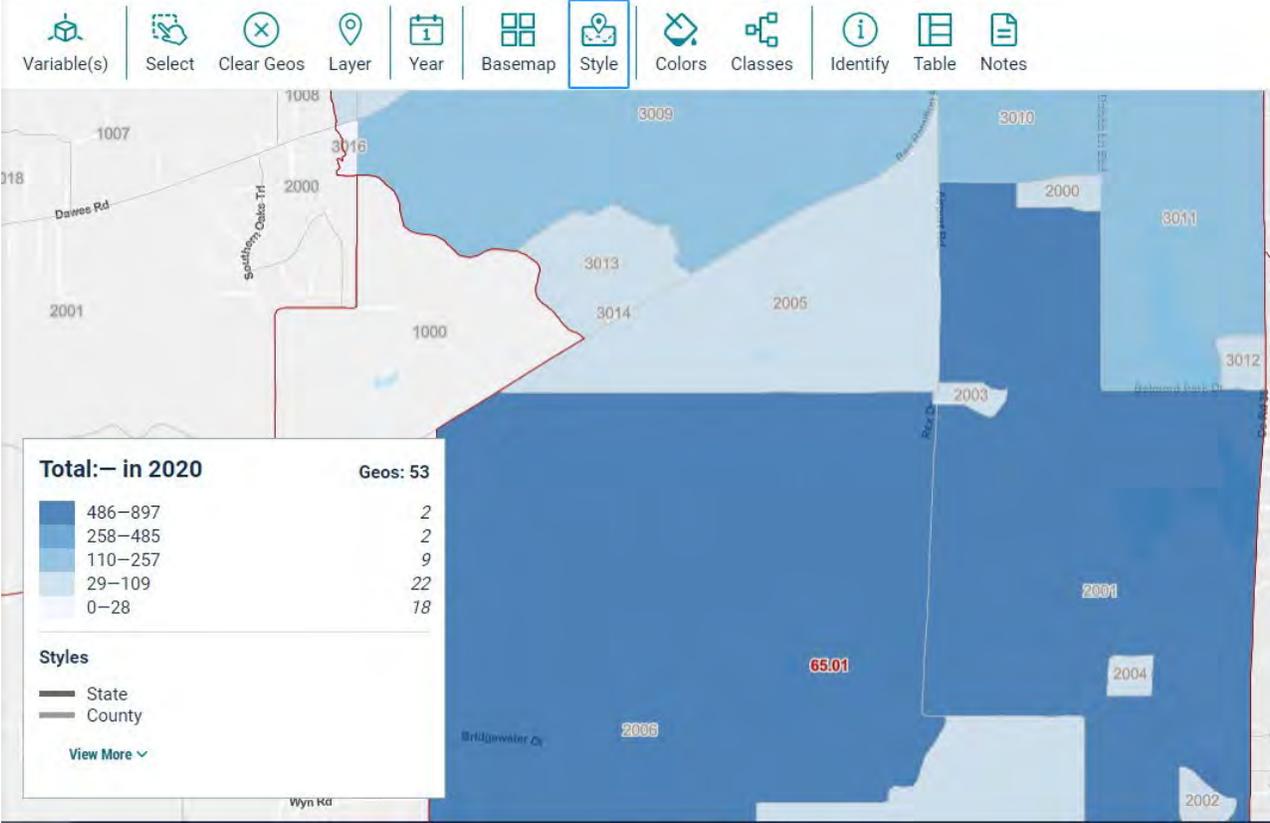
Race	Total For All Blocks	% For All Blocks
Total:	5123	
Population of one race:	4837	94.4
White alone	3830	74.8
Black or African American alone	671	13.1
American Indian and Alaska Native alone	22	0.4
Asian alone	187	3.7
Native Hawaiian and Other Pacific Islander alone	0	0.0
Some Other Race alone	127	2.5



See Excel File Attachment 2 for Census Tracts for Low-Income Data

Total:— in 53 Geos in 2020

2020 : DEC Redistricting Data (PL 94-171)



Labrador Trail/Run Subdivision Noise Impact Blocks 2003, 2005, 2006

Attachment 2 - Census Data Available Upon Request

Appendix G

Noise



Noise Analysis Technical Report
REVISION 1
McFarland Road Extension
Mobile County, Alabama
S&ME Project No. 4482-20-038
ALDOT Project No. STPMB-4918(250)

PREPARED FOR:

Neel-Schaffer, Inc.
851 East I-65 Service Road South, Suite 1000
Mobile, Alabama 36606

PREPARED BY:

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Huntsville, AL 35806

October 14, 2022



October 14, 2022

Neel-Schaffer, Inc.
851 East I-65 Service Road South, Suite 1000
Mobile, Alabama 36606

Attention: Mr. Brian Morgan, P.E.

Reference: **Noise Analysis Technical Report – REV 1**
McFarland Road Extension
Theodore, Mobile County, Alabama
S&ME Project No. 4482-20-038

Dear Mr. Morgan:

S&ME has completed the Revised Noise Impact Analysis for the proposed McFarland Road Extension in Theodore, Mobile County, Alabama. The revised report addresses comments from the FHWA review dated September 2, 2022. Our services were provided in general accordance with S&ME Proposal No. 44-2000234 REV 1 dated September 29, 2020 and the Consultant Contract for Services between Neel-Schaffer, Inc. and S&ME dated November 3, 2020.

S&ME appreciates the opportunity to provide these services to Neel-Schaffer. Please contact us at your convenience if there are questions regarding the information contained in this report.

Sincerely,

S&ME, Inc.

A handwritten signature in blue ink that reads "Sarah L. Yeldell".

Sarah L. Yeldell, PE
Project Manager

A handwritten signature in blue ink that reads "Deborah J. Jones".

Deborah J. Jones, PE
Senior Engineer



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◆ Executive Summary

S&ME, Inc. analyzed the 2019 EXISTING, 2045 NO BUILD, 2045 BUILD ALTERNATIVE 1, and 2045 BUILD ALTERNATIVE 2 noise levels for ALDOT Project No. STPMB-4918(250), McFarland Road Extension in Theodore, Mobile County, Alabama. Two BUILD alternatives were analyzed as part of the study.

This analysis was conducted in accordance with procedures for noise studies as set forth in the 2021 ALDOT *Highway Traffic Noise Analysis and Abatement Policy and Guidance* and in Title 23, Part 772 of the Code of Federal Regulation (23 CFR 772). The scope of this analysis was to determine and analyze traffic noise impacts on properties near the project and to analyze alternative noise abatement measures to mitigate these impacts, giving weight to the benefits and costs of abatement and to overall social, economic, and environmental effects.

The TNM 2.5 Model was used to predict noise levels for noise analysis areas containing noise-sensitive land uses. One hundred and sixty-one (161) Category B receptors were sited to represent residences within the identified noise analysis areas. Two (2) Category C receptors were sited to represent Victory Baptist Church and the Cross & Crown Family Worship Center. Noise levels were also predicted for 43 undeveloped parcels for the build scenarios by siting 132 Category G receptors.

A summary of the traffic noise impacts predicted by TNM 2.5 for each scenario is shown below in Table 1-1. The full results are presented in Tables 5-1 and 5-2.

Table 1-1 Traffic Noise Impact Summary

Condition	Total Impacted Receptors	Substantial Noise Increases
2019 EXISTING	1	-
2045 NO BUILD	2	0
2045 BUILD ALTERNATIVE 1	4	0
2045 BUILD ALTERNATIVE 2	38	36

Mitigation and abatement measures were analyzed for both alternatives, and it was determined that alteration of a portion of the horizontal alignment to mitigate one impact under Alternative 2 is reasonable; however, no additional reasonable mitigation or abatement measures were identified.

Abatement using noise barriers was evaluated for the four impacted receptors under Alternative 1. The results of the noise barrier analysis indicated that barriers did not meet the ALDOT feasibility criteria for the impacted receptors; therefore, barriers were not modeled for reasonableness.

Abatement using noise barriers was evaluated for the 38 impacted receptors under Alternative 2. The results of the noise barrier analysis indicated that barriers did not meet the ALDOT feasibility criteria for three isolated



impacts; however, barriers were found to be feasible to mitigate the remaining 35 impacts. Modeling of the proposed barriers determined that none of the five modeled barriers met the ALDOT reasonableness criteria.

1.0 Introduction

S&ME completed the Noise Impact Analysis for the proposed McFarland Road Extension in Theodore, Mobile County, Alabama in general accordance with S&ME Proposal No. 44-2000234 REV 1 dated September 29, 2020 and the Consultant Contract for Services between Neel-Schaffer and S&ME dated November 3, 2020. The revised report addresses comments from the FHWA review dated September 2, 2022. Project information was supplied by Mr. Brian Morgan of Neel-Schaffer on January 8, 2021 and included preliminary CAD drawings of the proposed alignment and peak hourly traffic for 2019 and 2045.

The Alabama Department of Transportation (ALDOT) has commissioned a study for approximately 7.2 miles of roadway in Mobile County, Alabama spanning McDonald Road (CR-39), Three Notch Kroner Road (CR-32), and a proposed extension to McFarland Road (CR-34). The study is intended to identify feasible improvements to address congestion in the project area and assess the potential impacts of the proposed alternatives. The general project area and existing roadway alignments are shown on Figure 1 in Appendix I.

The project plans include two alternatives. Alternative 1 consists of widening approximately 2.8 miles of McDonald Road between Old Pascagoula Road and Three Notch Kroner Road and approximately 1 mile of Three Notch Kroner Road between McDonald Road and McFarland to four travel lanes with a center turn lane. Both roadways would generally be widened along the existing centerline, with limited changes to the existing horizontal alignment. Alternative 1 also includes the construction of larger roundabout at the intersection of Dawes Lane and Three Notch Kroner Road as well as new roundabout at the intersection of Three Notch Kroner Road and McFarland Road.

Alternative 2 consists of a 3.4-mile extension of McFarland Road to connect with McDonald Road 0.15 miles north of Old Pascagoula Road, and includes the construction of two new roundabouts at the intersection of Three Notch Kroner Road and McFarland Road and the intersection of McFarland Road and McDonald Road.

Alternative 1 includes the addition of through traffic lanes to an existing highway and Alternative 2 includes the construction of a highway on a new location; therefore, the project is defined by 23 CFR 772 as a Type I project. Each of the proposed roadway alignments are shown on Figures 2 through 16 in Appendix I.

This report addresses potential noise impacts that may result from the proposed extension of McFarland Road or the proposed widening of McDonald Road. Included in this analysis are the computer-modeled traffic noise levels for the 2019 EXISTING, 2045 NO BUILD, 2045 BUILD ALTERNATIVE 1, and 2045 BUILD ALTERNATIVE 2 conditions. The noise modeling was performed using the Federal Highway Administration's (FHWA) approved TNM 2.5 program. The existing and future traffic data was provided by Neel-Schaffer and is included in Appendix II.



1.1 Existing Conditions

1.1.1 McDonald Road

The existing McDonald Road generally consists of one northbound lane and one southbound lane, both approximately 11 feet wide. At the start of the project, McDonald Road consists of two travel lanes, as well as one southbound left turn lane to Old Pascagoula Road. The intersection with Old Pascagoula Road is currently signalized.

The road narrows to two travel lanes approximately 580 feet north of the intersection and remains two lanes for approximately 2.1 miles. The existing road widens to accommodate a southbound left turn lane beginning approximately 380 feet south of the intersection with Theodore Dawes Road (CR-30). A right turn lane is provided from McDonald Road to eastbound Theodore Dawes Road. The intersection with Theodore Dawes Road is currently signalized.

The existing roadway narrows back to two travel lanes approximately 550 feet north of the Theodore Dawes Road intersection before widening again approximately 370 feet south of the intersection of McDonald Road and Three Notch Kroner Road. A right turn lane is provided from McDonald Road to eastbound Three Notch Kroner Road. The intersection with Three Notch Kroner Road is currently signalized.

The posted speed limit on McDonald Road is 45 miles per hour (mph) for the length of the project.

1.1.2 Three Notch Kroner Road

The existing Three Notch Kroner Road generally consists of one eastbound lane and one westbound lane, both approximately 11 feet wide. Left turn lanes to Gold Mine Road and McDonald Road are provided at the intersection. The intersection of Three Notch Kroner Road with Gold Mine/McDonald Road is currently signalized.

The intersection of Three Notch Kroner Road and Dawes Lane is currently governed by a single-lane roundabout constructed in 2014. West of the roundabout, the road continues as two 11-foot travel lanes through the intersection with McFarland Road and Ben Hamilton Road. The intersection of Three Notch Kroner Road and McFarland/Ben Hamilton Road is currently a four-way stop.

The posted speed limit on Three Notch Kroner Road is 45 miles per hour (mph) for the length of the project.

1.1.3 McFarland Road

The existing McFarland Road consists of one northbound travel and one southbound travel lane north of Three Notch Kroner Road. South of Three Notch Kroner Road, it becomes Ben Hamilton Road and curves to the southwest.

1.1.4 Airport Road

Airport Road is a gravel road located south of Ben Hamilton Road in line with the existing McFarland Road. The gravel road ends approximately 0.66 miles south of its intersection with Ben Hamilton Road.



1.2 Proposed Conditions

The proposed modifications include two unique alternatives. The first alternative will expand the existing corridor to four travel lanes with a center turn lane. The second alternative will construct a 2-lane roadway expansion. There are no design speed changes for the proposed modifications.

1.2.1 *McDonald Road (Alternative 1)*

Alternative 1 will widen McDonald Road to four 12-foot travel lanes with a 14-foot center turn lane from Old Pascagoula Road to Three Notch Kroner Road. The widening will generally follow the existing centerline from Old Pascagoula Road to Stratford Drive. From Stratford Drive to Belmont Park Drive, the widening will generally take place along the east side of the road. From Belmont Park Drive to Three Notch Kroner Road, the widening will largely take place on the west side of the existing road.

Alternative 1 also includes the expansion of the roundabout at the intersection of Three Notch Kroner Road and Dawes Lane from a single-lane roundabout to a multi-lane roundabout, as well as the construction of a multi-lane roundabout at the intersection of McFarland/Ben Hamilton Road and Three Notch Kroner Road. Improvements to the intersection with Old Pascagoula Road are also planned.

1.2.2 *McFarland Road (Alternative 2)*

Alternative 2 consists of the construction of a new extension of McFarland Road from Three Notch Kroner Road south to McDonald Road. The extension will include two 11-foot travel lanes with a 3-foot paved shoulder. The proposed road will follow the existing alignment of Airport Road, then will continue south over Rex Drive through the Labrador Run subdivision. South of Labrador Run, McFarland Road will continue for approximately 0.8 miles before turning east to intersect with McDonald Road 0.15 miles north of Old Pascagoula Road.

Alternative 2 also includes the construction of a single-lane roundabout at the intersection of Three Notch Kroner Road and McFarland Road, as well as the construction of a multi-lane roundabout at the proposed intersection of McFarland Road and McDonald Road. Improvements to the intersection with Old Pascagoula Road are also planned.

Under Alternative 2, no improvements will be made to McDonald Road or Three Notch Kroner Road, aside from the roundabouts at the intersections with McFarland Road and widening of approximately 0.2 miles of McDonald Road south of McFarland Road.

2.0 Data Input

2.1 Traffic Volumes

The general unit of measurement for traffic on a highway is the average annual daily traffic (AADT). Although AADT values are useful in assessing the overall traffic demands on a segment of highway, traffic volume during a shorter interval of time will more appropriately represent the operating conditions that should be used for noise



modeling and analysis. The hourly period, which shows the maximum traffic volumes, is referred to as the peak hour traffic. Typical area roadways experience peak hour traffic during both A.M. and P.M. rush periods.

The noise impact analysis for the corridor study was performed using peak hour A.M. rush traffic volumes, based on the traffic data provided by Neel-Schaffer for McFarland Road, McDonald Road, and Three Notch Kroner Road. Supplementary data for Old Pascagoula Road, Belmont Park Drive, and Ben Hamilton Road was obtained from publicly available Mobile County Data. For the purpose of the analysis, it was assumed that peak hour volumes and the corresponding posted or designed speed limit for trucks and automobiles will result in the noisiest conditions. During other time periods, noise levels will typically be less than those indicated by the model.

Table 2-1: Traffic Volume Summary – 2019 EXISTING

Roadway Description	2019 Existing Hourly Traffic Data		
	Cars	Medium Trucks	Heavy Trucks
McFarland Road Extension NB	0	0	0
McFarland Road Extension SB	0	0	0
Three Notch Kroner Road WB	308	0	13
Three Notch Kroner Road EB	719	0	30
McDonald Road NB	287	0	12
McDonald Road SB	396	0	17
Old Pascagoula Road (West of McDonald)*	282	0	12
Old Pascagoula Road (East of McDonald)*	207	0	9
Belmont Park Drive*	58	0	0
Ben Hamilton Road*	70	0	3

* Data obtained from Mobile County public record

Table 2-2 Traffic Volume Summary – 2045 NO BUILD

Roadway Description	2045 No Build Hourly Traffic Data		
	Cars	Medium Trucks	Heavy Trucks
McFarland Road Extension NB	0	0	0
McFarland Road Extension SB	0	0	0
Three Notch Kroner Road WB	547	0	53
Three Notch Kroner Road EB	1276	0	53
McDonald Road NB	505	0	21
McDonald Road SB	697	0	29



Roadway Description	2045 No Build Hourly Traffic Data		
	Cars	Medium Trucks	Heavy Trucks
Old Pascagoula Road (West of McDonald)**	499	0	21
Old Pascagoula Road (East of McDonald)**	366	0	15
Belmont Park Drive**	104	0	0
Ben Hamilton Road**	124	0	5

** Growth factor of 1.77 applied to Mobile County data

Table 2-3 Traffic Volume Summary – 2045 BUILD Alternative 1 (McDonald Widening)

Roadway Description	2045 No Build Hourly Traffic Data		
	Cars	Medium Trucks	Heavy Trucks
McFarland Road Extension NB	0	0	0
McFarland Road Extension SB	0	0	0
Three Notch Kroner Road WB	612	0	25
Three Notch Kroner Road EB	1428	0	59
McDonald Road NB	735	0	31
McDonald Road SB	1015	0	42
Old Pascagoula Road (West of McDonald)**	499	0	21
Old Pascagoula Road (East of McDonald)**	366	0	15
Belmont Park Drive**	104	0	0
Ben Hamilton Road**	124	0	5

** Growth factor of 1.77 applied to Mobile County data

Table 2-4 Traffic Volume Summary – 2045 BUILD Alternative 2 (McFarland Extension)

Roadway Description	2045 No Build Hourly Traffic Data		
	Cars	Medium Trucks	Heavy Trucks
McFarland Road Extension NB	485	0	20
McFarland Road Extension SB	727	0	30
Three Notch Kroner Road WB	459	0	19
Three Notch Kroner Road EB	1070	0	45
McDonald Road NB	315	0	13



Roadway Description	2045 No Build Hourly Traffic Data		
	Cars	Medium Trucks	Heavy Trucks
McDonald Road SB	435	0	18
Old Pascagoula Road (West of McDonald)**	499	0	21
Old Pascagoula Road (East of McDonald)**	366	0	15
Belmont Park Drive**	104	0	0
Ben Hamilton Road**	124	0	5

** Growth factor of 1.77 applied to Mobile County data

2.2 Receptor Description

ALDOT defines a receptor as a discrete or representative location of a noise sensitive area for any land use categorized as discussed in Section 3.1 of this report. Receptors are located where highway traffic noise may affect frequent human activities. Receptor locations are indicated on Figures 2 through 16 in Appendix I.

For the EXISTING, NO BUILD, and BUILD conditions, 163 TNM receiver locations were sited. Two (2) Category C receptors were sited at places of worship. Receiver R-97 was sited to represent the front portico of the Cross & Crown Family Worship Center where congregants gather before and after services, and receiver R-106 was sited to represent the meeting space in front of the Victory Baptist Church. One hundred and sixty-one (161) Category B receptors were sited to represent single-family residences. Parks, schools, or commercial properties with exterior areas of frequent human use were not observed within the proposed project area.

For the BUILD scenarios, an additional 132 Category G receptors were sited to represent 43 undeveloped parcels. This information is required for use by local officials to determine the potential for future development.

2.3 Roadway Inputs

The geometrical data for the roadway model input included horizontal coordinates and elevations, which created a roadway in continuous segments. Consideration was given to directional flow, changes in grade, and traffic flow devices (i.e., signals and stop signs). TNM receiver locations are exact points. Model input locations are based on the preliminary design drawings provided to S&ME by Neel-Schaffer on January 8, 2021. Average pavement type was used in the model.

2.4 Speed Inputs

As previously discussed, it was assumed that the corresponding posted or design speed limit combined with the peak hour traffic volumes for trucks and automobiles will result in the noisiest conditions. The posted speed limits were used for the EXISTING, NO BUILD, and BUILD conditions.

3.0 Methodology and Regulations

3.1 Methodology and Noise Modeling

The traffic noise analysis conducted for the project consists of a comparison of computer modeled noise levels for existing and future conditions. The computer software used for the noise analysis was the FHWA's approved TNM 2.5 model. The TNM 2.5 model results yield an hourly equivalent steady-state sound level at each modeled receiver.

3.2 Terminology and Sound Theory

The TNM 2.5 model calculates noise levels as $L_{eq(h)}$. L_{eq} is defined as the equivalent steady-state sound level, which, in a stated period of time, contains the same acoustic energy as the time-varying sound level during the same period. $L_{eq(h)}$ is the hourly value of L_{eq} . $L_{eq(h)}$ is based on the more commonly known decibel (dB) and "A-weighted" decibel (dBA) units. Decibels are logarithmic units as opposed to the more common linear units.

Noise is composed of different frequencies, each of which is perceived differently by the human ear. Human hearing is not sensitive to low and very high frequencies. To compensate for low and high-end frequency insensitivity and render noise levels readings more meaningful, an "A-weighting" scale is used to approximate the response of the human ear. The A-weighted decibel (dBA) unit measures perceptible sound energy and factors out the fringe frequencies.

Usually, an observer cannot detect an increase in sound levels of three to four decibels if the increase takes place at a uniform rate over several years. Research has indicated that a difference of 10 dBA is perceived half as loud or twice as loud to an average listener. In addition, the listener typically had difficulty determining if the sound had changed at all when the difference was only one decibel and the two observations were separated by a few seconds of quiet.

3.3 TNM 2.5 Description

The TNM 2.5 program predicts noise levels by taking into account roadway geometry, traffic volume, traffic composition, traffic speed, and source-receiver path characteristics such as barriers, topography, and ground absorption. TNM 2.5 analyzes the three-dimensional, spatial relationship between the roadway and receivers and calculates the resulting traffic noise level that would exist at each receiver. The roadway geometry is entered as x, y, and z coordinates.

3.4 Regulations

3.4.1 *Project Type*

The FHWA policies and procedures, as promulgated in the United States Code of Federal Regulations, 23 CFR Part 772, served as the procedural guideline for the noise impact analysis. A noise analysis is required for any project in the State of Alabama that receives Federal-aid funds or is otherwise subject to FHWA approval and is considered a Type I project.

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FHWA defines a Type I project as meeting one of the following or more criteria:

- Construction of a highway on new location
- Substantial physical alteration of an existing highway (per ALDOT policy)
- Addition of through-traffic lane(s)
- Addition of auxiliary lanes (except for when the auxiliary lane is a turn lane)
- Addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange
- Restriping existing pavement for the purpose of adding a through-traffic lane or auxiliary lane
- Addition of new or substantial alteration of a weigh station, rest stop, ride-share lot or toll plaza

Alternative 1 includes the addition of through traffic lanes to an existing highway and Alternative 2 includes the construction of a highway on a new location; therefore, the project is defined by 23 CFR 772 as a Type I project.

3.4.2 Noise Abatement Criteria

FHWA defines seven noise activity categories or Noise Abatement Criteria (NAC) based on land use activities and their corresponding sound level criteria as described in the following table.

Table 3-1: FHWA Noise Abatement Criteria

Activity Category	$L_{eq}(h)$	$L_{10}(h)^2$	Evaluation Location	Activity Description
A	57	60	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B ³	67	70	Exterior	Residential
C ³	67	70	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, trails, and trail crossings.
D	52	55	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E ³	72	75	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.



Activity Category	$L_{eq(h)}$	$L_{10(h)}^2$	Evaluation Location	Activity Description
F	-		-	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	-		-	Undeveloped lands that are not permitted.

¹ Either $L_{eq(h)}$ or $L_{10(h)}$ (but not both) may be used on a project.

² The $L_{eq(h)}$ and $L_{10(h)}$ Activity Criteria values are for impact determination only, and are not design standards for noise abatement measures.

³ Includes undeveloped lands permitted for this activity category.

According to 23 CFR 772 and ALDOT practice, a traffic noise impact occurs when the predicted levels approach or exceed the noise abatement criteria (NAC) or when predicted noise levels substantially increase relative to the existing noise level, even though the predicted levels may not exceed the NAC. Section 2 of the 2021 ALDOT *Highway Traffic Noise Analysis and Abatement Policy and Guidance* defines “approach” as used in 23 CFR 772.11(e) to mean levels one decibel below the NAC levels and a “substantial noise increase” to mean an increase of 15 dBA over the existing noise level. Per FHWA guidance, the determination of “approach” is expressed as a whole decibel.

Abatement measures must be evaluated if the project is expected to result in $L_{eq(h)}$ levels higher than or approaching the NAC, or in a substantial increase in sound levels.

4.0 Model Validation

Existing or ambient noise levels were measured on-site at seven locations within the study area during the time of day perceived to be the worst hourly noise impact. The recorded noise levels were compared to the modeled noise levels to evaluate the accuracy of the model according to 23 CFR 772.11(d)(2) and FHWA’s “Measurement of Highway Related Noise” report.

4.1 Noise Measurement

Noise measurements were conducted at seven locations in the project area on January 26, 27, and 28, 2021 between 6:30 AM and 8:30 AM. The monitoring was conducted using a CEL 633 Real Time Octave Band Analyzer Type 1. The meter was calibrated on January 19, 2021.

Short-term, 15-minute noise measurements were conducted at one-minute intervals. Manual traffic counts were taken concurrent with the noise measurements for a minimum of 15 minutes, then equated to an hourly volume. Non-traffic events (e.g., sirens, helicopters, etc.) during these measurements were noted and the corresponding one-minute measurement intervals were eliminated.



The observed weather during the noise measurement period on January 26 was 68 °F with 100% humidity and cloudy skies. The observed weather during the noise measurement period on January 27 was 61 °F with 100% humidity and fog.

Table 4-1: Monitoring Point Summary

Monitoring Point Number	Latitude	Longitude	Date	Measurement Time
MP-1	30.556739°	-88.242135°	1/26/2021	8:09 AM to 8:24 AM
MP-2	30.576164°	-88.241620°	1/26/2021	7:46 AM to 8:01 AM
MP-3	30.585735°	-88.241686°	1/26/2021	7:03 AM to 7:18 AM
MP-4	30.588993°	-88.248034°	1/27/2021	6:53 AM to 7:08 AM
MP-5	30.588765°	-88.258529°	1/27/2021	7:16 AM to 7:31 AM
MP-6	30.573358°	-88.258591°	1/27/2021	7:43 AM to 7:58 AM
MP-7	30.553322°	-88.250953°	1/27/2021	8:10 AM to 8:25 AM

The posted traffic speeds were used in the validation process. The validation model atmospheric conditions were also adjusted to reflect the weather conditions observed at the time the monitoring data was collected. The locations of the noise monitoring points are indicated on Figures 2 through 16 in Appendix I.

4.2 Validation Results

The results of the model validation are as follows:

Table 4-2: Noise Level Measurement Comparison

Monitoring Point Number	Measured Existing Noise Level (dB)	Modeled Existing Noise Level (dB)	Δ (dB)
MP-1	66.4	64.4	2.0
MP-2	72.4	70.8	1.6
MP-3	73.1	71.2	1.9
MP-4	66.0	67.2	-1.2
MP-5	67.3	64.8	2.5
MP-6	50.4	48.2	2.2
MP-7	58.0	57.8	0.2

The variation of ±3.0 dB(A) tolerance allowed by FHWA between the modeled and field condition was not exceeded for the seven selected monitoring points.



5.0 Noise Analysis Results

A total of 161 Category B receptors and two Category C receptors were sited to represent properties located within the project limits for the EXISTING, NO-BUILD, and BUILD scenarios. An additional 132 Category G receptors representing undeveloped lands were included in the 2045 BUILD scenarios.

For the 2045 BUILD Alternative 1 (McDonald Road) and the 2045 BUILD Alternative 2 (McFarland Road), TNM 2.5 yielded 4 and 38 individual sound level impacts respectively. The results of the noise analyses are provided in Tables 5-1 and 5-2.

Table 5-1: ALT 1 Scenario: Noise Impact Analysis for Receptors Along Project Corridor

EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 1				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Widened Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-1	1	B	SINGLE-FAMILY RESIDENCE	420	55	420	58	420	58	
R-2	1	B	SINGLE-FAMILY RESIDENCE	89	55	89	57	57	60	
R-3	1	B	SINGLE-FAMILY RESIDENCE	116	54	116	56	97	59	
R-5	2	B	SINGLE-FAMILY RESIDENCE	120	57	120	59	100	63	
R-6	1	B	SINGLE-FAMILY RESIDENCE	159	52	159	54	139	58	
R-8	2	B	SINGLE-FAMILY RESIDENCE	167	49	167	51	147	54	
R-9	2	B	SINGLE-FAMILY RESIDENCE	170	50	170	53	150	55	
R-10	1	B	SINGLE-FAMILY RESIDENCE	175	50	175	52	157	55	
R-11	2	B	SINGLE-FAMILY RESIDENCE	186	52	186	54	169	56	
R-12	2	B	SINGLE-FAMILY RESIDENCE	157	53	157	55	141	57	
R-13	1	B	SINGLE-FAMILY RESIDENCE	143	56	143	59	125	63	
R-14	1	B	SINGLE-FAMILY RESIDENCE	157	52	157	54	139	58	



EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 1				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Widened Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-15	2	B	SINGLE-FAMILY RESIDENCE	137	56	137	58	119	60	
R-16	1	B	SINGLE-FAMILY RESIDENCE	163	57	163	59	146	62	
R-17	1	B	SINGLE-FAMILY RESIDENCE	141	56	141	59	121	61	
R-18	1	B	SINGLE-FAMILY RESIDENCE	211	49	211	51	175	54	
R-19	1	B	SINGLE-FAMILY RESIDENCE	154	57	154	59	117	62	
R-20	1	B	SINGLE-FAMILY RESIDENCE	275	49	275	52	234	56	
R-21	1	B	SINGLE-FAMILY RESIDENCE	373	47	373	50	333	52	
R-22	1	B	SINGLE-FAMILY RESIDENCE	467	48	467	50	427	52	
R-23	1	B	SINGLE-FAMILY RESIDENCE	323	47	323	50	281	53	
R-24	1	B	SINGLE-FAMILY RESIDENCE	321	47	321	49	283	53	
R-25	1	B	SINGLE-FAMILY RESIDENCE	393	44	393	47	353	50	
R-26	1	B	SINGLE-FAMILY RESIDENCE	204	53	204	55	164	61	
R-27	1	B	SINGLE-FAMILY RESIDENCE	175	56	175	58	136	64	
R-28	1	B	SINGLE-FAMILY RESIDENCE	230	46	230	48	194	51	
R-29	1	B	SINGLE-FAMILY RESIDENCE	233	45	233	48	199	51	
R-30	1	B	SINGLE-FAMILY RESIDENCE	239	45	239	48	207	51	
R-31	1	B	SINGLE-FAMILY RESIDENCE	171	51	171	53	143	58	



EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 1				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Widened Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-32	1	B	SINGLE-FAMILY RESIDENCE	134	58	134	61	119	63	
R-33	1	B	SINGLE-FAMILY RESIDENCE	158	50	158	52	147	55	
R-34	1	B	SINGLE-FAMILY RESIDENCE	167	49	167	52	161	54	
R-35	1	B	SINGLE-FAMILY RESIDENCE	110	52	110	54	104	56	
R-36	1	B	SINGLE-FAMILY RESIDENCE	82	63	82	65	75	66	Y
R-37	2	B	SINGLE-FAMILY RESIDENCE	139	50	139	52	132	55	
R-38	2	B	SINGLE-FAMILY RESIDENCE	119	53	119	55	112	56	
R-39	3	B	SINGLE-FAMILY RESIDENCE	109	52	109	55	100	57	
R-40	1	B	SINGLE-FAMILY RESIDENCE	92	61	92	64	82	62	
R-41	1	B	SINGLE-FAMILY RESIDENCE	98	54	98	56	89	58	
R-42	2	B	SINGLE-FAMILY RESIDENCE	108	49	108	51	97	52	
R-43	1	B	SINGLE-FAMILY RESIDENCE	118	52	118	54	105	57	
R-44	1	B	SINGLE-FAMILY RESIDENCE	305	43	305	45	299	48	
R-45	1	B	SINGLE-FAMILY RESIDENCE	219	49	219	51	212	54	
R-46	1	B	SINGLE-FAMILY RESIDENCE	234	47	234	50	221	53	
R-47	1	B	SINGLE-FAMILY RESIDENCE	59	64	59	66	46	64	
R-48	1	B	SINGLE-FAMILY RESIDENCE	84	61	84	63	72	62	

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Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Widened Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-49	2	B	SINGLE-FAMILY RESIDENCE	158	49	158	51	147	52	
R-50	2	B	SINGLE-FAMILY RESIDENCE	159	50	159	52	148	53	
R-51	2	B	SINGLE-FAMILY RESIDENCE	156	50	156	52	146	53	
R-52	2	B	SINGLE-FAMILY RESIDENCE	165	50	165	53	155	54	
R-53	2	B	SINGLE-FAMILY RESIDENCE	168	51	168	53	158	54	
R-54	2	B	SINGLE-FAMILY RESIDENCE	161	49	161	51	152	53	
R-55	2	B	SINGLE-FAMILY RESIDENCE	161	50	161	53	152	54	
R-56	1	B	SINGLE-FAMILY RESIDENCE	114	56	114	59	104	59	
R-57	1	B	SINGLE-FAMILY RESIDENCE	133	59	133	61	121	62	
R-58	1	B	SINGLE-FAMILY RESIDENCE	293	54	293	56	287	57	
R-59	2	B	SINGLE-FAMILY RESIDENCE	174	54	174	56	148	59	
R-60	1	B	SINGLE-FAMILY RESIDENCE	156	55	156	58	129	60	
R-61	1	B	SINGLE-FAMILY RESIDENCE	154	54	154	56	126	58	
R-62	1	B	SINGLE-FAMILY RESIDENCE	99	61	99	63	71	64	
R-63	1	B	SINGLE-FAMILY RESIDENCE	184	53	184	55	154	57	
R-64	1	B	SINGLE-FAMILY RESIDENCE	180	53	180	55	150	57	
R-65	1	B	SINGLE-FAMILY RESIDENCE	144	56	144	58	114	60	

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EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 1				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Widened Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-66	1	B	SINGLE-FAMILY RESIDENCE	77	61	77	64	75	66	Y
R-67	1	B	SINGLE-FAMILY RESIDENCE	41	66	41	69	41	69	Y
R-68	1	B	SINGLE-FAMILY RESIDENCE	202	53	202	56	182	58	
R-69	1	B	SINGLE-FAMILY RESIDENCE	94	60	94	63	99	63	
R-70	1	B	SINGLE-FAMILY RESIDENCE	129	55	129	58	133	57	
R-71	1	B	SINGLE-FAMILY RESIDENCE	207	54	207	56	211	57	
R-72	1	B	SINGLE-FAMILY RESIDENCE	169	56	169	58	172	59	
R-73	1	B	SINGLE-FAMILY RESIDENCE	257	53	257	55	252	57	
R-74	1	B	SINGLE-FAMILY RESIDENCE	252	53	252	55	233	58	
R-75	1	B	SINGLE-FAMILY RESIDENCE	273	49	273	51	254	54	
R-76	1	B	SINGLE-FAMILY RESIDENCE	170	49	170	52	151	55	
R-77	1	B	SINGLE-FAMILY RESIDENCE	202	54	202	56	182	60	
R-78	3	B	SINGLE-FAMILY RESIDENCE	131	58	131	60	110	64	
R-79	1	B	SINGLE-FAMILY RESIDENCE	106	60	106	62	85	65	
R-80	1	B	SINGLE-FAMILY RESIDENCE	95	60	95	62	72	65	
R-81	2	B	SINGLE-FAMILY RESIDENCE	128	57	128	60	106	64	
R-82	1	B	SINGLE-FAMILY RESIDENCE	126	57	126	60	105	64	

Noise Analysis Technical Report – REV 1

McFarland Road Extension

Theodore, Mobile County, Alabama

S&ME Project No. 4482-20-038



EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 1				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Widened Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-83	1	B	SINGLE-FAMILY RESIDENCE	130	57	130	59	109	63	
R-84	1	B	SINGLE-FAMILY RESIDENCE	244	52	244	54	225	58	
R-85	1	B	SINGLE-FAMILY RESIDENCE	121	56	121	59	102	63	
R-86	1	B	SINGLE-FAMILY RESIDENCE	177	55	177	57	160	61	
R-87	1	B	SINGLE-FAMILY RESIDENCE	190	52	190	54	173	58	
R-88	1	B	SINGLE-FAMILY RESIDENCE	547	42	547	45	528	47	
R-89	1	B	SINGLE-FAMILY RESIDENCE	551	45	551	47	534	50	
R-90	1	B	SINGLE-FAMILY RESIDENCE	146	59	146	62	132	63	
R-91	1	B	SINGLE-FAMILY RESIDENCE	252	45	252	48	233	50	
R-92	2	B	SINGLE-FAMILY RESIDENCE	240	49	240	52	220	53	
R-93	1	B	SINGLE-FAMILY RESIDENCE	275	50	275	53	256	56	
R-94	1	B	SINGLE-FAMILY RESIDENCE	245	51	245	53	228	57	
R-95	1	B	SINGLE-FAMILY RESIDENCE	144	57	144	59	128	62	
R-96	1	B	SINGLE-FAMILY RESIDENCE	188	57	188	60	167	62	
R-97	1	C	PLACE OF WORSHIP	195	59	195	61	172	62	
R-98	1	B	SINGLE-FAMILY RESIDENCE	148	60	148	63	118	63	
R-99	2	B	SINGLE-FAMILY RESIDENCE	338	51	338	54	315	56	



EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 1				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Widened Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-100	1	B	SINGLE-FAMILY RESIDENCE	120	51	120	54	103	55	
R-101	1	B	SINGLE-FAMILY RESIDENCE	118	54	118	57	102	59	
R-102	1	B	SINGLE-FAMILY RESIDENCE	215	50	215	53	198	55	
R-103	1	B	SINGLE-FAMILY RESIDENCE	100	61	100	63	84	66	Y
R-104	1	B	SINGLE-FAMILY RESIDENCE	442	43	442	46	425	47	
R-105	2	B	SINGLE-FAMILY RESIDENCE	438	47	438	49	423	51	
R-106	1	C	PLACE OF WORSHIP	198	57	198	59	181	63	
R-107	1	B	SINGLE-FAMILY RESIDENCE	169	58	169	61	146	63	
R-108	1	B	SINGLE-FAMILY RESIDENCE	157	48	157	51	134	52	
R-109	1	B	SINGLE-FAMILY RESIDENCE	175	52	175	55	152	58	
R-110	1	B	SINGLE-FAMILY RESIDENCE	163	58	163	61	139	64	
R-111	1	B	SINGLE-FAMILY RESIDENCE	38	63	38	66	19	65	
R-112	1	B	SINGLE-FAMILY RESIDENCE	99	56	99	59	99	59	
R-113	1	B	SINGLE-FAMILY RESIDENCE	91	56	91	58	91	59	
R-114	1	B	SINGLE-FAMILY RESIDENCE	129	53	129	55	129	55	
R-115	1	B	SINGLE-FAMILY RESIDENCE	142	44	142	47	142	47	
R-116	1	B	SINGLE-FAMILY RESIDENCE	N/A	42	N/A	45	N/A	46	



EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 1				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Widened Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-117	1	B	SINGLE-FAMILY RESIDENCE	N/A	41	N/A	43	N/A	44	
R-118	1	B	SINGLE-FAMILY RESIDENCE	N/A	41	N/A	44	N/A	44	
R-119	1	B	SINGLE-FAMILY RESIDENCE	N/A	41	N/A	44	N/A	44	
R-120	1	B	SINGLE-FAMILY RESIDENCE	N/A	40	N/A	42	N/A	43	
R-121	1	B	SINGLE-FAMILY RESIDENCE	N/A	34	N/A	36	N/A	37	
R-122	1	B	SINGLE-FAMILY RESIDENCE	N/A	36	N/A	38	N/A	39	
R-123	1	B	SINGLE-FAMILY RESIDENCE	N/A	36	N/A	37	N/A	38	
R-124	1	B	SINGLE-FAMILY RESIDENCE	N/A	38	N/A	38	N/A	39	
R-125	1	B	SINGLE-FAMILY RESIDENCE	113	38	113	39	113	40	
R-126	1	B	SINGLE-FAMILY RESIDENCE	132	38	132	39	132	39	
R-127	1	B	SINGLE-FAMILY RESIDENCE	156	36	156	37	156	38	
R-128	1	B	SINGLE-FAMILY RESIDENCE	148	36	148	37	148	38	
R-129	1	B	SINGLE-FAMILY RESIDENCE	174	34	174	35	174	35	
R-130	1	B	SINGLE-FAMILY RESIDENCE	74	44	74	45	74	45	
R-131	1	B	SINGLE-FAMILY RESIDENCE	96	43	96	43	96	43	
R-132	1	B	SINGLE-FAMILY RESIDENCE	69	43	69	43	69	43	
R-133	1	B	SINGLE-FAMILY RESIDENCE	64	42	64	42	64	42	



EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 1				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Widened Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-134	1	B	SINGLE-FAMILY RESIDENCE	196	35	196	36	196	37	
R-135	2	B	SINGLE-FAMILY RESIDENCE	312	34	312	36	312	37	
R-136	1	B	SINGLE-FAMILY RESIDENCE	N/A	34	N/A	35	N/A	37	
R-137	1	B	SINGLE-FAMILY RESIDENCE	N/A	31	N/A	33	N/A	33	
R-138	1	B	SINGLE-FAMILY RESIDENCE	N/A	32	N/A	35	N/A	36	
R-139	1	B	SINGLE-FAMILY RESIDENCE	N/A	41	N/A	42	N/A	43	
R-140	1	B	SINGLE-FAMILY RESIDENCE	N/A	45	N/A	45	N/A	45	
R-141	1	B	SINGLE-FAMILY RESIDENCE	N/A	36	N/A	37	N/A	38	
R-142	2	B	SINGLE-FAMILY RESIDENCE	157	37	157	38	177	39	
R-143	1	B	SINGLE-FAMILY RESIDENCE	262	32	262	34	281	35	
R-144	1	B	SINGLE-FAMILY RESIDENCE	256	35	256	36	276	36	
R-145	1	B	SINGLE-FAMILY RESIDENCE	299	34	299	35	328	36	
R-146	1	B	SINGLE-FAMILY RESIDENCE	408	34	408	36	424	37	
R-147	1	B	SINGLE-FAMILY RESIDENCE	389	34	389	36	408	36	
R-148	1	B	SINGLE-FAMILY RESIDENCE	325	34	325	36	345	36	
R-149	1	B	SINGLE-FAMILY RESIDENCE	389	30	389	32	408	33	
R-150	1	B	SINGLE-FAMILY RESIDENCE	217	34	217	36	200	36	



EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 1				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Widened Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-151	1	B	SINGLE-FAMILY RESIDENCE	325	35	325	36	307	37	
R-152	1	B	SINGLE-FAMILY RESIDENCE	287	37	287	37	270	38	
R-153	2	B	SINGLE-FAMILY RESIDENCE	N/A	37	N/A	38	363	38	
R-154	2	B	SINGLE-FAMILY RESIDENCE	N/A	38	N/A	41	266	42	
R-155	1	B	SINGLE-FAMILY RESIDENCE	N/A	32	N/A	34	238	36	
R-156	2	B	SINGLE-FAMILY RESIDENCE	N/A	41	N/A	43	227	44	
R-157	1	B	SINGLE-FAMILY RESIDENCE	N/A	35	N/A	37	303	38	
R-158	1	B	SINGLE-FAMILY RESIDENCE	496	28	496	31	495	31	
R-159	1	B	SINGLE-FAMILY RESIDENCE	582	32	582	35	582	35	
R-160	1	B	SINGLE-FAMILY RESIDENCE	N/A	32	N/A	34	N/A	36	
R-161	1	B	SINGLE-FAMILY RESIDENCE	N/A	34	N/A	36	N/A	37	
R-162	1	B	SINGLE-FAMILY RESIDENCE	N/A	36	N/A	38	N/A	39	
R-163	1	B	SINGLE-FAMILY RESIDENCE	313	36	313	37	313	38	
R-164	1	B	SINGLE-FAMILY RESIDENCE	N/A	36	N/A	38	N/A	39	
R-165	1	B	SINGLE-FAMILY RESIDENCE	229	35	229	36	229	37	



Table 5-2: ALT 2 Scenario: Noise Impact Analysis for Receptors Along Project Corridor

EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 2				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Proposed Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-1	1	B	SINGLE-FAMILY RESIDENCE	420	55	420	58	420	58	
R-2	1	B	SINGLE-FAMILY RESIDENCE	89	55	89	57	57	61	
R-3	1	B	SINGLE-FAMILY RESIDENCE	116	54	116	56	126	57	
R-5	2	B	SINGLE-FAMILY RESIDENCE	120	57	120	59	203	57	
R-6	1	B	SINGLE-FAMILY RESIDENCE	159	52	159	54	167	53	
R-8	2	B	SINGLE-FAMILY RESIDENCE	167	49	167	51	167	51	
R-9	2	B	SINGLE-FAMILY RESIDENCE	170	50	170	53	170	52	
R-10	1	B	SINGLE-FAMILY RESIDENCE	175	50	175	52	175	52	
R-11	2	B	SINGLE-FAMILY RESIDENCE	186	52	186	54	186	53	
R-12	2	B	SINGLE-FAMILY RESIDENCE	157	53	157	55	157	54	
R-13	1	B	SINGLE-FAMILY RESIDENCE	143	56	143	59	143	57	
R-14	1	B	SINGLE-FAMILY RESIDENCE	157	52	157	54	157	53	
R-15	2	B	SINGLE-FAMILY RESIDENCE	137	56	137	58	137	56	
R-16	1	B	SINGLE-FAMILY RESIDENCE	163	57	163	59	163	57	
R-17	1	B	SINGLE-FAMILY RESIDENCE	141	56	141	59	141	57	
R-18	1	B	SINGLE-FAMILY RESIDENCE	211	49	211	51	211	50	



EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 2				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Proposed Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-19	1	B	SINGLE-FAMILY RESIDENCE	154	57	154	59	154	57	
R-20	1	B	SINGLE-FAMILY RESIDENCE	275	49	275	52	275	50	
R-21	1	B	SINGLE-FAMILY RESIDENCE	373	47	373	50	373	48	
R-22	1	B	SINGLE-FAMILY RESIDENCE	467	48	467	50	467	48	
R-23	1	B	SINGLE-FAMILY RESIDENCE	323	47	323	50	323	48	
R-24	1	B	SINGLE-FAMILY RESIDENCE	321	47	321	49	321	48	
R-25	1	B	SINGLE-FAMILY RESIDENCE	393	44	393	47	393	45	
R-26	1	B	SINGLE-FAMILY RESIDENCE	204	53	204	55	204	53	
R-27	1	B	SINGLE-FAMILY RESIDENCE	175	56	175	58	175	56	
R-28	1	B	SINGLE-FAMILY RESIDENCE	230	46	230	48	230	46	
R-29	1	B	SINGLE-FAMILY RESIDENCE	233	45	233	48	233	46	
R-30	1	B	SINGLE-FAMILY RESIDENCE	239	45	239	48	239	46	
R-31	1	B	SINGLE-FAMILY RESIDENCE	171	51	171	53	171	51	
R-32	1	B	SINGLE-FAMILY RESIDENCE	134	58	134	61	134	59	
R-33	1	B	SINGLE-FAMILY RESIDENCE	158	50	158	52	158	50	
R-34	1	B	SINGLE-FAMILY RESIDENCE	167	49	167	52	167	50	
R-35	1	B	SINGLE-FAMILY RESIDENCE	110	52	110	54	110	52	



EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 2				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Proposed Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-36	1	B	SINGLE-FAMILY RESIDENCE	82	63	82	65	82	63	
R-37	2	B	SINGLE-FAMILY RESIDENCE	139	50	139	52	139	50	
R-38	2	B	SINGLE-FAMILY RESIDENCE	119	53	119	55	119	53	
R-39	3	B	SINGLE-FAMILY RESIDENCE	109	52	109	55	109	53	
R-40	1	B	SINGLE-FAMILY RESIDENCE	92	61	92	64	92	62	
R-41	1	B	SINGLE-FAMILY RESIDENCE	98	54	98	56	98	54	
R-42	2	B	SINGLE-FAMILY RESIDENCE	108	49	108	51	108	49	
R-43	1	B	SINGLE-FAMILY RESIDENCE	118	52	118	54	118	52	
R-44	1	B	SINGLE-FAMILY RESIDENCE	305	43	305	45	305	44	
R-45	1	B	SINGLE-FAMILY RESIDENCE	219	49	219	51	219	49	
R-46	1	B	SINGLE-FAMILY RESIDENCE	234	47	234	50	234	48	
R-47	1	B	SINGLE-FAMILY RESIDENCE	59	64	59	66	59	64	
R-48	1	B	SINGLE-FAMILY RESIDENCE	84	61	84	63	84	61	
R-49	2	B	SINGLE-FAMILY RESIDENCE	158	49	158	51	158	49	
R-50	2	B	SINGLE-FAMILY RESIDENCE	159	50	159	52	159	50	
R-51	2	B	SINGLE-FAMILY RESIDENCE	156	50	156	52	156	50	
R-52	2	B	SINGLE-FAMILY RESIDENCE	165	50	165	53	165	51	



EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 2				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Proposed Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-53	2	B	SINGLE-FAMILY RESIDENCE	168	51	168	53	168	51	
R-54	2	B	SINGLE-FAMILY RESIDENCE	161	49	161	51	161	49	
R-55	2	B	SINGLE-FAMILY RESIDENCE	161	50	161	53	161	51	
R-56	1	B	SINGLE-FAMILY RESIDENCE	114	56	114	59	114	57	
R-57	1	B	SINGLE-FAMILY RESIDENCE	133	59	133	61	133	60	
R-58	1	B	SINGLE-FAMILY RESIDENCE	293	54	293	56	293	55	
R-59	2	B	SINGLE-FAMILY RESIDENCE	174	54	174	56	174	54	
R-60	1	B	SINGLE-FAMILY RESIDENCE	156	55	156	58	156	56	
R-61	1	B	SINGLE-FAMILY RESIDENCE	154	54	154	56	154	54	
R-62	1	B	SINGLE-FAMILY RESIDENCE	99	61	99	63	99	61	
R-63	1	B	SINGLE-FAMILY RESIDENCE	184	53	184	55	184	53	
R-64	1	B	SINGLE-FAMILY RESIDENCE	180	53	180	55	180	53	
R-65	1	B	SINGLE-FAMILY RESIDENCE	144	56	144	58	144	56	
R-66	1	B	SINGLE-FAMILY RESIDENCE	77	61	77	64	77	62	
R-67	1	B	SINGLE-FAMILY RESIDENCE	41	66	41	69	41	67	Y
R-68	1	B	SINGLE-FAMILY RESIDENCE	202	53	202	56	202	54	
R-69	1	B	SINGLE-FAMILY RESIDENCE	94	60	94	63	94	60	



EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 2				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Proposed Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-70	1	B	SINGLE-FAMILY RESIDENCE	129	55	129	58	129	56	
R-71	1	B	SINGLE-FAMILY RESIDENCE	207	54	207	56	207	54	
R-72	1	B	SINGLE-FAMILY RESIDENCE	169	56	169	58	169	56	
R-73	1	B	SINGLE-FAMILY RESIDENCE	257	53	257	55	257	53	
R-74	1	B	SINGLE-FAMILY RESIDENCE	252	53	252	55	252	54	
R-75	1	B	SINGLE-FAMILY RESIDENCE	273	49	273	51	273	50	
R-76	1	B	SINGLE-FAMILY RESIDENCE	170	49	170	52	170	50	
R-77	1	B	SINGLE-FAMILY RESIDENCE	202	54	202	56	202	55	
R-78	3	B	SINGLE-FAMILY RESIDENCE	131	58	131	60	131	59	
R-79	1	B	SINGLE-FAMILY RESIDENCE	106	60	106	62	106	60	
R-80	1	B	SINGLE-FAMILY RESIDENCE	95	60	95	62	95	60	
R-81	2	B	SINGLE-FAMILY RESIDENCE	128	57	128	60	128	58	
R-82	1	B	SINGLE-FAMILY RESIDENCE	126	57	126	60	126	58	
R-83	1	B	SINGLE-FAMILY RESIDENCE	130	57	130	59	130	58	
R-84	1	B	SINGLE-FAMILY RESIDENCE	244	52	244	54	244	53	
R-85	1	B	SINGLE-FAMILY RESIDENCE	121	56	121	59	121	57	
R-86	1	B	SINGLE-FAMILY RESIDENCE	177	55	177	57	177	57	



EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 2				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Proposed Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-87	1	B	SINGLE-FAMILY RESIDENCE	190	52	190	54	187	59	
R-88	1	B	SINGLE-FAMILY RESIDENCE	547	42	547	45	282	54	
R-89	1	B	SINGLE-FAMILY RESIDENCE	551	45	551	47	101	62	Y
R-90	1	B	SINGLE-FAMILY RESIDENCE	146	59	146	62	146	61	
R-91	1	B	SINGLE-FAMILY RESIDENCE	252	45	252	48	252	47	
R-92	2	B	SINGLE-FAMILY RESIDENCE	240	49	240	52	240	51	
R-93	1	B	SINGLE-FAMILY RESIDENCE	275	50	275	53	275	52	
R-94	1	B	SINGLE-FAMILY RESIDENCE	245	51	245	53	245	53	
R-95	1	B	SINGLE-FAMILY RESIDENCE	144	57	144	59	144	58	
R-96	1	B	SINGLE-FAMILY RESIDENCE	188	57	188	60	188	59	
R-97	1	C	PLACE OF WORSHIP	195	59	195	61	195	60	
R-98	1	B	SINGLE-FAMILY RESIDENCE	148	60	148	63	148	62	
R-99	2	B	SINGLE-FAMILY RESIDENCE	338	51	338	54	338	54	
R-100	1	B	SINGLE-FAMILY RESIDENCE	120	51	120	54	120	54	
R-101	1	B	SINGLE-FAMILY RESIDENCE	118	54	118	57	118	57	
R-102	1	B	SINGLE-FAMILY RESIDENCE	215	50	215	53	215	53	
R-103	1	B	SINGLE-FAMILY RESIDENCE	100	61	100	63	100	62	

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McFarland Road Extension

Theodore, Mobile County, Alabama

S&ME Project No. 4482-20-038



EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 2				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Proposed Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-104	1	B	SINGLE-FAMILY RESIDENCE	442	43	442	46	442	45	
R-105	2	B	SINGLE-FAMILY RESIDENCE	438	47	438	49	438	49	
R-106	1	C	PLACE OF WORSHIP	198	57	198	59	198	60	
R-107	1	B	SINGLE-FAMILY RESIDENCE	169	58	169	61	169	60	
R-108	1	B	SINGLE-FAMILY RESIDENCE	157	48	157	51	157	50	
R-109	1	B	SINGLE-FAMILY RESIDENCE	175	52	175	55	175	54	
R-110	1	B	SINGLE-FAMILY RESIDENCE	163	58	163	61	163	60	
R-111	1	B	SINGLE-FAMILY RESIDENCE	38	63	38	66	26	66	Y
R-112	1	B	SINGLE-FAMILY RESIDENCE	99	56	99	59	99	62	
R-113	1	B	SINGLE-FAMILY RESIDENCE	91	56	91	58	95	62	
R-114	1	B	SINGLE-FAMILY RESIDENCE	129	53	129	55	161	54	
R-115	1	B	SINGLE-FAMILY RESIDENCE	142	44	142	47	91	63	Y
R-116	1	B	SINGLE-FAMILY RESIDENCE	N/A	42	N/A	45	373	45	
R-117	1	B	SINGLE-FAMILY RESIDENCE	N/A	41	N/A	43	415	46	
R-118	1	B	SINGLE-FAMILY RESIDENCE	N/A	41	N/A	44	141	58	Y
R-119	1	B	SINGLE-FAMILY RESIDENCE	N/A	41	N/A	44	59	66	Y
R-120	1	B	SINGLE-FAMILY RESIDENCE	N/A	40	N/A	42	67	65	Y



EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 2				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Proposed Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-121	1	B	SINGLE-FAMILY RESIDENCE	N/A	34	N/A	36	109	60	Y
R-122	1	B	SINGLE-FAMILY RESIDENCE	N/A	36	N/A	38	223	54	Y
R-123	1	B	SINGLE-FAMILY RESIDENCE	N/A	36	N/A	37	92	62	Y
R-124	1	B	SINGLE-FAMILY RESIDENCE	N/A	38	N/A	38	125	60	Y
R-125	1	B	SINGLE-FAMILY RESIDENCE	113	38	113	39	97	60	Y
R-126	1	B	SINGLE-FAMILY RESIDENCE	132	38	132	39	114	58	Y
R-127	1	B	SINGLE-FAMILY RESIDENCE	156	36	156	37	148	51	Y
R-128	1	B	SINGLE-FAMILY RESIDENCE	224	36	224	37	205	49	
R-129	1	B	SINGLE-FAMILY RESIDENCE	143	34	143	35	123	54	Y
R-130	1	B	SINGLE-FAMILY RESIDENCE	74	44	74	45	91	63	Y
R-131	1	B	SINGLE-FAMILY RESIDENCE	96	43	96	43	114	61	Y
R-132	1	B	SINGLE-FAMILY RESIDENCE	69	43	69	43	89	62	Y
R-133	1	B	SINGLE-FAMILY RESIDENCE	64	42	64	42	83	62	Y
R-134	1	B	SINGLE-FAMILY RESIDENCE	196	35	196	36	217	55	Y
R-135	2	B	SINGLE-FAMILY RESIDENCE	312	34	312	36	329	49	Y
R-136	1	B	SINGLE-FAMILY RESIDENCE	285	34	285	35	265	49	Y
R-137	1	B	SINGLE-FAMILY RESIDENCE	N/A	31	N/A	33	312	52	Y

Noise Analysis Technical Report – REV 1

McFarland Road Extension

Theodore, Mobile County, Alabama

S&ME Project No. 4482-20-038



EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 2				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Proposed Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-138	1	B	SINGLE-FAMILY RESIDENCE	N/A	32	N/A	35	478	45	
R-139	1	B	SINGLE-FAMILY RESIDENCE	N/A	41	N/A	42	613	49	
R-140	1	B	SINGLE-FAMILY RESIDENCE	N/A	45	N/A	45	321	54	
R-141	1	B	SINGLE-FAMILY RESIDENCE	N/A	36	N/A	37	236	55	Y
R-142	2	B	SINGLE-FAMILY RESIDENCE	157	37	157	38	177	55	Y
R-143	1	B	SINGLE-FAMILY RESIDENCE	262	32	262	34	281	51	Y
R-144	1	B	SINGLE-FAMILY RESIDENCE	256	35	256	36	276	51	Y
R-145	1	B	SINGLE-FAMILY RESIDENCE	299	34	299	35	328	50	Y
R-146	1	B	SINGLE-FAMILY RESIDENCE	408	34	408	36	424	47	
R-147	1	B	SINGLE-FAMILY RESIDENCE	389	34	389	36	408	48	
R-148	1	B	SINGLE-FAMILY RESIDENCE	325	34	325	36	345	49	Y
R-149	1	B	SINGLE-FAMILY RESIDENCE	389	30	389	32	408	48	Y
R-150	1	B	SINGLE-FAMILY RESIDENCE	217	34	217	36	200	53	Y
R-151	1	B	SINGLE-FAMILY RESIDENCE	325	35	325	36	307	48	
R-152	1	B	SINGLE-FAMILY RESIDENCE	287	37	287	37	270	50	
R-153	2	B	SINGLE-FAMILY RESIDENCE	N/A	37	N/A	38	363	45	
R-154	2	B	SINGLE-FAMILY RESIDENCE	N/A	38	N/A	41	266	52	



EXISTING ALIGNMENT						NO BUILD / BUILD ALTERNATIVE 2				
Site No.	Number of Receptors Represented	NAC Category	Receptor Type	Distance from Existing Road (Feet)	2019 Modeled Noise Level (dBA)	Distance from Existing Road (Feet)	2045 No Build (dBA)	Distance to Proposed Road (Feet)	2045 Build Noise Level (dBA)	Noise Impact
R-155	1	B	SINGLE-FAMILY RESIDENCE	N/A	32	N/A	34	238	53	Y
R-156	2	B	SINGLE-FAMILY RESIDENCE	N/A	41	N/A	43	227	52	
R-157	1	B	SINGLE-FAMILY RESIDENCE	N/A	35	N/A	37	303	41	
R-158	1	B	SINGLE-FAMILY RESIDENCE	496	28	496	31	495	44	Y
R-159	1	B	SINGLE-FAMILY RESIDENCE	582	32	582	35	579	45	
R-160	1	B	SINGLE-FAMILY RESIDENCE	N/A	32	N/A	34	378	49	Y
R-161	1	B	SINGLE-FAMILY RESIDENCE	N/A	34	N/A	36	463	47	
R-162	1	B	SINGLE-FAMILY RESIDENCE	N/A	36	N/A	38	303	51	Y
R-163	1	B	SINGLE-FAMILY RESIDENCE	313	36	313	37	296	49	
R-164	1	B	SINGLE-FAMILY RESIDENCE	N/A	36	N/A	38	394	49	
R-165	1	B	SINGLE-FAMILY RESIDENCE	229	35	229	36	210	52	Y

6.0 Noise Mitigation Analysis

In addition to defining noise impacts, ALDOT’s policy offers guidance when determining the reasonableness and feasibility of a noise abatement measure. The following noise abatement measures were evaluated for reducing or eliminating noise impacts.

6.1 Introduction

Impacted receptor locations in both alternatives were evaluated for possible noise abatement using FHWA’s guidelines as promulgated by 23 CFR 772. The abatement measures evaluated included traffic management measures, alteration of horizontal and vertical alignments, acquisition of property rights, construction of noise barriers, acquisition of real property or interests therein, and noise insulation.



As previously discussed, Alternative 1 includes the addition of through travel lanes to an existing highway and Alternative 2 includes the construction of a highway on a new location; therefore, the project is defined by 23 CFR 772 as a Type I project.

6.2 Traffic Management Measures

Traffic management measures (e.g., traffic control devices and signage for prohibition of certain vehicle types, time use restrictions for certain vehicle types, modified speed limits, and exclusive land designations) applied for the purpose of noise abatement would be inconsistent with the purpose of this project. Use restrictions, including the restriction of certain vehicle types and time use restrictions, would eliminate certain traffic from using the roadway.

The installation of additional traffic control devices or the modification of speed limits would result in a decreased level of service and decreased efficiency of the proposed roadway; therefore, the implementation of traffic management measures for the purpose of the noise abatement is not deemed reasonable or likely for this project.

6.3 Alteration of Horizontal and Vertical Alignments

6.3.1 *Alternative 1*

The proposed Alternative 1 alignment is constrained by the location of the existing locations of McDonald Road, side streets, and residences. Altering the horizontal or vertical alignment of the widened roadway would likely impact additional properties; therefore, **changes to the proposed alignment are not considered reasonable or likely for Alternative 1.**

6.3.2 *Alternative 2*

Impacts associated with Alternative 2 are generally clustered along the existing Airport Road and Rex Drive, both of which would be incorporated into the proposed McFarland Road extension. The proposed Alternative 2 alignment in the vicinity of these proposed impacts is constrained by the existing locations of Rex Drive, Airport Road, side streets, and residences. Altering the horizontal or vertical alignment of the proposed roadway in this area would likely impact additional properties.

Receptor R-89 is also expected to experience a substantial increase in noise level due to the proposed construction of the McFarland Road extension. As planned, Receptor R-89 is located approximately 101 feet from the edge of the proposed roadway. The closest potential receptor on the south side of the proposed roadway is approximately 823 feet from the current proposed edge of pavement.

Altering the horizontal alignment in the vicinity of receptor R-89 to provide additional distance between the proposed McFarland Road extension and the existing residence would sufficiently mitigate the predicted impact at R-89 and is unlikely to result in additional impacts. Alteration of the proposed alignment in this area would require modification of the proposed roundabout at the intersection of McDonald Road and McFarland Road. **A change to the proposed alignment in the vicinity of receptor R-89 is considered reasonable for Alternative 2.**



6.4 Acquisition of Property Rights

The acquisition of property rights (either in fee or lesser interest) for the construction of noise barriers would be an effective noise abatement measure only if noise barriers were constructed on the acquired property (see Section 6.7 below).

6.5 Acquisition of Real Property

The acquisition of property or interests therein is intended to provide a buffer zone to preempt development which would be adversely impacted by traffic noise. The purchase of these properties is not deemed an economically reasonable mitigation measure at this time.

6.6 Noise Insulation of Public Use or Nonprofit Institutional Structures

Receptor R-97 was sited to represent Victory Baptist Church and receptor R-106 was sited to represent the Cross & Crown Family Worship Center on Three Notch Kroner Road. Neither receptor is predicted to be impacted in either BUILD condition. There are no additional public-use or non-profit facilities located within the project limits.

6.7 Construction of Noise Barriers

Mitigation of the predicted noise impacts by the construction of noise barriers (including landscaping for aesthetic purposes), whether within or outside the right-of-way, was evaluated for each impacted noise analysis area.

In determining whether construction of a noise barrier is feasible, the following was considered per ALDOT policy:

A. Feasibility

1. Limitations:

ALDOT guidance indicates that noise barriers should be evaluated first based on limitations on constructability, such as: safety due to line of sight, clear zone, etc.; topography; drainage and utilities; maintaining access; associated background noise such as airports; etc.

2. Achievable Noise Reduction:

Section 8.1 of the 2021 ALDOT Noise Policy states that to be considered feasible, the abatement measure must “achieve a minimum of at least a 5 dB(A) highway traffic noise reduction for 70% or more of the impacted receptors.”



B. Reasonableness

If a noise barrier is deemed feasible based on the above criteria, the reasonableness of constructing a barrier must then be determined. All three of the following reasonableness criteria must be met in order for a noise barrier to be deemed reasonable for construction:

1. Using a cost of \$30 per square foot of barrier, the abatement cost must be equal to or less than \$30,000 per residence.
2. A noise reduction of at least 10 dB(A) can be achieved by at least 65% of the benefited receptors.
3. A 70% majority of those benefited by the barrier agree to the construction of the barrier.

Section 2 of the 2021 ALDOT Noise Policy defines a benefited receptor as “a recipient of an abatement measure that receives a noise reduction at or above the minimum of 5 dBA but not to exceed the ALDOT reasonableness design goal of 10 dBA.”

6.7.1 *Alternative 1 - Isolated Impacts (R-36, R-66, R-67, and R-103)*

The four impacts predicted for the Alternative 1 BUILD condition are isolated impacts. Receptors R-36, R-66, and R-67 are accessed directly from McDonald Road. Receptor R-103 is accessed directly from Three Notch Kroner Road. In all four cases, driveways to the affected property or adjacent properties prevent construction of noise barriers. Receptor R-103 is also bordered to the west by West Villa Drive.

For a barrier to effectively shield receptors, the design must be continuous. Gaps incorporated into the design to accommodate access roads or driveways render the barrier ineffective. The presence of adjacent cross streets and driveways would impede the construction of barriers benefiting the impacted receptors; therefore, **construction of noise barriers for the purpose of noise abatement was not considered feasible for the impacts predicted under Alternative 1.**

An evaluation of the reasonableness for construction of barriers in the Alternative 1 condition was not required because construction of noise barriers is not feasible.

6.7.2 *Alternative 2 – Isolated Impacts (R-67, R-111, and R-115)*

Of the 38 impacts identified in the Alternative 2 BUILD condition, four are isolated impacts. Of the four isolated impacts, receptor R-67 is accessed directly from McDonald Road with adjacent driveways and Receptors R-111 and R-115 are bordered by cross streets.

For a barrier to effectively shield receptors, the design must be continuous. Gaps incorporated into the design to accommodate access roads or driveways render the barrier ineffective. The presence of adjacent cross streets and driveways would impede the construction of barriers benefiting the impacted receptors; therefore, **construction of noise barriers for the purpose of noise abatement was not considered feasible for the impacts predicted under Alternative 2 for receptors R-67, R-111, and R-115.**



An evaluation of the reasonableness for construction of barriers in the Alternative 1 condition was not required because construction of noise barriers is not feasible.

6.7.3 *Alternative 2 – Barrier 1 (South of Maxwell Drive in Labrador Run Subdivision)*

The Barrier 1 noise analysis area consists of the residences located east of the proposed McFarland Road extension and south of Maxwell Drive in the Labrador Run Subdivision. In the 2045 BUILD Alternative 2 condition, four residences are expected to experience a substantial increase in noise due to the proposed roadway.

Barrier 1 Feasibility

1. Limitations

Due to the location of Maxwell Drive and a proposed driveway on the adjacent property, the proposed barrier was limited to a length of 660 feet. No additional limiting factors were identified in the area of the proposed barrier. Utility locations were not considered.

2. Achievable Noise Reduction

For the 2045 BUILD condition, TNM 2.5 predicted sound level impacts for a total of four receptors in the Barrier 1 noise analysis area. A noise barrier constructed between the proposed sidewalk and the new ROW, with wall heights ranging from 16 feet to 24 feet, would achieve a noise reduction of at least 5 dBA for 75% of the 4 impacted receptors.

The modeled barrier provides a minimum of 5 dBA of noise reduction to more than 70% of the impacted receptors within the impacted Noise Analysis Area; therefore, **Barrier 1 was deemed feasible**. See Appendix III for the feasible Barrier 1 design.

Barrier 1 Reasonableness

1. Using a cost of \$30 per square foot of barrier, the total cost of the feasible Barrier 1 design is \$400,350. The proposed barrier benefits three receptors; therefore, the cost per benefited receptor is \$133,450. The cost of the modeled barrier is more than \$30,000 per benefited receptor; therefore, **under Criterion 1 (Cost Effectiveness), Barrier 1 was deemed not reasonable**.

2. The feasible Barrier 1 design achieves a noise reduction of 10 dBA or greater for 0% of the three benefited receptors. The modeled barrier does not meet the ALDOT requirement that a noise reduction of 10 dBA be achieved for a minimum of 65% of the benefited receptors.

The barrier was re-modeled to optimize the 10 dBA reductions. Even with a maximum barrier height of 24 feet for all segments, the barrier was only able to achieve a noise reduction of 10 dBA or greater for one benefited receptor.



The modeled barrier does not meet the ALDOT requirement that a noise reduction of 10 dBA be achieved for a minimum of 65% of the benefited receptors; therefore, **under Criterion 2 (Noise Reduction Design Goal), Barrier 1 was deemed to be not reasonable.**

3. Consideration of the viewpoints of the property owners and residents of the benefited receptors was beyond the scope of this Noise Analysis. The reasonableness of Barrier 1 in relation to the viewpoints of those benefited by the proposed barrier was not assessed.

6.7.4 *Alternative 2 – Barrier 2 (Champ Cove in Labrador Run Subdivision)*

The Barrier 2 noise analysis area consists of the residences located west of the proposed McFarland Road extension and north of Champ Cove in the Labrador Run Subdivision. In the 2045 BUILD Alternative 2 condition, 15 residences in the Champ Cove area of the Labrador Run subdivision are expected to experience a substantial increase in noise due to the proposed roadway, 10 of which are located within the Barrier 2 noise analysis area.

Barrier 2 Feasibility

1. Limitations

Due to the location of Champ Cove, a continuous noise barrier cannot be installed to screen all of the 15 impacted residences in the Champ Cove area. Additionally, the two residences on either side of Champ Cove have driveways to the proposed roadway. Given the existing driveway and a proposed driveway on an adjacent property, a noise barrier south of Champ Cove was deemed to be not feasible; however, a barrier could be constructed north of Champ Cove. With the exception of Champ Cove, no limiting factors were identified in the area of the proposed Barrier 2. Utility locations were not considered.

2. Achievable Noise Reduction

For the 2045 BUILD condition, TNM 2.5 predicted sound level impacts for a total of 10 receptors in the Barrier 2 noise analysis area. A noise barrier constructed between the proposed edge of pavement and the new ROW, with wall heights at a maximum of 24 feet, would achieve a noise reduction of at least 5 dBA for 80% of the 10 impacted receptors.

The modeled barrier provides a minimum of 5 dBA of noise reduction to more than 70% of the impacted receptors within the impacted Noise Analysis Area; therefore, **Barrier 2 was deemed feasible.** See Appendix III for the feasible Barrier 2 design.

Barrier 2 Reasonableness

1. Using a cost of \$30 per square foot of barrier, the total cost of the feasible Barrier 2 design is \$4857,020. The proposed barrier benefits nine receptors; therefore, the cost per benefited receptor is \$54,113. The cost of the modeled barrier is more than \$30,000 per benefited receptor; therefore, **under Criterion 1 (Cost Effectiveness), Barrier 2 was deemed not reasonable.**



2. The feasible Barrier 2 design achieves a noise reduction of 10 dBA or greater for 33% of the nine benefitted receptors. The modeled barrier does not meet the ALDOT requirement that a noise reduction of 10 dBA be achieved for a minimum of 65% of the benefitted receptors.

The barrier was re-modeled to optimize the 10 dBA reductions. Even with a maximum barrier height of 24 feet for all segments, the barrier was only able to achieve a noise reduction of 10 dBA or greater for three benefitted receptors.

The modeled barrier does not meet the ALDOT requirement that a noise reduction of 10 dBA be achieved for a minimum of 65% of the benefitted receptors; therefore, **under Criterion 2 (Noise Reduction Design Goal), Barrier 2 was deemed to be not reasonable.**

3. Consideration of the viewpoints of the property owners and residents of the benefitted receptors was beyond the scope of this Noise Analysis. The reasonableness of Barrier 2 in relation to the viewpoints of those benefitted by the proposed barrier was not assessed.

6.7.5 *Alternative 2 – Barrier 3 (Labrador Trail in Labrador Run Subdivision)*

The Barrier 3 noise analysis area consists of the residences located east of the proposed McFarland Road extension and north of Labrador Trail in the Labrador Run Subdivision. In the 2045 BUILD Alternative 2 condition, eight residences on either side of Labrador Trail are expected to experience a substantial increase in noise due to the proposed roadway, six of which are located within the Barrier 3 noise analysis area.

Barrier 3 Feasibility

1. Limitations

Due to the location of Labrador Trail, a continuous noise barrier cannot be installed to screen all of the impacted residences north and south of Labrador Trail. Given the location of existing driveways and Labrador Trail, a noise barrier was not deemed feasible south of Labrador Trail; however, a noise barrier could be constructed north of Labrador Trail. With the exception of Labrador Trail, no limiting factors were identified in the area of the proposed Barrier 3. Utility locations were not considered.

2. Achievable Noise Reduction

For the 2045 BUILD condition, TNM 2.5 predicted sound level impacts for a total of six receptors in the Barrier 3 noise analysis area. A noise barrier constructed between the proposed sidewalk and the new ROW, with wall heights ranging from 8 feet to 18 feet, would achieve a noise reduction of at least 5 dBA for 83% of the six impacted receptors.

The modeled barrier provides a minimum of 5 dBA of noise reduction to more than 70% of the impacted receptors within the impacted Noise Analysis Area; therefore, **Barrier 3 was deemed feasible.** See Appendix III for the feasible Barrier 3 design.



Barrier 3 Reasonableness

1. Using a cost of \$30 per square foot of barrier, the total cost of the feasible Barrier 3 design is \$360,000. The proposed barrier benefits six receptors; therefore, the cost per benefited receptor is \$60,000. The cost of the modeled barrier is more than \$30,000 per benefited receptor; therefore, **under Criterion 1 (Cost Effectiveness), Barrier 3 was deemed not reasonable.**
2. The feasible Barrier 3 design achieves a noise reduction of 10 dBA or greater for 0% of the six benefited receptors. The modeled barrier does not meet the ALDOT requirement that a noise reduction of 10 dBA be achieved for a minimum of 65% of the benefited receptors.

The barrier was re-modeled to optimize the 10 dBA reductions. Even with a maximum barrier height of 24 feet for all segments, the barrier was only able to achieve a noise reduction of 10 dBA or greater for three receptors.

The modeled barrier does not meet the ALDOT requirement that a noise reduction of 10 dBA be achieved for a minimum of 65% of the benefited receptors; therefore, **under Criterion 2 (Noise Reduction Design Goal), Barrier 3 was deemed to be not reasonable.**

3. Consideration of the viewpoints of the property owners and residents of the benefited receptors was beyond the scope of this Noise Analysis. The reasonableness of Barrier 3 in relation to the viewpoints of those benefited by the proposed barrier was not assessed.

6.7.6 Alternative 2 – Barrier 4 (Dawes Creek/Dawes Oak)

The Barrier 4 noise analysis area consists of the residences east of the proposed McFarland Road extension and surrounding Dawes Creek Drive and Dawes Oak Drive. In the 2045 BUILD Alternative 2 condition, seven residences are expected to experience a substantial increase in noise due to the proposed roadway.

A. Barrier 4 Feasibility

1. Limitations

No limiting factors were identified in the area of the proposed barrier. Utility locations were not considered.

2. Achievable Noise Reduction

For the 2045 BUILD condition, TNM 2.5 predicted sound level impacts for a total of seven receptors in the Barrier 4 noise analysis area. A noise barrier constructed between the proposed sidewalk and the new ROW, with wall heights ranging from 12 feet to 20 feet, would achieve a noise reduction of at least 5 dBA for 71% of the seven impacted receptors.



The modeled barrier provides a minimum of 5 dBA of noise reduction to more than 70% of the impacted receptors within the impacted Noise Analysis Area; therefore, **Barrier 4 was deemed feasible**. See Appendix III for the feasible Barrier 4 design.

Barrier 4 Reasonableness

1. Using a cost of \$30 per square foot of barrier, the total cost of the feasible Barrier 4 design is \$534,000. The proposed barrier benefits seven receptors; therefore, the cost per benefited receptor is \$76,286. The cost of the modeled barrier is more than \$30,000 per benefited receptor; therefore, **under Criterion 1 (Cost Effectiveness), Barrier 4 was deemed not reasonable**.
2. The feasible Barrier 4 design achieves a noise reduction of 10 dBA or greater for 29% of the seven benefited receptors. The modeled barrier does not meet the ALDOT requirement that a noise reduction of 10 dBA be achieved for a minimum of 65% of the benefited receptors.

The barrier was re-modeled to optimize the 10 dBA reductions. Even with a maximum barrier height of 24 feet for all segments, the barrier was only able to achieve a noise reduction of 10 dBA or greater for three benefited receptors.

The modeled barrier does not meet the ALDOT requirement that a noise reduction of 10 dBA be achieved for a minimum of 65% of the benefited receptors; therefore, **under Criterion 2 (Noise Reduction Design Goal), Barrier 4 was deemed to be not reasonable**.

3. Consideration of the viewpoints of the property owners and residents of the benefited receptors was beyond the scope of this Noise Analysis. The reasonableness of Barrier 4 in relation to the viewpoints of those benefited by the proposed barrier was not assessed.

6.7.7 Alternative 2 – Barrier 5 (Isolated Impact R-89)

The Barrier 5 noise analysis area consists of the residences located west of McDonald Road and north of the proposed McFarland Road extension in the vicinity of the proposed McDonald-McFarland roundabout. In the 2045 BUILD Alternative 2 condition, one residence is expected to experience a substantial increase in noise due to the proposed roadway.

A. Barrier 5 Feasibility

1. Limitations

No limiting factors were identified in the area of the proposed barrier.

2. Achievable Noise Reduction

A noise barrier constructed in the right of way on the north side of McFarland Road, west of the roundabout, with wall heights ranging from 14 feet to 18 feet, would achieve a noise reduction of at least 5 dBA for the impacted receptor.



The modeled barrier provides a minimum of 5 dBA of noise reduction to more than 70% of the impacted receptors within the impacted Noise Analysis Area; therefore, **Barrier 5 was deemed feasible**. See Appendix III for the feasible Barrier 5 design.

B. Barrier 5 Reasonableness

1. Using a cost of \$30 per square foot of barrier, the total cost of the feasible Noise Barrier 5 design is \$144,030. The proposed barrier benefits one receptor; therefore, the cost per benefited receptor is \$144,030. The cost of the modeled barrier is more than \$30,000 per benefited receptor; therefore, **under Criterion 1 (Cost Effectiveness), Barrier 5 was deemed not reasonable**.
2. The feasible Barrier 5 design achieves a noise reduction of 10 dBA or greater for 0% of the one benefited receptor. The modeled barrier does not meet the ALDOT requirement that a noise reduction of 10 dBA be achieved for a minimum of 65% of the benefited receptors.

The barrier was re-modeled to optimize the 10 dBA reductions. With a maximum barrier height of 24 feet for all segments, the barrier would benefit two receptors, but only provide a noise reduction of 10 dBA or greater for one receptor.

The modeled barrier does not meet the ALDOT requirement that a noise reduction of 10 dBA be achieved for a minimum of 65% of the benefited receptors; therefore, **under Criterion 2 (Noise Reduction Design Goal), Barrier 5 was deemed to be not reasonable**.

3. Consideration of the viewpoints of the property owners and residents of the benefited receptors was beyond the scope of this Noise Analysis. The reasonableness of Barrier 5 in relation to the viewpoints of those benefited by the proposed barrier was not assessed.

6.7.8 Statement of Likelihood

A noise barrier is not likely to be included in the project plans to provide noise abatement for the impacted receptors. Changes made during the final design process for the project could affect conclusions regarding noise impacts and abatement; therefore, final noise abatement decisions will be made during the final design process.

7.0 Undeveloped Lands

During the noise analysis, consideration was given to undeveloped lands (those defined under Category G in Table 3-1) according to 23 CFR 772. Forty-three (43) undeveloped parcels were identified in the project area.

7.1 Permitted Lands

The undeveloped parcels had not been issued building permits at the time of the noise impact analysis.

7.2 Lands Not Permitted With Potential For Development

To address the parcels that were not permitted for development at the time of the noise analysis but are



considered to have potential for development in the future, 120 Category G receptors were modeled at distances of 100 feet, 150 feet, and 200 feet from the edge of pavement in the 2045 BUILD scenarios. The modeled noise levels are summarized in Table 7-1.

Table 7-1 Undeveloped Lands

Model ID	Parcel Number	Acres	Distance from Proposed EOP	2045 BUILD ALT 1 McDonald	2045 BUILD ALT 2 McFarland
U1	37 01 01 3 000 059.XXX	1.6	100	66	66
			150	64	64
			200	62	62
U2	37 01 01 3 000 023.XXX	1.3	100	66	65
			150	64	64
			200	63	63
U3	37 01 01 3 000 052.XXX	0.4	100	65	60
			150	61	57
			200	NM	NM
U4	37 01 01 2 001 083.XXX	1.5	100	62	58
			150	59	56
			200	59	55
U5	37 01 01 2 001 059.XXX	0.3	100	65	60
			150	62	57
			200	NM	NM
U6	34 07 36 3 000 006.XXX	11.0	100	61	58
			150	59	56
			200	58	54
U7	34 07 36 3 000 004.001	10.7	100	65	60
			150	62	57
			200	60	55
U8	34 07 36 3 000 003.XXX	16.4	100	62	57
			150	59	55
			200	58	54
U9	34 07 37 0 003 005.007	1.0	100	66	60
			150	62	58
			200	60	56
U10	34 07 37 0 003 005.008	0.4	100	62	60
			150	60	57
			200	58	54

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Model ID	Parcel Number	Acres	Distance from Proposed EOP	2045 BUILD ALT 1 McDonald	2045 BUILD ALT 2 McFarland
U11	34 06 24 3 000 043.XXX	2.0	100	66	65
			150	63	62
			200	61	60
U12	34 07 37 0 000 001.001	2.3	100	65	60
			150	63	58
			200	62	57
U13	34 07 37 0 000 002.01X	0.8	100	65	59
			150	62	57
			200	61	55
U14	34 07 35 0 000 001.XXX	68.7	100	64	61
			150	60	57
			200	58	55
U15	34 07 35 0 000 018.008	2.2	100	65	62
			150	62	59
			200	60	57
U16	37 01 02 0 000 011.01X	3.2	100	64	NM
			150	61	NM
			200	59	NM
U16(2)	37 01 02 0 000 011.01X	3.2	100	NM	63
			150	NM	60
			200	NM	NM
U16(3)	37 01 02 0 000 011.01X	3.2	100	NM	64
			150	NM	61
			200	NM	NM
U17	34 07 26 0 000 025.006	2.3	100	65	63
			150	62	60
			200	60	58
U18	34 07 26 0 000 025.003	1.8	100	67	63
			150	63	60
			200	61	58
U19	34 07 26 0 000 028.009	22.8	100	67	NM
			150	64	NM
			200	62	NM

Noise Analysis Technical Report – REV 1

McFarland Road Extension

Theodore, Mobile County, Alabama

S&ME Project No. 4482-20-038



Model ID	Parcel Number	Acres	Distance from Proposed EOP	2045 BUILD ALT 1 McDonald	2045 BUILD ALT 2 McFarland
U19(2)	34 07 26 0 000 028.009	22.8	100	NM	61
			150	NM	59
			200	NM	57
U20	34 06 23 0 000 019.003	2.7	100	NM	NM
			150	61	61
			200	60	59
U21	34 06 23 0 000 019.004	3.2	100	65	63
			150	63	61
			200	61	59
U22	34 06 23 0 000 036.08X	1.0	100	65	62
			150	62	60
			200	60	58
U23	37 01 02 0 000 003.XXX	78.4	100	37	60
			150	37	57
			200	37	56
U24	34 07 26 0 000 028.005	26.7	100	40	62
			150	40	59
			200	39	57
U25	34 07 26 0 000 028.019	5.0	100	40	62
			150	40	59
			200	40	56
U25	34 07 26 0 000 028.020	4.7	100	40	62
			150	40	59
			200	40	56
U25	34 07 26 0 000 028.021	4.7	100	40	62
			150	40	59
			200	40	56
U26	34 07 26 0 000 028.185	4.7	100	41	62
			150	41	59
			200	41	56
U26	34 07 26 0 000 028.186	4.3	100	41	62
			150	41	59
			200	41	56

Noise Analysis Technical Report – REV 1

McFarland Road Extension

Theodore, Mobile County, Alabama

S&ME Project No. 4482-20-038



Model ID	Parcel Number	Acres	Distance from Proposed EOP	2045 BUILD ALT 1 McDonald	2045 BUILD ALT 2 McFarland
U26	34 07 26 0 000 028.187	4.3	100	41	62
			150	41	59
			200	41	56
U27	34 07 26 0 000 028.XXX	29.6	100	41	62
			150	41	58
			200	40	56
U28	34 07 26 0 000 028.163	2.8	100	45	62
			150	45	59
			200	45	56
U29	34 08 27 0 000 008.006	4.0	100	47	62
			150	47	59
			200	48	57
U30	34 08 27 0 000 008.005	5.4	100	43	62
			150	44	59
			200	44	56
U31	34 08 27 0 000 008.004	4.9	100	42	62
			150	42	59
			200	42	56
U32	34 08 27 0 000 010.XXX	137.2	100	40	62
			150	41	59
			200	41	56
U33	34 08 27 0 000 032.XXX	86.5	100	40	63
			150	39	59
			200	39	57
U34	34 08 34 0 000 001.XXX	56.1	100	37	62
			150	37	59
			200	36	56
U35	34 08 34 0 000 001.01X	73.4	100	36	62
			150	36	59
			200	36	56
U36	34 08 34 0 000 001.04X	34.0	100	37	62
			150	37	59
			200	37	56



Model ID	Parcel Number	Acres	Distance from Proposed EOP	2045 BUILD ALT 1 McDonald	2045 BUILD ALT 2 McFarland
U37	34 08 34 0 000 003.XXX	297.9	100	37	62
			150	37	59
			200	37	56
U38	37 01 02 0 000 009.XXX	238.0	100	NM	62
			150	NM	59
			200	NM	57
U39	34 07 35 0 000 005.084	0.3	100	NM	62
			150	NM	58
			200	NM	NM

NM – Not Modeled

The modeled undeveloped land receptors that approached or exceeded the NAC of 67 dB(A) for Categories B or C at 100 feet are highlighted in the above table. None of the modeled undeveloped land receptors approached or exceeded the NAC of 67 dB(A) for Categories B or C at 150 feet or 200 feet from the edge of pavement.

This information is intended to be used by local officials for better land use development planning and is meant to serve as a basic guideline to reduce future noise impacts.

8.0 Construction Noise

Construction noise will temporarily increase noise levels in the immediate vicinity of the construction site. The major construction elements of this project are expected to be earth removal, pavement removal, drilling, hauling, grading, and paving. General construction noise impacts, such as temporary speech interference for passersby and individuals living or working near the project can be expected. Considering the relatively short-term nature of construction noise, these impacts are not expected to be substantial. If construction noise becomes a concern, restrictions can be placed on the contractor to limit times for certain types of construction operations.

9.0 Conclusion

Based on the data available to S&ME at the time of this report, the following is a summary of the modeled results for the sensitive receptors on the project.

For the 2019 EXISTING, 2045 NO BUILD, 2045 BUILD Alternative 1 (McDonald Road), and 2045 BUILD Alternative 2 (McFarland Road) scenarios, TNM 2.5 yielded 1, 3, 4, and 38 sound level impacts respectively. The receptors predicted to have a sound level impact under Alternative 1 are expected to experience noise levels that will meet or exceed the noise level abatement criteria set forth by FHWA under 23 CFR Part 772 and by the Alabama Department of Transportation Noise Policy and Guidance. Of the 38 impacts predicted under the Alternative 2

Noise Analysis Technical Report – REV 1

McFarland Road Extension

Theodore, Mobile County, Alabama

S&ME Project No. 4482-20-038



scenario, only two are expected to experience noise levels that approach or exceed the NAC. The remaining 36 predicted impacts are a result of a predicted substantial increase in noise levels. The data results are shown in Tables 5-1 and 5-2 of this analysis.

The McDonald Road widening (Alternative 1) was determined to have fewer predicted impacts than the McFarland Road extension (Alternative 2).

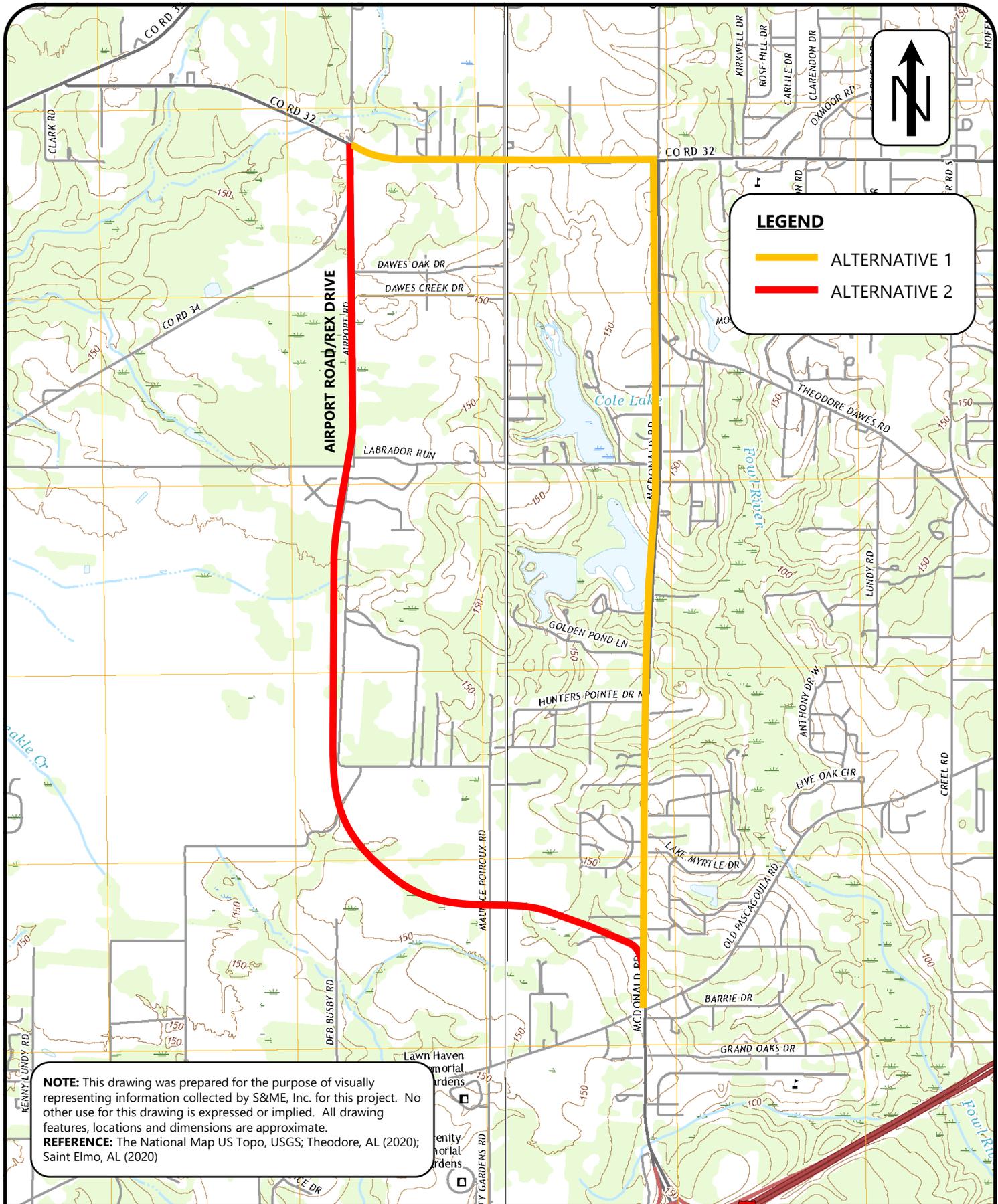
As stated in Section 6, alteration of a portion of the horizontal alignment to address one impact under Alternative 2 was deemed reasonable; however, there were no additional reasonable mitigation or abatement measures applicable for this project.

10.0 Limitations and Qualifications

When performing this scope of services, S&ME observed the degree of care and skill generally exercised by other consultants undertaking similar studies at the same time, under similar circumstances and conditions, and in the same geographic area. Conclusions regarding this study are based on roadway alignment and traffic information provided by Neel-Schaffer, our understanding of existing conditions, available documentation, and our interpretation of the collected and modeled data. Subsequent changes in the land use, roadway alignment, or traffic volumes could invalidate our findings. If additional or corrected information becomes available, we request the opportunity to review and modify our opinions, if warranted.

Appendices

Appendix I – Figures



LEGEND

- ALTERNATIVE 1
- ALTERNATIVE 2

NOTE: This drawing was prepared for the purpose of visually representing information collected by S&ME, Inc. for this project. No other use for this drawing is expressed or implied. All drawing features, locations and dimensions are approximate.

REFERENCE: The National Map US Topo, USGS; Theodore, AL (2020); Saint Elmo, AL (2020)



SITE LOCATION PLAN

MCFARLAND ROAD EXTENSION
THEODORE, MOBILE COUNTY, ALABAMA

SCALE:
AS SHOWN

DATE:
9-9-2021

PROJECT NUMBER:
4482-20-038

FIGURE NO.
1



RECEPTOR LOCATION PLAN - ALTERNATIVE 1

MCFARLAND ROAD EXTENSION
MOBILE COUNTY, ALABAMA
ALDOT PROJECT NO. STPMB-4918(250)

SCALE:

1:200

DATE:

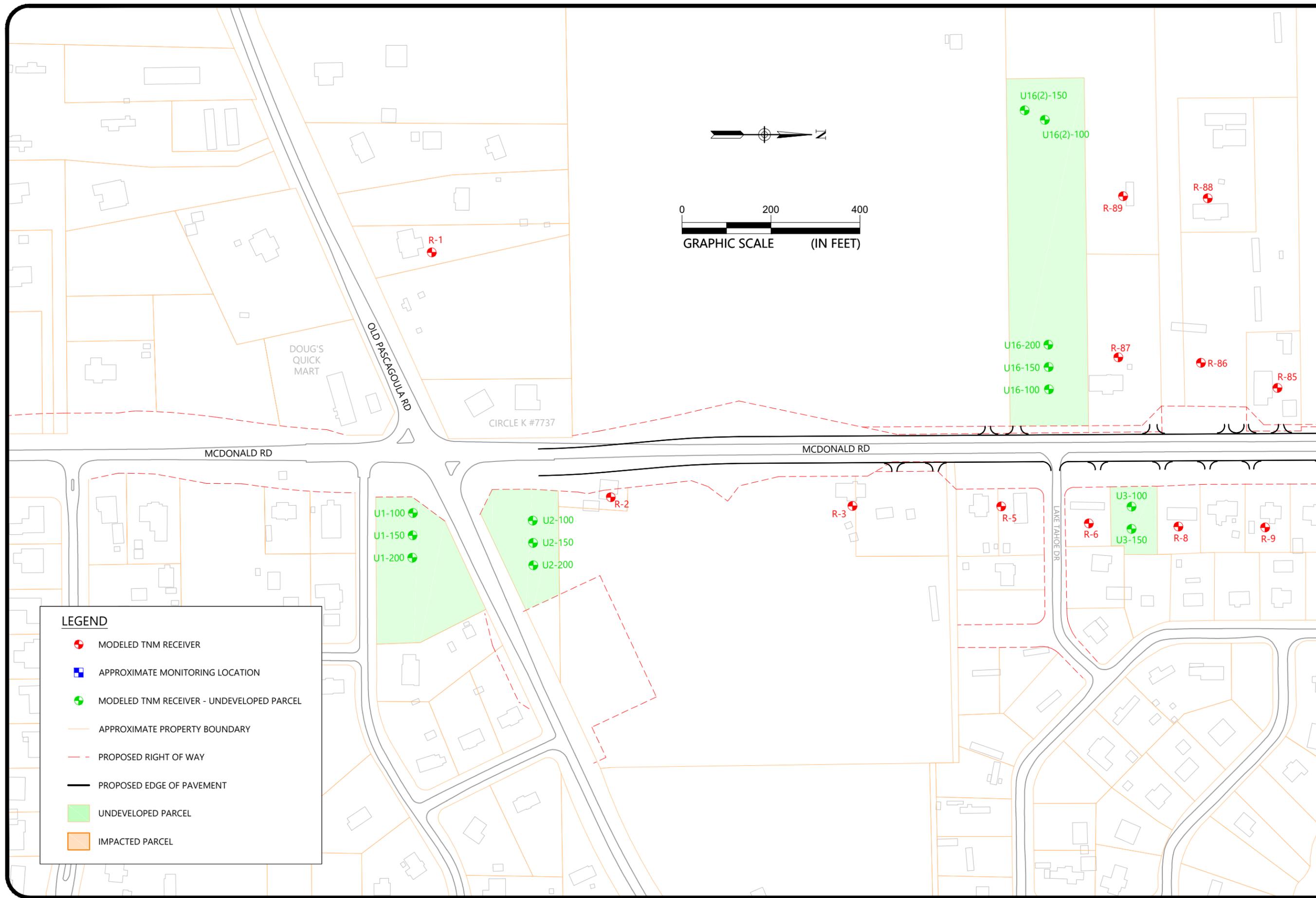
8/27/2021

PROJECT NUMBER

4482-20-038

FIGURE NO.

2





RECEPTOR LOCATION PLAN - ALTERNATIVE 1

MCFARLAND ROAD EXTENSION
MOBILE COUNTY, ALABAMA
ALDOT PROJECT NO. STPMB-4918(250)

SCALE:

1:200

DATE:

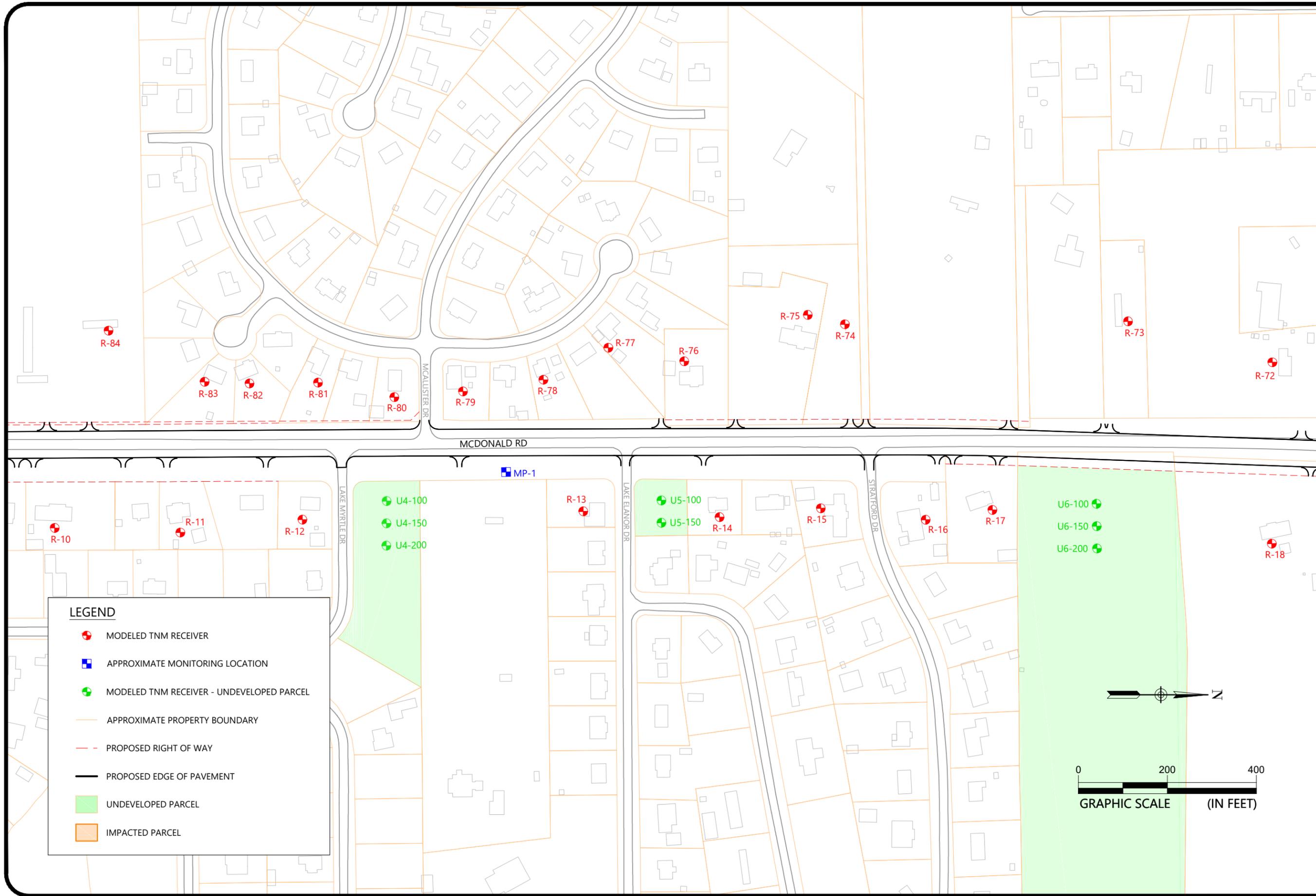
8/27/2021

PROJECT NUMBER

4482-20-038

FIGURE NO.

3



LEGEND

- MODELED TNM RECEIVER
- APPROXIMATE MONITORING LOCATION
- MODELED TNM RECEIVER - UNDEVELOPED PARCEL
- APPROXIMATE PROPERTY BOUNDARY
- PROPOSED RIGHT OF WAY
- PROPOSED EDGE OF PAVEMENT
- UNDEVELOPED PARCEL
- IMPACTED PARCEL



RECEPTOR LOCATION PLAN - ALTERNATIVE 1

MCFARLAND ROAD EXTENSION
MOBILE COUNTY, ALABAMA
ALDOT PROJECT NO. STPMB-4918(250)

SCALE:

1:200

DATE:

8/27/2021

PROJECT NUMBER

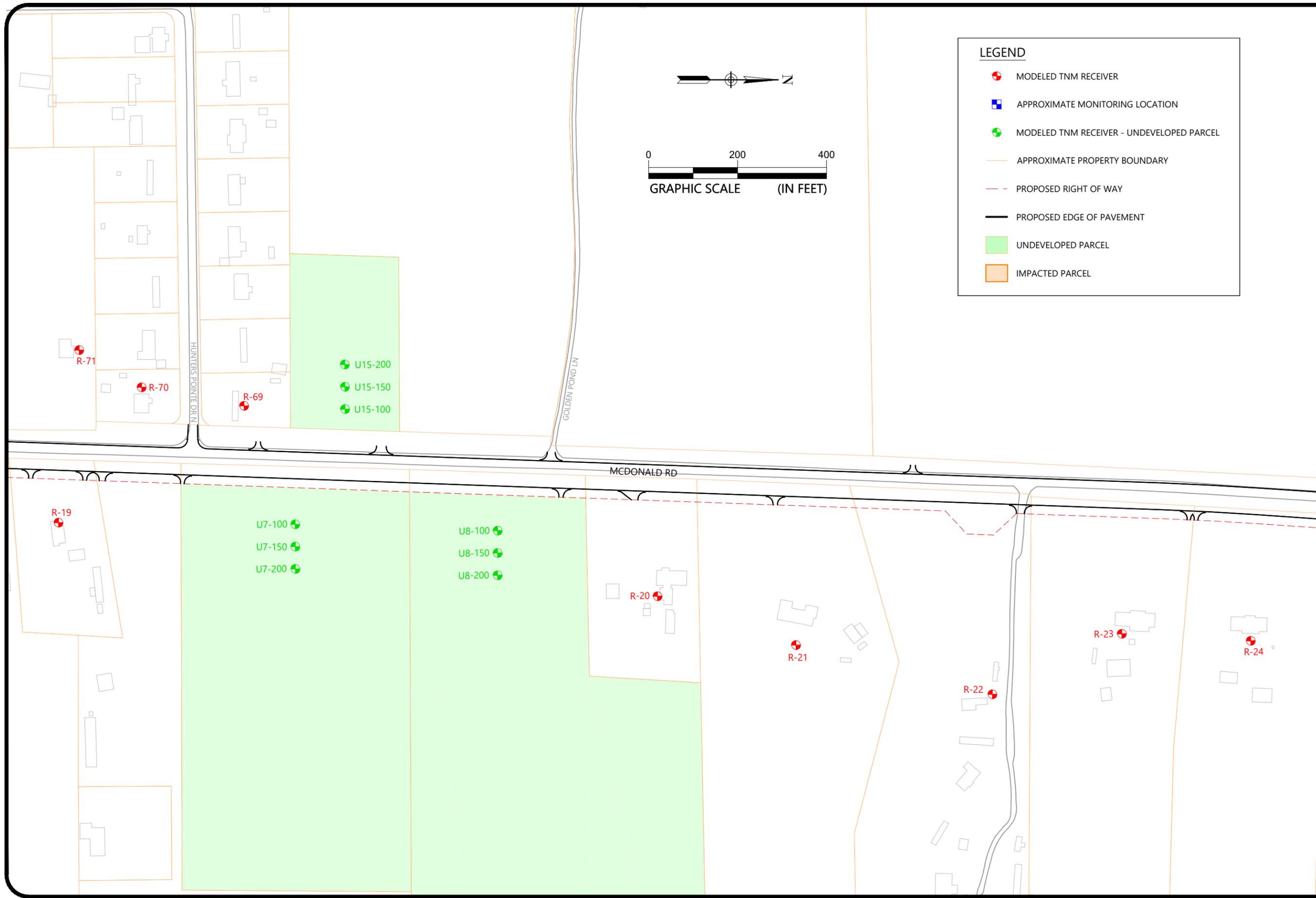
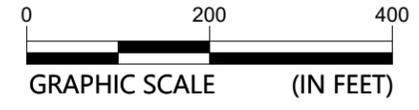
4482-20-038

FIGURE NO.

4

LEGEND

-  MODELED TNM RECEIVER
-  APPROXIMATE MONITORING LOCATION
-  MODELED TNM RECEIVER - UNDEVELOPED PARCEL
-  APPROXIMATE PROPERTY BOUNDARY
-  PROPOSED RIGHT OF WAY
-  PROPOSED EDGE OF PAVEMENT
-  UNDEVELOPED PARCEL
-  IMPACTED PARCEL





RECEPTOR LOCATION PLAN - ALTERNATIVE 1

MCFARLAND ROAD EXTENSION
MOBILE COUNTY, ALABAMA
ALDOT PROJECT NO. STPMB-4918(250)

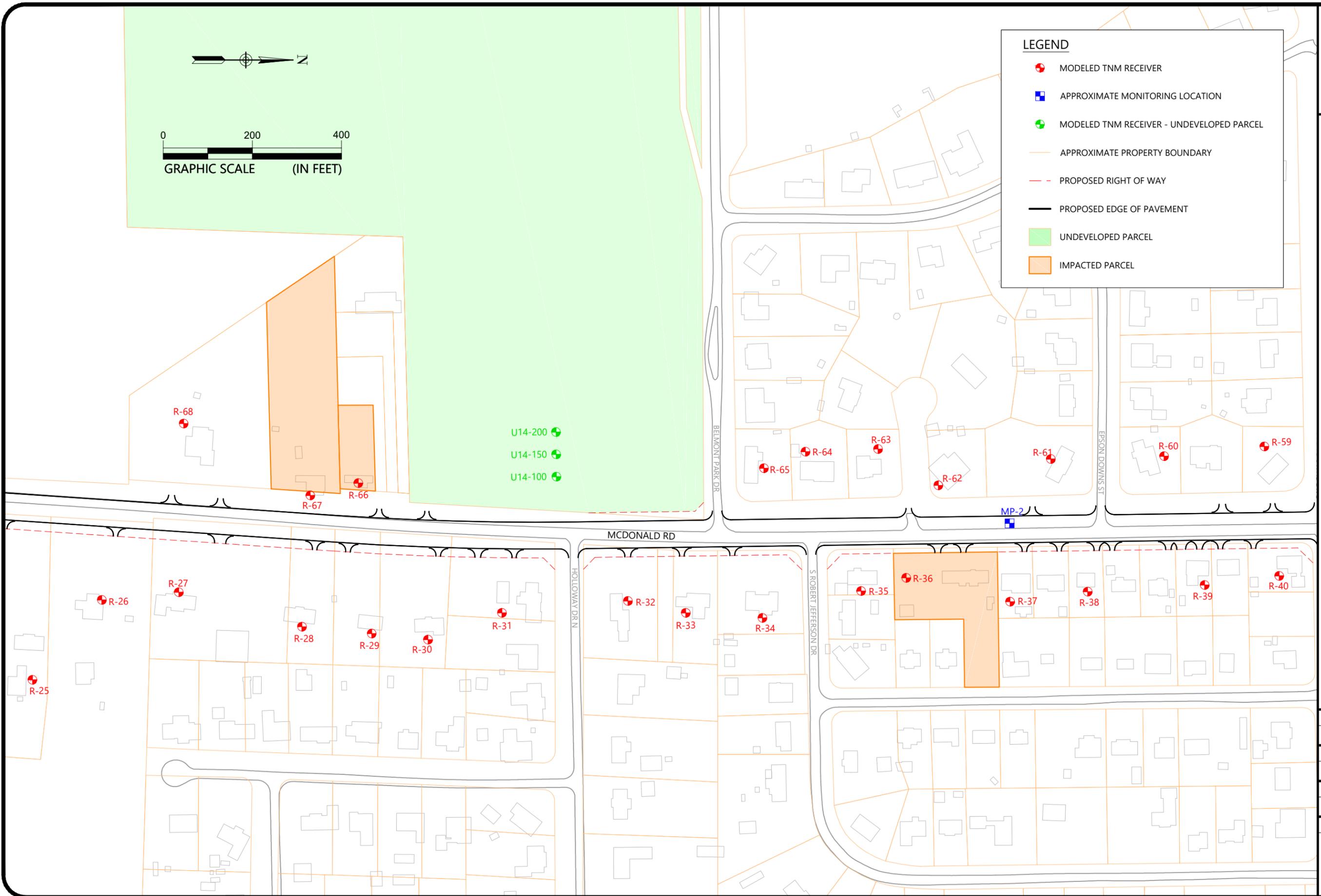
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1:200

DATE:
8/27/2021

PROJECT NUMBER
4482-20-038

FIGURE NO.

5





RECEPTOR LOCATION PLAN - ALTERNATIVE 1

MCFARLAND ROAD EXTENSION
MOBILE COUNTY, ALABAMA
ALDOT PROJECT NO. STPMB-4918(250)

SCALE:
1:200

DATE:
8/27/2021

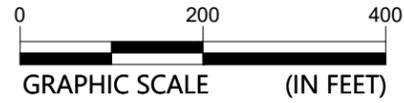
PROJECT NUMBER
4482-20-038

FIGURE NO.

6

LEGEND

-  MODELED TNM RECEIVER
-  APPROXIMATE MONITORING LOCATION
-  MODELED TNM RECEIVER - UNDEVELOPED PARCEL
-  APPROXIMATE PROPERTY BOUNDARY
-  PROPOSED RIGHT OF WAY
-  PROPOSED EDGE OF PAVEMENT
-  UNDEVELOPED PARCEL
-  IMPACTED PARCEL



U13-200 
U13-150 
U13-100 

MP-3 

MCDONALD RD

R-41 

R-42 

R-43 

R-44 

R-45 

R-46 

R-47 

R-48 

R-49 

R-50 

R-51 

R-52 

R-53 

R-54 

U9-100 
U9-150 
U9-200 

U10-100 
U10-150 
U10-200 

THEODORE DAVIES RD



RECEPTOR LOCATION PLAN - ALTERNATIVE 1

MCFARLAND ROAD EXTENSION
MOBILE COUNTY, ALABAMA
ALDOT PROJECT NO. STPMB-4918(250)

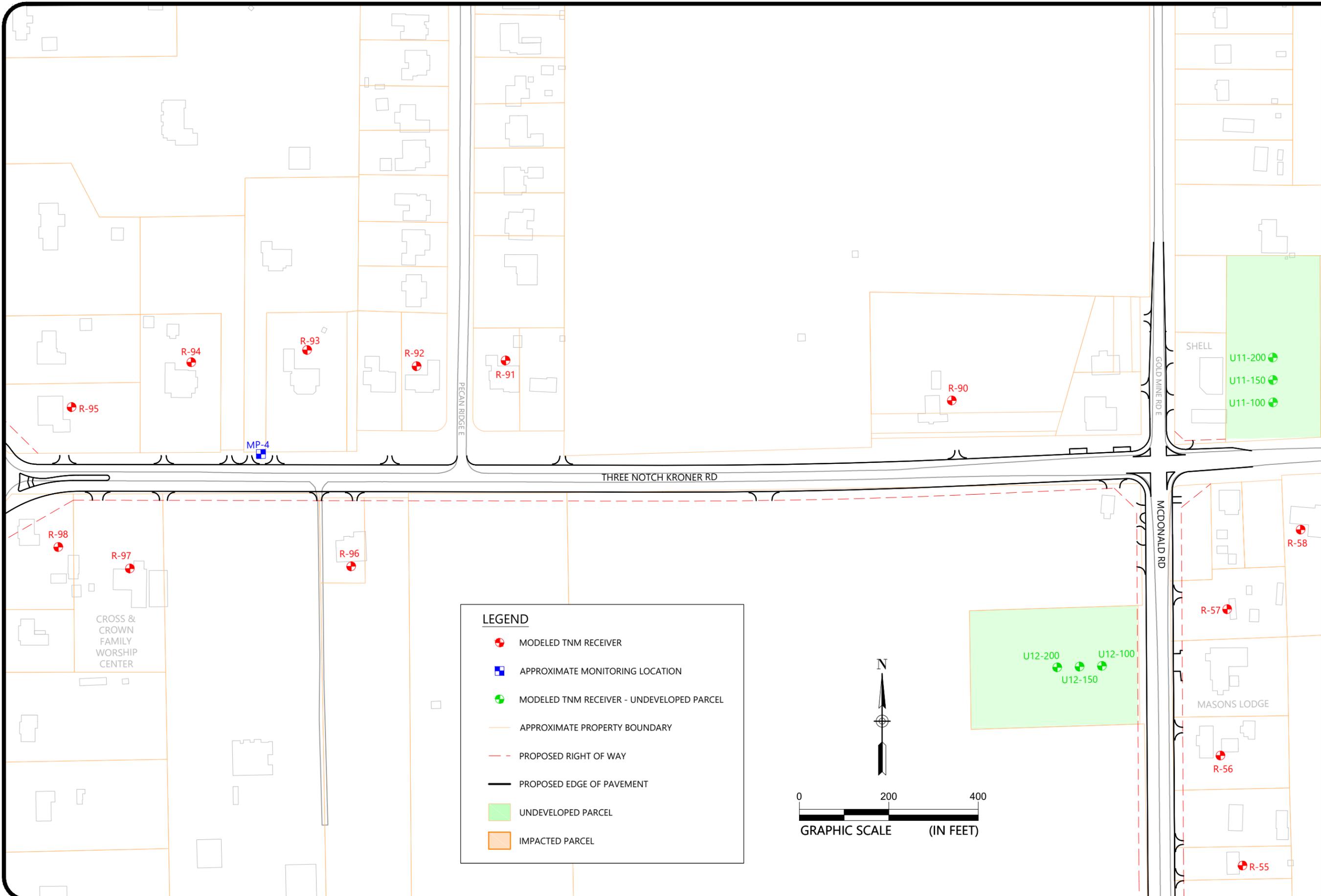
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DATE:
8/27/2021

PROJECT NUMBER
4482-20-038

FIGURE NO.

7





RECEPTOR LOCATION PLAN - ALTERNATIVE 1

MCFARLAND ROAD EXTENSION
MOBILE COUNTY, ALABAMA
ALDOT PROJECT NO. STPMB-4918(250)

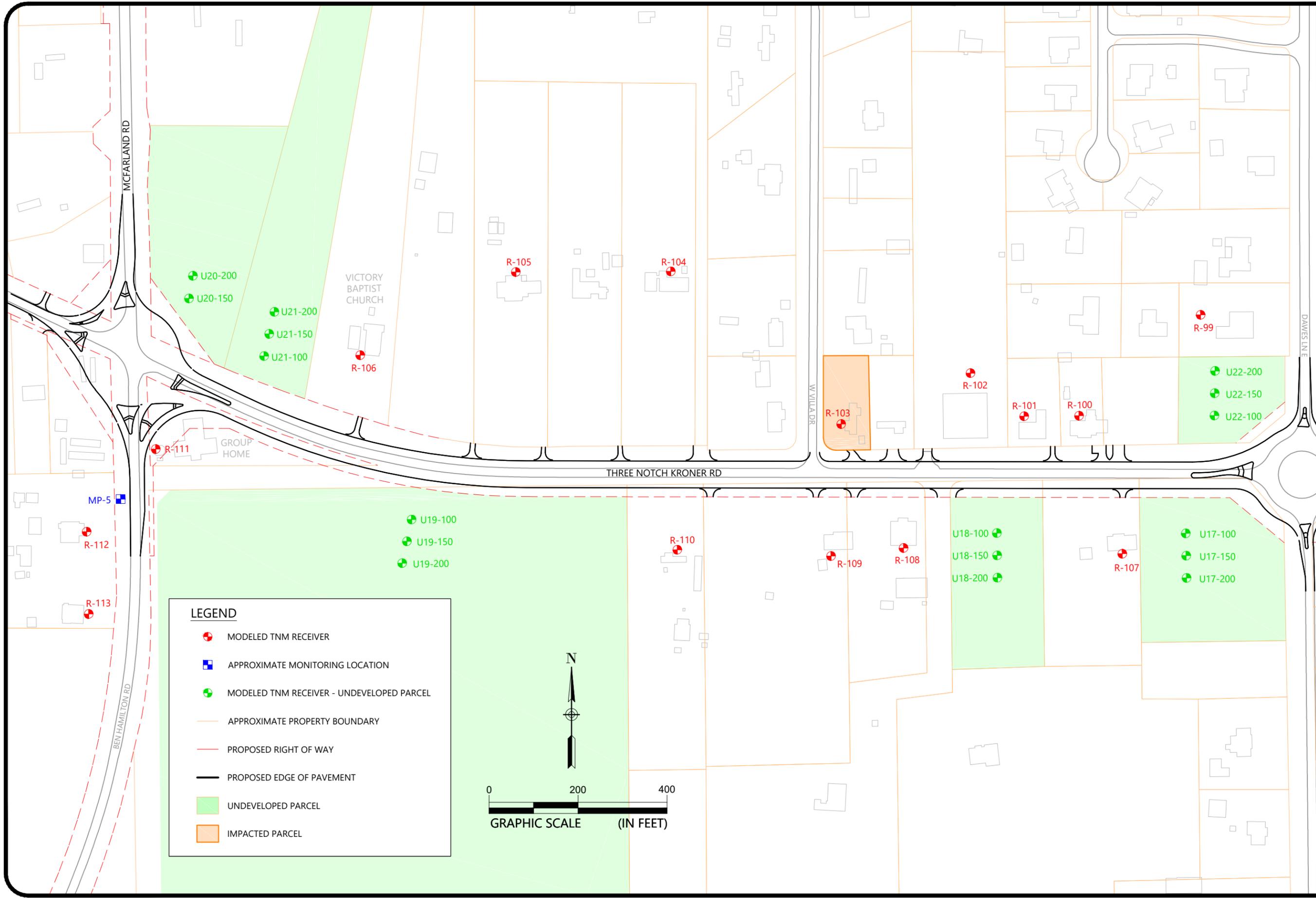
SCALE:
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DATE:
8/27/2021

PROJECT NUMBER
4482-20-038

FIGURE NO.

8





RECEPTOR LOCATION PLAN - ALTERNATIVE 2

MCFARLAND ROAD EXTENSION
MOBILE COUNTY, ALABAMA
ALDOT PROJECT NO. STPMB-4918(250)

SCALE:

1:200

DATE:

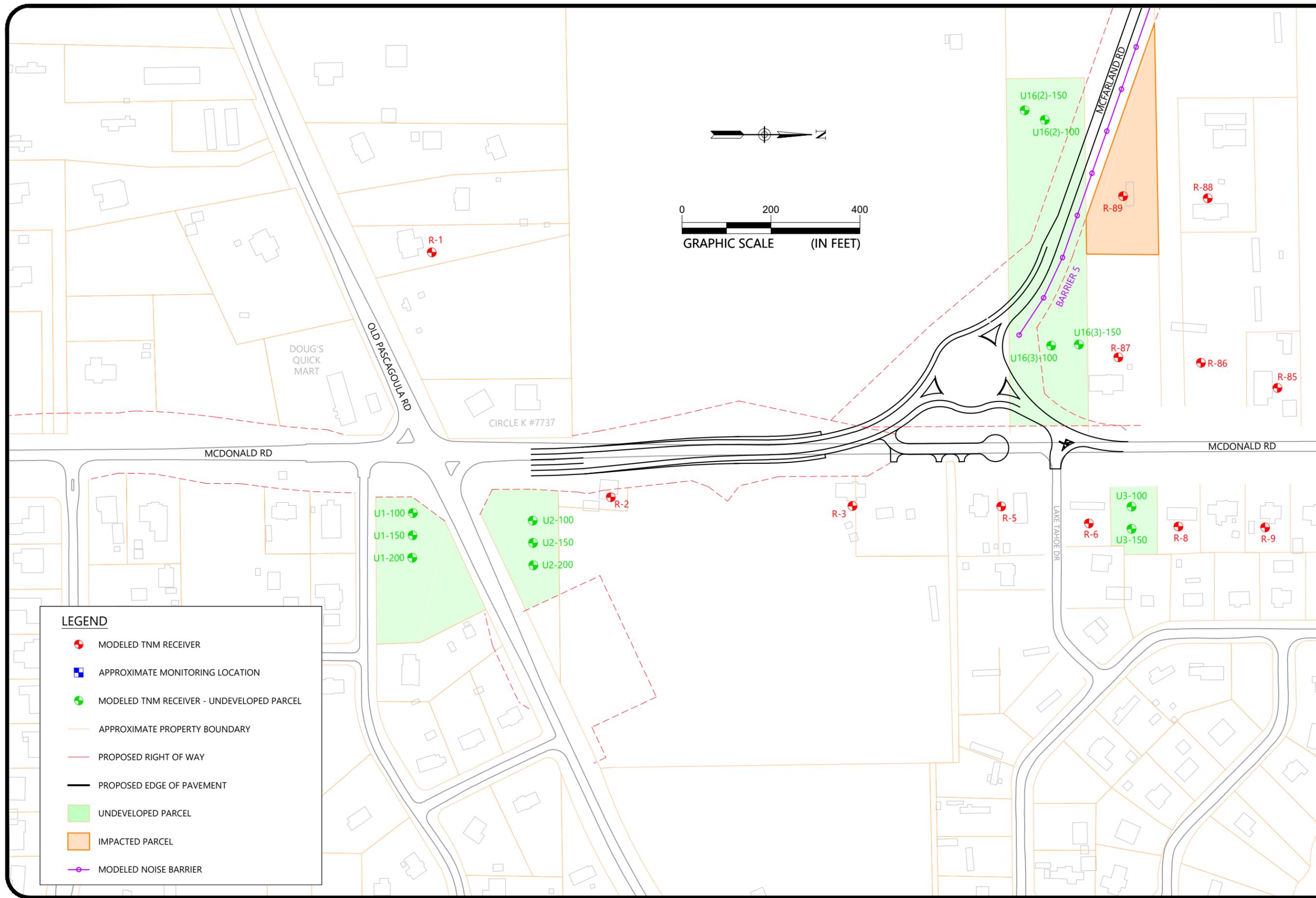
9/9/2021

PROJECT NUMBER

4482-20-038

FIGURE NO.

9



LEGEND

- MODELED TNM RECEIVER
- APPROXIMATE MONITORING LOCATION
- MODELED TNM RECEIVER - UNDEVELOPED PARCEL
- APPROXIMATE PROPERTY BOUNDARY
- PROPOSED RIGHT OF WAY
- PROPOSED EDGE OF PAVEMENT
- UNDEVELOPED PARCEL
- IMPACTED PARCEL
- MODELED NOISE BARRIER



RECEPTOR LOCATION PLAN - ALTERNATIVE 2

MCFARLAND ROAD EXTENSION
MOBILE COUNTY, ALABAMA
ALDOT PROJECT NO. STPMB-4918(250)

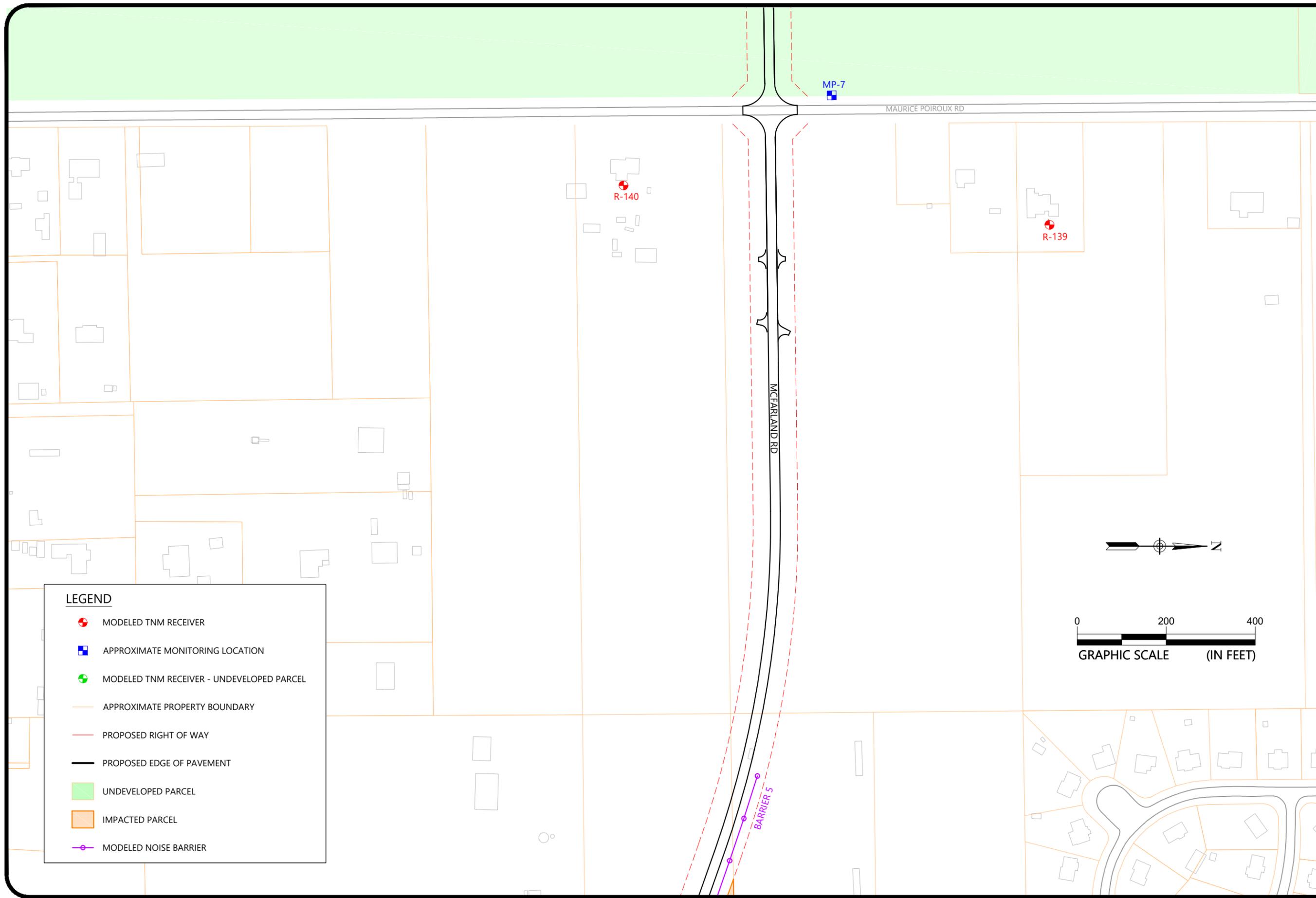
SCALE:
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DATE:
9/9/2021

PROJECT NUMBER
4482-20-038

FIGURE NO.

10



LEGEND

-  MODELED TNM RECEIVER
-  APPROXIMATE MONITORING LOCATION
-  MODELED TNM RECEIVER - UNDEVELOPED PARCEL
-  APPROXIMATE PROPERTY BOUNDARY
-  PROPOSED RIGHT OF WAY
-  PROPOSED EDGE OF PAVEMENT
-  UNDEVELOPED PARCEL
-  IMPACTED PARCEL
-  MODELED NOISE BARRIER



RECEPTOR LOCATION PLAN - ALTERNATIVE 2

MCFARLAND ROAD EXTENSION
MOBILE COUNTY, ALABAMA
ALDOT PROJECT NO. STPMB-4918(250)

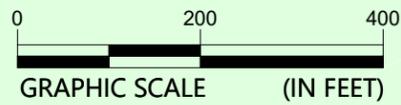
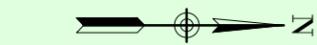
SCALE:
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DATE:
9/9/2021

PROJECT NUMBER
4482-20-038

FIGURE NO.

11



LEGEND

-  MODELED TNM RECEIVER
-  APPROXIMATE MONITORING LOCATION
-  MODELED TNM RECEIVER - UNDEVELOPED PARCEL
-  APPROXIMATE PROPERTY BOUNDARY
-  PROPOSED RIGHT OF WAY
-  PROPOSED EDGE OF PAVEMENT
-  UNDEVELOPED PARCEL
-  IMPACTED PARCEL
-  MODELED NOISE BARRIER

U38-200
U38-150
U38-100

MCFARLAND RD



RECEPTOR LOCATION PLAN - ALTERNATIVE 2

MCFARLAND ROAD EXTENSION
MOBILE COUNTY, ALABAMA
ALDOT PROJECT NO. STPMB-4918(250)

SCALE:

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DATE:

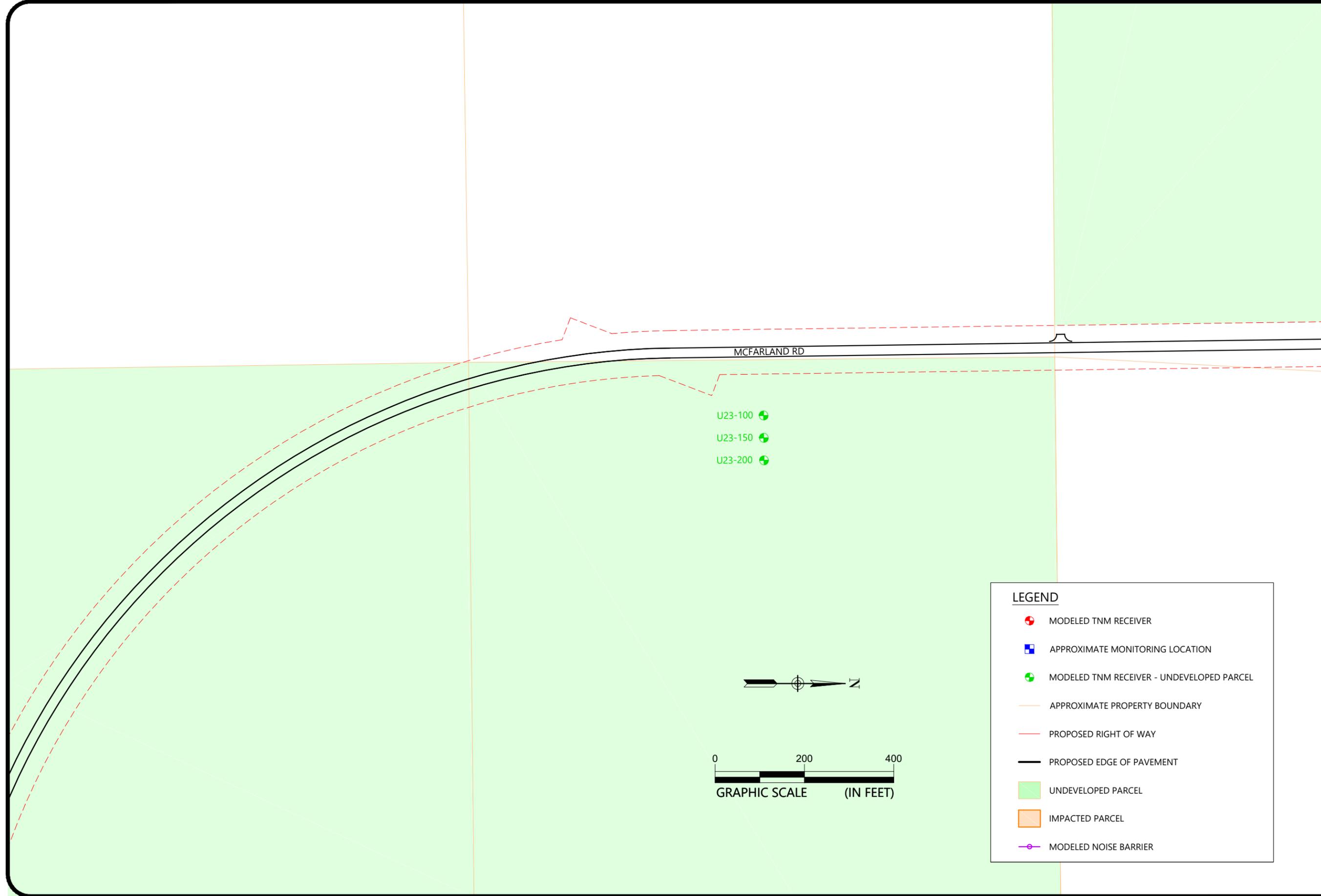
9/9/2021

PROJECT NUMBER

4482-20-038

FIGURE NO.

12



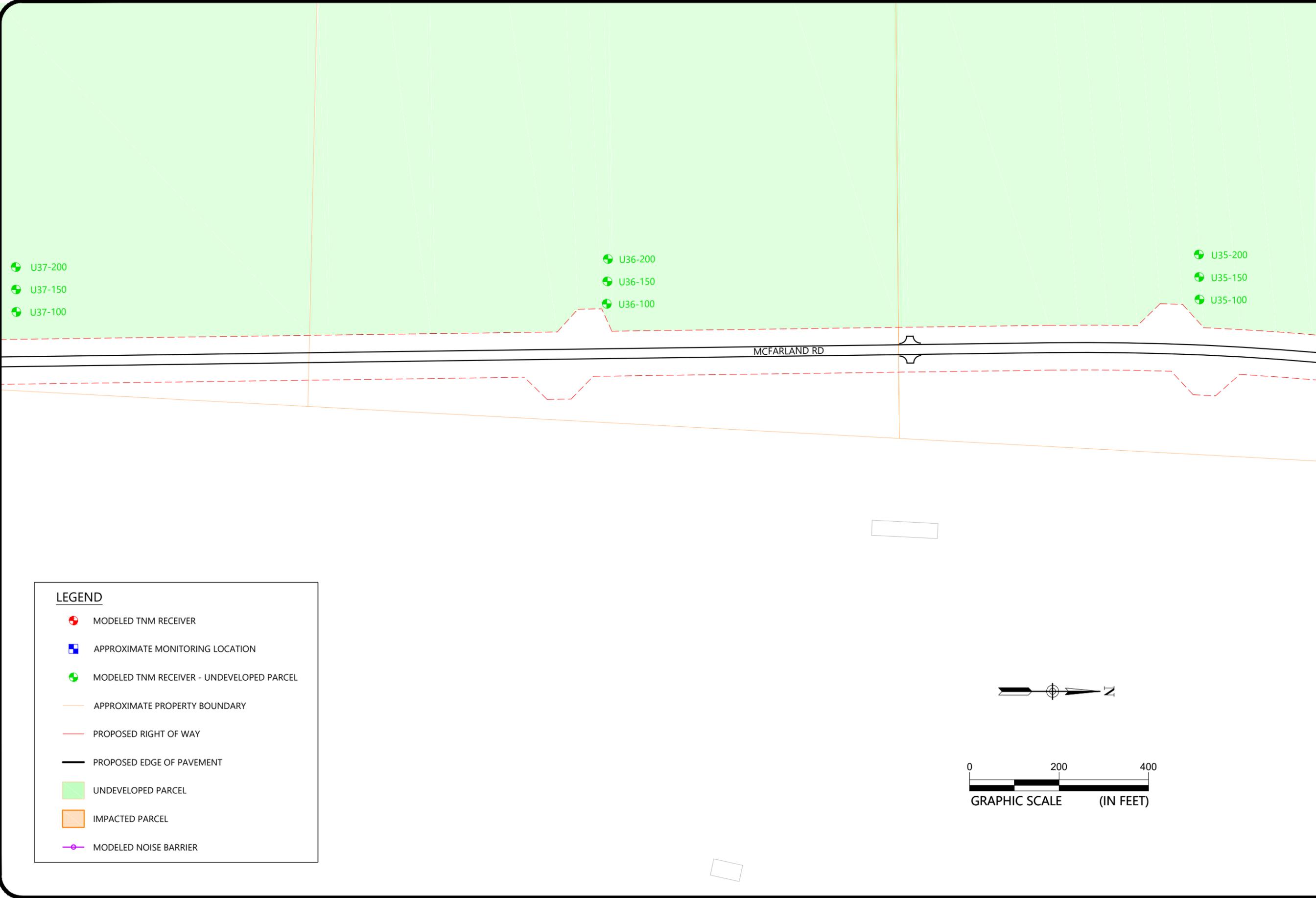
LEGEND

- MODELED TNM RECEIVER
- APPROXIMATE MONITORING LOCATION
- MODELED TNM RECEIVER - UNDEVELOPED PARCEL
- APPROXIMATE PROPERTY BOUNDARY
- PROPOSED RIGHT OF WAY
- PROPOSED EDGE OF PAVEMENT
- UNDEVELOPED PARCEL
- IMPACTED PARCEL
- MODELED NOISE BARRIER



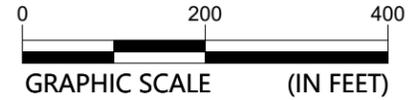
RECEPTOR LOCATION PLAN - ALTERNATIVE 2

MCFARLAND ROAD EXTENSION
MOBILE COUNTY, ALABAMA
ALDOT PROJECT NO. STPMB-4918(250)



LEGEND

- MODELED TNM RECEIVER
- APPROXIMATE MONITORING LOCATION
- MODELED TNM RECEIVER - UNDEVELOPED PARCEL
- APPROXIMATE PROPERTY BOUNDARY
- PROPOSED RIGHT OF WAY
- PROPOSED EDGE OF PAVEMENT
- UNDEVELOPED PARCEL
- IMPACTED PARCEL
- MODELED NOISE BARRIER



SCALE:

1:200

DATE:

9/9/2021

PROJECT NUMBER

4482-20-038

FIGURE NO.

13



RECEPTOR LOCATION PLAN - ALTERNATIVE 2

MCFARLAND ROAD EXTENSION
MOBILE COUNTY, ALABAMA
ALDOT PROJECT NO. STPMB-4918(250)

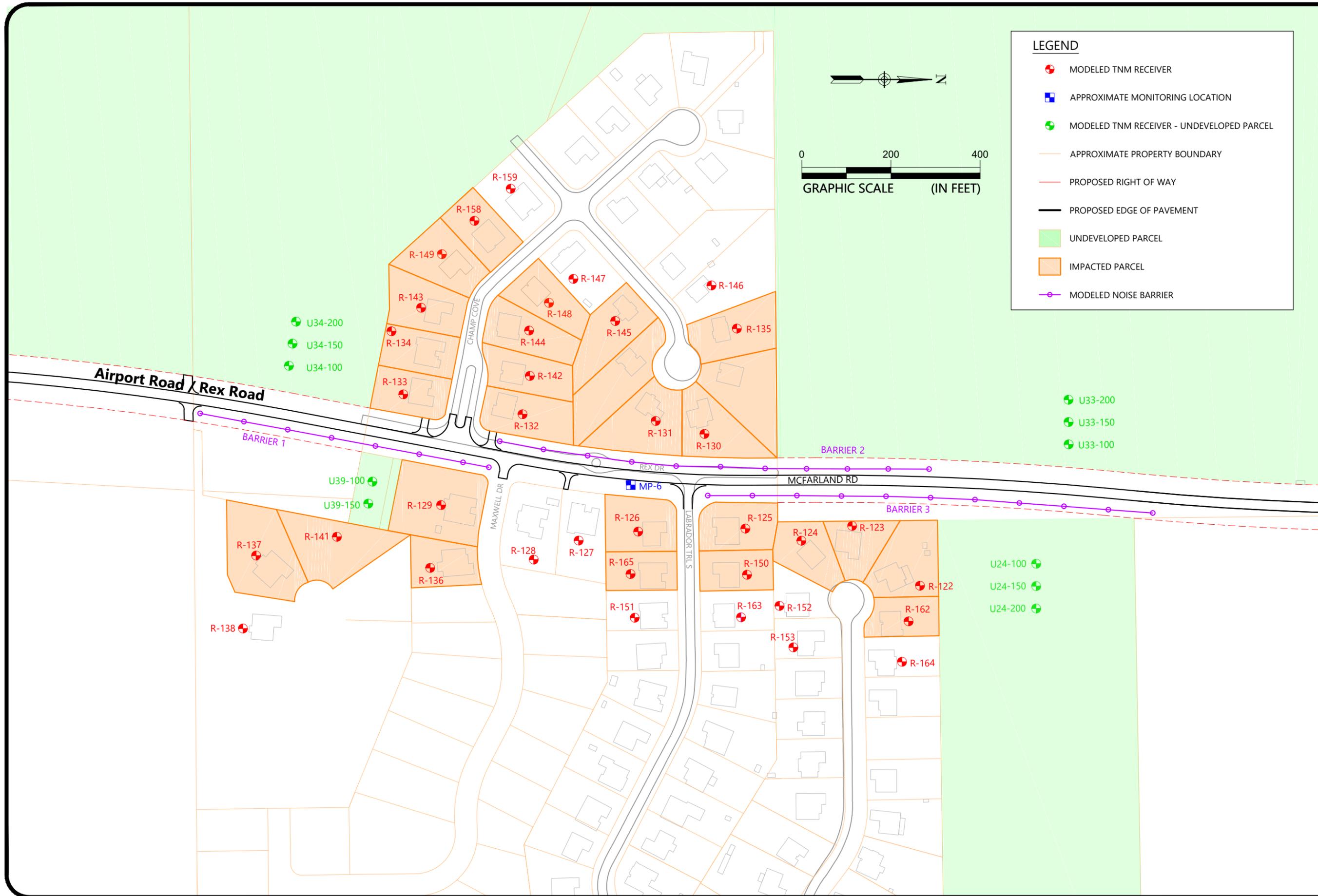
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DATE:
9/9/2021

PROJECT NUMBER
4482-20-038

FIGURE NO.

14





RECEPTOR LOCATION PLAN - ALTERNATIVE 2

MCFARLAND ROAD EXTENSION
MOBILE COUNTY, ALABAMA
ALDOT PROJECT NO. STPMB-4918(250)

SCALE:
1:200

DATE:
9/9/2021

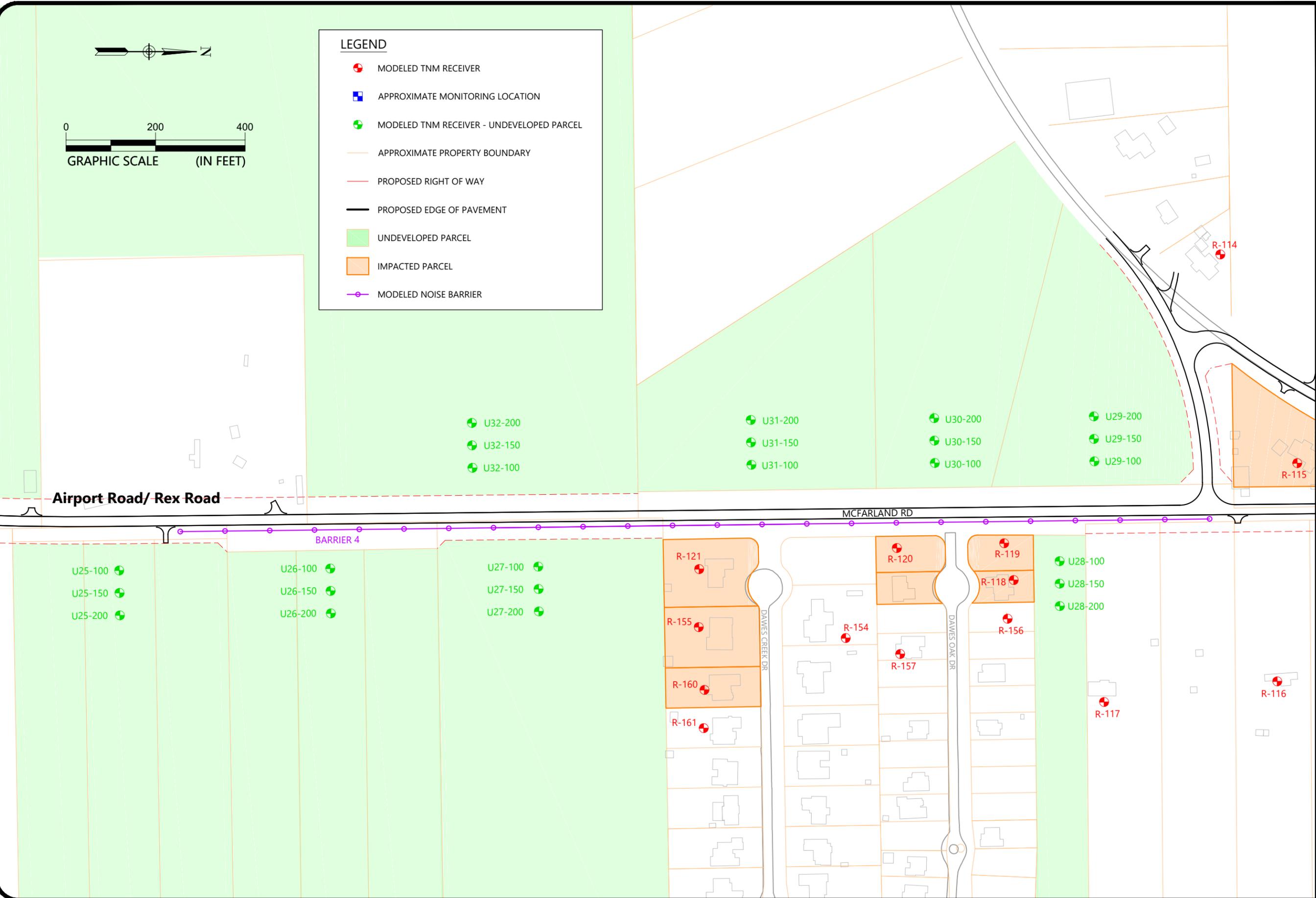
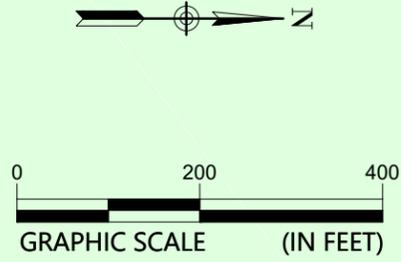
PROJECT NUMBER
4482-20-038

FIGURE NO.

15

LEGEND

- MODELED TNM RECEIVER
- APPROXIMATE MONITORING LOCATION
- MODELED TNM RECEIVER - UNDEVELOPED PARCEL
- APPROXIMATE PROPERTY BOUNDARY
- PROPOSED RIGHT OF WAY
- PROPOSED EDGE OF PAVEMENT
- UNDEVELOPED PARCEL
- IMPACTED PARCEL
- MODELED NOISE BARRIER





RECEPTOR LOCATION PLAN - ALTERNATIVE 2

MCFARLAND ROAD EXTENSION
MOBILE COUNTY, ALABAMA
ALDOT PROJECT NO. STPMB-4918(250)

SCALE:

1:200

DATE:

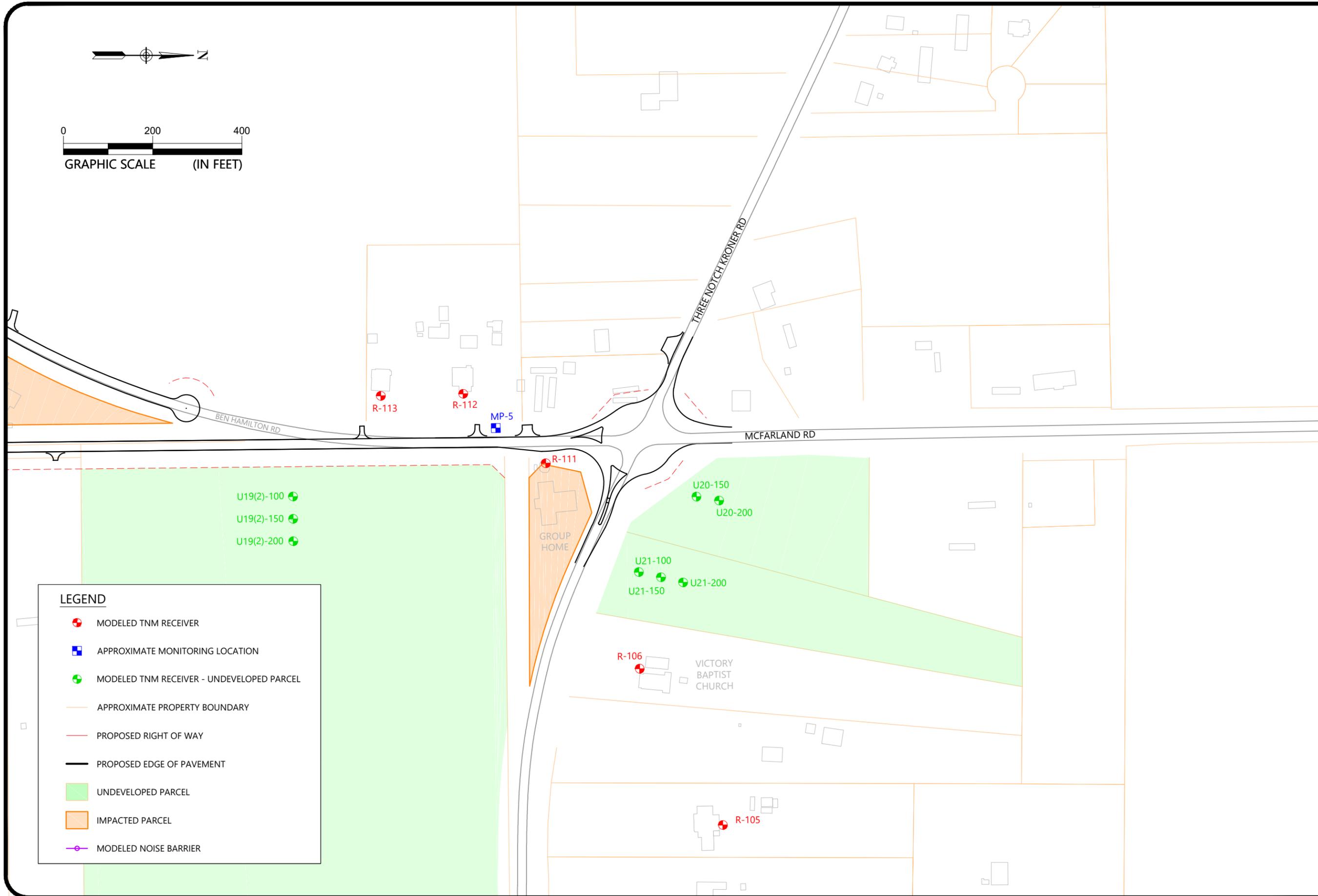
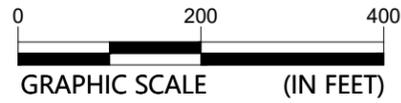
9/9/2021

PROJECT NUMBER

4482-20-038

FIGURE NO.

16



LEGEND

- MODELED TNM RECEIVER
- APPROXIMATE MONITORING LOCATION
- MODELED TNM RECEIVER - UNDEVELOPED PARCEL
- APPROXIMATE PROPERTY BOUNDARY
- PROPOSED RIGHT OF WAY
- PROPOSED EDGE OF PAVEMENT
- UNDEVELOPED PARCEL
- IMPACTED PARCEL
- MODELED NOISE BARRIER

Appendix II – Provided Traffic Data

Three Notch

11,881 (2019) $K=9$
21,096 (2045 NB) $D=70$
23,611 (2045 A1) $T=4\%$
17,692 (2045 A2)

McFarland
14,030 (2045 A2)
 $K=9$
 $D=60$
 $T=4\%$

McDonald Rd

8,891 (2019) $K=8$
15,655 (2045 NB) $D=58$
22,790 (2045 A1) $T=4\%$
9,765 (2045 A2)

Numbers shown are ADTs

NB - No Build

A1 - Widening of McDonald + Three Notch

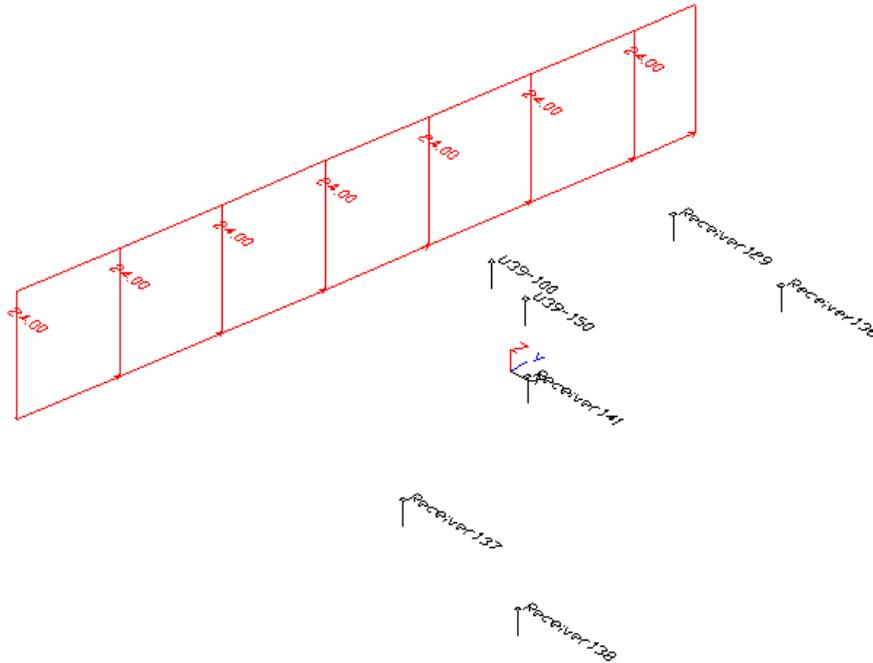
A2 - McFarland + widening of Three Notch

Appendix III – Barrier Analyses

BARRIER 1: MAX HEIGHT

RECEPTOR	EXISTING VALUE	2045 BUILD	INCREASE	IMPACT?	DWELLING UNITS	WITH BARRIER	REDUCTION	≥5 dB AND IMPACT	≥5 dB BENEFIT?	≥10 dB BENEFIT?
Receiver138	32	45	13	NO	1	43	2	NO	NO	NO
Receiver137	31	52	21	YES	1	47	5	YES	YES	NO
Receiver141	36	55	19	YES	1	48	7	YES	YES	NO
U39-150										
Receiver136	34	49	15	YES	1	46	3	NO	NO	NO
Receiver129	34	54	20	YES	1	44	10	YES	YES	NO
U39-100										

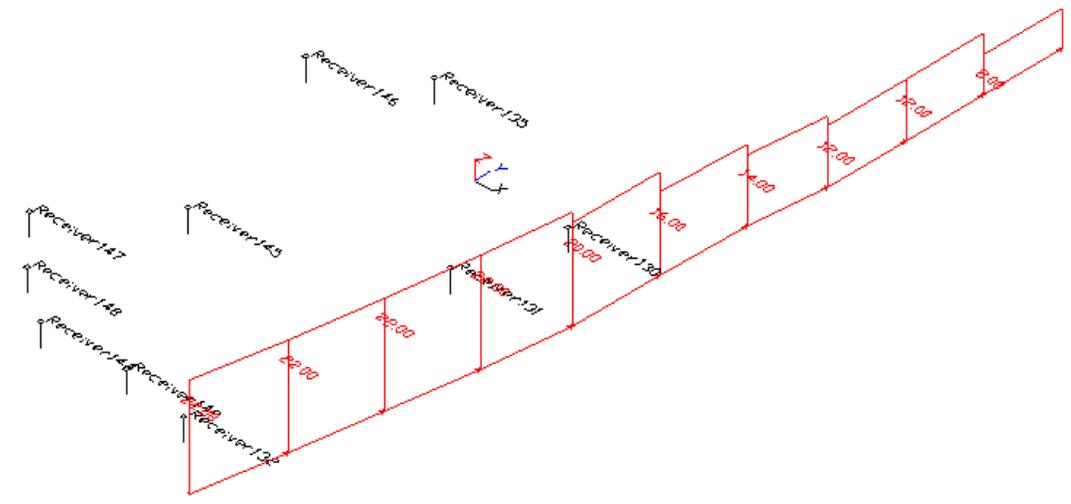
Barrier Area (sf)	15,817
Total Cost of Barrier	\$ 474,510
Impacted Dwelling Units	4
Benefited Impacted Dwelling Units	3
Percent Benefited of Impacted	75%
Benefited Dwelling Units (≥5 db)	3
Cost Per Benefited Dwelling Unit	\$ 158,170
Benefited Dwelling Units (≥10 db)	1
Percent of Benefited ≥10 db	33%



BARRIER 2: 22-22-22-20-18-16-14-12-12-8

RECEPTOR	EXISTING VALUE	2045 BUILD	INCREASE	IMPACT?	DWELLING UNITS	WITH BARRIER	REDUCTION	≥5 dB AND IMPACT	≥5 dB BENEFIT?	≥10 dB BENEFIT?
Receiver146	34	47	13	NO	1	44	3	NO	NO	NO
Receiver135	34	49	15	YES	2	46	3	NO	NO	NO
Receiver130	44	63	18	YES	1	52	11	YES	YES	YES
Receiver131	43	61	18	YES	1	50	10	YES	YES	YES
Receiver145	34	50	16	YES	2	45	5	YES	YES	NO
Receiver147	34	48	14	NO	1	42	6	NO	YES	NO
Receiver148	34	49	15	YES	1	43	6	YES	YES	NO
Receiver144	35	51	16	YES	1	45	6	YES	YES	NO
Receiver142	37	55	18	YES	1	45	10	YES	YES	YES
Receiver132	43	62	19	YES	1	55	7	YES	YES	NO

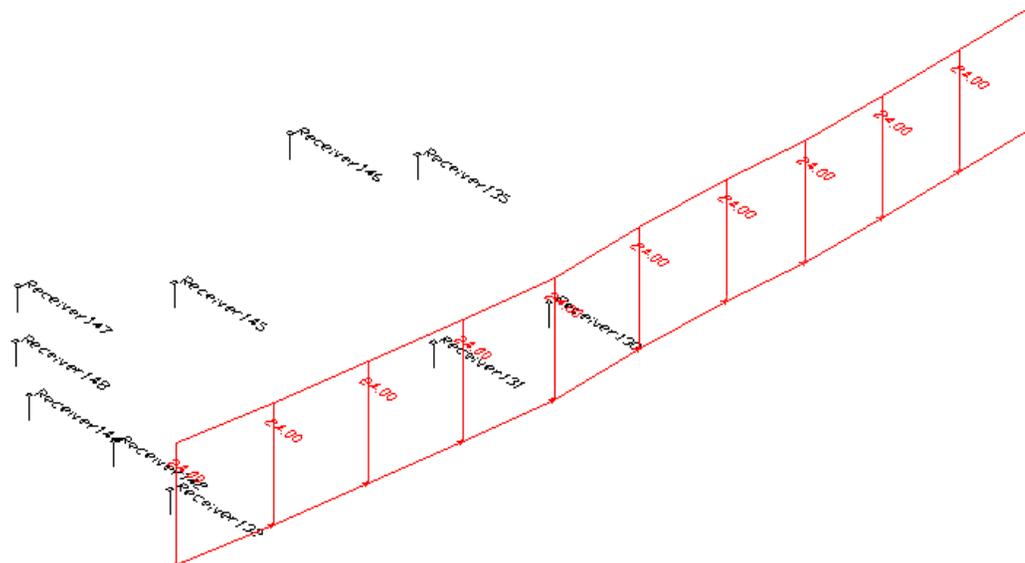
Barrier Area (sf)	16,234
Total Cost of Barrier	\$ 487,020
Impacted Dwelling Units	10
Benefited Impacted Dwelling Units	8
Percent Benefited of Impacted	80%
Benefited Dwelling Units (≥5 db)	9
Cost Per Benefited Dwelling Unit	\$ 54,113
Benefited Dwelling Units (≥10 db)	3
Percent of Benefited ≥10 db	33%



BARRIER 2: MAX HEIGHT

RECEPTOR	EXISTING VALUE	2045 BUILD	INCREASE	IMPACT?	DWELLING UNITS	WITH BARRIER	REDUCTION	≥5 dB BENEFIT AND IMPACT	≥5 dB BENEFIT?	≥10 dB BENEFIT?
Receiver146	34	47	13	NO	1	43	4	NO	NO	NO
Receiver135	34	49	15	YES	2	44	5	NO	NO	NO
Receiver130	44	63	18	YES	1	50	12	YES	YES	YES
Receiver131	43	61	18	YES	1	49	12	YES	YES	YES
Receiver145	34	50	16	YES	2	44	6	YES	YES	NO
Receiver147	34	48	14	NO	1	42	6	NO	YES	NO
Receiver148	34	49	15	YES	1	42	7	YES	YES	NO
Receiver144	35	51	16	YES	1	44	6	YES	YES	NO
Receiver142	37	55	18	YES	1	45	11	YES	YES	YES
Receiver132	43	62	19	YES	1	55	7	YES	YES	NO

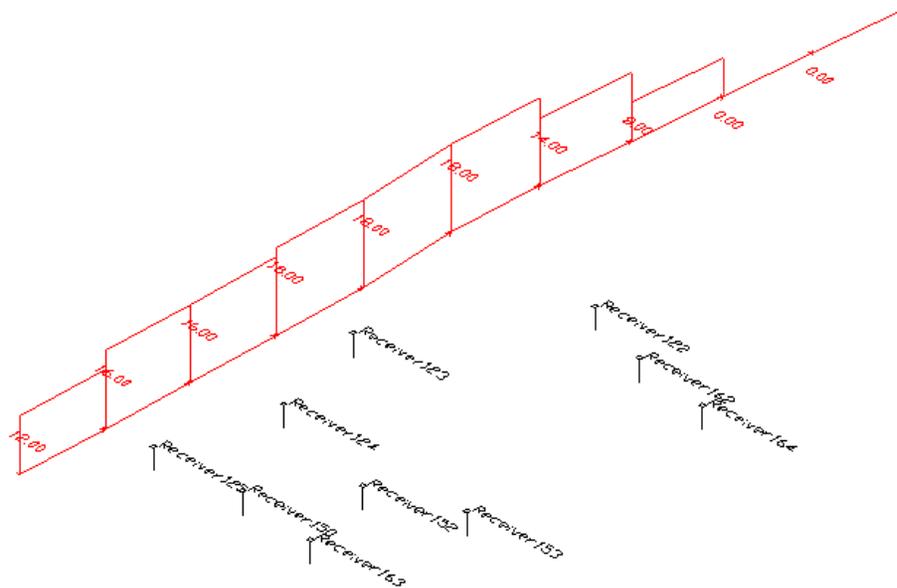
Barrier Area (sf)	23,231
Total Cost of Barrier	\$ 696,930
Impacted Dwelling Units	10
Benefited Impacted Dwelling Units	8
Percent Benefited of Impacted	80%
Benefited Dwelling Units (≥5 db)	9
Cost Per Benefited Dwelling Unit	\$ 77,437
Benefited Dwelling Units (≥10 db)	3
Percent of Benefited ≥10 db	33%



BARRIER 3: 12-16-16-18-18-18-14-8-0-0

RECEPTOR	EXISTING VALUE	2045 BUILD	INCREASE	IMPACT?	DWELLING UNITS	WITH BARRIER	REDUCTION	≥5 dB BENEFIT AND IMPACT	≥5 dB BENEFIT?	≥10 dB BENEFIT?
Receiver122	36	54	19	YES	1	49	5	YES	YES	NO
Receiver162	36	51	15	YES	1	48	3	NO	NO	NO
Receiver164	36	49	13	NO	1	47	2	NO	NO	NO
Receiver123	36	62	26	YES	1	53	9	YES	YES	NO
Receiver124	38	60	22	YES	1	51	8	YES	YES	NO
Receiver153	37	45	8	NO	2	43	2	NO	NO	NO
Receiver152	37	50	14	NO	1	45	5	NO	NO	NO
Receiver163	36	49	13	NO	1	43	6	NO	YES	NO
Receiver150	34	53	19	YES	1	46	7	YES	YES	NO
Receiver125	38	60	22	YES	1	51	9	YES	YES	NO

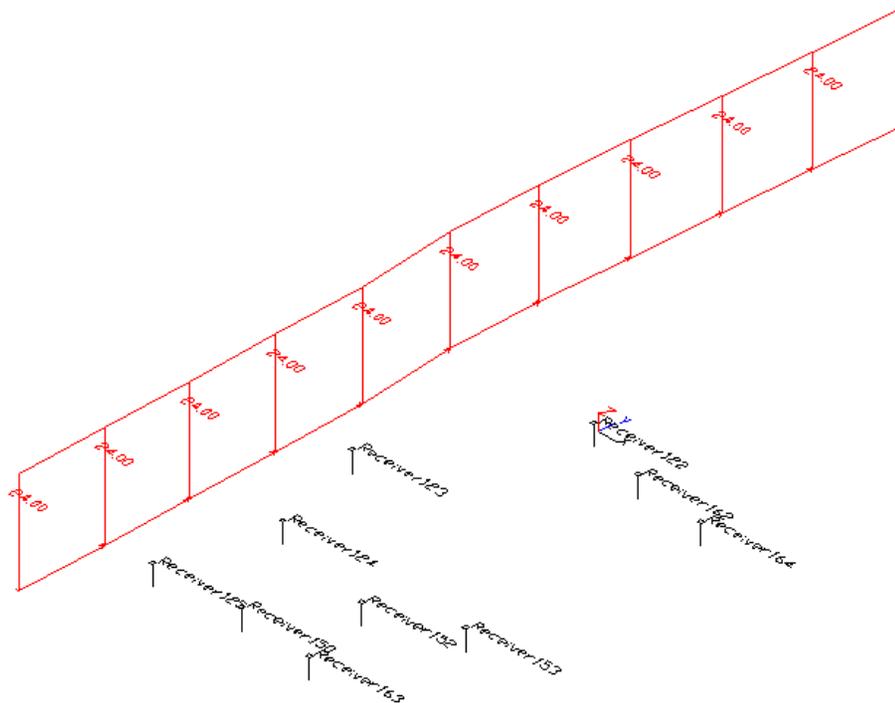
Barrier Area (sf)	12,000
Total Cost of Barrier	\$ 360,000
Impacted Dwelling Units	6
Benefited Impacted Dwelling Units	5
Percent Benefited of Impacted	83%
Benefited Dwelling Units (≥5 db)	6
Cost Per Benefited Dwelling Unit	\$ 60,000
Benefited Dwelling Units (≥10 db)	0
Percent of Benefited ≥10 db	0%



BARRIER 3: MAX HEIGHT

RECEPTOR	EXISTING VALUE	2045 BUILD	INCREASE	IMPACT?	DWELLING UNITS	WITH BARRIER	REDUCTION	≥5 dB BENEFIT AND IMPACT	≥5 dB BENEFIT?	≥10 dB BENEFIT?
Receiver122	36	54	19	YES	1	47	8	YES	YES	NO
Receiver162	36	51	15	YES	1	46	5	YES	YES	NO
Receiver164	36	49	13	NO	1	45	5	NO	NO	NO
Receiver123	36	62	26	YES	1	51	11	YES	YES	YES
Receiver124	38	60	22	YES	1	49	10	YES	YES	YES
Receiver153	37	45	8	NO	2	42	3	NO	NO	NO
Receiver152	37	50	14	NO	1	44	7	NO	YES	NO
Receiver163	36	49	13	NO	1	42	7	NO	YES	NO
Receiver150	34	53	19	YES	1	44	10	YES	YES	NO
Receiver125	38	60	22	YES	1	48	12	YES	YES	YES

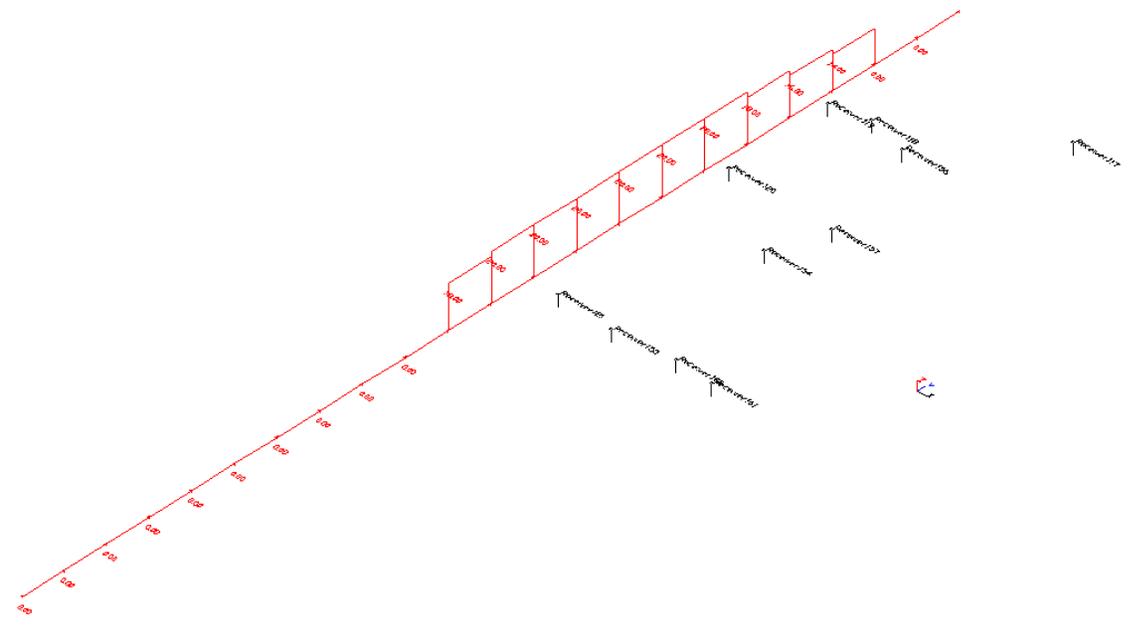
Barrier Area (sf)	24,000
Total Cost of Barrier	\$ 720,000
Impacted Dwelling Units	6
Benefited Impacted Dwelling Units	6
Percent Benefited of Impacted	100%
Benefited Dwelling Units (≥5 db)	8
Cost Per Benefited Dwelling Unit	\$ 90,000
Benefited Dwelling Units (≥10 db)	3
Percent of Benefited ≥10 db	38%



BARRIER 4: 0-0-0-0-0-0-0-0-0-0-12-18-20-20-20-20-20-18-16-14-0-0

RECEPTOR	EXISTING VALUE	2045 BUILD	INCREASE	IMPACT?	DWELLING UNITS	WITH BARRIER	REDUCTION	≥5 dB BENEFIT AND IMPACT	≥5 dB BENEFIT?	≥10 dB BENEFIT?
Receiver161	34	47	14	NO	2	46	1	NO	NO	NO
Receiver160	32	49	17	YES	1	47	2	NO	NO	NO
Receiver155	32	53	21	YES	1	50	3	NO	NO	NO
Receiver121	34	60	26	YES	1	53	7	YES	YES	NO
Receiver154	38	52	14	NO	2	46	6	NO	YES	NO
Receiver120	40	65	25	YES	1	53	12	YES	YES	YES
Receiver119	41	66	25	YES	1	56	10	YES	YES	YES
Receiver118	41	58	17	YES	2	53	5	YES	YES	NO
Receiver156	41	52	11	NO	2	50	2	NO	NO	NO
Receiver117	41	46	5	NO	1	45	1	NO	NO	NO
Receiver116	42	45	3	NO	1	45	0	NO	NO	NO
Receiver157	35	41	6	NO	2	40	0	NO	NO	NO

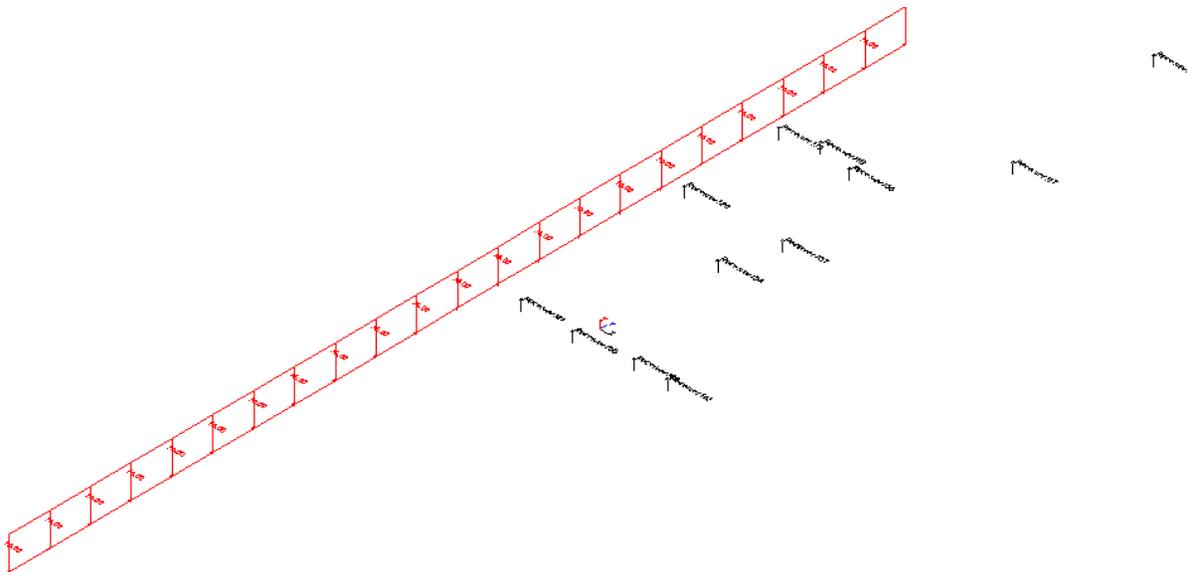
Barrier Area (sf)	17,800
Total Cost of Barrier	\$ 534,000
Impacted Dwelling Units	7
Benefited Impacted Dwelling Units	5
Percent Benefited of Impacted	71%
Benefited Dwelling Units (≥5 db)	7
Cost Per Benefited Dwelling Unit	\$ 76,286
Benefited Dwelling Units (≥10 db)	2
Percent of Benefited ≥10 db	29%



BARRIER 4: MAX HEIGHT

RECEPTOR	EXISTING VALUE	2045 BUILD	INCREASE	IMPACT?	DWELLING UNITS	WITH BARRIER	REDUCTION	≥5 dB BENEFIT AND IMPACT	≥5 dB BENEFIT?	≥10 dB BENEFIT?
Receiver161	34	47	14	NO	2	42	5	NO	YES	NO
Receiver160	32	49	17	YES	1	43	6	YES	YES	NO
Receiver155	32	53	21	YES	1	46	7	YES	YES	NO
Receiver121	34	60	26	YES	1	49	11	YES	YES	YES
Receiver154	38	52	14	NO	2	45	7	NO	YES	NO
Receiver120	40	65	25	YES	1	53	12	YES	YES	YES
Receiver119	41	66	25	YES	1	54	12	YES	YES	YES
Receiver118	41	58	17	YES	2	50	8	YES	YES	NO
Receiver156	41	52	11	NO	2	48	4	NO	NO	NO
Receiver117	41	46	5	NO	1	45	1	NO	NO	NO
Receiver116	42	45	3	NO	1	45	0	NO	NO	NO
Receiver157	35	41	6	NO	2	39	1	NO	NO	NO

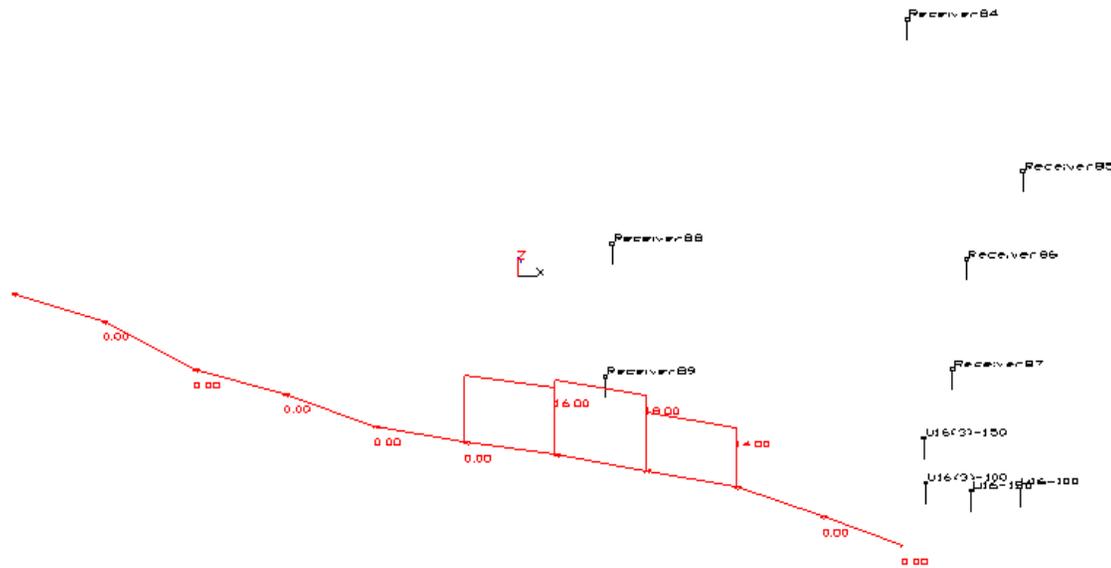
Barrier Area (sf)	35,200
Total Cost of Barrier	\$ 1,056,000
Impacted Dwelling Units	7
Benefited Impacted Dwelling Units	7
Percent Benefited of Impacted	100%
Benefited Dwelling Units (≥5 db)	11
Cost Per Benefited Dwelling Unit	\$ 96,000
Benefited Dwelling Units (≥10 db)	3
Percent of Benefited ≥10 db	27%



BARRIER 5: 0-0-14-18-16-0-0-0-0

RECEPTOR	EXISTING VALUE	2045 BUILD	INCREASE	IMPACT?	DWELLING UNITS	WITH BARRIER	REDUCTION	≥5 dB BENEFIT AND IMPACT	≥5 dB BENEFIT?	≥10 dB BENEFIT?
U16-100										
U16-150										
U16(3)-100										
U16(3)-150										
Receiver87	52	59	7	NO	1	58	0	NO	NO	NO
Receiver89	45	62	17	YES	1	57	5	YES	YES	NO
Receiver88	42	54	12	NO	1	53	1	NO	NO	NO
Receiver86	55	57	2	NO	1	56	0	NO	NO	NO
Receiver85	56	57	1	NO	1	57	0	NO	NO	NO
Receiver84	52	53	1	NO	1	53	0	NO	NO	NO

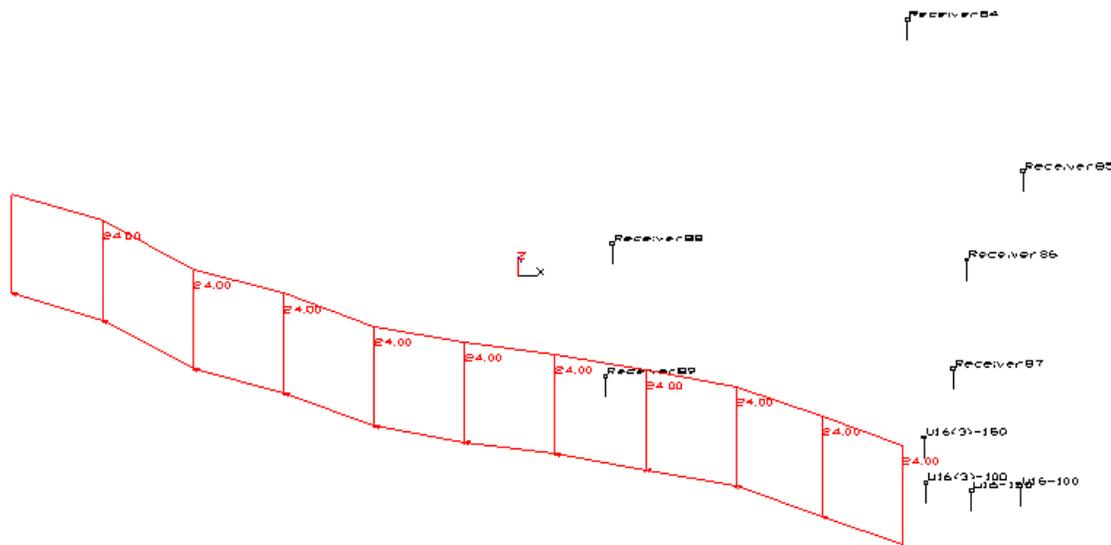
Barrier Area (sf)	4,801
Total Cost of Barrier	\$ 144,030
Impacted Dwelling Units	1
Benefited Impacted Dwelling Units	1
Percent Benefited of Impacted	100%
Benefited Dwelling Units (≥5 db)	1
Cost Per Benefited Dwelling Unit	\$ 144,030
Benefited Dwelling Units (≥10 db)	0
Percent of Benefited ≥10 db	0%



BARRIER 5: MAX HEIGHT

RECEPTOR	EXISTING VALUE	2045 BUILD	INCREASE	IMPACT?	DWELLING UNITS	WITH BARRIER	REDUCTION	≥5 dB BENEFIT AND IMPACT	≥5 dB BENEFIT?	≥10 dB BENEFIT?
U16-100										
U16-150										
U16(3)-100										
U16(3)-150										
Receiver87	52	59	7	NO	1	57	2	NO	NO	NO
Receiver89	45	62	17	YES	1	51	11	YES	YES	YES
Receiver88	42	54	12	NO	1	49	5	NO	YES	NO
Receiver86	55	57	2	NO	1	56	1	NO	NO	NO
Receiver85	56	57	1	NO	1	57	0	NO	NO	NO
Receiver84	52	53	1	NO	1	53	0	NO	NO	NO

Barrier Area (sf)	23,999
Total Cost of Barrier	\$ 719,970
Impacted Dwelling Units	1
Benefited Impacted Dwelling Units	1
Percent Benefited of Impacted	100%
Benefited Dwelling Units (≥5 db)	2
Cost Per Benefited Dwelling Unit	\$ 359,985
Benefited Dwelling Units (≥10 db)	1
Percent of Benefited ≥10 db	50%



Appendix H

Hazardous Materials



Kay Ivey
Governor

ALABAMA DEPARTMENT OF TRANSPORTATION

1409 Coliseum Boulevard, Montgomery, Alabama 36130-3050

Bureau of Materials and Tests

3700 Fairground Road, Montgomery, Alabama 36110

Phone (334) 206-2200 FAX (334) 264-6263



John R. Cooper
Transportation Director

October 5, 2022

Ms. Natasha Clay
ALDOT Design Bureau
1409 Coliseum Boulevard
Montgomery, AL 36130

**RE: Clearance Letter, Project No. STPMB-4918(250)
New alignment of CR-25 (McFarland Road) from CR-28 (Old Pascagoula Road) to CR-358
(Three Notch Road) – Alternative 1 and Alternative 2
Mobile County**

Dear Ms. Clay:

Information received from your office on January 5, 2022 identified eleven (11) potentially hazardous material sites on the above referenced project. An additional site was identified during the investigation for a total of twelve (12) sites. The project is being evaluated for two alternatives, with eleven (11) of the sites being within or near the project limits of Alternative 1 and five (5) of the sites being within or near the project limits of Alternative 2. Personnel from the Bureau of Materials and Tests Environmental Services Section visited the project area on February 17, 2022 and determined that one (1) of the sites along this project would warrant further investigation. A preliminary investigation was performed on Site #2 with our consultant Southern Earth Sciences (SES) on July 21, 2022. The following are the results of the investigation:

Site #1 – Vancleave Automotive – (Alternative 1 – 5019 McDonald Road)

This site is currently operating as an automobile repair shop and is located within the project limits of Alternative 1. There were no underground storage tanks (USTs) identified at this site. The most recent right-of-way (ROW) maps received show that additional ROW will not be acquired from this site; therefore, no further investigation was warranted. Based on all available information, there should not be any hazardous material problems at this site. **Based on the above referenced information, this site is environmentally cleared for construction with no known environmental remediation costs.**

Site #2 – Former Kevin's Quick Pack/Shop & Save – (Alternative 1 – 8483 Three Notch Road)

This site is currently abandoned but previously operated as a service station and automobile repair shop and is located within the project limits of Alternative 1. The building, fuel dispensers and the dispenser island have been removed but the building slab remains in place. The most recent ROW maps received show that additional ROW will be acquired from this site for Alternative 1. There were two (2) USTs identified at this site. A total of six (6) borings were advanced at this site, with each boring being advanced to a depth of 12' below ground surface (bgs). The boring locations can be seen in Figure 2 in SES's *Preliminary Investigation* report. Soil samples were taken at 4' intervals for a total of eighteen (18) samples. Each soil sample was analyzed for total petroleum hydrocarbons (TPH),

benzene, toluene, ethylbenzene and total xylenes (BTEX), methyl tertiary-butyl ether (MTBE), naphthalene and Resource Conservation and Recovery Act (RCRA) metals. The results can be seen in Tables 1, 2 and 3 of the report. Groundwater was not encountered in any of the borings. The results show that several of the samples had concentrations of TPH which were above the detectable limits but were below ADEM's corrective action limit of 100 parts per million (ppm) for TPH. The concentrations of BTEX, MTBE and naphthalene in each sample were below the detectable limits and below the Environmental Protection Agency's (EPA's) Regional Screening Levels (RSLs). Several of the samples showed detectable concentrations of metals, all of which fell below their respective RSLs, except for arsenic and chromium which showed detectable concentrations in several samples but at levels within the range of naturally occurring concentrations.

A complete "Underground Storage Tank Closure Site Assessment" will be required to ensure the USTs and any contaminated soil is removed properly. The tanks are believed to be located on the northwest corner of the property beneath the former dispenser island. Please see the following cost estimate for the required closure:

**Bureau of Materials and Tests, Environmental Services Section:
Professional Services (Provided under current contracts)**

Description of Service	Amount
Provide professional services for the collection and analytical testing for all soil/groundwater samples required during removal/closure activities.	\$12,500.00
Provide professional services for the completion and submittal of the "Underground Storage Tank Closure Site Assessment" to the ADEM.	\$7,500.00

Total: \$20,000.00

General Contractor:

In Accordance with the "Standard Specifications for Highway Construction, 2022 Edition" Section 250 "Removal of Underground Storage Tanks and Contaminated Soil"

Description of Service	Quantity	Unit Amount	Total Amount
Provide services for pumping/disposal of any contents in the tank prior to removal. (SECTION 250.03(c))	500 gallons	\$5.00/gallon	\$2,500.00
Provide services for the excavation/disposal of petroleum contaminated soil. (SECTION 250.03(d))	40 yd ³	\$150/yd ³	\$6,000.00
Provide services for the removal/disposal of the UST. (SECTION 250.03(e))	2	\$5,000.00	\$10,000.00

Please note that the contractor shall follow SECTION 250.03(b) when notifying either the engineer or the Environmental Services Engineer, at (334) 206-2278, prior to the commencement of closure activities to ensure appropriate personnel are on site

Total: \$18,500.00

Again, it is the Bureau of Materials and Tests, Environmental Services Section's recommendation that a complete "Underground Storage Tank Closure Site Assessment", per the ADEM's standards, be conducted at this site, with an estimated total cost of **\$20,000.00**.

Based on the above referenced information, this site is environmentally cleared for construction with an environmental remediation cost of \$38,500.00.

Site #3 – Corner Quick Shop – (Alternative 1 – 4863 Gold Mine Road E)

This site is currently operating as a service station and is located within the project limits of Alternative 1. There were three (3) USTs identified at this site. The site does not appear on ADEM's list of leaking USTs. The most recent ROW maps received show that additional ROW will be acquired from this site. The amount of ROW to be acquired is minimal and is not located near the facility, USTs, or dispenser islands; therefore, no further investigation was warranted. Based on all available information, there should not be any hazardous material problems at this site. **Based on the above referenced information, this site is environmentally cleared for construction with no known environmental remediation costs.**

Site #4 – William Brownlee Residence – (Alternative 1 – 5013 Langham Place)

This site currently contains a private residence and is located near the project limits of Alternative 1. The site was identified in the Resource Conservation and Recovery Act (RCRA) database as a NonGen/NLR site, indicating that the site may have been used in the past to generate, store, treat or transport hazardous waste. There were no USTs or other hazardous material indicators identified at this site. The most recent ROW maps received show that additional ROW will not be acquired from this site; therefore, no further investigation was warranted. Based on all available information, there should not be any hazardous material problems at this site. **Based on the above referenced information, this site is environmentally cleared for construction with no known environmental remediation costs.**

Site #5 – Gulf South Pipeline – (Alternative 2 – 30°34'57.86"N 88°15'28.99"W)

This site currently contains a natural gas pipeline compressor station and is located within the project limits of Alternative 2. The most recent ROW maps received show that additional ROW will not be acquired from this site; therefore, no further investigation was warranted. Based on all available information, there should not be any hazardous material problems at this site. **Based on the above referenced information, this site is environmentally cleared for construction with no known environmental remediation costs.**

Site #6 – Crown Automotive – (Alternative 1 – 540 Churchil Down)

This site is currently operating as an automobile repair shop and is located near the project limits of Alternative 1. There were no USTs identified at this site. The site was identified in the RCRA database as a Conditionally Exempt Small Quantity Generator. The most recent ROW maps received show that additional ROW will not be acquired from this site; therefore, no further investigation was warranted. Based on all available information, there should not be any hazardous material problems at this site. **Based on the above referenced information, this site is environmentally cleared for construction with no known environmental remediation costs.**

Site #7 – Farm Flying Service – (Alternative 1 – 8409 Robert Jefferson)

This site currently contains a residence which is associated with an aerial crop-dusting business and is located near the project limits of Alternative 1. There were no USTs or other hazardous material indicators identified at the site. The most recent ROW maps received show that additional ROW will not be acquired from this site; therefore, no further investigation was warranted. Based on all available information, there should not be any hazardous material problems at this site. **Based on the above referenced information, this site is environmentally cleared for construction with no known environmental remediation costs.**

Site #8 – Three Notch Union #76 – (Alternative 1 – 6650 Lake Helen Drive)

This site currently contains a residence which is associated with an automobile repair shop and is located near the project limits of Alternative 1. There were no USTs or other hazardous material indicators identified at the site. The most recent ROW maps received show that additional ROW will not be acquired from this site; therefore, no further investigation was warranted. Based on all available

information, there should not be any hazardous material problems at this site. **Based on the above referenced information, this site is environmentally cleared for construction with no known environmental remediation costs.**

Site #9 – Circle K #7737 – (Alternative 1 & 2 – 8510 Old Pascagoula Road)

This site is currently operating as a service station and is located within the project limits of Alternative 1 and 2. There were two (2) USTs identified at this site. The site does not appear on ADEM's list of leaking USTs. A subsurface investigation was previously performed at this site as part of another project, STPMB-7612(600). The results of the previous investigation showed no environmental remediation costs for the site. The most recent ROW maps received show that additional ROW will not be acquired from this site; therefore, no further investigation was warranted. Based on all available information, there should not be any hazardous material problems at this site. **Based on the above referenced information, this site is environmentally cleared for construction with no known environmental remediation costs.**

Site #10 – Doug's Quick Mart #2 – (Alternative 1 & 2 – 8501 Old Pascagoula Road)

This site is currently operating as a service station and is located near the project limits of Alternative 1 and 2. There were three (3) USTs identified at this site. The site does not appear on ADEM's list of leaking USTs. The most recent ROW maps received show that additional ROW will not be acquired from this site; therefore, no further investigation was warranted. Based on all available information, there should not be any hazardous material problems at this site. **Based on the above referenced information, this site is environmentally cleared for construction with no known environmental remediation costs.**

Site #11 – Mobile County Public Works Camp 2 – (Alternative 1 & 2 – 4863 Gold Mine Road E)

This site is currently operating as a government facility for Mobile County and is located near the project limits of Alternative 1 and 2. There were two (2) USTs identified at this site. The site does appear on ADEM's list of leaking USTs for incidents reported in 1993 and 1996. Both incidents have been issued statuses of No Further Action by ADEM. The most recent ROW maps received show that additional ROW will not be acquired from this site; therefore, no further investigation was warranted. Based on all available information, there should not be any hazardous material problems at this site. **Based on the above referenced information, this site is environmentally cleared for construction with no known environmental remediation costs.**

Site #12 – Former Service Station – (Alternative 1 & 2 - 30°32'55.07"N 88°14'31.39"W)

This site is currently abandoned but formerly operated as a service station and is located within the project limits of Alternative 1 and 2. The site previously contained an above ground storage tank (AST) which was removed in the 1950s according to the owner. The building, fuel dispensers and the dispenser island have also been removed. The site does not appear on ADEM's list of leaking USTs and no USTs were identified at the site. A subsurface investigation was previously performed at this site as part of another project, STPMB-7612(600). The results of the previous investigation showed no environmental remediation cost for the site. The most recent ROW maps received show that additional ROW will not be acquired from this site; therefore, no further investigation was warranted. Based on all available information, there should not be any hazardous material problems at this site. **Based on the above referenced information, this site is environmentally cleared for construction with no known environmental remediation costs.**

Based on the above referenced information, this project is environmentally cleared for construction work with an associated environmental remediation cost for Alternative 1 of \$38,500.00 and no associated environmental remediation costs for Alternative 2.

If there is an alignment or design change, please contact this office for a re-evaluation of the project area. If you have any questions, please contact Austin Cowan at (334) 206-2211.

Sincerely,

Lawson Brown, P.E.
Environmental Services Engineer

By:  _____
Austin Cowan, P.E.
Assistant Environmental Services Engineer

LB/AC/dkg

cc: Mr. Matthew J. Ericksen P.E., Southwest Region Engineer
File



August 25, 2021

Neel-Schaffer, Inc.
850 E I-65 Service Road South, Suite 1000
Mobile, Alabama 36606

Attention: Mr. Brian Morgan, P.E.

Reference: **Report of Hazardous Materials Assessment
McFarland Road Extension**
Theodore, Mobile County, Alabama
S&ME Project No. 4482-20-038
ALDOT Project No. STPMB-4918(250)

Dear Mr. Morgan:

As requested, S&ME, Inc. (S&ME) has completed a hazardous materials assessment for the proposed project area in Theodore, Mobile County, Alabama. S&ME is assisting Neel-Schaffer to determine if potential hazardous materials sites are located within the proposed project right-of-way. The work was conducted in general conformance with the terms and conditions established in S&ME Proposal No. 44-20000234 Revision 1, dated September 25, 2020 and authorized via the Neel-Schaffer Subconsultant Agreement dated October 19, 2020.

◆ Project Information

The subject project consists of two alternatives. Alternative 1 will widen McDonald Road from Old Pascagoula Road to Three Notch-Kroner Road and Three Notch-Kroner Road to McFarland Road/Ben Hamilton Road. Alternative 2 will construct McFarland Road on a new alignment beginning at the intersection of Old Pascagoula Road and ending at the intersection of McFarland Road/Three Notch-Kroner Road. Alternative 1 is approximately 3.8 miles in length, and Alternative 2 is approximately 3.4 miles in length. The project site is located approximately 1 mile north of Interstate 10 in Theodore, Mobile County, Alabama (see Figure 1 in Attachment I). The alternatives evaluated for this project are shown on Figures 1 and 2 in Attachment I.

The project area consists of current right-of-way with parking lots, driveways, parking ingress and egress, and grassed land, as well as proposed right-of-way through agricultural land. Commercial properties, businesses, and residential development are located north, south, east, and west of the project area.

◆ Hazardous Materials Assessment

Elizabeth Bavis and Emily Kennedy with S&ME performed a reconnaissance of the proposed project area on January 26 to 28, 2021 to observe the current uses of property within and in close proximity to the proposed right-of-way. The majority of the Alternative 1 area is current right-of-way with parking lots, parking ingress and egress, driveway ingress and egress, and grassed land. Trash and discarded debris were observed along the current right-of-way. The majority of Alternative 2 is proposed right-of-way through undeveloped agricultural land. See Attachment II for Site Photographs.



In addition to the field reconnaissance, S&ME also reviewed selected federal and state regulatory lists in an attempt to identify recorded information concerning potential hazardous materials sites or environmental impacts within the proposed project area or in close proximity such that contamination could potentially impact the proposed project area. S&ME reviewed the regulatory lists as obtained from Environmental Data Resources (EDR).

Alabama Department of Transportation (ALDOT) Hazardous Materials Forms were completed following the guidelines set forth in the State of Alabama Highway Department Guidelines for Operation, Procedures for Handling Hazardous/Toxic Material Sites Involved with Highway Projects. ALDOT Hazardous Materials Forms are Attachment III of this letter.

Alternative 1 – Widening Along Existing Roads

The EDR report identified 12 regulated facilities at 10 locations within the vicinity of the proposed Alternative 1 project area. A site map showing the identified properties is included as Figure 2 in Attachment I. The EDR report titled “Corridor 1” includes a summary of facilities in the near vicinity of the project area and is included in Attachment IV.

Table 1 - EDR Facilities Located Within Alternative 1 Project ROW

Location No.	Facility	Location Direction & Distance	Record	Comment
1	Vancleave Automotive	5019 McDonald Road Portion of property within 100 feet of project right-of-way off McDonald Road	<ul style="list-style-type: none"> EDR Hist Auto 	EDR Historical Auto for 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, and 2008
9	Circle K #7737	8510 Old Pascagoula Road Portion of property within project right-of-way with tank hold approximately 95-feet from project boundary	<ul style="list-style-type: none"> UST Financial Assurance 	One 15,000-gallon unleaded gasoline tank installed 9/30/2008 One two-compartment 20,000-gallon premium gasoline and diesel gasoline tank installed on 9/30/2008
10	Doug’s Quick Mart #2	8501 Old Pascagoula Road Portion of property within project right-of-way with tank hold approximately 92-feet from project boundary	<ul style="list-style-type: none"> UST Financial Assurance 	One 8,000-gallon unleaded gasoline tank installed 1/1/1987 One 8,000-gallon premium gasoline tank installed 1/1/1987 One 8,000-gallon diesel gasoline tank installed 1/1/1987



Report of Hazardous Materials Assessment

McFarland Road Extension

Theodore, Mobile County, Alabama

S&ME Project No. 4482-20-038

ALDOT Project No. STPMB-4918(250)

Location No.	Facility	Location Direction & Distance	Record	Comment
10	Calfee Company Dalton Inc.	8501 Old Pascagoula Road Portion of property within project right-of-way with tank hold approximately 92-feet from project boundary	<ul style="list-style-type: none"> EDR Hist Auto 	EDR Historical Auto for 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, and 2014.

Table 2 - EDR Facilities Located Adjacent to or Outside of Alternative 1 Project ROW

Location No.	Facility	Location Direction & Distance	Record	Comment
2	Kevin's Quick Pack	8483 Three Notch Road* Adjacent to project right-of-way and down gradient	<ul style="list-style-type: none"> UST Financial Assurance 	Site is abandoned. Date of last inspection 2/7/2008. Two 8,000-gallon unleaded gasoline tank installed 1/1/1973.
2	Stop & Save	8483 Three Notch Road* Adjacent to project right-of-way and down gradient	<ul style="list-style-type: none"> EDR Hist Auto 	EDR Historical Auto for 1997, 1998, 2007, and 2008.
3	Corner Quick Shop	4863 Gold Mine Road E Adjacent to project right-of-way and down gradient	<ul style="list-style-type: none"> UST Financial Assurance 	One 12,000-gallon unleaded gasoline tank installed 4/1/1995 One 10,000-gallon premium gasoline tank installed 2/28/1996 One 10,000-gallon diesel gasoline tank installed 2/28/1996
4	William Brownlee Residence	5013 Langham Place Approximately 1,230 ft east of project right-of-way and down gradient	<ul style="list-style-type: none"> RCRA NonGen/NLR 	Not a generator. No violations reported.



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Theodore, Mobile County, Alabama

S&ME Project No. 4482-20-038

ALDOT Project No. STPMB-4918(250)

Location No.	Facility	Location Direction & Distance	Record	Comment
6	Crown Automotive	5400 Churchill Down Approximately 1,200 ft. west of project right-of-way and cross gradient	<ul style="list-style-type: none"> • RCRA-VSQG • FINDS • ECHO 	Conditionally exempt small quantity generator. No violations found. FINDS and ECHO Registry ID: 110003381046
7	Farm Flying Service	8409 Robert Jefferson Approximately 520 feet east from project right-of-way and down gradient	<ul style="list-style-type: none"> • SEMS-Archive 	EPA ID: ALD004319877 No violations reported.
8	Three Notch Union #76	6650 Lake Helen Drive Approximately 287 feet east of project right-of-way	<ul style="list-style-type: none"> • EDR Hist Auto 	EDR Historical Auto for 1989, 1990, 1991, 1992, and 1993
11	Mobile County Public Works Camp 2	7075 McDonald Road Approximately 1,700 feet southeast of project right-of-way and down gradient	<ul style="list-style-type: none"> • LUST 	Incident date March 1993. No Further Action Letter has been issued.

* Address is incorrect in EDR. Correct address was verified using Mobile County GIS parcel data and 2020 tax payment information.

Alternative 2 – Extension of McFarland Road on New Alignment

The EDR report identified 5 regulated facilities at 4 locations within the vicinity of the proposed Alternative 2 project area. A site map showing the identified properties is included as Figure 2 in Attachment I. The EDR report titled "Corridor 2" includes a summary of facilities in the near vicinity of the project area and is included in Attachment IV.



Table 3 - EDR Facilities Located Within Alternative 2 Project ROW

Location No.	Facility	Location Direction & Distance	Record	Comment
5	Gulf South Pipeline Company, LP	Airport Road Portion of property within 50 feet of project right-of-way	<ul style="list-style-type: none"> • ICIS • US AIRS • FINDS • ECHO 	ICIS Violation Found FINDS/ECHO/FRS Registry ID: 110030490038
9	Circle K #7737	8510 Old Pascagoula Road Portion of property within project right-of-way with tank hold approximately 95-feet from project boundary	<ul style="list-style-type: none"> • UST • Financial Assurance 	One 15,000-gallon unleaded gasoline tank installed 9/30/2008 One two-compartment 20,000-gallon premium gasoline and diesel gasoline tank installed on 9/30/2008
10	Doug's Quick Mart #2	8501 Old Pascagoula Road Portion of property within project right-of-way with tank hold approximately 92-feet from project boundary	<ul style="list-style-type: none"> • UST • Financial Assurance 	One 8,000-gallon unleaded gasoline tank installed 1/1/1987 One 8,000-gallon premium gasoline tank installed 1/1/1987 One 8,000-gallon diesel gasoline tank installed 1/1/1987
10	Calfee Company Dalton Inc.	8501 Old Pascagoula Road Portion of property within project right-of-way with tank hold approximately 92-feet from project boundary	<ul style="list-style-type: none"> • EDR Hist Auto 	EDR Historical Auto for 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, and 2014.



Table 4 - EDR Facilities Located Adjacent to or Outside of Alternative 2 Project ROW

Location No.	Facility	Location Direction & Distance	Record	Comment
11	Mobile County Public Works Camp 2	7075 McDonald Road Approximately 1,700 feet southeast of project right-of-way and down gradient	<ul style="list-style-type: none"> • LUST 	Incident date March 1993. No Further Action Letter has been issued.

◆ Conclusions

Alternative 1 – Widening Along Existing Roads

Alternative 1 will widen McDonald Road from Old Pascagoula Road to Three Notch-Kroner Road and Three Notch-Kroner Road to McFarland Road/Ben Hamilton Road.

Seven potential hazardous material sites were identified in proximity such that contamination would be likely to impact property located within the proposed Alternative 1 right-of-way. The remaining five EDR-listed facilities are not considered potential hazardous materials sites, due to distance from the project right-of-way, relative topographic elevation, records information, and intervening local topographic features.

Finding 1

The facility at 5019 McDonald Road (Location 1) is identified in the EDR Report as a Historical Auto Station. Although no violations or releases were reported for this facility, based on its close proximity (100 feet cross gradient), there is potential for undetected and/or unreported releases at this facility to impact groundwater in the eastern portion of the subject property. We consider this facility a potential hazardous materials site.

Finding 2

The facility at 8510 Old Pascagoula Road (Location 9) is identified in the EDR Report as UST and Financial Assurance. Although no releases have been reported for this facility, based on its close proximity to the project right-of-way (95 feet up gradient), there is potential for undetected and/or unreported releases at this facility to impact groundwater in the southeastern portion of the subject property. We consider this facility a potential hazardous materials site.

Finding 3

The two facilities at 8501 Old Pascagoula Road (Location 10) are identified in the EDR Report as UST and Financial Assurance and a Historical Auto Station. Although no releases have been reported for these facilities, based on their close proximity to the project right-of-way (92 feet up gradient), there is potential for undetected and/or



unreported releases at these facilities to impact groundwater in the southeastern portion of the subject property. We consider these facilities potential hazardous materials sites.

Finding 4

The two facilities at 8483 Three Notch Road (Location 2) are identified in the EDR Report as UST and Financial Assurance and a Historical Auto Station. Although no releases have been reported for these facilities, based on their close proximity to the project right-of-way (50 feet down gradient), there is potential for undetected and/or unreported releases at these facilities to impact groundwater in the southeastern portion of the subject property. We consider these facilities potential hazardous materials sites.

Finding 5

The facility located at 4863 Goldmine Road (Location 3) is identified in the EDR Report as UST and Financial Assurance. Although no releases have been reported for this facility, based on its close proximity to the project right-of-way (29 feet up gradient), there is potential for undetected and/or unreported releases at this facility to impact groundwater in the southeastern portion of the subject property. We consider this facility a potential hazardous materials site.

Alternative 2 – Extension of McFarland Road on New Alignment

Alternative 2 will construct McFarland Road on a new alignment beginning at the intersection of Old Pascagoula Road and ending at the intersection of McFarland Road/Three Notch-Kroner Road.

Four potential hazardous material sites were identified in proximity such that contamination would be likely to impact property located within the proposed Alternative 2 right-of-way. The remaining EDR-listed facility is not considered a potential hazardous materials site, due to distance from the project right-of-way, relative topographic elevation, records information, and intervening local topographic features.

Finding 1

The facility along Airport Road (Location 5) is identified in the EDR Report as ICIS, US AIRS, FINDS, and ECHO. Although no releases have been reported for this facility, based on its close proximity to the project right-of-way (within 50 feet), there is potential for undetected and/or unreported releases at this facility to impact groundwater in the western portion of the Property. We consider this facility a potential hazardous materials site.

Finding 2

The facility at 8510 Old Pascagoula Road (Location 9) is identified in the EDR Report as UST and Financial Assurance. Although no releases have been reported for this facility, based on its close proximity to the project right-of-way (95 feet up gradient), there is potential for undetected and/or unreported releases at this facility to impact groundwater in the southeastern portion of the subject property. We consider this facility a potential hazardous materials site.



Report of Hazardous Materials Assessment

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Theodore, Mobile County, Alabama

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ALDOT Project No. STPMB-4918(250)

Finding 3

The two facilities at 8501 Old Pascagoula Road (Location 10) are identified in the EDR Report as UST and Financial Assurance and a Historical Auto Station. Although no releases have been reported for these facilities, based on their close proximity to the project right-of-way (92 feet up gradient), there is potential for undetected and/or unreported releases at these facilities to impact groundwater in the southeastern portion of the subject property. We consider these facilities potential hazardous materials sites.

◆ Limitations

This report is an instrument of service of S&ME. It was prepared for and intended for the exclusive use of Neel-Schaffer. If other parties wish to rely on this report for other than informational purposes, we will consider written requests to do so.

When performing this scope of services, S&ME observed the degree of care and skill generally exercised by other consultants undertaking similar studies at the same time, under similar circumstances and conditions, and in the same geographic area. Conclusions regarding the subject property are based on observations of existing conditions, available documentation, and our interpretation of the collected data. Subsequent changes in the land use or other activities on or near the site could invalidate our findings. If additional or corrected information becomes available, we request the opportunity to review and modify our opinions, if warranted.

◆ Closing

S&ME sincerely appreciates the opportunity to provide professional environmental consulting services to Neel-Schaffer. Should questions remain or if additional information is required, please do not hesitate to contact the undersigned.

Sincerely,

S&ME, Inc.

A handwritten signature in blue ink that reads "BreAnna G. Corder".

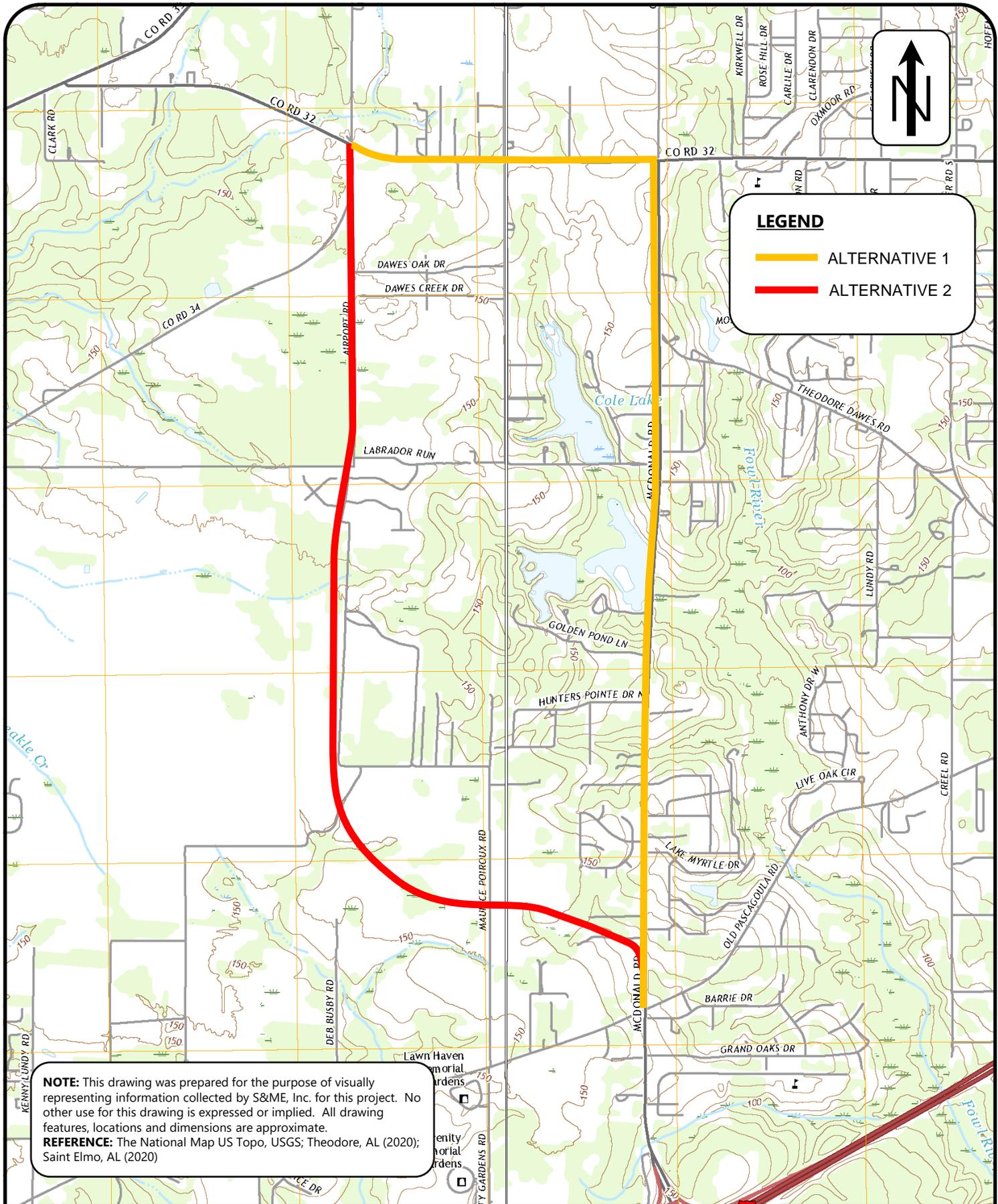
BreAnna G. Corder, P.E.
Staff Engineer

A handwritten signature in blue ink that reads "Deborah J. Jones".

Deborah J. Jones, P.E.
Senior Reviewer

Attachments

Attachment I – Figures



LEGEND

- ALTERNATIVE 1
- ALTERNATIVE 2

NOTE: This drawing was prepared for the purpose of visually representing information collected by S&ME, Inc. for this project. No other use for this drawing is expressed or implied. All drawing features, locations and dimensions are approximate.

REFERENCE: The National Map US Topo, USGS; Theodore, AL (2020); Saint Elmo, AL (2020)



TOPOGRAPHIC MAP

MCFARLAND ROAD EXTENSION
THEODORE, MOBILE COUNTY, ALABAMA

SCALE:
AS SHOWN

DATE:
7-23-2021

PROJECT NUMBER:
4482-20-038

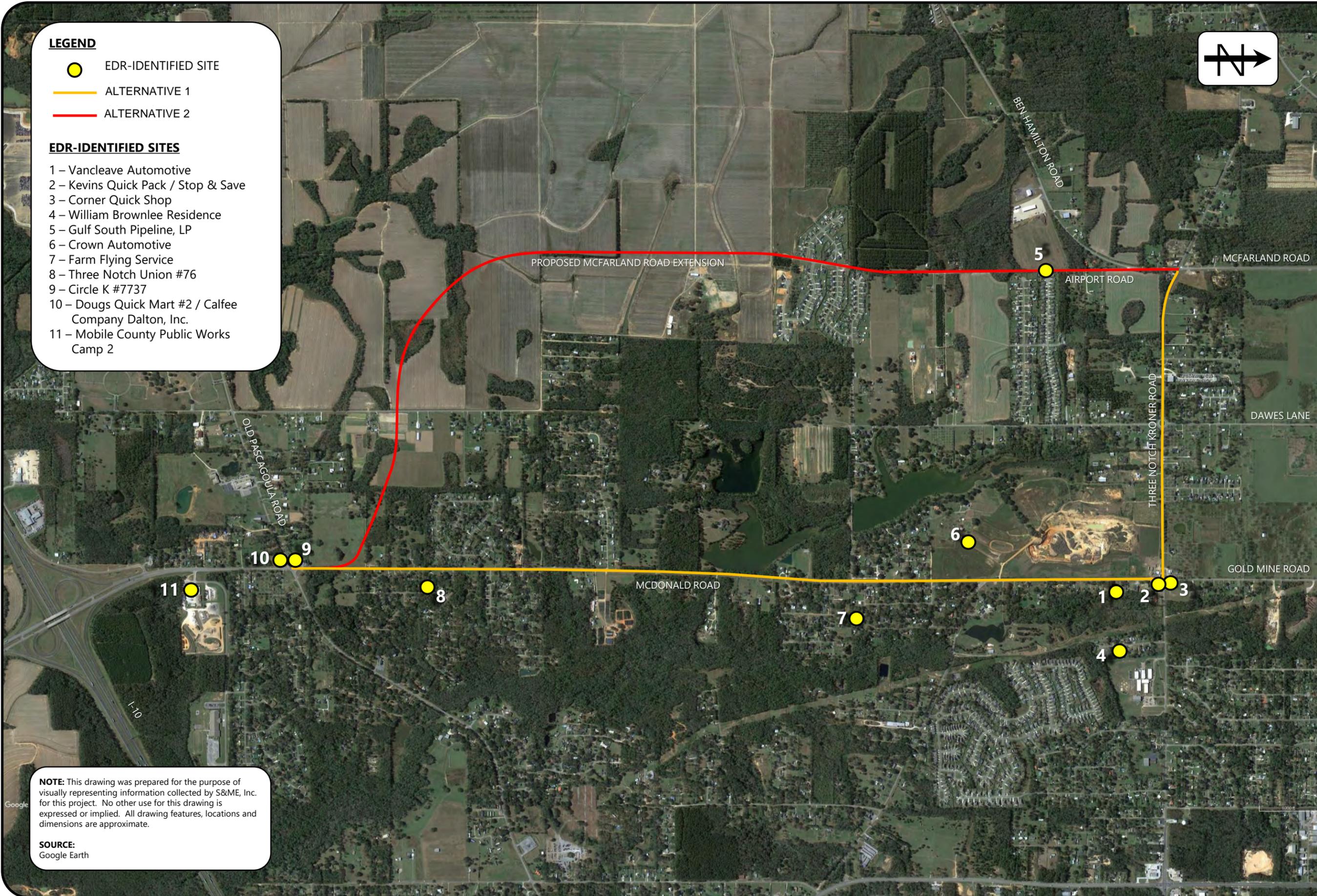
FIGURE NO.
1

LEGEND

- EDR-IDENTIFIED SITE
- ALTERNATIVE 1
- ALTERNATIVE 2

EDR-IDENTIFIED SITES

- 1 – Vanleave Automotive
- 2 – Kevins Quick Pack / Stop & Save
- 3 – Corner Quick Shop
- 4 – William Brownlee Residence
- 5 – Gulf South Pipeline, LP
- 6 – Crown Automotive
- 7 – Farm Flying Service
- 8 – Three Notch Union #76
- 9 – Circle K #7737
- 10 – Dougs Quick Mart #2 / Calfee Company Dalton, Inc.
- 11 – Mobile County Public Works Camp 2



EDR-IDENTIFIED SITES

MCFARLAND ROAD EXTENSION
THEODORE, MOBILE COUNTY, ALABAMA

SCALE:
AS SHOWN

DATE:
7-23-21

PROJECT NUMBER
4482-20-038

FIGURE NO.

2

NOTE: This drawing was prepared for the purpose of visually representing information collected by S&ME, Inc. for this project. No other use for this drawing is expressed or implied. All drawing features, locations and dimensions are approximate.

SOURCE:
Google Earth

Attachment II – Site Photographs



1	Location / Orientation	5019 McDonald Road, facing east
	Remarks	View of Vancleave Automotive off McDonald Road. Shop Behind Residence. Location 1 on Figure 2



Date: 5/1/2013

Photographer: Google Street View

2	Location / Orientation	8483 Three Notch Road, facing south
	Remarks	View of Kevins Quick Pack/Stop & Save off Three Notch Road. Previously demolished. Location 2 on Figure 2



Date: 5/1/2013

Photographer: EAB



3	Location / Orientation	View from across Three Notch Rd, facing north	Date: 1/26/2021 Photographer: EAB
	Remarks	View of Corner Quick Stop at intersection of McDonald Road and Three Notch Road. Location 3 on Figure 2.	



4	Location / Orientation	5013 Langham Place, facing east	Date: 5/1/2013 Photographer: Google Street View
	Remarks	View of William Brownlee Residence off Langham Place. Location 4 on Figure 2.	





5	Location / Orientation	East side of Airport Road, facing east	Date: 1/27/2021
	Remarks	View of Gulf South Pipeline off Airport Road. Location 5 on Figure 2.	



6	Location / Orientation	679 feet southwest of Location 6, facing north	Date: 1/27/2021
	Remarks	View of Crown Automotive off Churchhill Downs Avenue. Shop in back of property. Location 6 on Figure 2.	





7	Location / Orientation	8409 Robert Jefferson, facing south	Photographer: Google Street View Date: 5/2013
	Remarks	View of Farm Flying Service. Appears to be a residence. No observation of equipment. Location 7 on Figure 2.	



8	Location / Orientation	6650 Lake Helen Drive, facing west	Photographer: Google Street View Date: 5/2013
	Remarks	View of Three Notch Union #76. Appears to be residence. No observation of gas station. Location #8 on Figure 2.	





9	Location / Orientation	8510 Old Pascagoula Road, facing northeast	Date: 1/28/2021 Photographer: EAB
	Remarks	View of Circle K #7737 on the northwest corner of McDonald Road and Old Pascagoula Road. Location 9 on Figure 2.	



10	Location / Orientation	8501 Old Pascagoula Road, facing south	Date: 1/28/2021 Photographer: EAB
	Remarks	View of Dougs Quick Mart #2/Calfee Company Dalton Inc. on the southwest corner of McDonald Road and Old Pascagoula Road. Location 10 on Figure 2.	





11	Location / Orientation	7075 McDonald Road, facing east	Date: 1/28/2021 Photographer: EAB
	Remarks	View of Mobile County Public Works Camp 2. Location 11 on Figure 2.	



12	Location / Orientation	Intersection of McDonald and Three Notch, facing south	Date: 1/26/2021 Photographer: EAB
	Remarks	View of the intersection at McDonald Road and Three Notch Road	





13	Location / Orientation	Intersection of McDonald and Three Notch, facing west	Date: 1/26/2021 Photographer: EAB
	Remarks	View of the intersection at McDonald Road and Three Notch Road	



14	Location / Orientation	Intersection of Three Notch and Airport, facing east	Date: 1/27/2021 Photographer: EAB
	Remarks	View of the intersection at Three Notch Road and Airport Road	





15	Location / Orientation	Airport Road south of Three Notch Road, facing south	Date: 1/26/2021
	Remarks	View of Airport Road	



16	Location / Orientation	McDonald Rd north of Old Pascagoula Rd, facing north	Date: 1/28/2021
	Remarks	View of McDonald Road	





17	Location / Orientation	Old Pascagoula Rd west of McDonald Rd, facing southwest	Date: 1/28/2021
	Remarks	View of Old Pascagoula Road west of McDonald Road	



18	Location / Orientation	Airport Rd south of Ben Hamilton Rd, facing north	Date: 1/27/2021
	Remarks	View of Airport Road	





19	Location / Orientation	South end of Airport Rd, facing south	Date: 1/27/2021 Photographer: EAB
	Remarks	View of the end of Airport Road	



20	Location / Orientation	500 ft south of the end of Airport Rd, facing north	Date: 1/27/2021 Photographer: EAB
	Remarks	View of field south of Airport Road	





21	Location / Orientation	Intersection of Rex Drive and Labrador Trail, facing southeast	Date: 1/27/2021 Photographer: EAB
	Remarks	View of Rex Drive in Labrador Run Neighborhood.	

22	Location / Orientation	6675 Maurice Poiroux Road, facing south	Date: 1/28/2021 Photographer: EAB
	Remarks	View of Maurice Poiroux Road	



23	Location / Orientation	West side of Maurice Poiroux Road, facing west	Date: 1/28/2021
	Remarks	View of field west of Maurice Poiroux Road	

24	Location / Orientation	East Maurice Poiroux Road, facing east	Date: 1/28/2021
	Remarks	View of the field east of Maurice Poiroux Road.	



25	Location / Orientation	1,330 feet west of the end of Laytham Rd, facing north	Photographer: EAB	Date: 1/28/2021
	Remarks	View of the Property		



26	Location / Orientation	West central portion of Property / facing north	Photographer: EAB	Date: 1/28/2021
	Remarks	View of the Property.		





27	Location / Orientation	Alt 2 ROW south of Rex Drive, facing south	Photographer: EAB Date: 1/28/2021
	Remarks	View of the Property.	



28	Location / Orientation	Near 5370 Airport Road, facing west	Photographer: EAB Date: 1/27/2021
	Remarks	View of discarded TVs located within Project right-of-way off Airport Road.	





29	Location / Orientation	Near 5370 Airport Road, facing west	Photographer: EAB Date: 1/27/2021
	Remarks	View of trash located within Project right-of-way off Airport Road.	



30	Location / Orientation	Near 5370 Airport Road, facing west	Photographer: EAB Date: 1/27/2021
	Remarks	View of tire located within Project right-of-way off Airport Road.	





31	Location / Orientation	Near 5370 Airport Road, facing south	Date: 1/27/2021 Photographer: EAB
	Remarks	View of Airport Road	



32	Location / Orientation	Near 5370 Airport Road, facing west	Date: 1/27/2021 Photographer: EAB
	Remarks	View of trash and shingles located within Project right-of-way off Airport Road.	



**Attachment III – Alabama Department of Transportation (ALDOT)
Hazardous Materials Form**

HAZARDOUS MATERIALS NOTIFICATION FORM

PROJECT # McFarland Road Expansion - Alternative 1 STATION # 1

MUNICIPALITY OR COMMUNITY Theodore COUNTY Mobile

FACILITY NAME **Vancleave Automotive**

FACILITY ADDRESS 5019 McDonald Road

Theodore, Alabama 36582

OWNER'S NAME _____

OWNER'S ADDRESS _____

FACILITY PHONE # _____ OWNER'S PHONE # _____

ADEM REGISTRATION # _____

TYPE FACILITY (check applicable response(s)):

Gas Station Scrap Metal Foundry Landfill

Dry Cleaner Chemical Plant Manufacturing Facility

Fertilizer Plant Wood Treating Plant Farmer's Cooperative

Plating Plant Auto Parts w/ Engine Repair Shop

Leather Tannery Other (Specify): _____

COMMENTS EDR Historical Auto

INSPECTOR'S NAME Elizabeth A. Bavis DATE INSPECTED 1/26/2021

SUPERVISOR'S SIGNATURE

Deborah J. Jones

HAZARDOUS MATERIALS NOTIFICATION FORM

PROJECT # McFarland Road Expansion - Alternative 1 STATION # 2

MUNICIPALITY OR COMMUNITY Mobile COUNTY Mobile

FACILITY NAME **Kevins Quick Pack**

FACILITY ADDRESS 8483 Three Notch Road

Mobile, Alabama 36619

CONTACT NAME Hung Do

OWNER'S NAME J B Remarketing LLC

OWNER'S ADDRESS 435 Dykes Road South

Mobile, Alabama 36608

FACILITY PHONE # _____ OWNER'S PHONE # (334) 661-7399

ADEM REGISTRATION # 19988-97-6141

TYPE FACILITY (check applicable response(s)):

- Gas Station _____ Scrap Metal _____ Foundry _____ Landfill
- _____ Dry Cleaner _____ Chemical Plant _____ Manufacturing Facility
- _____ Fertilizer Plant _____ Wood Treating Plant _____ Farmer's Cooperative
- _____ Plating Plant _____ Auto Parts w/ Engine Repair Shop
- _____ Leather Tannery _____ Other (Specify): _____

COMMENTS UST, Financial Assurance. Abandoned site, building previously demolished.

UST 1: 8,000-gallon unleaded gasoline

UST 2: Unknown capacity and contents

INSPECTOR'S NAME Elizabeth A. Bavis DATE INSPECTED 1/26/2021

SUPERVISOR'S SIGNATURE

Deborah J. Jones

HAZARDOUS MATERIALS NOTIFICATION FORM

PROJECT # McFarland Road Expansion - Alternative 1 STATION # 2

MUNICIPALITY OR COMMUNITY Mobile COUNTY Mobile

FACILITY NAME **Stop & Save**

FACILITY ADDRESS 8483 Three Notch Road

Mobile, Alabama 36619

OWNER'S NAME _____

OWNER'S ADDRESS _____

FACILITY PHONE # _____ OWNER'S PHONE # _____

ADEM REGISTRATION # _____

TYPE FACILITY (check applicable response(s)):

- Gas Station _____ Scrap Metal _____ Foundry _____ Landfill
- _____ Dry Cleaner _____ Chemical Plant _____ Manufacturing Facility
- _____ Fertilizer Plant _____ Wood Treating Plant _____ Farmer's Cooperative
- _____ Plating Plant _____ Auto Parts w/ Engine Repair Shop
- _____ Leather Tannery _____ Other (Specify): _____

COMMENTS EDR Historical Auto

INSPECTOR'S NAME Elizabeth A. Bavis DATE INSPECTED 1/26/2021

SUPERVISOR'S SIGNATURE

Deborah J. Jones

HAZARDOUS MATERIALS NOTIFICATION FORM

PROJECT # McFarland Road Expansion - Alternative 1 STATION # 3

MUNICIPALITY OR COMMUNITY Mobile COUNTY Mobile

FACILITY NAME Corner Quick Stop

FACILITY ADDRESS 4863 Gold Mine Road E
Mobile, Alabama 36619

OWNER'S NAME Dang & Hoang LLC

OWNER'S ADDRESS 9514 McRae Drive South
Mobile, Alabama 36695

FACILITY PHONE # _____ OWNER'S PHONE # (251) 666-3501

ADEM REGISTRATION # 23220-97-17690

TYPE FACILITY (check applicable response(s)):

- Gas Station _____ Scrap Metal _____ Foundry _____ Landfill
- _____ Dry Cleaner _____ Chemical Plant _____ Manufacturing Facility
- _____ Fertilizer Plant _____ Wood Treating Plant _____ Farmer's Cooperative
- _____ Plating Plant _____ Auto Parts w/ Engine Repair Shop
- _____ Leather Tannery _____ Other (Specify): _____

COMMENTS UST, Financial Assurance. Tank hold approximately 30 feet from existing EOP.

UST 1: 12,000-gallon unleaded gasoline

UST 2: 10,000-gallon premium gasoline

UST 3: 10,000-gallon diesel

INSPECTOR'S NAME Emily J. Kennedy DATE INSPECTED 10/21/2020

SUPERVISOR'S SIGNATURE

Deborah J. Jones

HAZARDOUS MATERIALS NOTIFICATION FORM

PROJECT # McFarland Road Expansion - Alternative 1 STATION # 4

MUNICIPALITY OR COMMUNITY Mobile COUNTY Mobile

FACILITY NAME **William Brownlee Residence**

FACILITY ADDRESS 5013 Langham Place

Mobile, Alabama 36301

OWNER'S NAME William Brownlee

OWNER'S ADDRESS 5013 Langham Place

Mobile, Alabama 36301

FACILITY PHONE # _____ OWNER'S PHONE # (334) 555-1212

ADEM REGISTRATION # _____

TYPE FACILITY (check applicable response(s)):

Gas Station Scrap Metal Foundry Landfill

Dry Cleaner Chemical Plant Manufacturing Facility

Fertilizer Plant Wood Treating Plant Farmer's Cooperative

Plating Plant Auto Parts w/ Engine Repair Shop

Leather Tannery Other (Specify): _____

COMMENTS RCRA Non Gen / NLR. No violations reported.

INSPECTOR'S NAME Elizabeth A. Bavis DATE INSPECTED 1/26/2021

SUPERVISOR'S SIGNATURE



HAZARDOUS MATERIALS NOTIFICATION FORM

PROJECT # McFarland Road Expansion - Alternative 2 STATION # 5

MUNICIPALITY OR COMMUNITY Mobile COUNTY Mobile

FACILITY NAME Gulf South Pipeline Company, LP

FACILITY ADDRESS Airport Road
Mobile, AL 36582

OWNER'S NAME Gulf South Pipeline Company, LP

OWNER'S ADDRESS _____

FACILITY PHONE # _____ OWNER'S PHONE # _____

ADEM REGISTRATION # _____

TYPE FACILITY (check applicable response(s)):

- Gas Station _____ Scrap Metal _____ Foundry _____ Landfill
- _____ Dry Cleaner _____ Chemical Plant _____ Manufacturing Facility
- _____ Fertilizer Plant _____ Wood Treating Plant _____ Farmer's Cooperative
- _____ Plating Plant _____ Auto Parts w/ Engine Repair Shop
- _____ Leather Tannery Other (Specify): Natural Gas Pipeline

COMMENTS ICIS, US AIRS, FINDS, ECHO.

INSPECTOR'S NAME Elizabeth A. Bavis DATE INSPECTED 1/27/2021

SUPERVISOR'S SIGNATURE

Deborah J. Jones

HAZARDOUS MATERIALS NOTIFICATION FORM

PROJECT # McFarland Road Expansion - Alternative 1 STATION # 6

MUNICIPALITY OR COMMUNITY Theodore COUNTY Mobile

FACILITY NAME **Crown Automotive**

FACILITY ADDRESS 5400 Churchhill Downs Avenue
Theodore, Alabama 36582

OWNER'S NAME Thomas Crown

OWNER'S ADDRESS 5400 Churchhill Downs Avenue
Theodore, Alabama 36582

FACILITY PHONE # _____ OWNER'S PHONE # (334) 660-1936

ADEM REGISTRATION # _____

TYPE FACILITY (check applicable response(s)):

- Gas Station Scrap Metal Foundry Landfill
- Dry Cleaner Chemical Plant Manufacturing Facility
- Fertilizer Plant Wood Treating Plant Farmer's Cooperative
- Plating Plant Auto Parts w/ Engine Repair Shop
- Leather Tannery Other (Specify): _____

COMMENTS RCRA - VSQG, FINDS, ECHO. No violations found.

INSPECTOR'S NAME Elizabeth A. Bavis DATE INSPECTED 1/26/2021

SUPERVISOR'S SIGNATURE



HAZARDOUS MATERIALS NOTIFICATION FORM

PROJECT # McFarland Road Expansion Alternative 1 STATION # 7

MUNICIPALITY OR COMMUNITY Theodore COUNTY Mobile

FACILITY NAME **Farm Flying Service**

FACILITY ADDRESS 8409 Robert Jefferson

Theodore, Alabama 36582

OWNER'S NAME _____

OWNER'S ADDRESS _____

FACILITY PHONE # _____ OWNER'S PHONE # _____

ADEM REGISTRATION # _____

TYPE FACILITY (check applicable response(s)):

_____ Gas Station _____ Scrap Metal _____ Foundry _____ Landfill

_____ Dry Cleaner _____ Chemical Plant _____ Manufacturing Facility

_____ Fertilizer Plant _____ Wood Treating Plant Farmer's Cooperative

_____ Plating Plant _____ Auto Parts w/ Engine Repair Shop

_____ Leather Tannery _____ Other (Specify): _____

COMMENTS SEMS - Archive. No violations reported.

INSPECTOR'S NAME Elizabeth A. Bavis DATE INSPECTED 1/26/2021

SUPERVISOR'S SIGNATURE

Deborah J. Jones

HAZARDOUS MATERIALS NOTIFICATION FORM

PROJECT # McFarland Road Expansion - Alternative 1 STATION # 8

MUNICIPALITY OR COMMUNITY Theodore COUNTY Mobile

FACILITY NAME **Three Notch Union 76**

FACILITY ADDRESS 6650 Lake Helen Drive

Theodore, Alabama 36582

OWNER'S NAME _____

OWNER'S ADDRESS _____

FACILITY PHONE # _____ OWNER'S PHONE # _____

ADEM REGISTRATION # _____

TYPE FACILITY (check applicable response(s)):

- Gas Station Scrap Metal Foundry Landfill
- Dry Cleaner Chemical Plant Manufacturing Facility
- Fertilizer Plant Wood Treating Plant Farmer's Cooperative
- Plating Plant Auto Parts w/ Engine Repair Shop
- Leather Tannery Other (Specify): _____

COMMENTS EDR Historical Auto

INSPECTOR'S NAME Elizabeth A. Bavis DATE INSPECTED 1/26/2021

SUPERVISOR'S SIGNATURE

Deborah J. Jones

HAZARDOUS MATERIALS NOTIFICATION FORM

PROJECT # McFarland Road Expansion - Alternative 1 STATION # 9

MUNICIPALITY OR COMMUNITY Theodore COUNTY Mobile

FACILITY NAME Circle K #7737

FACILITY ADDRESS 8510 Old Pascagoula Road
Theodore, Alabama 36582

OWNER CONTACT Cheri Robbins

OWNER'S NAME Circle K Stores, Inc.

OWNER'S ADDRESS 25 West Cedar Street, Suite M
Pensacola, Florida 32502

FACILITY PHONE # _____ OWNER'S PHONE # (850) 454-1070

ADEM REGISTRATION # 23413-97-19356

TYPE FACILITY (check applicable response(s)):

- Gas Station _____ Scrap Metal _____ Foundry _____ Landfill
- _____ Dry Cleaner _____ Chemical Plant _____ Manufacturing Facility
- _____ Fertilizer Plant _____ Wood Treating Plant _____ Farmer's Cooperative
- _____ Plating Plant _____ Auto Parts w/ Engine Repair Shop
- _____ Leather Tannery _____ Other (Specify): _____

COMMENTS UST, Financial Assurance. Tank hold approximately 95 ft. from project boundary.

UST 1: 15000-gallon unleaded gasoline

UST 2: 20,000-gallon 2 compartment premium gasoline and diesel

INSPECTOR'S NAME Elizabeth A. Bavis DATE INSPECTED 1/27/2021

SUPERVISOR'S SIGNATURE



HAZARDOUS MATERIALS NOTIFICATION FORM

PROJECT # McFarland Road Expansion - Alternative 1 STATION # 10

MUNICIPALITY OR COMMUNITY Theodore COUNTY Mobile

FACILITY NAME **Dougs Quick Mart #2**

FACILITY ADDRESS 8501 Old Pascagoula Road
Theodore, Alabama 36582

CONTACT NAME Anil Patel and Charles B Archer

OWNER'S NAME Able Inc.

OWNER'S ADDRESS 110 Pier Avenue
Fairhope, Alabama 36532

FACILITY PHONE # _____ OWNER'S PHONE # (251) 656-7929 / (251) 680-5126

ADEM REGISTRATION # 23321-97-6148

TYPE FACILITY (check applicable response(s)):

- Gas Station _____ Scrap Metal _____ Foundry _____ Landfill
- _____ Dry Cleaner _____ Chemical Plant _____ Manufacturing Facility
- _____ Fertilizer Plant _____ Wood Treating Plant _____ Farmer's Cooperative
- _____ Plating Plant _____ Auto Parts w/ Engine Repair Shop
- _____ Leather Tannery _____ Other (Specify): _____

COMMENTS UST, Financial Assurance. Tank hold approximately 92 ft. from project boundary.

UST 1: 8,000-gallon unleaded gasoline

UST 2: 8,000-gallon premium gasoline

UST 3: 8,000-gallon diesel

INSPECTOR'S NAME Elizabeth A. Bavis DATE INSPECTED 1/27/2021

SUPERVISOR'S SIGNATURE



HAZARDOUS MATERIALS NOTIFICATION FORM

PROJECT # McFarland Road Expansion - Alternative 1 STATION # 10

MUNICIPALITY OR COMMUNITY Theodore COUNTY Mobile

FACILITY NAME **Calfee Company Dalton Inc.**

FACILITY ADDRESS 8501 Old Pascagoula Road

Theodore, Alabama 36582

OWNER'S NAME _____

OWNER'S ADDRESS _____

FACILITY PHONE # _____ OWNER'S PHONE # _____

ADEM REGISTRATION # _____

TYPE FACILITY (check applicable response(s)):

- Gas Station _____ Scrap Metal _____ Foundry _____ Landfill
- _____ Dry Cleaner _____ Chemical Plant _____ Manufacturing Facility
- _____ Fertilizer Plant _____ Wood Treating Plant _____ Farmer's Cooperative
- _____ Plating Plant _____ Auto Parts w/ Engine Repair Shop
- _____ Leather Tannery _____ Other (Specify): _____

COMMENTS EDR Historical Auto.

INSPECTOR'S NAME Elizabeth A. Bavis DATE INSPECTED 1/27/2021

SUPERVISOR'S SIGNATURE

Deborah J. Jones

HAZARDOUS MATERIALS NOTIFICATION FORM

PROJECT # McFarland Road Expansion - Alternative 1 STATION # 11

MUNICIPALITY OR COMMUNITY Irvington COUNTY Mobile

FACILITY NAME Mobile County Public Works Camp 2

FACILITY ADDRESS 7075 McDonald Road
Irvington, Alabama 36544

OWNER'S NAME Mobile County Commission

OWNER'S ADDRESS P.O. Box 1443
Mobile, Alabama 36633

FACILITY PHONE # _____ OWNER'S PHONE # _____

ADEM REGISTRATION # _____

TYPE FACILITY (check applicable response(s)):

- Gas Station _____ Scrap Metal _____ Foundry _____ Landfill
- _____ Dry Cleaner _____ Chemical Plant _____ Manufacturing Facility
- _____ Fertilizer Plant _____ Wood Treating Plant _____ Farmer's Cooperative
- _____ Plating Plant _____ Auto Parts w/ Engine Repair Shop
- _____ Leather Tannery _____ Other (Specify): _____

COMMENTS LUST. NFA Issued.

INSPECTOR'S NAME Elizabeth A. Bavis DATE INSPECTED 1/26/2021

SUPERVISOR'S SIGNATURE



Attachment IV – Environmental Data Resources (EDR) Reports

(EDR Reports have been omitted and are available in ALDOT files)

Appendix I

Cultural Resources



ALABAMA DEPARTMENT OF TRANSPORTATION

Design Bureau

1409 Coliseum Boulevard, Montgomery, Alabama 36110

P. O. Box 303050, Montgomery, Alabama 36130-3050

Phone: 334-242-6178 FAX: 334-269-0826



Kay Ivey
Governor

John R. Cooper
Transportation Director

April 1, 2021

Ms. Lee Anne Wofford, Deputy
State Historic Preservation Officer
Alabama Historical Commission
468 South Perry Street
Montgomery, AL 36130

Re: Cultural Resource Survey Report
ALDOT # STPMB-4918(250)
New Alignment of CR-25(McFarland Road) from CR-28 (Old Pascagoula Road) to CR-358 (Three Notch Road)
Mobile County, Alabama

Dear Ms. Wofford:

The Alabama Department of Transportation and the Federal Highway Administration are studying a proposal for a project that includes a new alignment of CR-25(McFarland Road) from CR-28 (Old Pascagoula Road) to CR-358 (Three Notch Road) in Mobile County, Alabama for a project length of approximately 3.6 miles each on the two alternate routes. Please find attached for your review and concurrence, one copy of A Cultural Resources Assessment for the Proposed McFarland Road Improvements Project, Mobile County, Alabama for the above referenced project.

A Phase I Cultural Resources Survey was performed by Office of Archaeological Research. No new archaeological resources were located within the APE during the course of the survey. Three historic architectural resources were identified within the APE and are considered ineligible for listing to the NRHP due to lack of historic integrity and/or lack of significance. Therefore, it is our submitted determination that ALDOT # STPMB-4918(250) New Alignment of CR-25(McFarland Road) from CR-28 (Old Pascagoula Road) to CR-358 (Three Notch Road) in Mobile County, Alabama will have no adverse effect on any property on or eligible for the National Register of Historic Places. Please review this information. If the SHPO agrees please sign and return a copy to the Design Bureau. Thank you in advance for your attention in this matter.

Sincerely,

Stanley C. Biddick, P.E.
State Design Engineer

By: 
Natasha Clay
State Environmental Administrator
Environmental Technical Section

WBT/lbw
Attachments
C: FHWA: Lynne Urquhart
C.R. File

CONCUR: Lee Anne Wofford DATE: 4-20-21

Appendix J

Tribal Coordinaton

From: [Heisler, Timothy \(FHWA\)](#)
To: [Haikey, Larry](#); [Kenneth H Carleton \(kcarleton@choctaw.org\)](#); [Lindsey D Bilyeu \(lbilyeu@choctawnation.com\)](#); [Alina Shively \(ashively@jenachoctaw.org\)](#); [celestine.bryant@actribe.org](#); [David Cook - Kialegee Tribal Town \(kialegeettcpo@gmail.com\)](#); [Earl Barbry Jr. \(earlii@tunica.org\)](#); [Janet Maylen](#); [Linda Langley](#); [marshall.e@sno-nsn.gov](#); [molly.moore@alabama-quassarte.org](#); [Muscogee \(Creek\) Nation Section 106 \(section106@mcn-nsn.gov\)](#); [United Keetoowah Band of Cherokee Indians in Oklahoma \(wwarrior@ukb-nsn.gov\)](#)
Cc: [Chambless, Jr., Jesse J.](#)
Subject: STPMB-4918(250), New alignment roadway of CR-25 (McFarland Rd) from CR-28 (Old Pascagoula Rd) to CR-358 (Three Notch Road), Mobile County, State of Alabama
Date: Monday, September 27, 2021 10:02:07 AM
Attachments: [Location Map.pdf](#)
[Phase I CRA.pdf](#)
[SHPO Concurrence Letter.pdf](#)

The Federal Highway Administration Alabama Division (FHWA), in cooperation with the Alabama Department of Transportation (ALDOT), is preparing an environmental document per the National Environmental Policy Act (NEPA) to address an identified transportation need in Mobile County.

This project consists of constructing a new alignment roadway of CR-25 (McFarland Rd) from CR-28 (Old Pascagoula Rd) to CR-358 (Three Notch Rd) in Mobile, Alabama. Please find a copy of the location map, Phase I Cultural Resource Assessment (CRA) & State Historic Preservation Officer's (SHPO) concurrence letter attached to this email.

FHWA and ALDOT would like to initiate government-to-government consultation with your tribe for the subject Federal-aid project. We respectfully request this consultation to address the cultural and historic resource issues, pursuant to the regulations implementing Section 106 of the National Historic Preservation Act (36 CFR Part 800). We request your comments on the Area of Potential Effects (APE) for this project, and any historic properties present to include Traditional Cultural Properties (TCPs). Also, we invite your comments regarding any other tribal concerns regarding the proposed project. Your response acknowledging your interest in participating as a consulting party for this undertaking is greatly appreciated.

We respectfully request a response by October 28th, 2021. Should you have any questions about this project, you may contact me at (334) 274-6370 or email address at timothy.heisler@dot.gov.

Tim Heisler
Transportation Engineer
Federal Highway Administration – Alabama Division
9500 Wynlakes Place
Montgomery, Alabama 36117
Phone: [334.274.6370](tel:334.274.6370)
timothy.heisler@dot.gov

From: Heisler, Timothy (FHWA) <timothy.heisler@dot.gov>
Sent: Tuesday, September 28, 2021 2:29 PM
To: Chambless, Jr., Jesse J. <chamblessje@dot.state.al.us>
Subject: FW: STPMB-4918(250), New alignment roadway of CR-25 (McFarland Rd) from CR-28 (Old Pascagoula Rd) to CR-358 (Three Notch Road), Mobile County, State of Alabama

FYI

From: Karen D. Downen <kdownen@choctawnation.com>
Sent: Tuesday, September 28, 2021 11:36 AM
To: Heisler, Timothy (FHWA) <timothy.heisler@dot.gov>
Cc: Lindsey Bilyeu <lbilyeu@choctawnation.com>; Misty Madbull <mmadbull@choctawnation.com>
Subject: Re: STPMB-4918(250), New alignment roadway of CR-25 (McFarland Rd) from CR-28 (Old Pascagoula Rd) to CR-358 (Three Notch Road), Mobile County, State of Alabama

CAUTION: This email originated from outside of the Department of Transportation (DOT). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Mr. Heisler/Tim:

The Choctaw Nation of Oklahoma thanks the FHWA, ALDOT for information regarding the above referenced project. Mobile County holds great significance within our area of historic interest.

The Choctaw Nation Historic Preservation Department has carefully reviewed maps and supporting documents provided for the project. We note the following:

1. The historic Cedar Grove Church and Cemetery, with unmarked graves dating to the 1800s, is located less than 0.5 miles East of the APE. Two (2) other cemeteries are noted, Southwest of the APE. We appreciate due care taken to avoid any disturbance to these cemeteries.
2. We defer to the AL SHPO for impacts to HAR-1, HAR-2, and HAR-3.
3. Watkins and Pearson note that the survey area consists of lands extensively impacted by prior roadway and related infrastructure construction, residential/commercial development, and agricultural activities (iii). The authors also point out that the 178.8 acre survey area (iii) was investigated by pedestrian walkover, visual inspection, and 140 negative shovel tests (9-10).

The presence of a relic pecan grove (Watkins and Pearson, 2020: 9, 13) is of concern, given the

potential for ground disturbance below the agricultural plow zone, or in the case of the pecan trees, substantial root balls.

Nevertheless, based on the information provided, the Choctaw Nation Historic Preservation Department finds No Effect to known cultural resources.

While, as noted above, earlier ground disturbance has greatly reduced... the likelihood of intact subsurface or surficial evidence, it is not possible to rule out inadvertent discovery of historic, or pre-contact, Indigenous occupation, or that of Europeans, or post-Removal settlers, especially in Mobile County.

We ask that you add the following Inadvertent Discovery clause to all contracts, construction documents, and specification:

“In the event that ground-disturbing work uncovers Native American artifacts or human remains, we ask that work be stopped and that the Choctaw Nation Historic Preservation Department be contacted immediately.”

“If any archaeological or cultural materials are discovered during the project undertaking, neither the construction team nor the applicant will disclose this information to the public or the media in any manner. Discoveries of archaeological materials will be kept private and confidential.”

If you have any questions, please contact me.

Respectfully yours,

Karen

Karen Denham Downen, BFA, MHP
Graduate Certificate in Native American Studies
Section 106 Reviewer
Historic Preservation Department
Choctaw Nation of Oklahoma
P.O. Box 1210, Durant, OK 74702
Desk Phone: 580-642-7896 (Please note: new phone number, effective 8/16/21)
Cell Phone: 580-916-2670
kdownen@choctawnation.com
www.choctawnation.com
www.choctawnationculture.com

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opinions presented in this email are solely those of the author and do not necessarily represent those of the Choctaw Nation.

Appendix K

Section 6(f) - No Resources

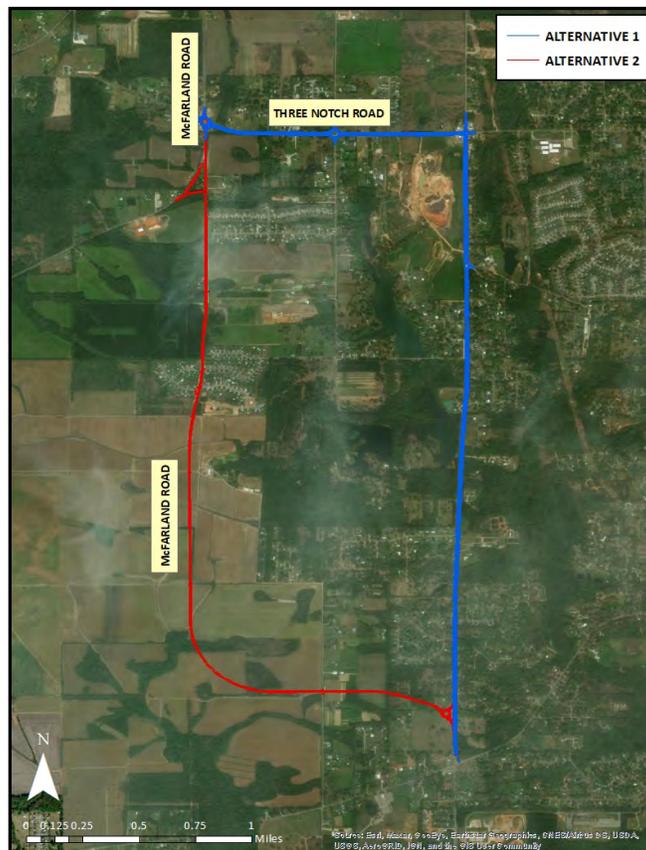
Appendix L

Wetlands and Streams

MAY 2021

WETLANDS AND WATERS ASSESSMENT

ALDOT PROJECT STPMB-4918(250)
MCFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA
ROAD TO THREE NOTCH-KRONER ROAD
MOBILE, ALABAMA



Prepared By



WETLANDS AND WATERS ASSESSMENT REPORT
ALDOT PROJECT STPMB-4918(250)
MCFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO
THREE NOTCH-KRONER ROAD
MOBILE COUNTY, ALABAMA

Prepared For:

Mobile County Commission
6449 Moffett Road
Mobile, Alabama

Prepared By:

Neel-Schaffer, Inc.
851 East Interstate 65 Service Road South
Suite 1000
Mobile, Alabama 36606

Report Date: May 21, 2021

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APPENDICES

Appendix A – Regional Supplement Data Sheets for Alternative 1
Appendix B – Regional Supplement Data Sheets for Alternative 2
Appendix C – Alternative 1 Corridor Photographs
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EXECUTIVE SUMMARY

The Mobile County Commission retained Neel-Schaffer, Inc. to assess sensitive water resources and wetlands along an improved roadway corridor in Theodore, Alabama (see Figures 1 and 2). As urban sprawl from the City of Mobile travels west, an increase in traffic loads along McDonald Road and Three Notch Road are lengthening traffic delay times during peak hours. As a solution to the growing population and traffic demand in this area, the MCC is assessing two alternatives to address current and future needs. The entire survey area encompasses approximately 178.8 acres.

Alternative 1 proposes to widen McDonald Road and Three Notch Road to a five-lane thoroughfare to account for increased traffic loads. A total of two wetlands (3.17 acres total), one 19.22-acre lake, and two relatively permanent waterways (RPWs) totaling 1,210 linear feet were found within the Alternative 1 study corridor. Wetlands are classified as bottomland hardwoods.

Alternative 2 proposes to extend McFarland Road, creating a new roadway through the corridor for area motorists. Beginning at the intersection of Old Pascagoula Road and McDonald Road, the extension will continue northwest through agriculturally developed properties and terminate at the intersection of McFarland Road and Three Notch-Kroner Road. A total of eight wetlands (3.84 acres total) were found within the Alternative 2 study corridor. Wetlands are classified as bottomland hardwoods.

All identified wetland areas should be considered potentially jurisdictional until concurrence is given by a representative of the US Army Corps of Engineers (USACE).

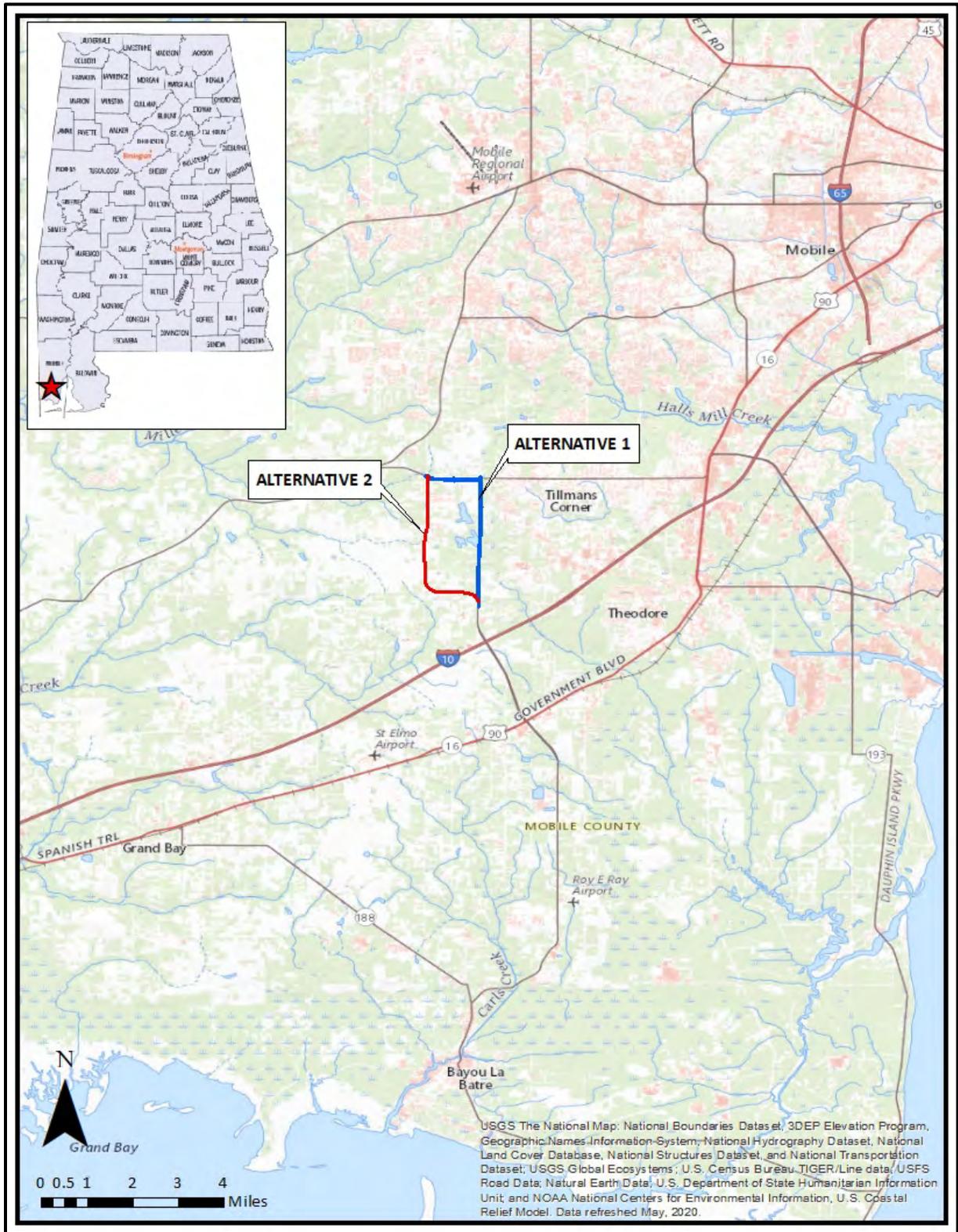


Figure 1. Project Location Map

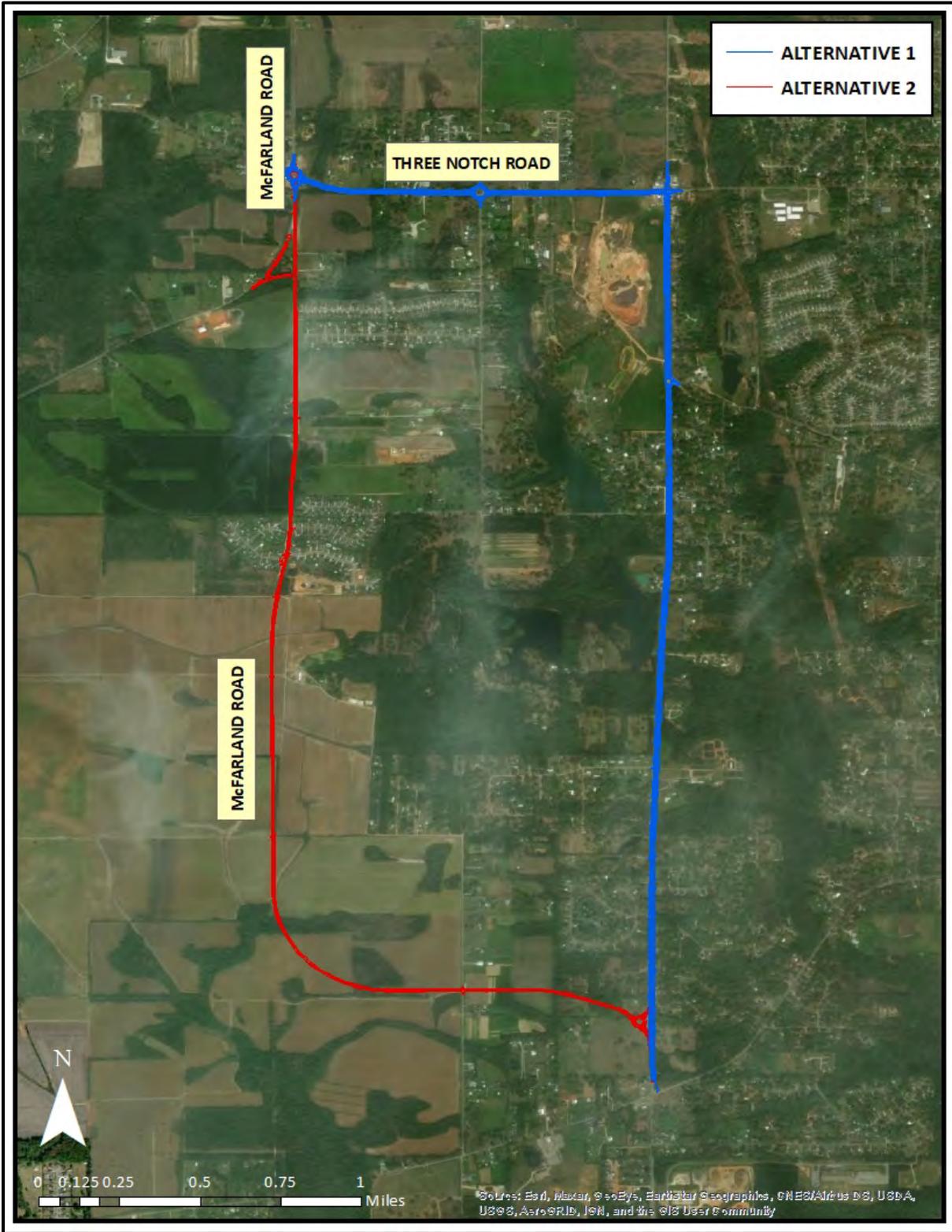


Figure 2. 2017 Aerial Photograph of Project Area

1.0 INTRODUCTION

The purpose of this report is to identify and describe potentially jurisdictional areas such as wetlands, surface waters, and other waters of the U.S. within the project corridor. This report will also assess impacts from preliminary plans for the purposes of regulation under Section 404 of the Clean Water Act (CWA) and/or Section 10 of the Safe Rivers and Harbors Act of 1899 (RHA). This report also facilitates Mobile County Commission's efforts to document wetland and other waters boundary determinations for review by regulatory authorities and to avoid or minimize impacts to wetlands and other waters during the design process. The lead oversight agency for the proposed project is the Federal Highway Administration (FHWA).

The proposed project's survey area is approximately 178.8 acres. The survey area was studied for potentially jurisdictional wetlands and other waters of the U.S. as defined in 40 CFR Parts 120 and 122 and 33 CFR Part 328, effective June 22, 2020, as well as 40 CFR Part 121, effective September 11, 2020.

Cori Gavin, Neel-Schaffer, Inc. wetlands scientist, conducted the wetlands and waters assessment during the period from February 4 to March 31, 2021. Map production and Geographic Information Systems (GIS) compilation were conducted by Cori Gavin and Brian Morgan (Project Manager). The report was compiled and edited by Cori Gavin and Brian Morgan, with a final edit by Bob Portera, P.E. (Transportation Engineer Manager). The Principal Investigator for the project is Cori Gavin, EP, Environmental Project Manager.

The proposed project is located in Theodore, Mobile County, Alabama within Sections 26, 27, and 34; Township 5 South; Range 3 West; and Section 2, Township 6 South, Range 3 West (see Figure 1). The survey area is linear in design and consists of two alternate routes for the proposed project (see Figure 2). Residential and commercial lots border both sides of the roads. Each of the alternates has a 200-foot survey width along the entire length.

The northern terminus of Alternates 1 and 2 originate at the intersection of McFarland Road, which turns into Ben Hamilton Road on the south side of the east-west oriented Three Notch-Kroner Road. The Alternate 1 alignment (see Figures 3 and 4) turns south to extend along McDonald Road for approximately 2.8 miles to the terminus at Old Pascagoula Road.

From the same northern terminus, Alternate 2 follows Ben Hamilton Road for approximately 0.1 mile before continuing to extend south along Airport Road for approximately 0.6 mile, where Airport Road terminates (see Figures 5 and 6). Alternate 2 continues south through a short stretch of planted pine, continuing south along a subdivision road (Rex Drive) for another short distance. South of Rex Drive the alignment crosses a series of agricultural fields, eventually turning to the east and joining McDonald Road just north of the Old Pascagoula Road intersection. Alternate 2 has a total distance of 3.5 miles. Near the north origin point, a short stretch of Ben Hamilton Road will be improved to accommodate the new Alternate 2 design.



Figure 3. 2017 Aerial Photograph of Alternative 1

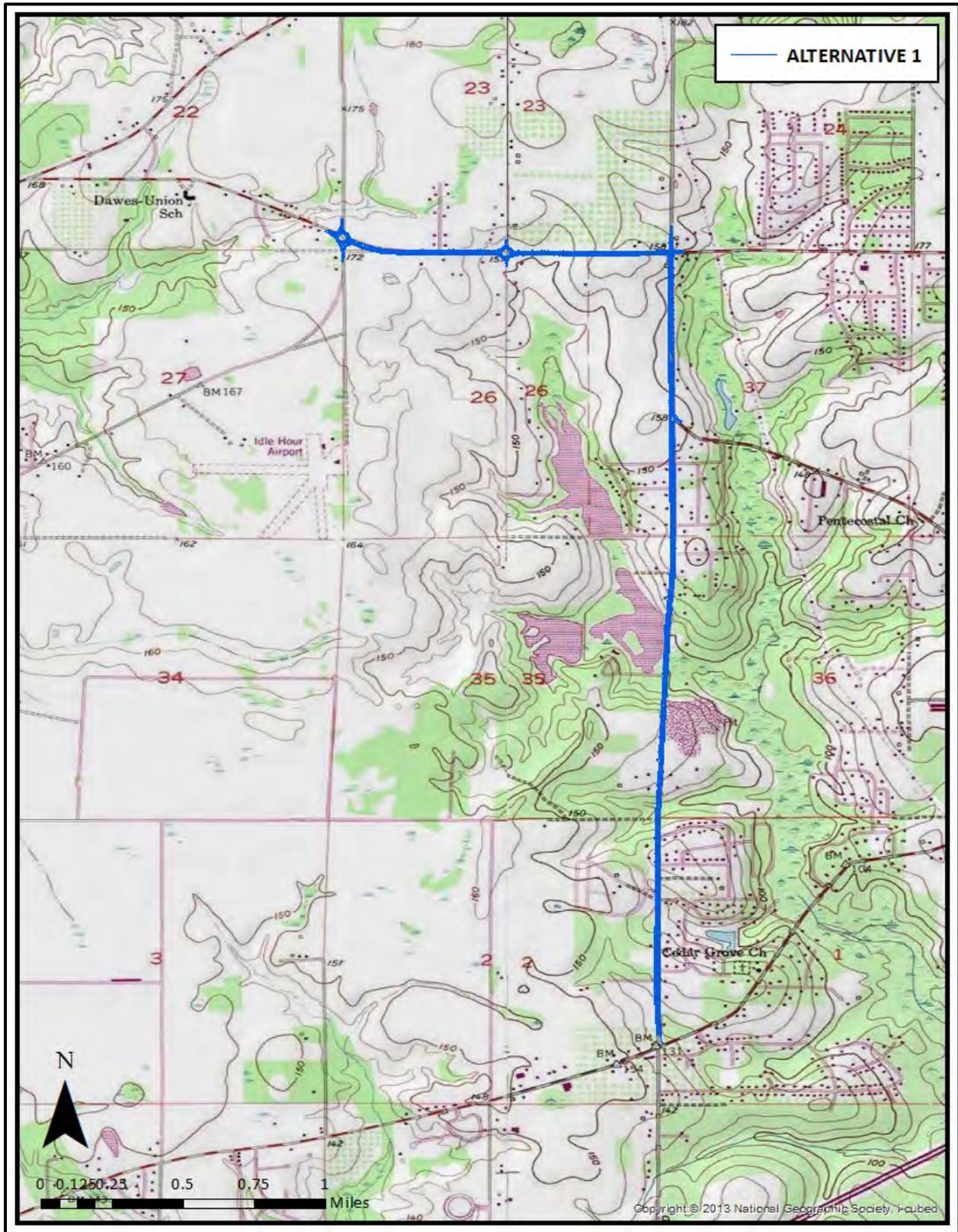


Figure 4. 2012 USGS Topographic Map of Alternative 1

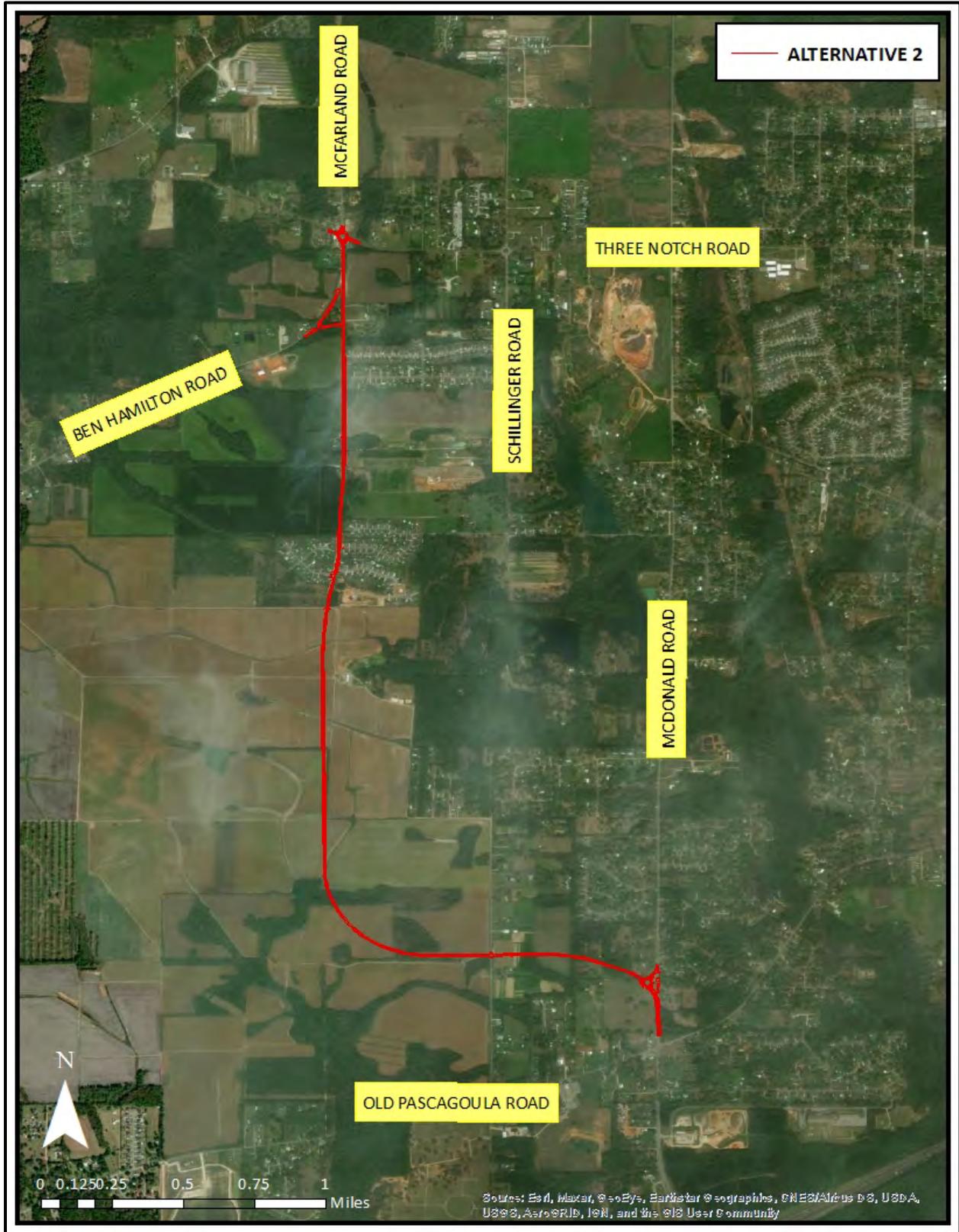


Figure 5. 2017 Aerial Photograph of Alternative 2

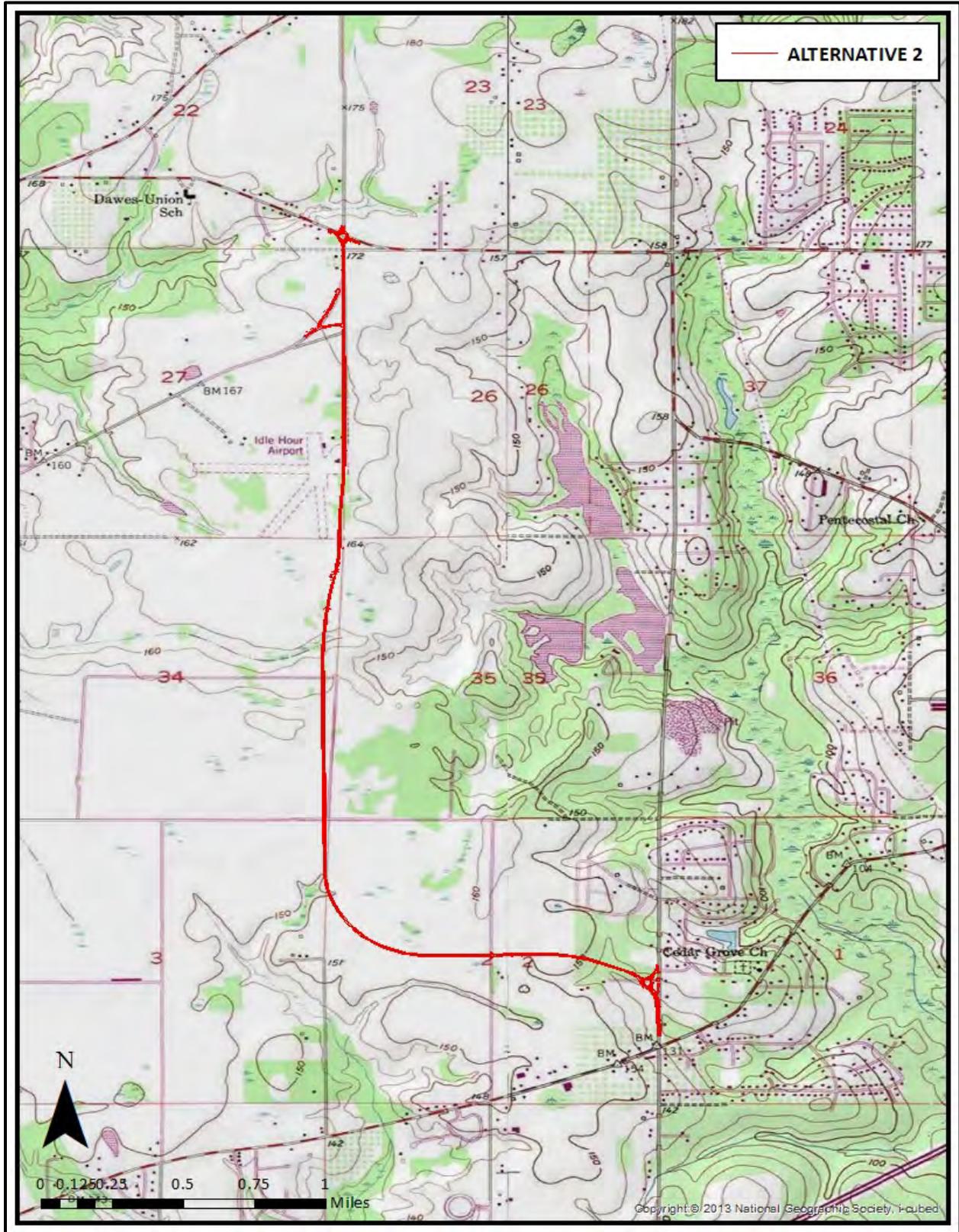


Figure 6. 2012 USGS Topographic Map of Alternative 2

2.0 SURVEY METHODOLOGY

The wetlands investigation was performed in accordance with the USACE Regulatory Branch – Mobile District, the Alabama Department of Conservation and Natural Resources (ADCNR), and the Alabama Department of Environmental Management (ADEM) guidelines. The wetland delineation for the study area was based on reference materials, including the 1987 Corps of Engineers Wetlands Delineation Manual, the 2010 Atlantic and Gulf Coastal Plain Regional Supplement, U.S. Geological Survey (USGS) topographic maps, historic and current aerial photographs, National Resource Conservation Service (NRCS) soil survey data, National Wetland Inventory (NWI) maps, and data collected during a site visits made on February 4 and 24, and March 30 and 31, 2021. Alternative 1 was assessed in March, and Alternative 2 was assessed in during the February dates. Regional supplement data sheets are included in Appendix A. Photographs of each data point are included as Appendix B. Prior to initiation of field work, geographic information system (GIS) ArcMap 10 software was used to compile known hydrologic, geologic, and other relevant information on the study area. See Figure 7 for the NRCS soil survey for Mobile County, Alabama Soil Survey, and see Figure 8 for NWI data within and around the survey area.

Potentially jurisdictional areas near proposed work were assessed during the site visit and are described in this document. Wetland determinations were made using observable vegetation, hydrology, and soils in accordance with the routine approach described in the Regional Supplement to the USACE Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (2010). Wetland boundaries and locations were not professionally surveyed but were located by a hand-held GPS device (Bad Elf GNSS Surveyor).

Atlantic and Gulf Coastal Plain Regional Supplement datasheets were completed at each data point (DP) location. At each data point location, soils, vegetation, and hydrology were described and representative photographs were taken. Photographs were also taken of stream boundaries and surface area was recorded.

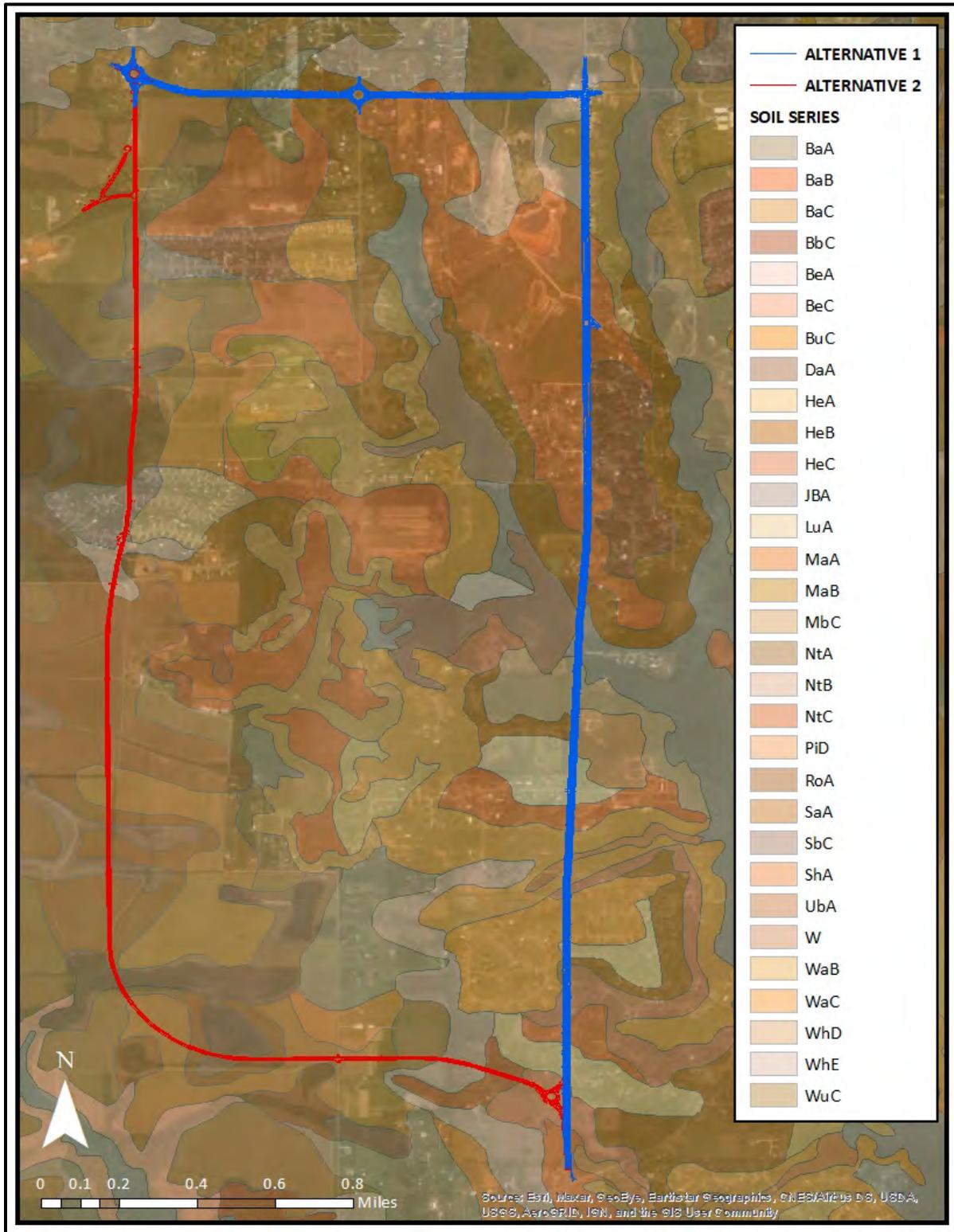


Figure 7. NRCS Soil Survey of Project Area

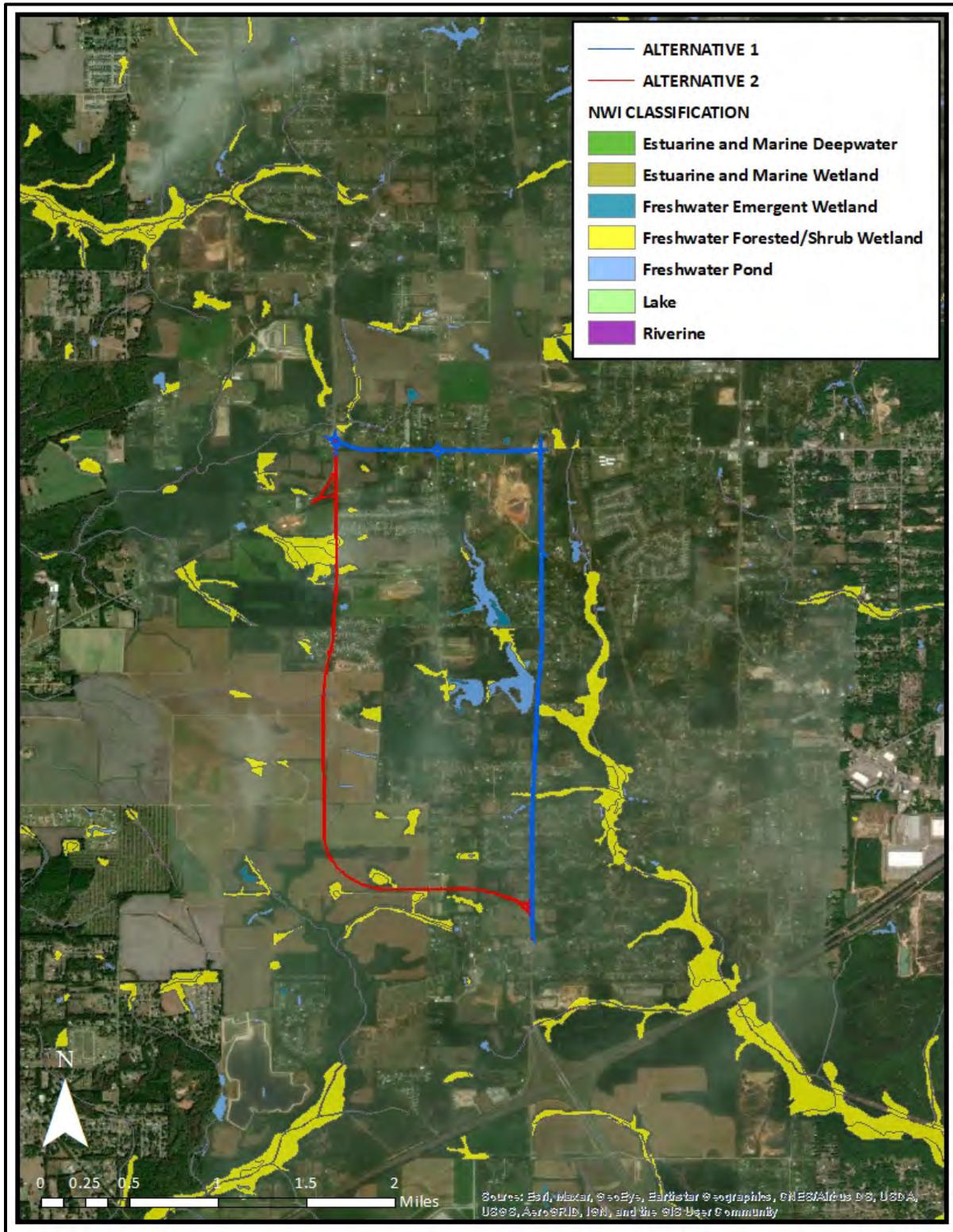


Figure 8. National Wetlands Inventory Map of Project Area

3.0 EXISTING CONDITIONS

A total of 3.17 acres of wetlands, one 19.22-acre lake, and 1,210 linear feet of RPWs were found within the Alternative 1 study corridor. A total of 3.84 acres of potentially jurisdictional wetlands were found within the Alternative 2 study corridor (See Figures 9 and 10).

Potential work area boundaries have yet to be defined; therefore, not all potential wetland and other waters will be impacted by the project. All potential jurisdictional areas should be considered preliminary prior to confirmation by the U.S. Army Corps of Engineers (USACE) Regulatory Branch – Mobile District.

3.1 LANDSCAPE SETTING

Terrain in the project area is along the hills and valleys of northeastern Mobile County. The project is in the Eastern Gulf Coast Flatwoods Major Land Resource Area (MLRA) 152A within the Atlantic and Gulf Coast Lowland Forest and Crop Land Resource Region (LRR) P as described by the NRCS. Dominant land use is commercial and residential immediately surrounding the project area.

3.2 HYDROLOGY

Alternative 1 is located within the Escatawpa watershed, USGS HUC #03170008. Alternative 2 is located within the Mobile Bay watershed, USGS HUC #03160205. Rainfall in February 2021 typical of the Gulf Coastal Plain region with sporadic showers and thunderstorms. Recorded rainfall for Mobile County in February 2021 totaled 4.06 inches, which was lower than the 5.12-inch average.

On February 4, 2021, skies were cloudy, the ambient high was recorded at 67°F, and humidity was observed at 86 percent. The closest recorded rainfall data location was at the Mobile Regional Airport, which recorded 0.12 inch of rainfall on February 1, 2021.

On February 24, 2021, skies were sunny, the ambient high was recorded at 74°F, and humidity was observed at 93 percent. The most recent precipitation event was a heavy rain totaling 0.26 inch on February 18, 2021.

On the morning of March 30, 2021, skies were cloudy, the ambient high was recorded at 75°F, and humidity was observed at 81 percent. The most recent precipitation event was a light shower totaling 0.06 inch on March 28, 2021.

On March 31, 2021, skies were sunny, the ambient high was recorded at 82°F, and humidity was observed at 89 percent. The most recent precipitation event were sporadic showers on March 30, 2021, totaling 0.08 inch.

3.3 VEGETATION

Plant communities in the project area ranged from barren uplands, forested uplands, and bottomland hardwoods. Barren uplands were located adjacent to residential areas and were

predominated by *Andropogon virginicus* (broomsedge bluestem), *Paspalum notatum* (bahiagrass), *Paspalum urvillei* (Vasey's grass), and *Stenotaphrum secundatum* (St. Augustine grass). Forested uplands were dominated by *Ilex vomitoria* (yaupon), *Lygodium japonicum* (Japanese climbing fern), *Magnolia grandiflora* (southern magnolia), *Pinus echinata* (shortleaf pine), *Pinus taeda* (loblolly pine), *Quercus virginiana* (live oak), *Rubus argutus* (sawtooth blackberry), *Smilax* spp. (greenbriar), and *Triadica sebifera* (Chinese tallow).

Bottomland hardwoods were predominated by *Carex glaucescens* (southern waxy sedge), *Cyrilla racemiflora* (swamp titi), *Dichanthelium scoparium* (velvet panicum), *Magnolia virginiana* (sweetbay), *Morella cerifera* (wax myrtle), *Nyssa aquatica* (water tupelo), *Nyssa biflora* (swamp tupelo), *Osmunda cinnamomea* (cinnamon fern), *Pinus elliottii* (shortleaf pine), *Taxodium ascendens* (pond cypress), and *Taxodium distichum* (bald cypress).

3.4 SOILS

The NRCS classifies soils as nonhydic, hydric inclusive, and hydric. Nonhydic soils show no evidence of hydrology passing through and are usually very well drained. Hydric inclusive soils are predominantly non-hydric but have some hydric qualities within minor components that can dominate major components under suitable conditions. Hydric soils can be identified in multiple ways, including reduction-oxidation (redox) of iron, manganese masses, mucky material, and stratification. Thirty soil series are mapped within and around the project area.

1. Bama fine sandy loam, 0-2% slopes (BaA) – Prime farmland soils found along ridges of fluviomarine terraces. Parent materials consist of loamy fluviomarine deposits. These soils are fine sandy loams and well drained and considered nonhydic.
2. Bama fine sandy loam, 2-5% slopes (BaB) – Prime farmland soils found along summits of fluviomarine terraces. Parent materials consist of loamy marine deposits. These soils are well drained and considered nonhydic.
3. Bama fine sandy loam, 5-8% slopes (BaC) – Farmland soils of statewide importance found along summits of fluviomarine terraces, whose parent material is loamy marine deposits. These soils are well drained fine sandy loams and considered nonhydic.
4. Bama-Urban land complex, 0-8% slopes (BbC) – Soils found along summits of fluviomarine terraces with a parent material of loamy marine deposits. These soils are well drained sandy clay loams and considered hydric inclusive.
5. Benndale fine sandy loam, 0-2% slopes (BeA) – Prime farmland soils found along summits and interfluves. Parent materials consist of coarse-loamy fluviomarine

deposits derived from sedimentary rock. These soils are well drained fine sandy loams and considered hydric inclusive.

6. Benndale fine sandy loam, 5-8% slopes (BeC) – Farmland soils of statewide importance found along shoulders of interfluves. Parent materials consist of coarse-loamy fluviomarine deposits derived from sedimentary rock. These soils are well drained fine sandy loams and considered hydric inclusive.

7. Benndale-Urban land complex, 0-8% slopes (BuC) – Soils found along shoulders of interfluves with a parent material of coarse-loamy fluviomarine deposits derived from sedimentary rock. These soils are well drained sandy loams and considered hydric inclusive.

8. Daleville loam, frequently ponded, 0-2% slopes (DaA) – Soils found along treads of floodplain steps developed from loamy fluviomarine deposits derived from sedimentary rock. These soils are poorly drained loams and considered hydric.

9. Heidel fine sandy loam 0-2% slopes (HeA) – Prime farmland soils found along shoulders and summits of fluviomarine terraces. Parent materials consist of loamy fluviomarine deposits derived from sedimentary rock. These soils are well drained fine sandy loams and considered nonhydric.

10. Heidel fine sandy loam 2-5% slopes (HeB) – Prime farmland soils found along shoulders and summits of fluviomarine terraces. Parent materials consist of loamy fluviomarine deposits derived from sedimentary rock. These soils are well drained fine sandy loams and considered nonhydric.

11. Heidel fine sandy loam 5-8% slopes (HeC) – Farmland soils of statewide importance found along backslopes and shoulders of fluviomarine terraces. Parent materials consist of loamy fluviomarine deposits derived from sedimentary rock. These soils are well drained fine sandy loams and considered hydric inclusive.

12. Johnston, Bibb and Pamlico, 0-1% slopes, frequently flooded (JBA) – Soils found along treads of floodplains derived from coarse-loamy alluvium. These soils are very poorly drained mucky loams and considered hydric.

13. Lucedale sandy loam, 0-2% slopes (LuA) – Prime farmland soils found along ridges and summits derived from fine-loamy marine deposits and sedimentary rock. These soils are well drained sandy clay loams and considered hydric inclusive.

14. Malbis fine sandy loam, 0-2% slopes (MaA) – Prime farmland soils found along summits and crests of fluviomarine terraces. Parent materials consist of fine-loamy marine deposits derived from sedimentary rock. These soils are well drained fine sandy loams and considered nonhydric.

15. Malbis fine sandy loam, 2-5% slopes (MaB) – Prime farmland soils found along summits, shoulders, and crests of fluviomarine terraces. Parent materials consist of fine-loamy marine deposits derived from sedimentary rock. These soils are well drained fine sandy loams and considered nonhydryc.

16. Malbis-Urban land complex, 0-8% slopes (MbC) – Soils found along summits and shoulders of fluviomarine terraces whose parent material is fine-loamy marine deposits derived from sedimentary rock. These soils are well drained fine sandy loams and considered nonhydryc.

17. Notcher fine sandy loam, 0-2% slopes (NtA) – Prime farmland soils found along summits and interfluves of fluviomarine terraces. Parent materials consist of loamy over clayey fluviomarine deposits derived from sedimentary rock. These soils are moderately well drained loams and considered hydric inclusive.

18. Notcher fine sandy loam, 2-5% slopes (NtB) – Prime farmland soils found along backslopes and sideslopes of fluviomarine terraces. Parent materials consist of loamy over clayey fluviomarine deposits derived from sedimentary rock. These soils are moderately well drained loams and considered hydric inclusive.

19. Notcher fine sandy loam, 5-8% slopes (NtC) – Farmland soils of statewide importance found along summits and interfluves of fluviomarine terraces. Parent materials consist of loamy over clayey fluviomarine deposits derived from sedimentary rock. These soils are moderately well drained loams and considered hydric inclusive.

20. Pits and Udorthents, 0-15% slopes (PiD) – Loamy and sandy mine spoil or earthy fill. These soils are well drained and considered nonhydryc.

21. Robertsdale loam, 0-1% slopes (RoA) – Prime farmland soils found along toeslopes, footslopes, and base slopes in depressions on fluviomarine terraces. Parent materials consist of loamy marine deposits derived from sedimentary rock. These soils are somewhat poorly drained sandy clay loams and considered hydric inclusive.

22. Saucier fine sandy loam, 0-2% slopes (SaA) – Prime farmland soils found along shoulders and crests of fluviomarine terraces. Parent materials consist of loamy fluviomarine deposits over clayed fluviomarine deposits. These soils are moderately well drained fine sandy loams and considered hydric inclusive.

23. Saucier-Urban land complex, 0-8% slopes (SbC) – Soils found along shoulders and crests of fluviomarine terraces developed from loamy fluviomarine deposits over clayey fluviomarine deposits. These soils are moderately well drained fine sandy loams and considered nonhydryc.

24. Smithton fine sandy loam, 0-1% slopes, occasionally flooded (ShA) – Soils found along toeslopes of floodplain steps developed from loamy alluvium derived from

sedimentary rock. These soils are poorly drained fine sandy loams and considered hydric.

25. Urban land, 0-8% slopes (UbA) – manufactured soils considered nonhydric.

26. Wadley loamy fine sand, 0-5% slopes (WaB) – Soils found along summits and backslopes of interfluves, whose parent material is sandy and loamy marine deposits. These soils are somewhat excessively drained sandy loams and considered nonhydric.

27. Wadley loamy fine sand, 5-8% slopes (WaC) – Soils found along summits and backslopes of interfluves, whose parent material is sandy and loamy marine deposits. These soils are somewhat excessively drained fine sand and considered hydric inclusive.

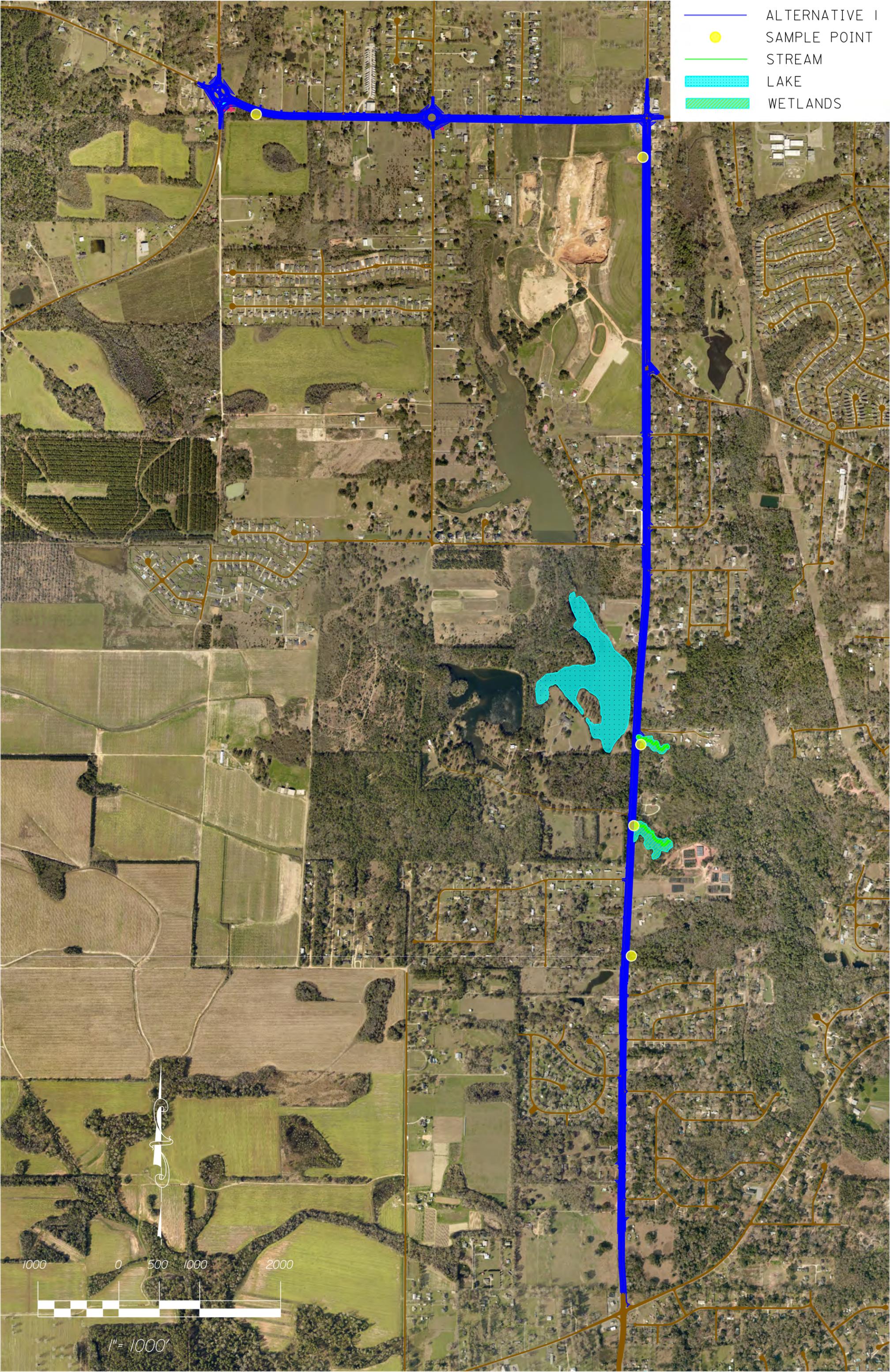
28. Wadley-Heidel complex, 8-15% slopes (WhD) – loamy fine sands and sandy loams found along summits, shoulders, and backslopes of fluvio marine terraces. Parent materials consist of sandy and loamy marine deposits. These soils are somewhat excessively drained and considered nonhydric.

29. Wadley-Heidel complex, 15-25% slopes (WhD) – loamy fine sands and sandy loams found along summits and backslopes of fluvio marine terraces. Parent materials consist of sandy and loamy marine deposits. These soils are somewhat excessively drained and considered nonhydric.

30. Wadley-Urban land complex, 0-8% slopes (WuC) – sandy loams found along summits and backslopes of fluvio marine terraces. Parent materials consist of sandy and loamy marine deposits. These soils are somewhat excessively drained and considered nonhydric.

***Figure 9. Sample Locations and Identified Wetlands
and Other Waters within Alternative 1 Study Area***

- ALTERNATIVE 1
- SAMPLE POINT
- STREAM
- LAKE
- WETLANDS

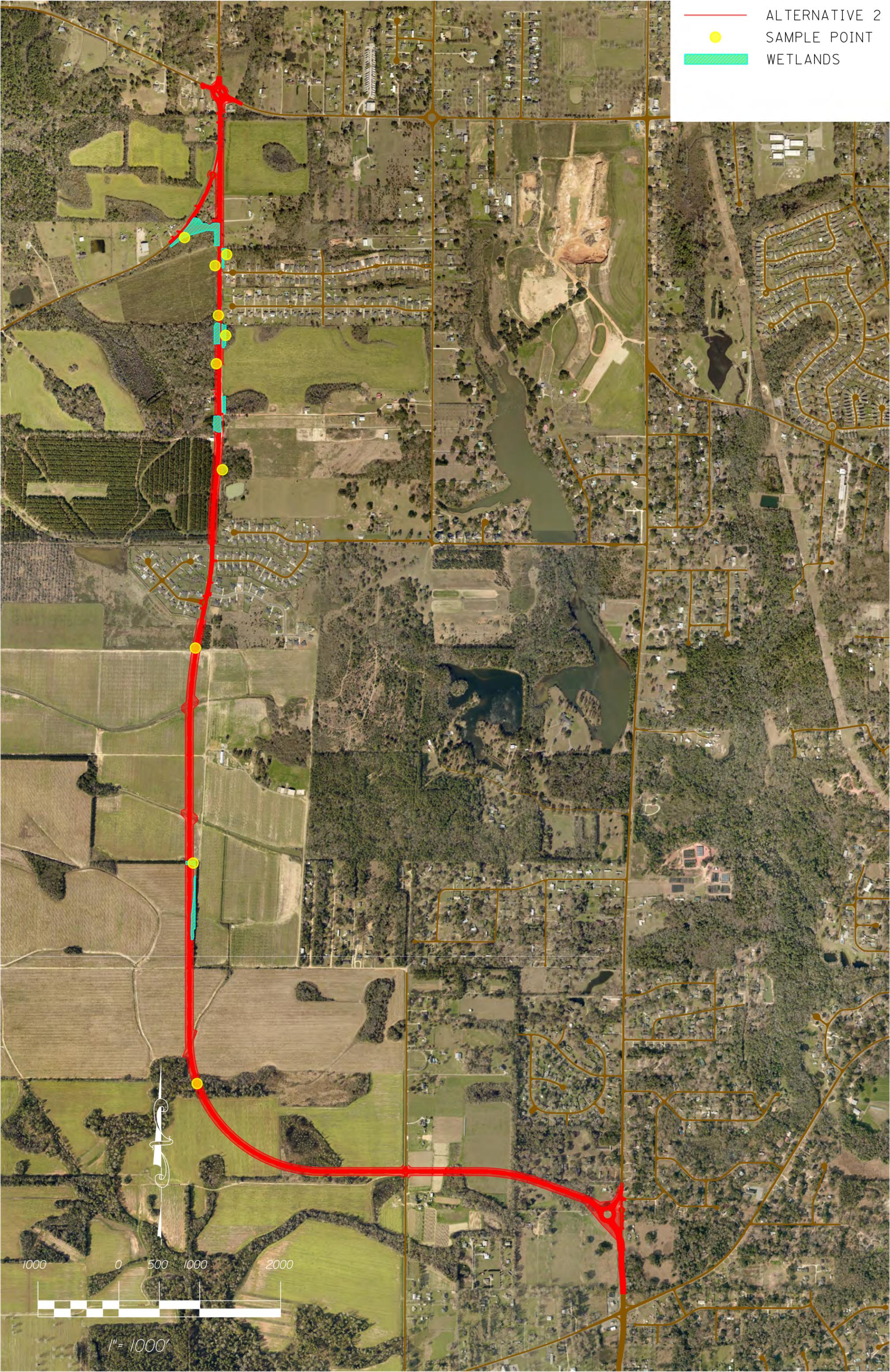


1000 0 500 1000 2000

1" = 1000'

***Figure 10. Sample Locations and Identified Wetlands
and Other Waters within Alternative 2 Study Area***

- ALTERNATIVE 2
- SAMPLE POINT
- ▨ WETLANDS



4.0 CONCLUSIONS AND RECOMMENDATIONS

A wetlands and other waters walking survey was performed on February 4 and 24, 2021. The study area encompassed 176.2 acres. The Alternative 1 survey area contained a total 3.17 acres of potentially jurisdictional wetlands, one 19.22-acre lake, and 605 linear feet of RPWs. Within the Alternative 2 survey area, a total of 3.84 acres of potentially jurisdictional wetlands were identified. At the completion of construction natural grade will be reestablished and wetlands could redevelop. Wetland determination data forms for each sampling point are included in Appendix A (Alternative 1) and Appendix B (Alternative 2). Site photographs taken during the site investigation are included in Appendix C (Alternative 1) and Appendix D (Alternative 2).

For jurisdictional wetlands and other waters of the U.S. that are proposed to be impacted, coordination will be required from the USACE, Alabama Department of Environmental Management (ADEM), and the Alabama Department of Conservation and Natural Resources (ADCNR). During construction, appropriate erosion control fencing should be placed around the perimeter of the construction zone to prevent any off-site release of materials which could work their way into adjacent wetland and surface water sites. The USACE application and permitting process allows for fill of wetland habitat for specific, justified projects, if appropriate compensatory mitigation is made. Other factors considered during the application process include wastewater treatment, alternatives analysis, and floodplain impacts.

5.0 REFERENCES

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- U.S. Climate Data. *Climate Mobile – Alabama (March 2021)*. Website accessed March 17, 2021. <https://www.usclimatedata.com/climate/mobile/alabama/united-states/usa10899>
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). Field Indicators of Hydric Soils in the United States. 2018: v 8.2. 55 pp.
- USDA, NRCS. *Plants Database (October 29, 2020)*. Website accessed March 4, 2021. <https://plants.usda.gov/java/>
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- U.S. Fish and Wildlife Service. *National Wetland Inventory – V2: Surface Waters and Wetlands. (October 1, 2020)*. Website accessed February 3, 2021. <https://www.fws.gov/wetlands/data/mapper.html>
- Weather Underground. *Mobile, AL Weather Conditions*. Website accessed March 4, 2021. <https://www.wunderground.com/weather/us/al/theodore/KMOB>

APPENDIX A
REGIONAL SUPPLEMENT DATA SHEETS FOR
ALTERNATIVE 1

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: McFarland Road Extension City/County: Theodore/Mobile Sampling Date: 02/04/2021
 Applicant/Owner: City of Mobile State: AL Sampling Point: ALT 1A
 Investigator(s): Cori Gavin Section, Township, Range: Section 27, Township 5 S, Range 3 W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 30.584721 Long: -88.259783 Datum: WGS84
 Soil Map Unit Name: Saucier fine sandy loam NWI classification: UP

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: The latest recorded rainfall event for the area was recorded on February 1, 2021 at 0.12 inch.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
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Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12+</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL

Sampling Point: ALT 1A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 2/2	98	5YR 3/3	2	C	PL	Loam	oxidized rhizopheres
2-8	10YR 4/2	98	5YR 2.5/1	2	C	M	Loam	Mn masses
8+	10YR 5/6	100					Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Mucky Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: McFarland Road Extension City/County: Theodore/Mobile Sampling Date: 02/04/2021
 Applicant/Owner: City of Mobile State: AL Sampling Point: ALT 1B
 Investigator(s): Cori Gavin Section, Township, Range: Section 26, Township 5 S, Range 3 W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 30.584081 Long: -88.258068 Datum: WGS84
 Soil Map Unit Name: Notcher fine sandy loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: The latest recorded rainfall event for the area was recorded on February 1, 2021 at 0.12 inch.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) ___ Aquatic Fauna (B13) ___ High Water Table (A2) Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) Hydrogen Sulfide Odor (C1) ___ Water Marks (B1) ___ Oxidized Rhizospheres along Living Roots (C3) ___ Sediment Deposits (B2) ___ Presence of Reduced Iron (C4) ___ Drift Deposits (B3) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Algal Mat or Crust (B4) ___ Thin Muck Surface (C7) ___ Iron Deposits (B5) ___ Other (Explain in Remarks) ___ Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) ___ Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) ___ Sphagnum moss (D8) (LRR T, U)
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Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>12+</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
---	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: ALT 1B

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				
1. <u>Cyrilla racemiflora</u>	75	Yes	FACW	
2. <u>Magnolia virginiana</u>	15	No	FACW	
3. <u>Pinus elliotii</u>	10	No	FACW	
4. _____				
5. _____				
6. _____				
	<u>100</u>	= Total Cover		
	50%	of total cover: <u>50</u> 20% of total cover: <u>20</u>		
Sapling Stratum (Plot size: <u>30</u>)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
	<u>0</u>	= Total Cover		
	50%	of total cover: _____ 20% of total cover: _____		
Shrub Stratum (Plot size: <u>30</u>)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
	<u>0</u>	= Total Cover		
	50%	of total cover: _____ 20% of total cover: _____		
Herb Stratum (Plot size: <u>30</u>)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
	<u>0</u>	= Total Cover		
	50%	of total cover: _____ 20% of total cover: _____		
Woody Vine Stratum (Plot size: <u>30</u>)				
1. <u>Lygodium japonicum</u>	30	No	FAC	
2. <u>Smilax bona-nox</u>	60	Yes	FAC	
3. _____				
4. _____				
5. _____				
	<u>90</u>	= Total Cover		
	50%	of total cover: <u>45</u> 20% of total cover: <u>18</u>		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species 100 x 2 = 200

FAC species 90 x 3 = 270

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: 190 (A) 470 (B)

Prevalence Index = B/A = 2.47

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: ALT 1B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 3/2	100					Loam	
2-8	10YR 3/3	98	5YR 2.5/1	2	C	M	Loam	Mn masses
8+	10YR 5/8	100					Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) **(LRR P, T, U)**
- 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- Muck Presence (A8) **(LRR U)**
- 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) **(MLRA 150A)**
- Sandy Mucky Mineral (S1) **(LRR O, S)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) **(LRR P, S, T, U)**

- Polyvalue Below Surface (S8) **(LRR S, T, U)**
- Thin Dark Surface (S9) **(LRR S, T, U)**
- Loamy Mucky Mineral (F1) **(LRR O)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR U)**
- Depleted Ochric (F11) **(MLRA 151)**
- Iron-Manganese Masses (F12) **(LRR O, P, T)**
- Umbric Surface (F13) **(LRR P, T, U)**
- Delta Ochric (F17) **(MLRA 151)**
- Reduced Vertic (F18) **(MLRA 150A, 150B)**
- Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR O)**
- 2 cm Muck (A10) **(LRR S)**
- Reduced Vertic (F18) **(outside MLRA 150A,B)**
- Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: McFarland Road Extension City/County: Theodore/Mobile Sampling Date: 02/04/2021
 Applicant/Owner: City of Mobile State: AL Sampling Point: ALT 1C
 Investigator(s): Cori Gavin Section, Township, Range: Section 27, Township 5 S, Range 3 W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): LRR T Lat: 30.583770 Long: -88.258575 Datum: WGS84
 Soil Map Unit Name: Notcher fine sandy loam NWI classification: UP

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: The latest recorded rainfall event for the area was recorded on February 1, 2021 at 0.12 inch.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
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Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: ALT 1C

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				
1. _____	_____			
2. _____	_____			
3. _____	_____			
4. _____	_____			
5. _____	_____			
6. _____	_____			
	<u>0</u>	= Total Cover		
	50% of total cover: _____		20% of total cover: _____	
Sapling Stratum (Plot size: <u>30</u>)				
1. _____	_____			
2. _____	_____			
3. _____	_____			
4. _____	_____			
5. _____	_____			
6. _____	_____			
	<u>0</u>	= Total Cover		
	50% of total cover: _____		20% of total cover: _____	
Shrub Stratum (Plot size: <u>30</u>)				
1. _____	_____			
2. _____	_____			
3. _____	_____			
4. _____	_____			
5. _____	_____			
6. _____	_____			
	<u>0</u>	= Total Cover		
	50% of total cover: _____		20% of total cover: _____	
Herb Stratum (Plot size: <u>30</u>)				
1. <u>Andropogon virginicus</u>	<u>50</u>	Yes	FAC	
2. <u>Paspalum urvillei</u>	<u>35</u>	Yes	FAC	
3. <u>Trifolium arevense</u>	<u>15</u>	No	FAC	
4. _____	_____			
5. _____	_____			
6. _____	_____			
7. _____	_____			
8. _____	_____			
9. _____	_____			
10. _____	_____			
11. _____	_____			
	<u>100</u>	= Total Cover		
	50% of total cover: <u>50</u>		20% of total cover: <u>20</u>	
Woody Vine Stratum (Plot size: <u>30</u>)				
1. _____	_____			
2. _____	_____			
3. _____	_____			
4. _____	_____			
5. _____	_____			
	<u>0</u>	= Total Cover		
	50% of total cover: _____		20% of total cover: _____	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species 100 x 3 = 300

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: 100 (A) 300 (B)

Prevalence Index = B/A = 3.0

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes No

Remarks: (If observed, list morphological adaptations below).

frequently mowed, no FACW/OBL species observed, no hydrology, and soils are nonhydric; therefore, this vegetation should be considered upland

SOIL

Sampling Point: ALT 1C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1	10YR 3/2	100					Loam	
1-6	10YR 4/2	100					Loam	
6+	10YR 5/6	100					Loam	clay/fill

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) **(LRR P, T, U)**
- 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- Muck Presence (A8) **(LRR U)**
- 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) **(MLRA 150A)**
- Sandy Mucky Mineral (S1) **(LRR O, S)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) **(LRR P, S, T, U)**

- Polyvalue Below Surface (S8) **(LRR S, T, U)**
- Thin Dark Surface (S9) **(LRR S, T, U)**
- Loamy Mucky Mineral (F1) **(LRR O)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR U)**
- Depleted Ochric (F11) **(MLRA 151)**
- Iron-Manganese Masses (F12) **(LRR O, P, T)**
- Umbric Surface (F13) **(LRR P, T, U)**
- Delta Ochric (F17) **(MLRA 151)**
- Reduced Vertic (F18) **(MLRA 150A, 150B)**
- Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR O)**
- 2 cm Muck (A10) **(LRR S)**
- Reduced Vertic (F18) **(outside MLRA 150A,B)**
- Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: McFarland Road Extension City/County: Theodore/Mobile Sampling Date: 02/04/2021
 Applicant/Owner: City of Mobile State: AL Sampling Point: ALT 1D
 Investigator(s): Cori Gavin Section, Township, Range: Section 26, Township 5 S, Range 3 W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 30.582074 Long: -88.258436 Datum: WGS84
 Soil Map Unit Name: Notcher fine sandy loam NWI classification: UP

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: The latest recorded rainfall event for the area was recorded on February 1, 2021 at 0.12 inch. Vegetation is barely hydrophytic. Sample point most likely taken on upland boundary	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
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Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: ALT 1D

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				
1. <u>Magnolia virginiana</u>	<u>10</u>	No	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <u>Pinus taeda</u>	<u>30</u>	No	FAC	
3. <u>Triadica sebifera</u>	<u>60</u>	Yes	FAC	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>100</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>170</u> x 3 = <u>510</u> FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>180</u> (A) <u>530</u> (B) Prevalence Index = B/A = <u>2.94</u>
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				
Sapling Stratum (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>0</u> = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% of total cover: _____ 20% of total cover: _____				
Shrub Stratum (Plot size: <u>30</u>)				
1. <u>Ilex vomitoria</u>	<u>40</u>	Yes	FAC	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>40</u> = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
50% of total cover: <u>20</u> 20% of total cover: <u>8</u>				
Herb Stratum (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>0</u> = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Woody Vine Stratum (Plot size: <u>30</u>)				
1. <u>Lygodium japonicum</u>	<u>10</u>	No	FAC	_____ _____ _____ _____ _____
2. <u>Smilax rotundifolia</u>	<u>30</u>	Yes	FAC	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>40</u> = Total Cover				
50% of total cover: <u>20</u> 20% of total cover: <u>8</u>				
Remarks: (If observed, list morphological adaptations below).				

SOIL

Sampling Point: ALT 1D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/2	100					Loam	
3-6	10YR 4/4	100					Loam	
6+	10YR 5/6	100					Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) **(LRR P, T, U)**
- 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- Muck Presence (A8) **(LRR U)**
- 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) **(MLRA 150A)**
- Sandy Mucky Mineral (S1) **(LRR O, S)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) **(LRR P, S, T, U)**

- Polyvalue Below Surface (S8) **(LRR S, T, U)**
- Thin Dark Surface (S9) **(LRR S, T, U)**
- Loamy Mucky Mineral (F1) **(LRR O)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR U)**
- Depleted Ochric (F11) **(MLRA 151)**
- Iron-Manganese Masses (F12) **(LRR O, P, T)**
- Umbric Surface (F13) **(LRR P, T, U)**
- Delta Ochric (F17) **(MLRA 151)**
- Reduced Vertic (F18) **(MLRA 150A, 150B)**
- Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR O)**
- 2 cm Muck (A10) **(LRR S)**
- Reduced Vertic (F18) **(outside MLRA 150A,B)**
- Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: McFarland Road Extension City/County: Theodore/Mobile Sampling Date: 02/04/2021
 Applicant/Owner: City of Mobile State: AL Sampling Point: ALT 1E
 Investigator(s): Cori Gavin Section, Township, Range: Section 26, Township 5 S, Range 3 W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 30.581397 Long: -88.258144 Datum: WGS84
 Soil Map Unit Name: Daleville loam NWI classification: UP

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: The latest recorded rainfall event for the area was recorded on February 1, 2021 at 0.12 inch. Tupelo swamp	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input checked="" type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input checked="" type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input checked="" type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>1</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>5+</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12+</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: ALT 1E

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				
1. <u>Magnolia virginica</u>	<u>10</u>	No	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <u>Nyssa biflora</u>	<u>70</u>	Yes	OBL	
3. <u>Taxodium ascendens</u>	<u>20</u>	No	OBL	
4. _____				
5. _____				
6. _____				
	<u>100</u>			
= Total Cover				
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				
Sapling Stratum (Plot size: <u>30</u>)				
1. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>90</u> x 1 = <u>90</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>30</u> x 3 = <u>90</u> FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>140</u> (A) <u>220</u> (B) Prevalence Index = B/A = <u>1.57</u>
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
	<u>0</u>			
= Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Shrub Stratum (Plot size: <u>30</u>)				
1. _____				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
	<u>0</u>			
= Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Herb Stratum (Plot size: <u>30</u>)				
1. <u>Athyrium filix-femina</u>	<u>10</u>	No	FAC	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
2. <u>Lygodium japonicum</u>	<u>20</u>	Yes	FAC	
3. <u>Osmunda cinnamomea</u>	<u>10</u>	No	FACW	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
	<u>40</u>			
= Total Cover				
50% of total cover: <u>20</u> 20% of total cover: <u>8</u>				
Woody Vine Stratum (Plot size: <u>30</u>)				
1. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____				
3. _____				
4. _____				
5. _____				
	<u>0</u>			
= Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Remarks: (If observed, list morphological adaptations below).				

SOIL

Sampling Point: ALT 1E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	7.5YR 3/1	100					Loam	muck
4+	7.5YR 2.5/1	100					Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Mucky Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: McFarland Road Extension City/County: Theodore/Mobile Sampling Date: 02/04/2021
 Applicant/Owner: City of Mobile State: AL Sampling Point: ALT 1F
 Investigator(s): Cori Gavin Section, Township, Range: Section 26, Township 5 S, Range 3 W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 30.580427 Long: -88.258501 Datum: WGS84
 Soil Map Unit Name: Saucier fine sandy loam NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: The latest recorded rainfall event for the area was recorded on February 1, 2021 at 0.12 inch.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: ALT 1F

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				
1. <u>Magnolia grandiflora</u>	<u>25</u>	No	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <u>Triadica sebifera</u>	<u>75</u>	Yes	FAC	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>100</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>220</u> x 3 = <u>660</u> FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>220</u> (A) <u>660</u> (B) Prevalence Index = B/A = <u>3.0</u>
50% of total cover: <u>50</u>		20% of total cover: <u>20</u>		
Sapling Stratum (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>0</u> = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% of total cover: _____		20% of total cover: _____		
Shrub Stratum (Plot size: <u>30</u>)				
1. <u>Ilex vomitoria</u>	<u>60</u>	Yes	FAC	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>60</u> = Total Cover				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
50% of total cover: <u>30</u>		20% of total cover: <u>12</u>		
Herb Stratum (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>0</u> = Total Cover				
50% of total cover: _____		20% of total cover: _____		
Woody Vine Stratum (Plot size: <u>30</u>)				
1. <u>Smilax glauca</u>	<u>60</u>	Yes	FAC	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>60</u> = Total Cover				
50% of total cover: <u>30</u>		20% of total cover: <u>12</u>		

Remarks: (If observed, list morphological adaptations below).

No FACW or OBL species, soils are nonhydric, and no evidence of hydrology - vegetation is considered up

SOIL

Sampling Point: ALT 1F

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 4/2	100					Loam	
2-10	10YR 4/3	100					Loam	
10+	10YR 5/6	100					Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) **(LRR P, T, U)**
- 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- Muck Presence (A8) **(LRR U)**
- 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) **(MLRA 150A)**
- Sandy Mucky Mineral (S1) **(LRR O, S)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) **(LRR P, S, T, U)**

- Polyvalue Below Surface (S8) **(LRR S, T, U)**
- Thin Dark Surface (S9) **(LRR S, T, U)**
- Loamy Mucky Mineral (F1) **(LRR O)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR U)**
- Depleted Ochric (F11) **(MLRA 151)**
- Iron-Manganese Masses (F12) **(LRR O, P, T)**
- Umbric Surface (F13) **(LRR P, T, U)**
- Delta Ochric (F17) **(MLRA 151)**
- Reduced Vertic (F18) **(MLRA 150A, 150B)**
- Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR O)**
- 2 cm Muck (A10) **(LRR S)**
- Reduced Vertic (F18) **(outside MLRA 150A,B)**
- Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: McFarland Road Extension City/County: Theodore/Mobile Sampling Date: 02/04/2021
 Applicant/Owner: City of Mobile State: AL Sampling Point: ALT 1G
 Investigator(s): Cori Gavin Section, Township, Range: Section 26, Township 5 S, Range 3 W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 30.576816 Long: -88.258235 Datum: WGS84
 Soil Map Unit Name: Robertsdale loam NWI classification: UP

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: The latest recorded rainfall event for the area was recorded on February 1, 2021 at 0.12 inch.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: ALT 1G

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Magnolia grandiflora</u>	<u>30</u>	Yes	FAC
2. <u>Quercus virginiana</u>	<u>40</u>	Yes	FACU
3. <u>Triadica sebifera</u>	<u>20</u>	No	FAC
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
<u>90</u> = Total Cover			
50% of total cover: <u>45</u> 20% of total cover: <u>18</u>			

Sapling Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ilex vomitoria</u>	<u>30</u>	Yes	FAC
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
<u>30</u> = Total Cover			
50% of total cover: <u>15</u> 20% of total cover: <u>6</u>			

Shrub Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			

Herb Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lygodium japonicum</u>	<u>25</u>	Yes	FAC
2. <u>Smilax bona-nox</u>	<u>15</u>	No	FAC
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
<u>40</u> = Total Cover			
50% of total cover: <u>20</u> 20% of total cover: <u>8</u>			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species <u>120</u>	x 3 = <u>360</u>
FACU species <u>40</u>	x 4 = <u>160</u>
UPL species _____	x 5 = _____
Column Totals: <u>160</u> (A)	<u>520</u> (B)

Prevalence Index = B/A = 3.25

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: ALT 1G

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 4/3	100					Loam	
8+	2.5Y 5/4	100					Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) **(LRR P, T, U)**
- 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- Muck Presence (A8) **(LRR U)**
- 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) **(MLRA 150A)**
- Sandy Mucky Mineral (S1) **(LRR O, S)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) **(LRR P, S, T, U)**

- Polyvalue Below Surface (S8) **(LRR S, T, U)**
- Thin Dark Surface (S9) **(LRR S, T, U)**
- Loamy Mucky Mineral (F1) **(LRR O)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR U)**
- Depleted Ochric (F11) **(MLRA 151)**
- Iron-Manganese Masses (F12) **(LRR O, P, T)**
- Umbric Surface (F13) **(LRR P, T, U)**
- Delta Ochric (F17) **(MLRA 151)**
- Reduced Vertic (F18) **(MLRA 150A, 150B)**
- Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR O)**
- 2 cm Muck (A10) **(LRR S)**
- Reduced Vertic (F18) **(outside MLRA 150A,B)**
- Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: McFarland Road Extension City/County: Theodore/Mobile Sampling Date: 02/24/2021
 Applicant/Owner: City of Mobile State: AL Sampling Point: ALT 1H
 Investigator(s): Cori Gavin Section, Township, Range: Section 34, Township 5S, Range 3W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 3-5
 Subregion (LRR or MLRA): LRR T Lat: 30.570734 Long: -88.259247 Datum: WGS84
 Soil Map Unit Name: Notcher fine sandy loam NWI classification: UP

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Last recorded rain event was on February 18, 2021 with 0.26 inch of precipitation.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
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Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: ALT 1H

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				
1. <u>Pinus echinata</u>	<u>30</u>	Yes	FAC	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
	<u>30</u> = Total Cover			
	50% of total cover: <u>15</u>		20% of total cover: <u>6</u>	
Sapling Stratum (Plot size: <u>30</u>)				
1. <u>Ilex vomitoria</u>	<u>50</u>	Yes	FAC	
2. <u>Morella cerifera</u>	<u>30</u>	No	FAC	
3. _____				
4. _____				
5. _____				
6. _____				
	<u>80</u> = Total Cover			
	50% of total cover: <u>40</u>		20% of total cover: <u>16</u>	
Shrub Stratum (Plot size: <u>30</u>)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
	<u>0</u> = Total Cover			
	50% of total cover: _____		20% of total cover: _____	
Herb Stratum (Plot size: <u>30</u>)				
1. <u>Andropogon virginicus</u>	<u>80</u>	Yes	FAC	
2. <u>Eupatorium cappillifolium</u>	<u>50</u>	Yes	FACU	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
	<u>130</u> = Total Cover			
	50% of total cover: <u>60</u>		20% of total cover: <u>24</u>	
Woody Vine Stratum (Plot size: <u>30</u>)				
1. <u>Rubus argustus</u>	<u>50</u>	Yes	FAC	
2. _____				
3. _____				
4. _____				
5. _____				
	<u>50</u> = Total Cover			
	50% of total cover: <u>25</u>		20% of total cover: <u>10</u>	
Dominance Test worksheet:				
Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)				
Total Number of Dominant Species Across All Strata: <u>4</u> (B)				
Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80</u> (A/B)				
Prevalence Index worksheet:				
Total % Cover of:		Multiply by:		
OBL species	_____	x 1 =	_____	
FACW species	_____	x 2 =	_____	
FAC species	<u>240</u>	x 3 =	<u>720</u>	
FACU species	<u>50</u>	x 4 =	<u>200</u>	
UPL species	_____	x 5 =	_____	
Column Totals:	<u>290</u> (A)		<u>920</u> (B)	
Prevalence Index = B/A = <u>3.17</u>				
Hydrophytic Vegetation Indicators:				
<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation				
<input type="checkbox"/> 2 - Dominance Test is >50%				
<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹				
<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Definitions of Five Vegetation Strata:				
Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).				
Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.				
Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.				
Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.				
Woody vine – All woody vines, regardless of height.				
Hydrophytic Vegetation Present?				
Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
Remarks: (If observed, list morphological adaptations below).				

SOIL

Sampling Point: ALT 1H

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 4/2	100					Loam	
4+	10YR 5/8	100					Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) **(LRR P, T, U)**
- 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- Muck Presence (A8) **(LRR U)**
- 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) **(MLRA 150A)**
- Sandy Mucky Mineral (S1) **(LRR O, S)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) **(LRR P, S, T, U)**

- Polyvalue Below Surface (S8) **(LRR S, T, U)**
- Thin Dark Surface (S9) **(LRR S, T, U)**
- Loamy Mucky Mineral (F1) **(LRR O)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR U)**
- Depleted Ochric (F11) **(MLRA 151)**
- Iron-Manganese Masses (F12) **(LRR O, P, T)**
- Umbric Surface (F13) **(LRR P, T, U)**
- Delta Ochric (F17) **(MLRA 151)**
- Reduced Vertic (F18) **(MLRA 150A, 150B)**
- Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR O)**
- 2 cm Muck (A10) **(LRR S)**
- Reduced Vertic (F18) **(outside MLRA 150A,B)**
- Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: McFarland Road Extension City/County: Theodore/Mobile Sampling Date: 02/24/2021
 Applicant/Owner: City of Mobile State: AL Sampling Point: ALT 11
 Investigator(s): Cori Gavin Section, Township, Range: Section 34, Township 5S, Range 3W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): LRR T Lat: 30.563406 Long: -88.259278 Datum: WGS84
 Soil Map Unit Name: Saucier fine sandy loam NWI classification: UP

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Last recorded rain event was on February 18, 2021 with 0.26 inch of precipitation.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
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Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: ALT 11

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				
1. <u>Pinus echinata</u>	<u>75</u>	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <u>Triadica sebifera</u>	<u>25</u>	No	FAC	
3. _____				
4. _____				
5. _____				
6. _____				
<u>100</u> = Total Cover				
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				
Sapling Stratum (Plot size: <u>30</u>)				
1. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>230</u> x 3 = <u>690</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species _____ x 5 = _____ Column Totals: <u>240</u> (A) <u>730</u> (B) Prevalence Index = B/A = <u>3.04</u>
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
<u>0</u> = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Shrub Stratum (Plot size: <u>30</u>)				
1. <u>Frangula caroliniana</u>	<u>10</u>	No	FACU	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Ilex vomitoria</u>	<u>80</u>	Yes	FAC	
3. _____				
4. _____				
5. _____				
6. _____				
<u>90</u> = Total Cover				
50% of total cover: <u>45</u> 20% of total cover: <u>18</u>				
Herb Stratum (Plot size: <u>30</u>)				
1. _____				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
<u>0</u> = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Woody Vine Stratum (Plot size: <u>30</u>)				
1. <u>Rubus argutus</u>	<u>30</u>	Yes	FAC	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. <u>Smilax bona-nox</u>	<u>10</u>	No	FAC	
3. <u>Smilax glaucescens</u>	<u>10</u>	No	FAC	
4. _____				
5. _____				
<u>50</u> = Total Cover				
50% of total cover: <u>25</u> 20% of total cover: <u>10</u>				
Remarks: (If observed, list morphological adaptations below).				

SOIL

Sampling Point: ALT 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 2/1	100					Loam	
8+	10YR 5/4	100					Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) **(LRR P, T, U)**
- 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- Muck Presence (A8) **(LRR U)**
- 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) **(MLRA 150A)**
- Sandy Mucky Mineral (S1) **(LRR O, S)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) **(LRR P, S, T, U)**

- Polyvalue Below Surface (S8) **(LRR S, T, U)**
- Thin Dark Surface (S9) **(LRR S, T, U)**
- Loamy Mucky Mineral (F1) **(LRR O)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR U)**
- Depleted Ochric (F11) **(MLRA 151)**
- Iron-Manganese Masses (F12) **(LRR O, P, T)**
- Umbric Surface (F13) **(LRR P, T, U)**
- Delta Ochric (F17) **(MLRA 151)**
- Reduced Vertic (F18) **(MLRA 150A, 150B)**
- Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR O)**
- 2 cm Muck (A10) **(LRR S)**
- Reduced Vertic (F18) **(outside MLRA 150A,B)**
- Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: McFarland Road Extension City/County: Theodore/Mobile Sampling Date: 02/24/2021
 Applicant/Owner: City of Mobile State: AL Sampling Point: ALT 1J
 Investigator(s): Cori Gavin Section, Township, Range: Section 2, Township 6S, Range 3W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 30.555864 Long: -88.259446 Datum: WGS84
 Soil Map Unit Name: Daleville Loam NWI classification: UP

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Last recorded rain event was on February 18, 2021 with 0.26 inch of precipitation.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input checked="" type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input checked="" type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>2</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0+</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12+</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: buttressing of tree trunks	

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: ALT 1J

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				
1. <u>Cyrilla racemiflora</u>	<u>40</u>	Yes	FACW	
2. <u>Nyssa aquatica</u>	<u>40</u>	Yes	OBL	
3. _____				
4. _____				
5. _____				
6. _____				
	<u>80</u> = Total Cover			
	50% of total cover: <u>40</u>		20% of total cover: <u>16</u>	
Sapling Stratum (Plot size: <u>30</u>)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
	<u>0</u> = Total Cover			
	50% of total cover: _____		20% of total cover: _____	
Shrub Stratum (Plot size: <u>30</u>)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
	<u>0</u> = Total Cover			
	50% of total cover: _____		20% of total cover: _____	
Herb Stratum (Plot size: <u>30</u>)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
	<u>0</u> = Total Cover			
	50% of total cover: _____		20% of total cover: _____	
Woody Vine Stratum (Plot size: <u>30</u>)				
1. <u>Rubus argutus</u>	<u>20</u>	Yes	FAC	
2. _____				
3. _____				
4. _____				
5. _____				
	<u>20</u> = Total Cover			
	50% of total cover: <u>10</u>		20% of total cover: <u>4</u>	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>40</u>	x 1 = <u>40</u>
FACW species <u>40</u>	x 2 = <u>80</u>
FAC species <u>20</u>	x 3 = <u>60</u>
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: <u>100</u> (A)	<u>180</u> (B)

Prevalence Index = B/A = 1.8

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes No

Remarks: (If observed, list morphological adaptations below).

ground level covered in sphagnum moss/leaf litter

SOIL

Sampling Point: ALT 1J

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1	5YR 2.1/1	100					Loam	muck
1-6	5YR 3/1	100					Loam	
6+	10YR 3/2	95	5YR 5/8	5	C	M	Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Mucky Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

APPENDIX B

REGIONAL SUPPLEMENT DATA SHEETS FOR

ALTERNATIVE 2

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: McFarland Road Extension City/County: Theodore/Mobile Sampling Date: 3/30/2021
 Applicant/Owner: Mobile County Commission State: AL Sampling Point: ALT 2A
 Investigator(s): Cori Gavin Section, Township, Range: Section 26, Township 5S, Range 3W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 30.588935 Long: -88.257000 Datum: WGS84
 Soil Map Unit Name: Saucier fine sandy loam, 0-2% slopes NWI classification: UP

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
---	--

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: ALT 2A

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				
1. <u>Quercus alba</u>	<u>40</u>	Yes	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80</u> (A/B)
2. <u>Quercus virginiana</u>	<u>10</u>	No	FACU	
3. <u>Triadica sebifera</u>	<u>50</u>	Yes	FAC	
4. _____				
5. _____				
6. _____				
<u>100</u> = Total Cover				
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				
Sapling Stratum (Plot size: <u>30</u>)				
1. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>170</u> x 3 = <u>510</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species _____ x 5 = _____ Column Totals: <u>220</u> (A) <u>710</u> (B) Prevalence Index = B/A = <u>3.23</u>
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
<u>0</u> = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Shrub Stratum (Plot size: <u>30</u>)				
1. <u>Ligustrum sinense</u>	<u>20</u>	Yes	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
<u>20</u> = Total Cover				
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>				
Herb Stratum (Plot size: <u>30</u>)				
1. _____				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
<u>0</u> = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Woody Vine Stratum (Plot size: <u>30</u>)				
1. <u>Rubus argutus</u>	<u>50</u>	Yes	FAC	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. <u>Smilax bona-nox</u>	<u>35</u>	Yes	FAC	
3. <u>Smilax glauca</u>	<u>15</u>	No	FAC	
4. _____				
5. _____				
<u>100</u> = Total Cover				
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				
Remarks: (If observed, list morphological adaptations below).				

SOIL

Sampling Point: ALT 2A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/2	100					Loam	
3-12+	10YR 5/8	100					Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) **(LRR P, T, U)**
- 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- Muck Presence (A8) **(LRR U)**
- 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) **(MLRA 150A)**
- Sandy Mucky Mineral (S1) **(LRR O, S)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) **(LRR P, S, T, U)**

- Polyvalue Below Surface (S8) **(LRR S, T, U)**
- Thin Dark Surface (S9) **(LRR S, T, U)**
- Loamy Mucky Mineral (F1) **(LRR O)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR U)**
- Depleted Ochric (F11) **(MLRA 151)**
- Iron-Manganese Masses (F12) **(LRR O, P, T)**
- Umbric Surface (F13) **(LRR P, T, U)**
- Delta Ochric (F17) **(MLRA 151)**
- Reduced Vertic (F18) **(MLRA 150A, 150B)**
- Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR O)**
- 2 cm Muck (A10) **(LRR S)**
- Reduced Vertic (F18) **(outside MLRA 150A,B)**
- Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: McFarland Road Extension City/County: Theodore/Mobile Sampling Date: 3/30/2021
 Applicant/Owner: Mobile County Commission State: AL Sampling Point: ALT 2B
 Investigator(s): Cori Gavin Section, Township, Range: Section 37, Township 5S, Range 3W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 2-5
 Subregion (LRR or MLRA): LRR T Lat: 30.587558 Long: -88.241796 Datum: WGS84
 Soil Map Unit Name: Notcher fine sandy loam, 2-5% slopes NWI classification: UP

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: ALT 2B

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____			
2. _____	_____			
3. _____	_____			
4. _____	_____			
5. _____	_____			
6. _____	_____			
0 = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Sapling Stratum (Plot size: <u>30</u>)				
1. _____	_____			
2. _____	_____			
3. _____	_____			
4. _____	_____			
5. _____	_____			
6. _____	_____			
0 = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Shrub Stratum (Plot size: <u>30</u>)				
1. _____	_____			
2. _____	_____			
3. _____	_____			
4. _____	_____			
5. _____	_____			
6. _____	_____			
0 = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Herb Stratum (Plot size: <u>30</u>)				
1. <u>Andropogon virginicus</u>	20	No	FAC	
2. <u>Carex austrina</u>	20	No	FACU	
3. <u>Eupatorium capillifolium</u>	50	Yes	FACU	
4. <u>Solidago spp.</u>	30	Yes	FAC	
5. <u>Verbena bonariensis</u>	30	Yes	FAC	
6. _____	_____			
7. _____	_____			
8. _____	_____			
9. _____	_____			
10. _____	_____			
11. _____	_____			
150 = Total Cover				
50% of total cover: <u>75</u> 20% of total cover: <u>30</u>				
Woody Vine Stratum (Plot size: <u>30</u>)				
1. <u>Rubus argutus</u>	50	Yes	FAC	
2. _____	_____			
3. _____	_____			
4. _____	_____			
5. _____	_____			
50 = Total Cover				
50% of total cover: <u>25</u> 20% of total cover: <u>10</u>				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species 130 x 3 = 390

FACU species 70 x 4 = 280

UPL species _____ x 5 = _____

Column Totals: 200 (A) 670 (B)

Prevalence Index = B/A = 3.35

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: ALT 2B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1	10YR 3/3	100					Loam	
1-8	10YR 3/2	100					Loam	
8-12+	7.5YR 3/3	100					Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Mucky Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: McFarland Road Extension City/County: Theodore/Mobile Sampling Date: 3/30/2021
 Applicant/Owner: Mobile County Commission State: AL Sampling Point: ALT 2C
 Investigator(s): Cori Gavin Section, Township, Range: Section 36, Township 5S, Range 3W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0-1
 Subregion (LRR or MLRA): LRR T Lat: 30.567546 Long: -88.241725 Datum: WGS84
 Soil Map Unit Name: Johnson, Bibb, and Pamlico, 0-1% slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: ALT 2C

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				
1. <u>Magnolia grandiflora</u>	<u>30</u>	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. <u>Quercus alba</u>	<u>10</u>	No	FACU	
3. <u>Quercus virginiana</u>	<u>10</u>	No	FACU	
4. <u>Triadica sebifera</u>	<u>20</u>	Yes	FAC	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>70</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>80</u> x 3 = <u>240</u> FACU species <u>110</u> x 4 = <u>440</u> UPL species _____ x 5 = _____ Column Totals: <u>190</u> (A) <u>680</u> (B) Prevalence Index = B/A = <u>3.58</u>
50% of total cover: <u>35</u>		20% of total cover: <u>14</u>		
Sapling Stratum (Plot size: <u>30</u>)				
1. <u>Quercus alba</u>	<u>20</u>	Yes	FACU	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>20</u> = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% of total cover: <u>10</u>		20% of total cover: <u>4</u>		
Shrub Stratum (Plot size: <u>30</u>)				
1. <u>Aesculus pavia</u>	<u>70</u>	Yes	FACU	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
2. <u>Ilex vomitoria</u>	<u>30</u>	No	FAC	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>100</u> = Total Cover				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
50% of total cover: <u>50</u>		20% of total cover: <u>20</u>		
Herb Stratum (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>0</u> = Total Cover				_____ _____
50% of total cover: _____		20% of total cover: _____		
Woody Vine Stratum (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	_____ _____ _____ _____ _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover				_____ _____
50% of total cover: _____		20% of total cover: _____		
Remarks: (If observed, list morphological adaptations below).				

SOIL

Sampling Point: ALT 2C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1	10YR 3/4	100					Loam	
1-6	7.5YR 4/4	100					Loam	
6-12+	10YR 6/4	100					Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) **(LRR P, T, U)**
- 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- Muck Presence (A8) **(LRR U)**
- 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) **(MLRA 150A)**
- Sandy Mucky Mineral (S1) **(LRR O, S)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) **(LRR P, S, T, U)**

- Polyvalue Below Surface (S8) **(LRR S, T, U)**
- Thin Dark Surface (S9) **(LRR S, T, U)**
- Loamy Mucky Mineral (F1) **(LRR O)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR U)**
- Depleted Ochric (F11) **(MLRA 151)**
- Iron-Manganese Masses (F12) **(LRR O, P, T)**
- Umbric Surface (F13) **(LRR P, T, U)**
- Delta Ochric (F17) **(MLRA 151)**
- Reduced Vertic (F18) **(MLRA 150A, 150B)**
- Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR O)**
- 2 cm Muck (A10) **(LRR S)**
- Reduced Vertic (F18) **(outside MLRA 150A,B)**
- Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: McFarland Road Extension City/County: Theodore/Mobile Sampling Date: 3/31/2021
 Applicant/Owner: Mobile County Commission State: AL Sampling Point: ALT 2D
 Investigator(s): Cori Gavin Section, Township, Range: Section 36, Township 5S, Range 3W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 2-5
 Subregion (LRR or MLRA): LRR T Lat: 30.56478 Long: -88.241979 Datum: WGS84
 Soil Map Unit Name: Wadley-Heidel complex, 8-15% slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: 	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input checked="" type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input checked="" type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input checked="" type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
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Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>14</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12+</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
BUTTRESSING OF TREES

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: ALT 2D

	Absolute % Cover	Dominant Species?	Indicator Status																																	
Tree Stratum (Plot size: <u>30</u>)																																				
1. <u>Magnolia virginiana</u>	<u>90</u>	Yes	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																																
2. <u>Triadica sebifera</u>	<u>10</u>	No	FAC																																	
3. _____																																				
4. _____																																				
5. _____																																				
6. _____																																				
<u>100</u> = Total Cover																																				
50% of total cover: <u>50</u>		20% of total cover: <u>20</u>																																		
Sapling Stratum (Plot size: <u>30</u>)																																				
1. <u>Salix babylonica</u>	<u>10</u>	Yes	FAC	Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="text-align:right;">Total % Cover of:</td> <td style="text-align:center;"><u>10</u></td> <td style="text-align:center;">x 1 =</td> <td style="text-align:center;"><u>10</u></td> </tr> <tr> <td style="text-align:right;">OBL species</td> <td style="text-align:center;"><u>220</u></td> <td style="text-align:center;">x 2 =</td> <td style="text-align:center;"><u>440</u></td> </tr> <tr> <td style="text-align:right;">FACW species</td> <td style="text-align:center;"><u>110</u></td> <td style="text-align:center;">x 3 =</td> <td style="text-align:center;"><u>330</u></td> </tr> <tr> <td style="text-align:right;">FAC species</td> <td></td> <td style="text-align:center;">x 4 =</td> <td></td> </tr> <tr> <td style="text-align:right;">FACU species</td> <td></td> <td style="text-align:center;">x 5 =</td> <td></td> </tr> <tr> <td style="text-align:right;">UPL species</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align:right;">Column Totals:</td> <td style="text-align:center;"><u>340</u></td> <td style="text-align:center;">(A)</td> <td style="text-align:center;"><u>780</u></td> </tr> <tr> <td colspan="4" style="text-align:right;">Prevalence Index = B/A = <u>2.29</u></td> </tr> </table>	Total % Cover of:	<u>10</u>	x 1 =	<u>10</u>	OBL species	<u>220</u>	x 2 =	<u>440</u>	FACW species	<u>110</u>	x 3 =	<u>330</u>	FAC species		x 4 =		FACU species		x 5 =		UPL species				Column Totals:	<u>340</u>	(A)	<u>780</u>	Prevalence Index = B/A = <u>2.29</u>			
Total % Cover of:	<u>10</u>	x 1 =	<u>10</u>																																	
OBL species	<u>220</u>	x 2 =	<u>440</u>																																	
FACW species	<u>110</u>	x 3 =	<u>330</u>																																	
FAC species		x 4 =																																		
FACU species		x 5 =																																		
UPL species																																				
Column Totals:	<u>340</u>	(A)	<u>780</u>																																	
Prevalence Index = B/A = <u>2.29</u>																																				
2. _____																																				
3. _____																																				
4. _____																																				
5. _____																																				
6. _____																																				
<u>10</u> = Total Cover																																				
50% of total cover: <u>5</u>		20% of total cover: <u>2</u>																																		
Shrub Stratum (Plot size: <u>30</u>)																																				
1. <u>Ilex cassine</u>	<u>30</u>	Yes	FACW	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)																																
2. <u>Ilex glabra</u>	<u>40</u>	Yes	FACW																																	
3. <u>Morella cerifera</u>	<u>30</u>	Yes	FAC																																	
4. _____																																				
5. _____																																				
6. _____																																				
<u>100</u> = Total Cover																																				
50% of total cover: <u>50</u>		20% of total cover: <u>20</u>																																		
Herb Stratum (Plot size: <u>30</u>)																																				
1. <u>Andropogon glaucopsis</u>	<u>60</u>	Yes	FACW	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.																																
2. <u>Athyrium filix-femina</u>	<u>30</u>	No	FAC																																	
3. <u>Juncus effusus</u>	<u>10</u>	No	OBL																																	
4. _____																																				
5. _____																																				
6. _____																																				
7. _____																																				
8. _____																																				
9. _____																																				
10. _____																																				
11. _____																																				
<u>100</u> = Total Cover																																				
50% of total cover: <u>50</u>		20% of total cover: <u>20</u>																																		
Woody Vine Stratum (Plot size: <u>30</u>)																																				
1. <u>Rubus argutus</u>	<u>20</u>	Yes	FAC	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																																
2. <u>Smilax glauca</u>	<u>10</u>	No	FAC																																	
3. _____																																				
4. _____																																				
5. _____																																				
<u>30</u> = Total Cover																																				
50% of total cover: <u>15</u>		20% of total cover: <u>6</u>																																		
Remarks: (If observed, list morphological adaptations below).																																				

SOIL

Sampling Point: ALT 2D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/2	100					loam	
3-8	10YR 3/1	95	7.5YR 4/6	5	C	M	loam	Fe
8-12+	7.5YR 3/1	98	5YR 2.5/1	2	C	M	loam	Mn

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Mucky Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: McFarland Road Extension City/County: Theodore/Mobile Sampling Date: 3/31/2021
 Applicant/Owner: Mobile County Commission State: AL Sampling Point: ALT 2D
 Investigator(s): Cori Gavin Section, Township, Range: Section 36, Township 5S, Range 3W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 10-15
 Subregion (LRR or MLRA): LRR T Lat: 30.56034 Long: -88.242042 Datum: WGS84
 Soil Map Unit Name: Wadley loamy fine sand, 5-8% slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
---	--

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: ALT 2D

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				
1. <u>Juniperus virginiana</u>	<u>10</u>	No	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <u>Pinus echinata</u>	<u>30</u>	Yes	FAC	
3. <u>Quercus alba</u>	<u>10</u>	No	FACU	
4. <u>Triadica sebifera</u>	<u>30</u>	Yes	FAC	
5. _____				
6. _____				
<u>80</u> = Total Cover				
50% of total cover: <u>40</u>		20% of total cover: <u>16</u>		
Sapling Stratum (Plot size: <u>30</u>)				
1. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>200</u> x 3 = <u>600</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species _____ x 5 = _____ Column Totals: <u>220</u> (A) <u>680</u> (B) Prevalence Index = B/A = <u>3.09</u>
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
<u>0</u> = Total Cover				
50% of total cover: _____		20% of total cover: _____		
Shrub Stratum (Plot size: <u>30</u>)				
1. <u>Baccharis halimifolia</u>	<u>60</u>	Yes	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
<u>60</u> = Total Cover				
50% of total cover: <u>30</u>		20% of total cover: <u>12</u>		
Herb Stratum (Plot size: <u>30</u>)				
1. _____				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
<u>0</u> = Total Cover				
50% of total cover: _____		20% of total cover: _____		
Woody Vine Stratum (Plot size: <u>30</u>)				
1. <u>Nekemius arborea</u>	<u>30</u>	No	FAC	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. <u>Smilax glauca</u>	<u>50</u>	Yes	FAC	
3. _____				
4. _____				
5. _____				
<u>80</u> = Total Cover				
50% of total cover: <u>40</u>		20% of total cover: <u>16</u>		
Remarks: (If observed, list morphological adaptations below).				

SOIL

Sampling Point: ALT 2D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	5YR 4/6	100					sand	
3-9	5YR 5/8	100					loam	
9-12+	2.5YR 5/3	100					clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) **(LRR P, T, U)**
- 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- Muck Presence (A8) **(LRR U)**
- 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) **(MLRA 150A)**
- Sandy Mucky Mineral (S1) **(LRR O, S)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) **(LRR P, S, T, U)**

- Polyvalue Below Surface (S8) **(LRR S, T, U)**
- Thin Dark Surface (S9) **(LRR S, T, U)**
- Loamy Mucky Mineral (F1) **(LRR O)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR U)**
- Depleted Ochric (F11) **(MLRA 151)**
- Iron-Manganese Masses (F12) **(LRR O, P, T)**
- Umbric Surface (F13) **(LRR P, T, U)**
- Delta Ochric (F17) **(MLRA 151)**
- Reduced Vertic (F18) **(MLRA 150A, 150B)**
- Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR O)**
- 2 cm Muck (A10) **(LRR S)**
- Reduced Vertic (F18) **(outside MLRA 150A,B)**
- Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

APPENDIX C

ALTERNATIVE 1 CORRIDOR PHOTOGRAPHS



NORTHERN TERMINUS, FACING SOUTH FROM BEN HAMILTON ROAD



PROJECT CORRIDOR ALONG AIRPORT ROAD, FACING NORTH



AGRICULTURE DEVELOPMENT WITHIN PROJECT CORRIDOR



PROJECT CROSSING AT MAURICE POIROUX ROAD, FACING SOUTH



PROJECT TERMINUS AT McDONALD ROAD, FACING EAST



VEGETATION AT DATA POINT (DP) 1



SOIL PROFILE AT DP 1



VEGETATION AT DP 2



SOIL PROFILE AT DP 2



VEGETATION AT DP 3



SOIL PROFILE AT DP 3



VEGETATION AT DP 4



SOIL PROFILE AT DP 4



VEGETATION AT DP 5



SOIL PROFILE AT DP 5



VEGETATION AT DP 6



SOIL PROFILE AT DP 6



VEGETATION AT DP 7



SOIL PROFILE AT DP 7



VEGETATION AT DP 8



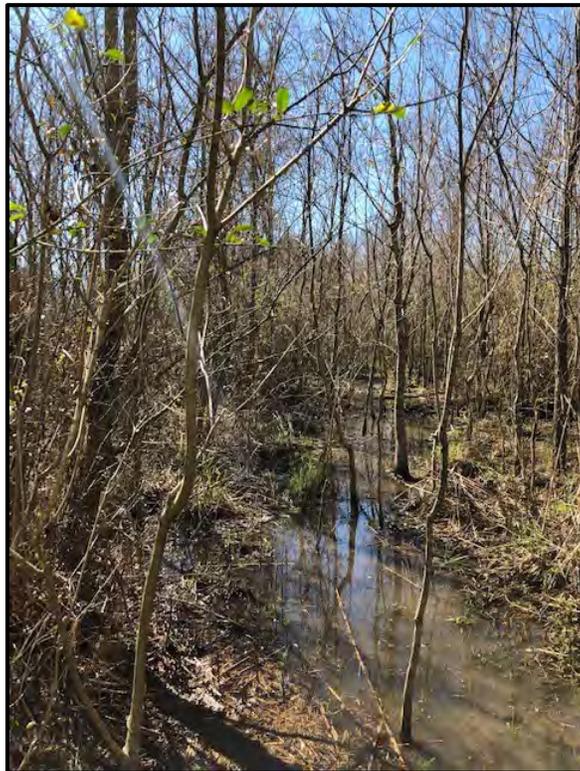
SOIL PROFILE AT DP 8



VEGETATION AT DP 9



SOIL PROFILE AT DP 9



VEGETATION AT DP 10



SOIL PROFILE AT DP 10

APPENDIX C

ALTERNATIVE 2 CORRIDOR PHOTOGRAPHS



INTERSECTION OF MCFARLAND ROAD AND THREE NOTCH ROAD, FACING SOUTH FROM MCFARLAND ROAD



ROUNDBOUT AT THREE NOTCH ROAD AND SCHILLINGER ROAD, FACING WEST FROM THREE NOTCH ROAD



INTERSECTION AT McDONALD ROAD AND THREE NOTCH ROAD, FACING SOUTH FROM McDONALD ROAD



INTERSECTION AT McDONALD ROAD AND THEODORE DAWES ROAD, FACING SOUTH FROM McDONALD ROAD



FACING SOUTH ON MCFARLAND ROAD AT WESTERN ADJACENT LAKE



WESTERN ADJACENT LAKE, FACING WEST FROM MCFARLAND ROAD



RPW WITHIN STUDY AREA



INTERSECTION AT MCFARLAND ROAD AND OLD PASCAGOULA ROAD, FACING SOUTH FROM MCFARLAND ROAD



VEGETATION AT SAMPLE POINT (SP) 1



SOILS AT SP 1



VEGETATION AT SP 2



SOILS AT SP 2



VEGETATION AT SP 3



SOILS AT SP 3



VEGETATION AT SP 4



SOILS AT SP 4



VEGETATION AT SP 5



SOILS AT SP 5

Appendix M

Floodplain and Floodway

**LOCATION RISK ASSESSMENT RECORD
FOR
LOCATION OF FLOODPLAIN ENCROACHMENT**

Date: 10/1/2021
 Project No: STPMB-4918 (250)
 Project Description: New Alignment of CR-25 (McFarland Road) From CR-28 (Old Pascagoula Road) to CR-358 (Three Notch Road) Alternatives 1 and 2
 Prepared By: Bob Portera, P.E., Neel-Schaffer, Inc.

NFIP Participation:
(Fill In)

ENCROACHMENT DETERMINATION:
(Date of Map)

County: Mobile Participating: X FHBM: _____ FBFM: _____
 Non-Participating: _____ FIRM: 6/5/2020 HUD Study: _____
 City: _____ Participating: _____
 Non-Participating: _____

OTHER SOURCES:

USGS Topo Mapping _____ X _____ Flood Prone Area Map _____
 Plan-Profile Sheet _____

EXISTING STRUCTURE(S): (FILL IN)

LENGTH: _____
 P.G. : _____
 SKEW: _____
 CENTERLINE ELEV: _____

<u>PROJECT SITE EVALUATION:</u>	<u>ALTERNATIVE NO.</u>	<u>YES OR NO</u>
Longitudinal Encroachment?		<u>NO</u>
Significant Encroachment?		<u>NO</u>
Alternatives to Significant Encroachment?		<u>N/A</u>
Only Practical Alternative (Only if Significant Encr.)?		<u>N/A</u>
Significant Risk?		<u>NO</u>
Measures to Minimize Flood Plain Impacts?		<u>YES</u>

Direct/Indirect Support to Base Flood Plain Development? NO

Potential for Interruption of Evacuation Route? NO

YES OR NO

IMPACT ON BENEFICIAL FLOOD PLAIN VALES:

YES

IF YES, EXPLAIN: Wetland and stream i

MEASURES TO RESTORE AND PRESERVE BENEFICIAL VALUES:

YES

IF YES, EXPLAIN: Compensatory mitigation for wetlands and stream impacts will be coordinated with all agencies involved.

TYPE AND DEGREE OF DEVELOPMENT OF FLOODPLAIN:

Presently minimal to none in the proposed project area.

PROPOSAL AFFECTING A REGULATORY FLOODWAY?

NO

PROJECT COORDINATION WITH FEMA REQUIRED?

NO

IF YES, WHEN? _____

OTHER COMMENTS: _____

CONCLUSION:

Under the guidelines provided in the Alabama Highway Department’s “Screening Process for the Design of Flood Plains and Federal Aid Projects”, this project qualifies for the level of analysis under Category 3 .

National Flood Hazard Layer FIRMMette



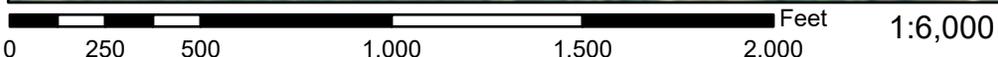
88°14'49"W 30°34'20"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- | | | |
|----------------------------|--|--|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> |
| | | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> |
| | | Regulatory Floodway |
| FLOOD HAZARD | | |
| | | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> |
| | | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> |
| | | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> |
| | | Area with Flood Risk due to Levee <i>Zone D</i> |
| OTHER AREAS | | |
| | | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> |
| | | Effective LOMRs |
| | | Area of Undetermined Flood Hazard <i>Zone D</i> |
| GENERAL STRUCTURES | | |
| | | Channel, Culvert, or Storm Sewer |
| | | Levee, Dike, or Floodwall |
| OTHER FEATURES | | |
| | | 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation |
| | | 17.5 Coastal Transect |
| | | Base Flood Elevation Line (BFE) |
| | | Limit of Study |
| | | Jurisdiction Boundary |
| | | Coastal Transect Baseline |
| | | Profile Baseline |
| | | Hydrographic Feature |
| MAP PANELS | | |
| | | Digital Data Available |
| | | No Digital Data Available |
| | | Unmapped |
- The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/30/2021 at 5:31 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix N

Air Quality



Air Quality Impact Analysis Report
REVISION 1
McFarland Road Extension
Mobile County, Alabama
S&ME Project No. 4482-20-038
ALDOT Project No. STPMB-4918(250)

PREPARED FOR:

Neel-Schaffer, Inc.

851 East I-65 Service Road South, Suite 100

Mobile, Alabama 36606

PREPARED BY:

S&ME, Inc.

360D Quality Circle NW, Suite 450

Huntsville, AL 35806

November 2, 2022



November 2, 2022

Neel-Schaffer, Inc.
851 East I-65 Service Road South, Suite 1000
Mobile, Alabama 36606

Attention: Mr. Brian Morgan, P.E.

Reference: **Air Quality Impact Analysis Report – REV 1**
McFarland Road Extension
Mobile County, Alabama
S&ME Project No. 4482-20-038
ALDOT Project No. STPMB-4918(250)

Dear Mr. Morgan:

S&ME, Inc. is pleased to provide this Air Quality Impact Analysis Report for the above-referenced project. The revised report addresses comments from the FHWA review dated September 21, 2022. Our services were provided in general accordance with S&ME Proposal No. 44-20000234 Revision 1, dated September 29, 2020 and authorized via the Neel-Schaffer, Inc. Consultant Contract for Services dated October 19, 2020.

S&ME appreciates the opportunity to be of service to you. Please call if you have questions concerning this report.

Sincerely,

S&ME, Inc.

A handwritten signature in black ink that reads "Patrick Curwen".

Patrick Curwen
Staff Professional

A handwritten signature in blue ink that reads "Deborah J. Jones".

Deborah J. Jones, P.E.
Senior Engineer



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Appendices

- Appendix I – Receptor Maps
- Appendix II – Traffic Data



1.0 Introduction

S&ME has completed the Air Quality Impact Analysis for the McFarland Road project in Theodore, Mobile County, Alabama in general accordance with S&ME Proposal No. 44-2000234 REV 1 dated September 29, 2020 and the Consultant Contract for Services between Neel-Schaffer and S&ME dated October 19, 2020. The revised report addresses comments from the FHWA review dated September 2, 2022.

S&ME understands an extension is planned for McFarland Road between Three Notch Kroner Road and McDonald Road (Alternative 2). The proposed extension is expected to consist of approximately 3.5 miles of new roadway.

S&ME understands that the project alternative consists of the widening of McDonald Road from Old Pascagoula Road to Three Notch Kroner Road and of Three Notch Kroner Road from McDonald Road to McFarland Road (Alternative 1). The alternative encompasses approximately 3.8 miles of roadway.

2.0 Purpose

Air quality impacts were analyzed at the intersection of McDonald Road and Three Notch Kroner Road. This air quality impact analysis evaluates whether National Ambient Air Quality Standards (NAAQS) for carbon monoxide will be exceeded at the receptor locations near the intersection of the above-mentioned roadways for both alternatives. This report also presents consideration of mobile source air toxics (MSAT) for the above-mentioned roadways.

The NAAQS for CO are 35 parts per million (ppm) for the one-hour standard and 9 ppm for the eight-hour standard. Using dispersion modeling, worst-case one-hour and eight-hour concentrations were estimated for multiple receptors in the vicinity of the intersection. The following report provides the project description, a description of the analysis, and the analysis results.

3.0 Project Description

Project information was provided by Mr. Brian Morgan with Neel-Schaffer and included preliminary CAD drawings showing the proposed improvements and average daily traffic for 2019 and 2045. The provided traffic data is included in **Appendix B**.

The project plans consist of an extension of McFarland Road between Three Notch Kroner Road and McDonald Road (Alternative 2), creating approximately 3.5 miles of new roadway. An alternative to this plan consists of widening McDonald Road from Old Pascagoula Road to Three Notch Kroner Road and widening Three Notch Kroner Road from McDonald Road to McFarland Road (Alternative 1). This alternative impacts approximately 3.8 miles of existing roadway.

S&ME has conducted an Air Quality Impact Analysis for each alternative at the intersection with the lowest level of service to predict carbon monoxide (CO) emissions associated with the increased traffic the proposed



improvements are expected to generate. The intersection of McDonald Road and Three Notch Kroner Road was chosen as the location with the lowest level of service for both alternatives based on traffic patterns in 2019. McDonald Road runs North-South and Three Notch Kroner Road runs East-West.

3.1 Existing Conditions

South of the intersection of McDonald Road and Three Notch Kroner Road, McDonald Road has one southbound travel lane. Northbound has one travel lane and a right turn lane that begins approximately 250 feet south of the intersection. The posted speed limit for both north and southbound directions is 45 MPH.

Immediately north of the intersection, McDonald Road transitions to Gold Mine Road East, and has two travel lanes, one for each direction. The posted speed limit for both north and southbound directions is 45 MPH.

East and west of the intersection, Three Notch Kroner Road has three lanes. East of the intersection there is one eastbound lane, one westbound lane, and a left turn lane that begins approximately 150 feet from the intersection. The posted speed limit for both east and westbound directions is 45 MPH.

West of the intersection there is one eastbound lane, one westbound lane, and a left-hand turn lane that begins approximately 180 feet from the intersection. The posted speed limit for both east and westbound directions is 45 MPH.

3.2 Proposed Conditions

3.2.1 McDonald Road (Alternative 1)

Alternative 1 will widen McDonald Road to four 12-foot travel lanes with a 14-foot center turn lane from Old Pascagoula Road to Three Notch Kroner Road. The widening will generally follow the existing centerline from Old Pascagoula Road to Stratford Drive. From Stratford Drive to Belmont Park Drive, the widening will generally take place along the east side of the road. From Belmont Park Drive to Three Notch Kroner Road, the widening will largely take place on the west side of the existing road.

Alternative 1 also includes the expansion of the roundabout at the intersection of Three Notch Kroner Road and Dawes Lane from a single-lane roundabout to a multi-lane roundabout, as well as the construction of a multi-lane roundabout at the intersection of McFarland/Ben Hamilton Road and Three Notch Kroner Road. Improvements to the intersection with Old Pascagoula Road are also planned.

Proposed modifications to the intersection of McDonald Road and Three Notch Kroner Road in Alternative 1 include adding left hand turn lanes both north and south of the intersection, adding a right-hand turn lane both east and west of the intersection, and adding a second westbound lane on the west side of the intersection.

3.2.2 McFarland Road (Alternative 2)

Alternative 2 consists of the construction of a new extension of McFarland Road from Three Notch Kroner Road south to McDonald Road. The extension will include two 11-foot travel lanes with a 3-foot paved shoulder. The

Air Quality Impact Analysis Report – REV 1

McFarland Road Extension

Mobile County, Alabama

S&ME Project No. 4482-20-038

ALDOT Project No. STPMB-4918(250)



proposed road will follow the existing alignment of Airport Road, then will continue south over Rex Drive through the Labrador Run subdivision. South of Labrador Run, McFarland Road will continue for approximately 0.8 miles before turning east to intersect with McDonald Road 0.15 miles north of Old Pascagoula Road.

Alternative 2 also includes the construction of a single-lane roundabout at the intersection of Three Notch Kroner Road and McFarland Road, as well as the construction of a multi-lane roundabout at the proposed intersection of McFarland Road and McDonald Road. Improvements to the intersection with Old Pascagoula Road are also planned.

Under Alternative 2, no improvements will be made to McDonald Road or Three Notch Kroner Road, aside from the roundabouts at the intersections with McFarland Road and widening of approximately 0.2 miles of McDonald Road south of McFarland Road. There are no proposed modifications to the intersection of McDonald Road and Three Notch Kroner Road in Alternative 2.

4.0 Carbon Monoxide Air Quality Impact Analysis

4.1 Project Procedures

The CO air quality impact analysis was completed in accordance with the EPA guidance document "Guideline for Modeling Carbon Monoxide from Roadway Intersections" (EPA-454/R-92-005; November 1992). Another EPA guidance, which summarizes the 1997 revised Appendix W of 40 CFR Part 51 "Guideline on Air Quality Models," was incorporated into this air analysis study. An additional guidance document titled "Using MOVES2014 in Project-Level Carbon Monoxide Analyses" and dated March 2015 was used to incorporate the MOVES2014 emissions model. These guidelines are applicable for project-level analysis for State Implementation Plans (SIPs), conformity analysis, and air analysis for Environmental Impact Statements (EISs) and Environmental Assessments (EAs). The following basic procedures were used in this air quality impact analysis:

- The use of the EPA software program MOVES2014b to estimate existing and future emission rates.
- The screening of intersections to determine the need for CO modeling.
- The gathering of data related to the project, such as traffic and operating characteristics, roadway configurations and geometry, and required meteorological and emissions modeling data.
- The selection of receptor points.
- The computation of traffic flow conditions and one-hour emissions for intersections requiring CO modeling based on those vehicles that free-flow (move without stopping) or queue (are delayed and/or stopped) through each modeled intersection.
- The use of the EPA CAL3HQC dispersion model to calculate estimated existing and future CO concentrations due to roadway and intersection improvements and increased traffic flow.



- The overall tabulation of total concentrations based on the proposed improvements and background conditions.
- Comparison of the modeled results with the NAAQS.

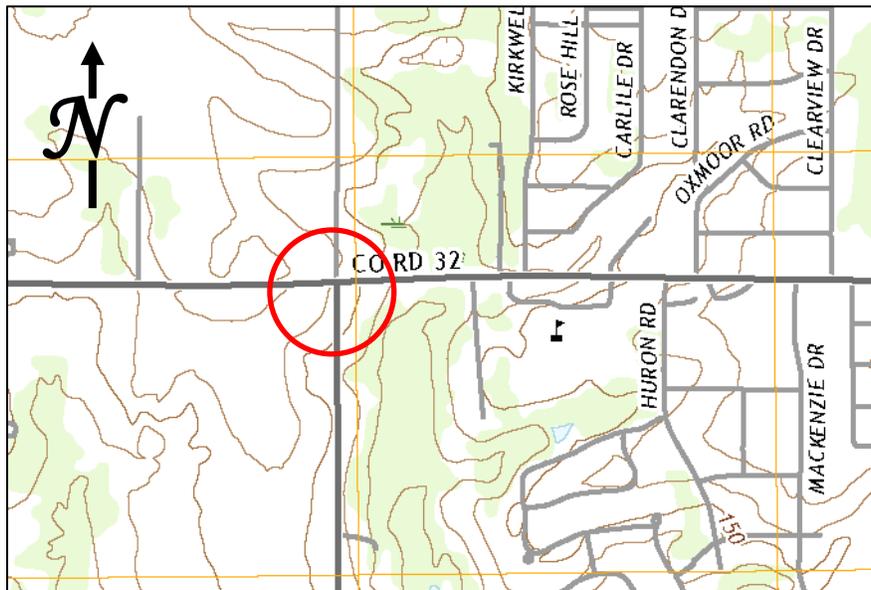
Modeling was conducted at the selected intersection for 2019 existing conditions (2019 EXISTING) and the 2045 design year build alternative (2045 BUILD). Peak-hour traffic volumes (design hour volumes) were calculated from the provided 2019 and 2045 traffic data.

4.2 Identification of Analysis Intersections

The methodology mentioned in the “Guideline for Modeling Carbon Monoxide from Roadway Intersections” requires that intersections and roadway segments within the project boundaries be reviewed for the potential to create an adverse air quality impact by either increasing traffic or reducing roadway distances from receptors where the general public has access.

The intersection of McDonald Road and Three Notch Kroner Road was selected for modeling as the lowest level of service for both alternatives. The intersection with the lowest level of service is considered the worst case location for air quality impacts. CO dispersion modeling was conducted for the intersection. McDonald Road and Three Notch Kroner Road are classified as Rural Unrestricted Access. The intersection location is shown in Figure 4-1.

Figure 4-1: Map of McDonald Road and Three Notch Kroner Road Intersection





4.3 Carbon Monoxide Emission Factors

Carbon monoxide (CO) is an odorless, colorless gas that interferes with the delivery of oxygen to the body's organs and tissues. The incomplete burning of carbon in fuels, including gasoline, produces CO.

High concentrations of CO occur along roadsides in heavy traffic, particularly at major intersections, and in enclosed areas, such as garages and poorly ventilated tunnels. Peak CO concentrations typically occur during the colder months of the year when CO vehicular emissions are greater and nighttime inversion conditions are more frequent. Free-flow and idle (queuing) factors are used in air modeling to determine CO vehicular emissions.

4.3.1 Vehicle Speeds

Vehicles come to a complete stop at the intersection due to a four-way stoplight. As a result, vehicles can cross the intersection at multiple speeds. The speed limit for both McDonald Road and Three Notch Kroner Road is 45 MPH. Emission factors were created for a variety of speeds, from 0 MPH while stopped at the stoplight, to full 45 MPH of a vehicle with no constraints. The speeds modeled were 0, 15, 25, 35, and 45 MPH.

4.3.2 Free-Flow Factors

Composite emission factors for free-flow links were generated with MOVES2014b, an EPA model for estimating pollution from highway vehicles. A composite emission factor is based on vehicle distribution weighted by type, age, and operating mode. The emission factor for free-flow links is expressed as grams of CO per vehicle-mile (g/mile) and is dependent on vehicle speed, percent hot and cold starts, ambient temperature, vehicle mix, calendar year, and roadway grades.

Free-flow emission factors for the intersection of McDonald Road and Three Notch Kroner Road were generated for 15, 25, 35, and 45 MPH. The default MOVES2014b databases were used to generate meteorological factors, fuel mix, source type distribution, and vehicle age distributions.

Table 4-1 Free-flow CO Emission Factors

Speed (mph)	2019 Emission Factor g/veh-hr	2045 Emission Factor g/veh-hr
15	4.64	1.29
25	3.47	0.95
35	3.06	0.92
45	2.75	0.90

4.3.3 Idle and Queueing Factors

Composite emission factors for idle links were generated with MOVES2014b. A composite emission factor is based on vehicle distribution weighted by type, age, and operating mode. The emission factor for idle and queue links is



expressed as grams of CO per vehicle-hour (g/hr) and is dependent on percent hot and cold starts, ambient temperature, vehicle mix, calendar year, and fuel type. The idle emission factors were generated for 0 MPH, representing vehicles stopped and idling at the red light. The default MOVES2014b databases were used to generate meteorological factors, fuel mix, source type distribution, and vehicle age distributions.

Table 4-2: Idle and Queuing CO Emission Factor

Speed (mph)	2019 Emission Factor g/veh-hr	2045 Emission Factor g/veh-hr
0	12.86	3.35

4.4 Data Collection and Dispersion Modeling

Dispersion modeling was performed using the CAL3QHC model, an EPA-developed model, through the FWHA-developed CAL3i interface. CAL3QHC predicts CO concentrations from both moving and idling motor vehicles at roadway intersections. The model includes the CALINE-3 line source dispersion model and a traffic algorithm for estimating vehicular queue lengths at intersections. Because idle emissions account for a substantial portion of the total emissions at an intersection, the model is relatively insensitive to traffic speed.

Model input requires meteorological conditions, roadway geometry (including information describing the configuration of the intersection being modeled), signal timing, vehicular emission rates, traffic volumes, and traffic parameters. The receptor locations are automatically generated by the CAL3i software package.

4.4.1 Meteorological Variables

Input for meteorological variables was in accordance with ALDOT and EPA guidance. Meteorological variables and the input for each are summarized in Table 4-2.

Table 4-3: Meteorological Values

Meteorological Variable	Input
Averaging Time in Minutes (ATIM)	60
Ambient Background CO Concentration (AMB) 1-Hour	3 ppm
Mixing Height in Meters (MIXH)	1,000
Atmosphere Stability Class (CLAS)	4 (D)
Settling Velocity (VS)	0 cm/s
Deposition Velocity (VD)	0 cm/s
Wind Speed (U)	1 m/s
Wind Angle Range	Every 10°, from 0° to 360°
Surface Roughness Coefficient (Z ₀)	108 cm (see text below)

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To compare directly with the NAAQS for CO over a one-hour time averaged concentration, the sixty (60) minute value was utilized as the averaging period for this analysis.

The deposition and settling velocities, which do not apply to CO, were assigned a value of zero, so no adjustments would be made to the predicted concentrations.

A wind speed of 1 meter/second (2.2 mph) was utilized to provide a “worst case” scenario because lower wind speeds produce higher concentrations. Every 10 degrees of wind direction from 0 to 360 from due north was analyzed.

The CAL3QHC model is only sensitive to mixing height for extremely low values occurring under parallel wind conditions. The mixing height algorithm is meant primarily for study of nocturnal inversions. Since this analysis focuses on the morning peak period (as opposed to a nocturnal condition), a value of 1,000 meters was utilized in accordance with EPA guidance.

The surface roughness coefficient (Z_o) for the intersection was chosen on the basis of surrounding land use. The properties near the intersection of project area include residences and single-story, free-standing businesses. The Z_o value chosen for the design year study area is 108 centimeters. Sensitivity analysis has indicated that CAL3QHC is relatively insensitive to the value of Z_o .

4.4.2 *Intersection Configurations*

CAL3QHC requires two sets of X and Y coordinates (X1, Y1, X2, and Y2) for each link in the analysis of each intersection. Further, the coordinate system must be based on a positive Y axis that is aligned due north so that wind angles modeled will follow accepted meteorological convention.

The CAL3i interface generates the intersection layout based on user provided inputs of number of through lanes and left turn lanes, lane width, right-of-way distance from edge of road, median width, and alignment with respect north. The locations of the roadway and receptors are shown in Appendix I.

4.4.3 *Traffic Volumes*

The traffic flow information utilized in the model is included in Appendix II. Project information was supplied by Mr. Brian Morgan of Neel-Schaffer on January 8, 2021 and included preliminary CAD drawings of the proposed alignment and peak hourly traffic for 2019 and 2045. Turning movements were not included in the provided information. Design hour volume was calculated using the provided K and D factors.

4.4.4 *Traffic Parameters*

For certain traffic parameters, defaults were used as suggested by the CAL3QHC User’s Guide. For saturation flow rate, values up to 1600 vehicles per hour were used. For signal arrival rate type, “3” (average progression) was used. Signal timing was not provided; instead, assumed signal timing values were based on similar projects.

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4.4.5 Receptor Locations

The default worst-case receptor locations generated by the CAL3i interface were used. In general accordance with EPA guidance, receptors were placed approximately 10 feet from the edge of each modeled roadway, at distances of approximately 3 meters, 25 meters, 50 meters, and 150 meters (midblock) along each approach and departure of the intersection. A total of 28 receptors were located at the intersection of McDonald Road and Three Notch Kroner Road.

4.5 Results

For the analyzed intersection, one-hour and eight-hour CO concentrations were predicted with CAL3QHC at each receptor for each wind direction using an ambient background CO concentration of 3 ppm. Table 4-4 shows the maximum predicted one-hour CO concentrations for each receptor and the wind angle at which each maximum occurred.

Table 4-4 Maximum Predicted 1-Hour CO Concentrations by Receptor

Receptor	2019 Existing		2045 Alternative 1		2045 Alternative 2	
	One-Hour CO (ppm)	Wind Angle (degrees)	One-Hour CO (ppm)	Wind Angle (degrees)	One-Hour CO (ppm)	Wind Angle (degrees)
R-1	3.3	110	3.3	190	3.0	10
R-2	3.1	340	3.1	180	3.0	10
R-3	3.1	190	3.1	180	3.0	10
R-4	3.1	180	3.1	190	3.0	10
R-5	3.2	20	3.3	170	3.0	10
R-6	3.2	140	3.3	170	3.0	10
R-7	3.2	160	3.2	170	3.0	10
R-8	3.1	10	3.1	10	3.0	10
R-9	3.2	80	3.3	190	3.1	50
R-10	3.1	180	3.3	190	3.0	10
R-11	3.1	180	3.3	190	3.0	10
R-12	3.1	190	3.2	190	3.0	10
R-13	3.3	280	3.5	170	3.1	270
R-14	3.1	10	3.5	170	3.0	10
R-15	3.1	10	3.5	170	3.0	10
R-16	3.1	10	3.5	10	3.0	10
R-17	3.2	90	3.2	190	3.0	10
R-18	3.2	100	3.2	200	3.0	10

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Receptor	2019 Existing		2045 Alternative 1		2045 Alternative 2	
	One-Hour CO (ppm)	Wind Angle (degrees)	One-Hour CO (ppm)	Wind Angle (degrees)	One-Hour CO (ppm)	Wind Angle (degrees)
R-19	3.2	240	3.1	80	3.0	10
R-20	3.2	110	3.1	110	3.0	10
R-21	3.2	100	3.1	120	3.0	10
R-22	3.2	80	3.0	10	3.0	10
R-23	3.2	80	3.1	190	3.1	50
R-24	3.2	80	3.1	200	3.1	50
R-25	3.2	280	3.0	10	3.1	50
R-26	3.3	280	3.2	80	3.1	50
R-27	3.2	50	3.1	10	3.1	50
R-28	3.2	80	3.1	10	3.1	50

4.6 Conclusions

Based on the analysis performed, carbon monoxide concentrations for the proposed project will not exceed the one-hour National Ambient Air Quality Standards under the existing condition in 2019 or under the build alternatives in the Design Year 2045. Results of the analysis indicate that one-hour CO concentrations at all receptor locations are below the one-hour 35 ppm standard and the eight-hour 9 ppm standard for both the 2019 EXISTING condition and the design year 2045 BUILD alternatives.

A separate eight-hour analysis is not required if the one-hour analysis results meet the eight-hour standard; therefore, no eight-hour period analysis was performed.

To minimize potential air quality impacts from particulate matter during project construction, the contractor shall follow procedures in the ALDOT publication "Standard Specifications for Highway Construction."

This project is in an area designated to be in attainment with the National Ambient Air Quality Standards and is in accordance with the National Ambient Air Quality Standards for carbon monoxide.

5.0 Qualitative Mobile Source Air Toxics Analysis

A qualitative analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by FHWA entitled *A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives*, found at:

https://www.fhwa.dot.gov/environment/air_quality/air_toxics/research_and_analysis/mobile_source_air_toxics/msat_emissions.cfm.



The project is expected to have a low potential MSAT effects in that the design year traffic is projected to be less than 140,000 AADT; therefore, a qualitative analysis was performed. For each alternative, the amount of mobile source air toxics (MSAT) emitted would be proportional to the vehicle miles traveled (VMT), assuming that other variables such as fleet mix are the same for each alternative.

Table 5-1: Vehicle Miles Traveled

Year	Total Project Vehicle Miles Traveled
2019 Existing	36,775
2045 No Build	64,930
2045 Build Alternative 1	87,423
2045 Build Alternative 2	94,139

5.1 2045 Build Alternative 1

For each alternative in the project, the amount of MSAT emitted would be proportional to the VMT, assuming that other variables such as fleet mix are the same for each alternative. As shown in Table 5-1, the VMT estimated for the Build Alternative 1 is higher than that for the No Build Alternative because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions for Build Alternative 1 along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to the Environmental Protection Agency's (EPA) MOVES2014 model, emissions of the priority MSAT decrease as speed increases.

Because the estimated VMT under each of the Build Alternatives are nearly the same, varying by less than 8%, it is expected there would be no appreciable difference in overall MSAT emissions among the Build Alternatives. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 90 percent between 2010 and 2050 (Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents, Federal Highway Administration, October 12, 2016). Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The additional travel lanes contemplated as part of Build Alternative 1 will have the effect of moving some traffic closer to nearby homes and businesses; therefore, under this alternative there may be localized areas where ambient concentrations of MSAT could be higher than the No Build Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the expanded roadway sections that would be built at McDonald Road and along Three Notch Kroner Road under Alternative 1. However, the magnitude and the duration of these potential increases compared to the No-Build alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts.

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In sum, when a highway is widened, the localized level of MSAT emissions for the Build Alternative 1 could be higher relative to the No Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT will be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

5.2 2045 Build Alternative 2

For each alternative in the project, the amount of MSAT emitted would be proportional to the VMT, assuming that other variables such as fleet mix are the same for each alternative. Because the VMT estimated for Build Alternative 2 is higher than the No Build Alternative due to higher traffic levels, higher levels of MSAT are expected from Build Alternative 2 compared to the No Build. Refer to Table 5-1.

In addition, because the estimated VMT under each of the Build Alternatives are nearly the same, varying by less than 8% percent, it is expected there would be no appreciable difference in overall MSAT emissions among the various Build Alternatives. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of the Environmental Protection Agency's (EPA) national control programs that are projected to reduce annual MSAT emissions by over 90 percent from 2010 to 2050 (Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents, Federal Highway Administration, October 12, 2016). Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in virtually all locations.

Under each alternative there may be localized areas where VMT would increase, and other areas where VMT would decrease. Therefore, it is possible that localized increases and decreases in MSAT emissions may occur. The localized increases in MSAT emissions would likely be most pronounced along the new roadway sections that would be built between Three Notch Kroner Road and McDonald Road. However, even if these increases do occur, they too will be substantially reduced in the future due to implementation of EPA's vehicle and fuel regulations. In sum, under all Build Alternatives in the design year it is expected there would be reduced MSAT emissions in the immediate area of the project due to EPA's MSAT reduction programs.

5.3 Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis

In FHWA's view, information is incomplete or unavailable to credibly predict the project specific health impacts due to changes in mobile source air toxic (MSAT) emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

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The Environmental Protection Agency (EPA) is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is “a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects” (EPA, <https://www.epa.gov/iris/>). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). A number of HEI studies are summarized in Appendix D of FHWA’s Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI Special Report 16, <https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-reviewliterature-exposure-and-health-effects>) or in the future as vehicle emissions substantially decrease.

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable. It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of C-3 occupational exposure data to the general population, a concern expressed by HEI (Special Report 16, <https://www.healtheffects.org/publication/mobile-source-air-toxicscritical-review-literature-exposure-and-health-effects>). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA states that with respect to diesel engine exhaust, “[t]he absence of adequate data to develop a sufficiently confident dose-response relationship from the epidemiologic studies has prevented the estimation of inhalation carcinogenic risk (<https://www.epa.gov/iris/>).”

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect

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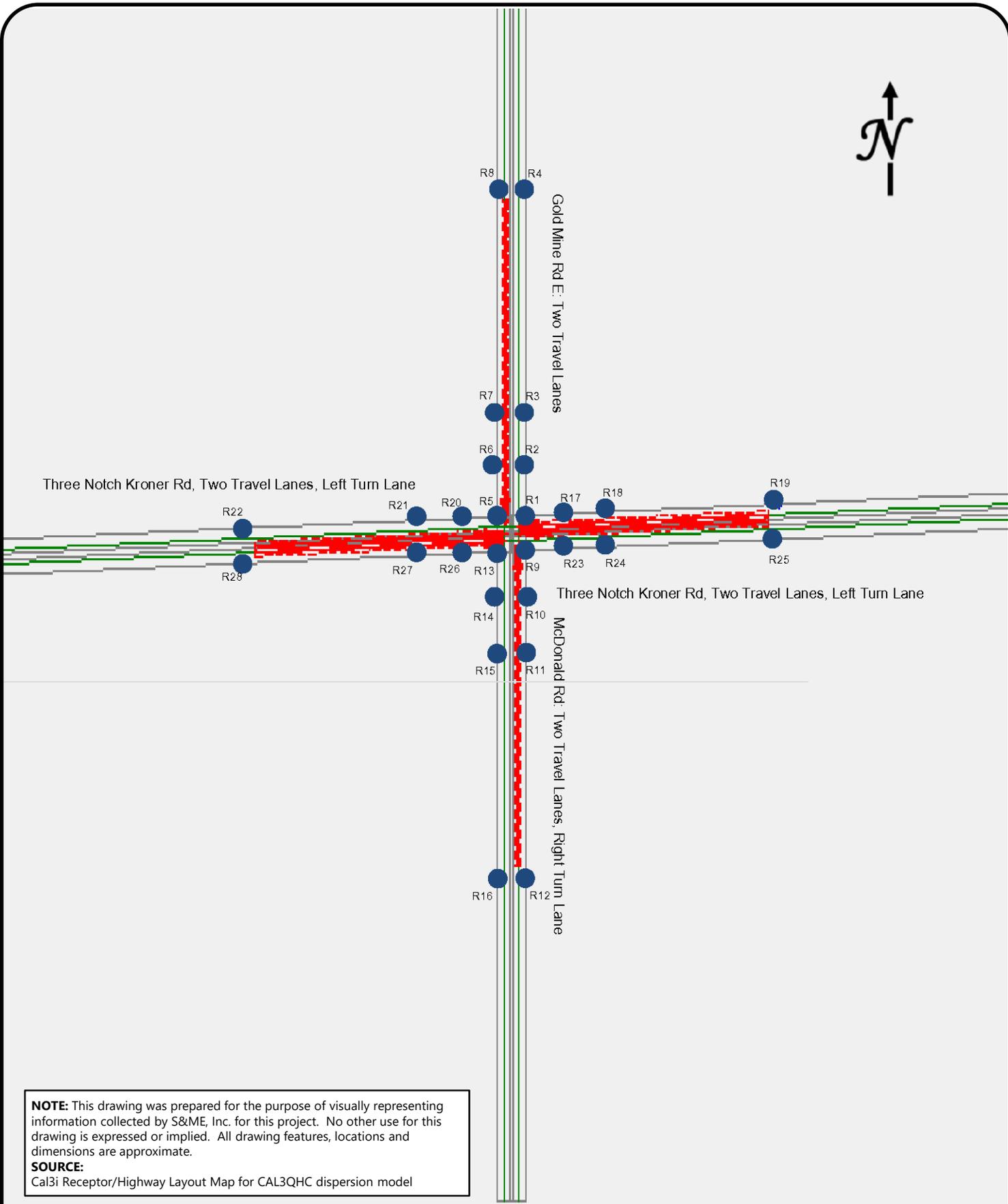
for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an “acceptable” level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA’s approach to addressing risk in its two-step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable ([https://www.cadc.uscourts.gov/internet/opinions.nsf/284E23FFE079CD59852578000050C9DA/\\$file/07-1053-1120274.pdf](https://www.cadc.uscourts.gov/internet/opinions.nsf/284E23FFE079CD59852578000050C9DA/$file/07-1053-1120274.pdf)).

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

6.0 Limitations & Qualifications

When performing this scope of services, S&ME observed the degree of care and skill generally exercised by other consultants undertaking similar studies at the same time, under similar circumstances and conditions, and in the same geographic area. Conclusions regarding the proposed project are based on observations of existing conditions, available documentation, and our interpretation of the provided data. Subsequent changes in the land use or other activities on or near the site could invalidate our findings. If additional or corrected information becomes available, we request the opportunity to review and modify our opinions, if warranted.

Appendix I – Receptor Maps



NOTE: This drawing was prepared for the purpose of visually representing information collected by S&ME, Inc. for this project. No other use for this drawing is expressed or implied. All drawing features, locations and dimensions are approximate.
SOURCE:
Cal3i Receptor/Highway Layout Map for CAL3QHC dispersion model

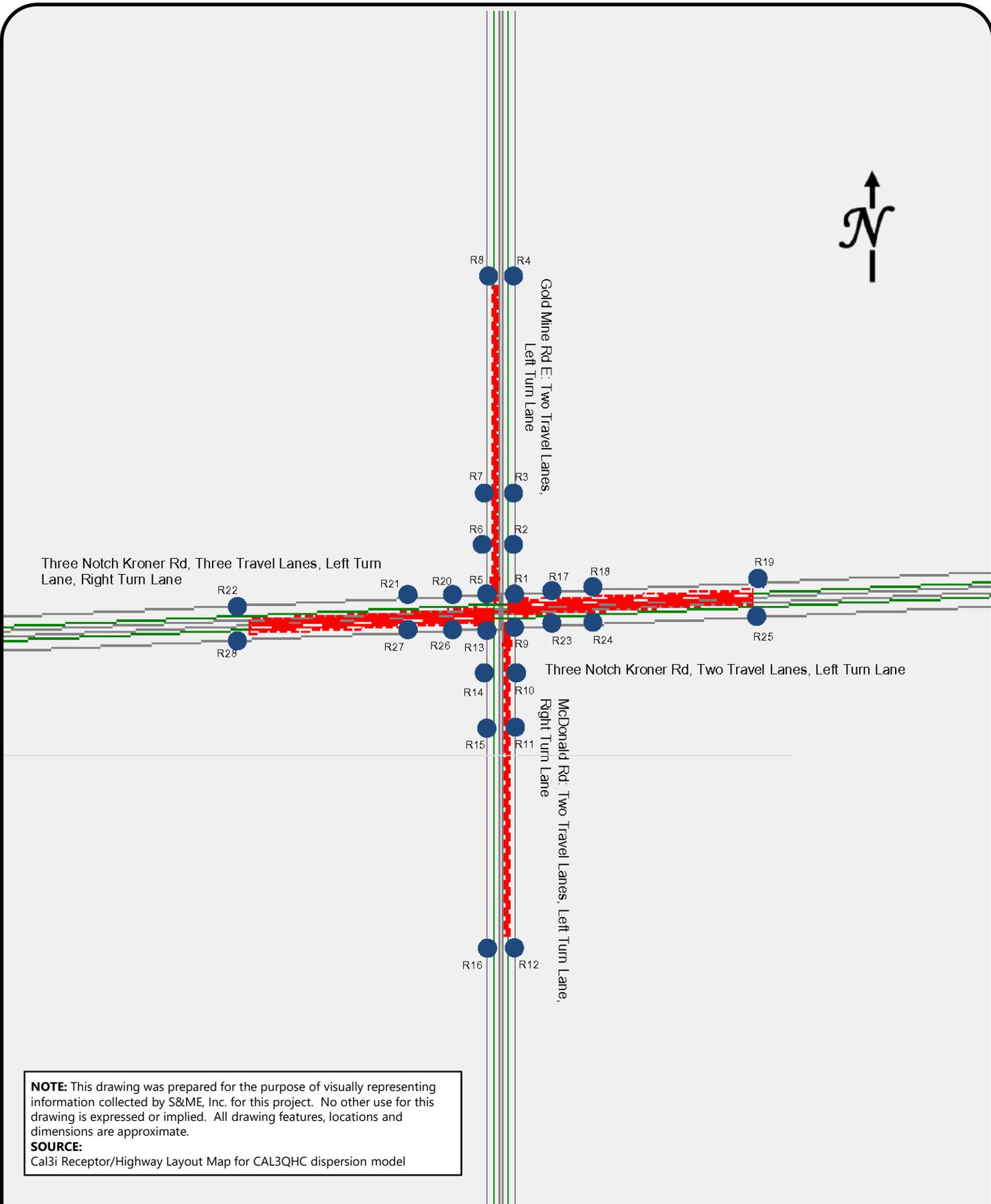


CAL3i RECEPTOR/HIGHWAY LAYOUT MAP
McDonald Road and Three Notch Kroner Road Intersection – Existing and Alternative I Condition

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McFarland Road Extension
Mobile County, AL

SCALE:
AS SHOWN
DATE:
7/12/2021
PROJECT NUMBER:
4482-20-038

FIGURE NO.
1



NOTE: This drawing was prepared for the purpose of visually representing information collected by S&ME, Inc. for this project. No other use for this drawing is expressed or implied. All drawing features, locations and dimensions are approximate.

SOURCE:
Cal3i Receptor/Highway Layout Map for CAL3QHC dispersion model



CAL3i RECEPTOR/HIGHWAY LAYOUT MAP
McDonald Road and Three Notch Kroner Road Intersection – Alternative II Condition

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SCALE:
AS SHOWN

DATE:
7/12/2021

PROJECT NUMBER:
4482-20-038

FIGURE NO.

2

Appendix II – Traffic Data

Three Notch

11,881 (2019) $K=9$
21,096 (2045 NB) $D=70$
23,611 (2045 A1) $T=4\%$
17,692 (2045 A2)

McFarland
14,030 (2045 A2)
 $K=9$
 $D=60$
 $T=4\%$

McDonald Rd

8,891 (2019) $K=8$
15,655 (2045 NB) $D=58$
22,790 (2045 A1) $T=4\%$
9,765 (2045 A2)

Numbers shown are ADTs

NB - No Build

A1 - Widening of McDonald + Three Notch

A2 - McFarland + widening of Three Notch

2019

McFarland

ADT 0

	NB	NB
D	0%	0
K	0%	0
TDHV	0%	0
TADT	0%	0
CARS	0%	0
MT	0%	0
HT	0%	0

	SB	SB
D	0%	0
K	0%	0
TDHV	0%	0
TADT	0%	0
CARS	0%	0
MT	0%	0
HT	0%	0

Three Notch Kroner

ADT 11881

	WB	WB
D	30%	3564
K	9%	321
TDHV	4%	13
TADT	4%	475
CARS	96%	308
MT	0%	0
HT	100%	13

	EB	EB
D	70%	8317
K	9%	749
TDHV	4%	30
TADT	4%	333
CARS	96%	719
MT	0%	0
HT	100%	30

McDonald

ADT 8891

	NB	NB
D	42%	3734
K	8%	299
TDHV	4%	12
TADT	4%	356
CARS	96%	287
MT	0%	0
HT	100%	12

	SB	SB
D	58%	5157
K	8%	413
TDHV	4%	17
TADT	4%	206
CARS	96%	396
MT	0%	0
HT	100%	17

Acronym Explanation

ADT	The highest two-way direction average daily traffic volume for the design year at the intersection
NB	Northbound
SB	Southbound
EB	Eastbound
WB	Westbound
D	Percentage of traffic going in one direction
K	Percentage of ADT that is estimated to occur in the peak hour
TDHV	Percentage of K that is expected to be truck traffic
TADT	Percentage of K that is estimated to be heavy truck traffic
CARS	Percentage of K that is estimated to be car traffic
MT	Percentage of truck traffic that is estimated to be medium truck traffic
HT	Percentage of truck traffic that is estimated to be heavy truck traffic in the peak hour

2045 NO BUILD

McFarland

ADT 0

	NB	NB
D	0%	0
K	0%	0
TDHV	0%	0
TADT	0%	0
CARS	0%	0
MT	0%	0
HT	0%	0

	SB	SB
D	0%	0
K	0%	0
TDHV	0%	0
TADT	0%	0
CARS	0%	0
MT	0%	0
HT	0%	0

Three Notch Kroner

ADT 21096

	WB	WB
D	30%	6329
K	9%	570
TDHV	4%	23
TADT	4%	844
CARS	96%	547
MT	0%	0
HT	100%	23

	EB	EB
D	70%	14767
K	9%	1329
TDHV	4%	53
TADT	4%	591
CARS	96%	1276
MT	0%	0
HT	100%	53

McDonald

ADT 15655

	NB	NB
D	42%	6575
K	8%	526
TDHV	4%	21
TADT	4%	626
CARS	96%	505
MT	0%	0
HT	100%	21

	SB	SB
D	58%	9080
K	8%	726
TDHV	4%	29
TADT	4%	363
CARS	96%	697
MT	0%	0
HT	100%	29

Acronym Explanation

ADT	The highest two-way direction average daily traffic volume for the design year at the intersection
NB	Northbound
SB	Southbound
EB	Eastbound
WB	Westbound
D	Percentage of traffic going in one direction
K	Percentage of ADT that is estimated to occur in the peak hour
TDHV	Percentage of K that is expected to be truck traffic
TADT	Percentage of ADT that is estimated to be heavy truck traffic
CARS	Percentage of K that is estimated to be car traffic
MT	Percentage of truck traffic that is estimated to be medium truck traffic
HT	Percentage of truck traffic that is estimated to be heavy truck traffic in the peak hour

2045 Alternative I

McFarland

ADT 0

	NB	NB
D	0%	0
K	0%	0
TDHV	0%	0
TADT	0%	0
CARS	0%	0
MT	0%	0
HT	0%	0

	SB	SB
D	0%	0
K	0%	0
TDHV	0%	0
TADT	0%	0
CARS	0%	0
MT	0%	0
HT	0%	0

Three Notch Kroner

ADT 23611

	WB	WB
D	30%	7083
K	9%	637
TDHV	4%	25
TADT	4%	944
CARS	96%	612
MT	0%	0
HT	100%	25

	EB	EB
D	70%	16528
K	9%	1487
TDHV	4%	59
TADT	4%	661
CARS	96%	1428
MT	0%	0
HT	100%	59

McDonald

ADT 22790

	NB	NB
D	42%	9572
K	8%	766
TDHV	4%	31
TADT	4%	912
CARS	96%	735
MT	0%	0
HT	100%	31

	SB	SB
D	58%	13218
K	8%	1057
TDHV	4%	42
TADT	4%	529
CARS	96%	1015
MT	0%	0
HT	100%	42

Acronym Explanation

ADT	The highest two-way direction average daily traffic volume for the design year at the intersection
NB	Northbound
SB	Southbound
EB	Eastbound
WB	Westbound
D	Percentage of traffic going in one direction
K	Percentage of ADT that is estimated to occur in the peak hour
TDHV	Percentage of K that is expected to be truck traffic
TADT	Percentage of ADT that is estimated to be heavy truck traffic
CARS	Percentage of K that is estimated to be car traffic
MT	Percentage of truck traffic that is estimated to be medium truck traffic
HT	Percentage of truck traffic that is estimated to be heavy truck traffic in the peak hour

2045 Alternative II

McFarland

ADT 14030

	NB	NB
D	40%	5612
K	9%	505
TDHV	4%	20
TADT	4%	561
CARS	96%	485
MT	0%	0
HT	100%	20

	SB	SB
D	60%	8418
K	9%	758
TDHV	4%	30
TADT	4%	337
CARS	96%	727
MT	0%	0
HT	100%	30

Three Notch Kroner

ADT 17692

	WB	WB
D	30%	5308
K	9%	478
TDHV	4%	19
TADT	4%	708
CARS	96%	459
MT	0%	0
HT	100%	19

	EB	EB
D	70%	12384
K	9%	1115
TDHV	4%	45
TADT	4%	495
CARS	96%	1070
MT	0%	0
HT	100%	45

McDonald

ADT 9765

	NB	NB
D	42%	4101
K	8%	328
TDHV	4%	13
TADT	4%	391
CARS	96%	315
MT	0%	0
HT	100%	13

	SB	SB
D	58%	5664
K	8%	453
TDHV	4%	18
TADT	4%	227
CARS	96%	435
MT	0%	0
HT	100%	18

Acronym Explanation

ADT	The highest two-way direction average daily traffic volume for the design year at the intersection
NB	Northbound
SB	Southbound
EB	Eastbound
WB	Westbound
D	Percentage of traffic going in one direction
K	Percentage of ADT that is estimated to occur in the peak hour
TDHV	Percentage of K that is expected to be truck traffic
TADT	Percentage of ADT that is estimated to be heavy truck traffic
CARS	Percentage of K that is estimated to be car traffic
MT	Percentage of truck traffic that is estimated to be medium truck traffic
HT	Percentage of truck traffic that is estimated to be heavy truck traffic in the peak hour

Appendix O

Endangered Species

From: Rowell, Josh <Josh_Rowell@fws.gov>

Sent: Friday, September 23, 2022 3:03 PM

To: Chambless, Jr., Jesse J. <chamblessje@dot.state.al.us>

Subject: Re: [EXTERNAL] RE: McFarland Road USFWS Response Ltter

Hi Jesse,

An additional survey for the gopher tortoise will not be necessary. However, if gopher tortoise are discovered taking up residence ahead of construction we may need to make arrangements to relocate them out of the right of way.

Sorry for any confusion. Have a great weekend!

T

Thanks

Josh Rowell

Fish and Wildlife Biologist

Alabama Ecological Services Field Office

1208 Main Street

Daphne, AL 36526

251-441-5836 *office*

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

scs
Clay



United States Department of the Interior

FISH AND WILDLIFE SERVICE
1208-B Main Street
Daphne, Alabama 36526

AUG 10 2021

IN REPLY REFER TO:
2021-TA-1198



Mr. Stanley C. Biddick, P. E.
State Design Engineer
Alabama Department of Transportation
1409 Coliseum Boulevard
Montgomery, AL 36110

Dear Mr. Biddick:

Thank you for your letter received on July 13, 2021, providing a Biological Assessment for a corridor study in Mobile County, Alabama. This study involves McFarland Road from the .01 mile north of Old Pascagoula Road to Three Notch-Kroner Road. We have reviewed the information and provide the following comments in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.)(ESA).

Federally Listed Species

The gopher tortoise (*Gopherus polyphemus*) is known to occur in Mobile County and its burrows may be found along the proposed corridor routes. We recommend that the two alternatives be inspected for the presence of gopher tortoises and their burrows. If any are observed, then please contact Mr. Josh Rowell to develop a plan for their conservation.

Thank you for the opportunity to review your project. If you have any questions or need additional information, please contact Mr. Josh Rowell at (251) 441-5836. Please refer to the reference number located at the top of this letter in future phone calls or written correspondence.

Sincerely,

William J. Pearson
Field Supervisor
Alabama Ecological Services Field Office



BIOLOGICAL ASSESSMENT
ALDOT PROJECT STPMB-4918(250)
MCFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO
THREE NOTCH-KRONER ROAD

Prepared For:

Mobile County Commission
205 Government Street
Mobile, Alabama 36644

Prepared By:

Neel-Schaffer, Inc.
851 East Interstate 65 Service Road South
Suite 1000
Mobile, Alabama 36606

Report Date: June 8, 2021

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- Appendix A – Alternative 1 Study Area Photographs**
- Appendix B – Alternative 2 Study Area Photographs**

1.0 PROJECT DESCRIPTION

The Mobile County Commission (MCC) retained Neel-Schaffer, Inc. to assess sensitive environmental resources along a proposed roadway corridor in Mobile County, Alabama (see Figures 1 and 2). The project lies within Sections 26, 27, and 34; Township 5 South; Range 3 West; and Section 2, Township 6 South, Range 3 West in Mobile County. The survey area is linear in design and consists of two alternate routes for the proposed project (see Figure 2). Residential and commercial lots border both sides of the roads. The proposed project's survey area is approximately 178.8 acres, and each of the alternates has a 200-foot survey width along the entire length.

As urban sprawl from the City of Mobile travels west, an increase in traffic loads along McDonald Road and Three Notch Road are lengthening traffic delay times during peak hours. As a solution to the growing population and traffic demand in this area, the MCC is assessing two alternatives to address current and future needs.

The northern terminus of Alternates 1 and 2 originate at the intersection of McFarland Road, which turns into Ben Hamilton Road on the south side of the east-west oriented Three Notch-Kroner Road. The Alternate 1 alignment (see Figures 3 and 4) turns south to extend along McDonald Road for approximately 2.8 miles to the terminus at Old Pascagoula Road.

From the same northern terminus, Alternate 2 follows Ben Hamilton Road for approximately 0.1 mile before continuing to extend south along Airport Road for approximately 0.6 mile, where Airport Road terminates (see Figures 5 and 6). Alternate 2 continues south through a short stretch of planted pine, continuing south along a subdivision road (Rex Drive) for another short distance. South of Rex Drive the alignment crosses a series of agricultural fields, eventually turning to the east and joining McDonald Road just north of the Old Pascagoula Road intersection. Alternate 2 has a total distance of 3.5 miles. Near the north origin point, a short stretch of Ben Hamilton Road will be improved to accommodate the new Alternate 2 design.

Cori Gavin, Neel-Schaffer, Inc. Senior Biologist, conducted the biological assessment during the period from February 4 to March 31, 2021. Map production and Geographic Information Systems (GIS) compilation were conducted by Cori Gavin and Brian Morgan (Project Manager). The report was compiled and edited by Cori Gavin and Brian Morgan, with a final edit by Bob Portera, P.E. (Transportation Engineer Manager). The Principal Investigator for the project is Cori Gavin, EP.

The proposed undertaking has been designed to minimize adverse impacts to Federally and State listed species and their critical habitats as a result of its implementation. The project area is primarily bounded agricultural and residential properties.

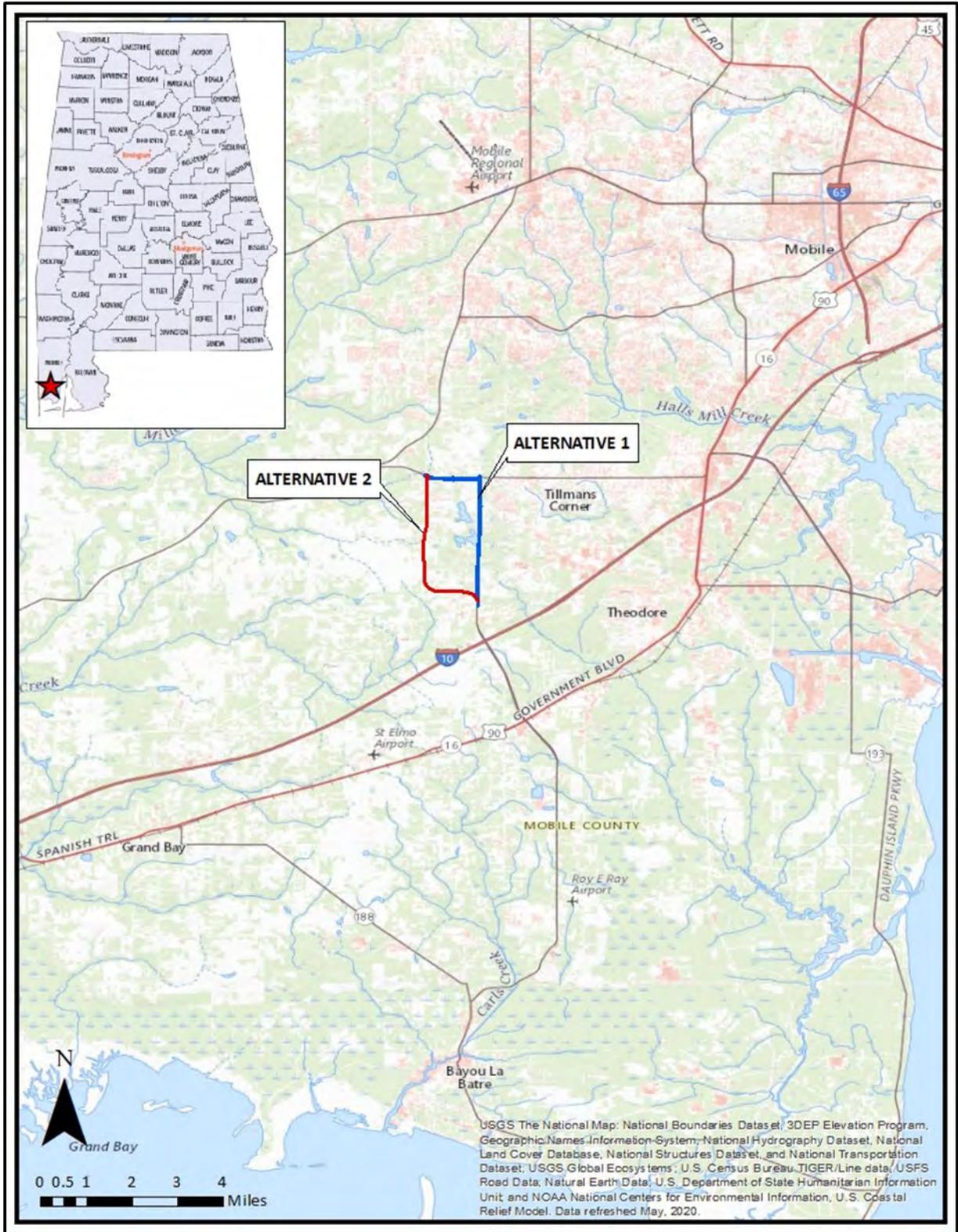


Figure 1. Project Location Map

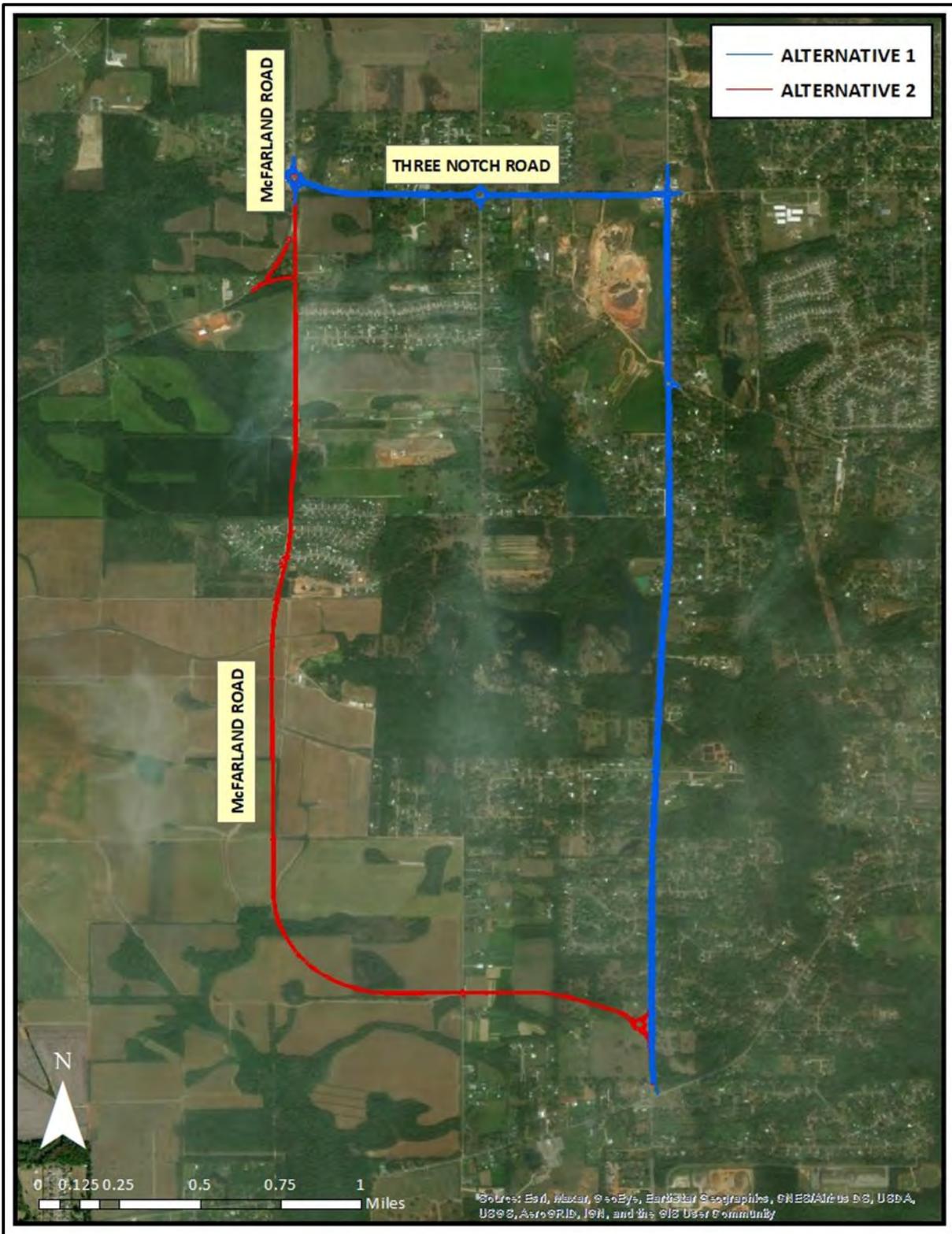


Figure 2. 2017 Aerial Photograph of Project Area

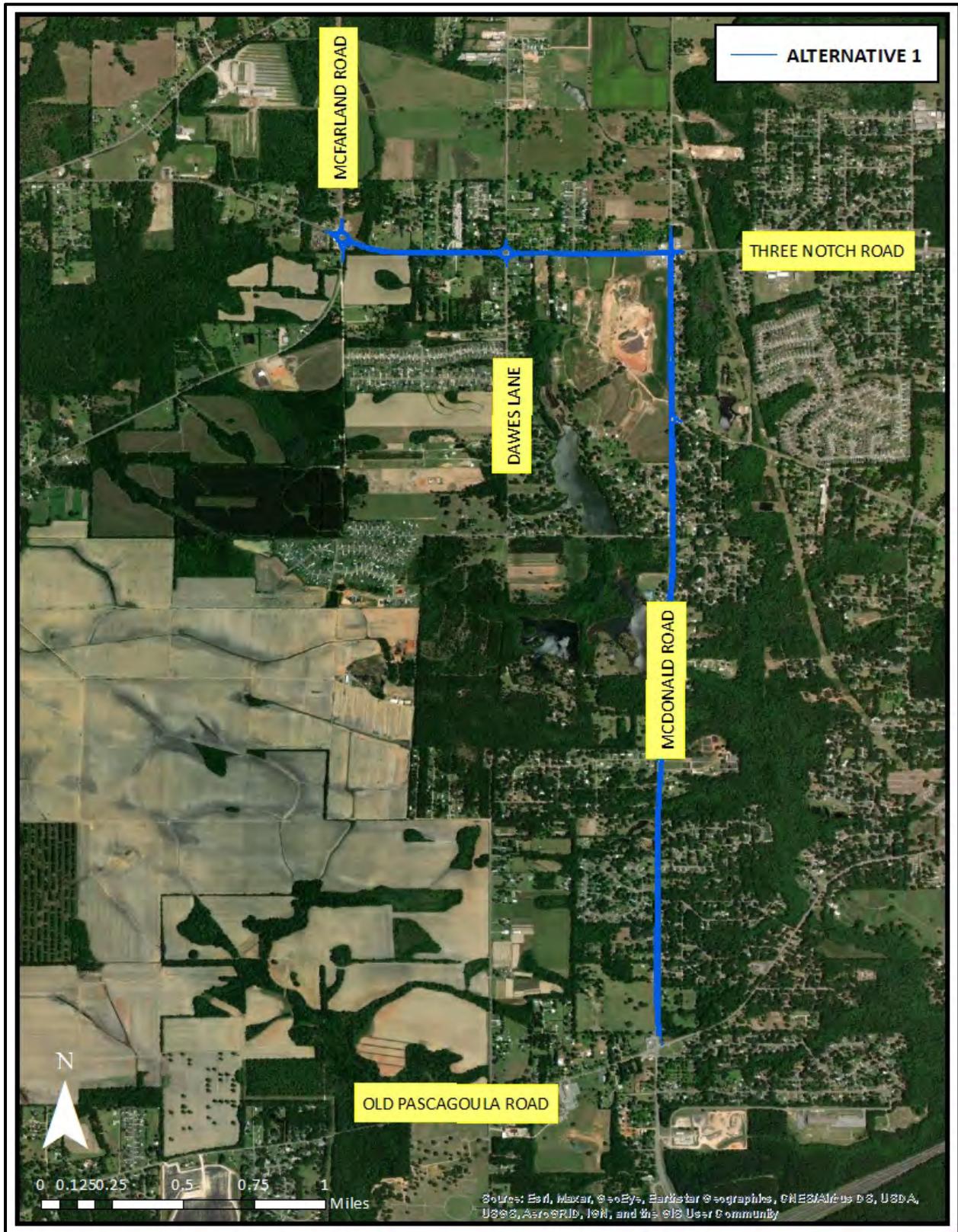


Figure 3. 2017 Aerial Photograph of Alternative 1

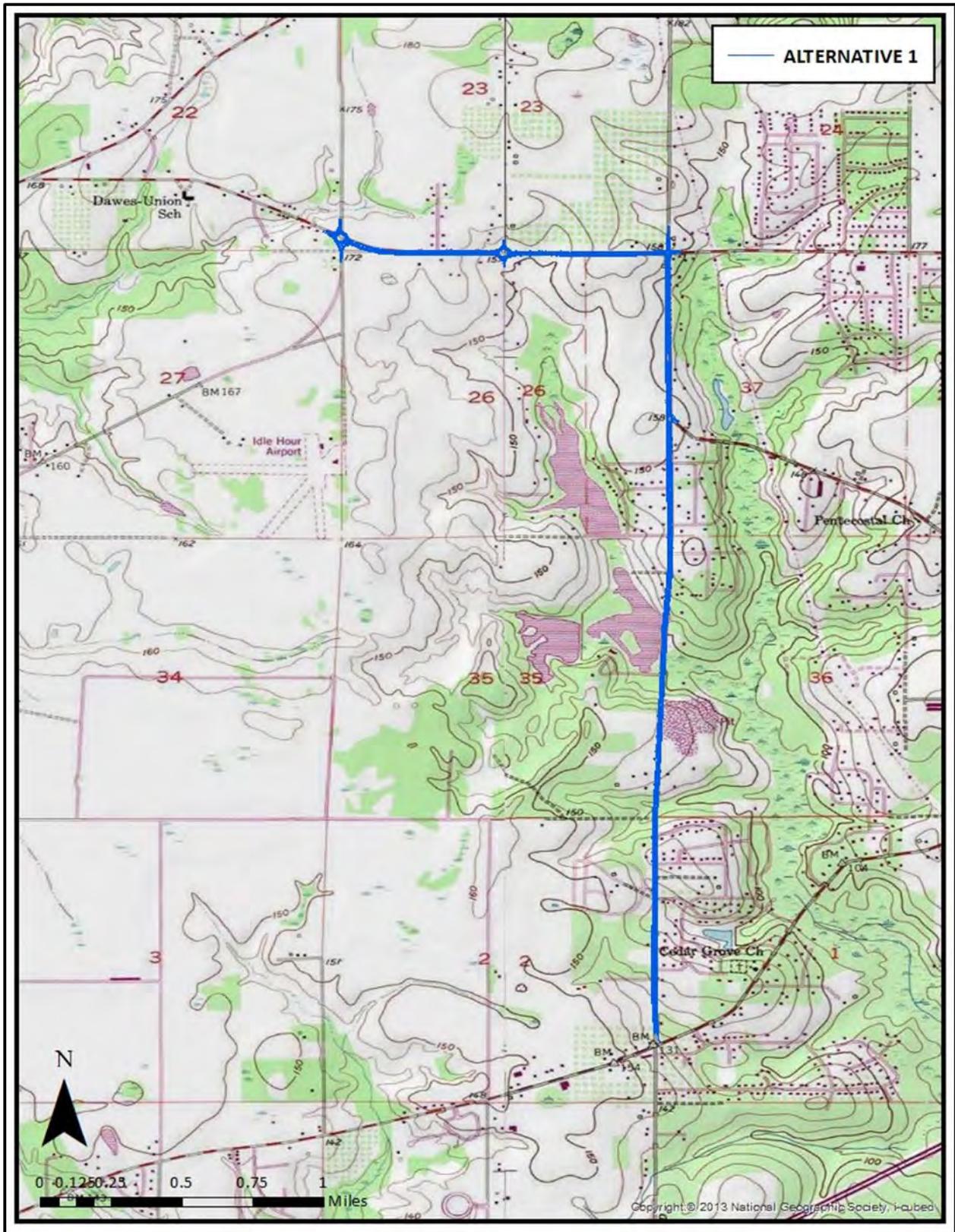


Figure 4. 2012 USGS Topographic Map of Alternative 1

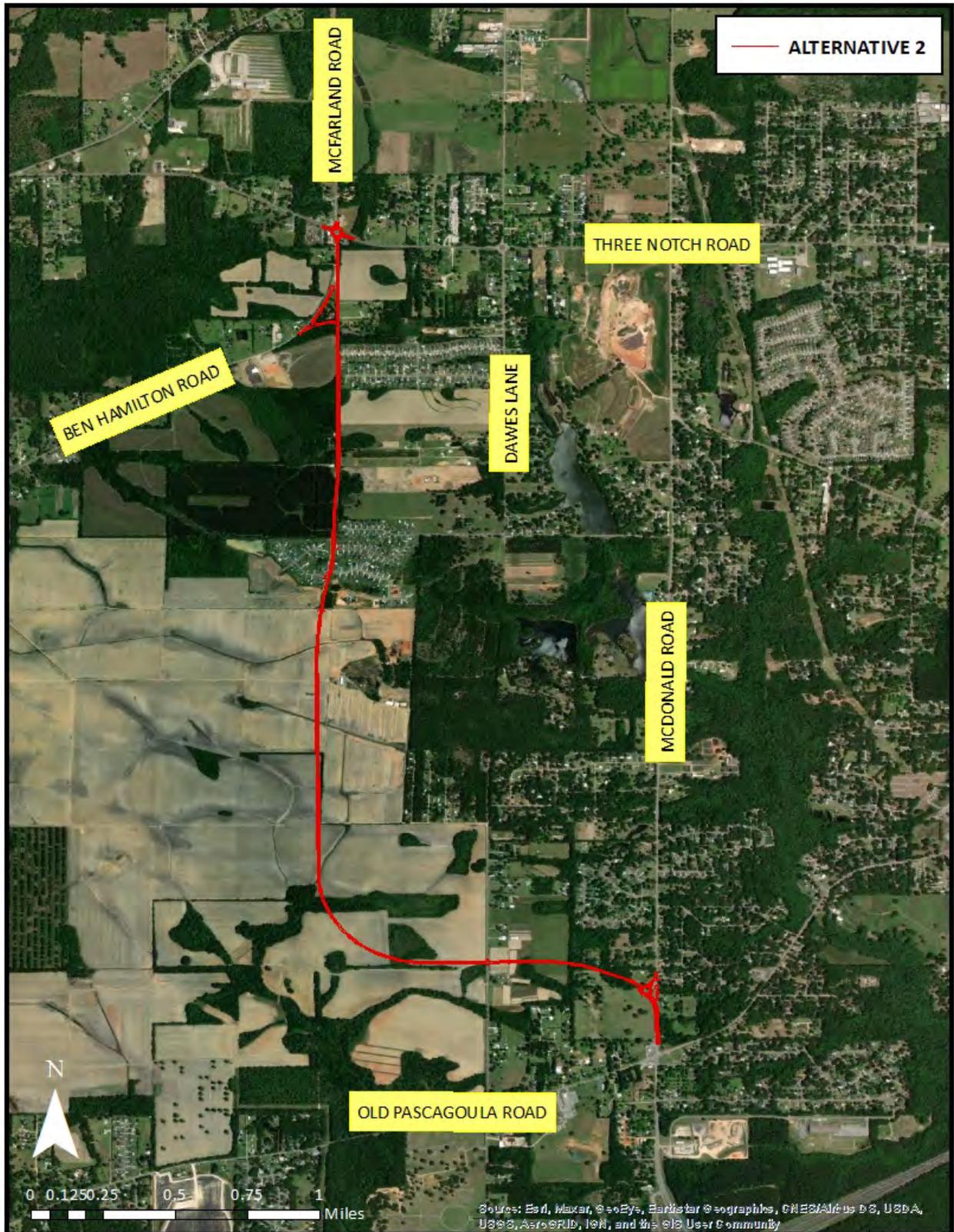


Figure 5. 2017 Aerial Photograph of Alternative 2

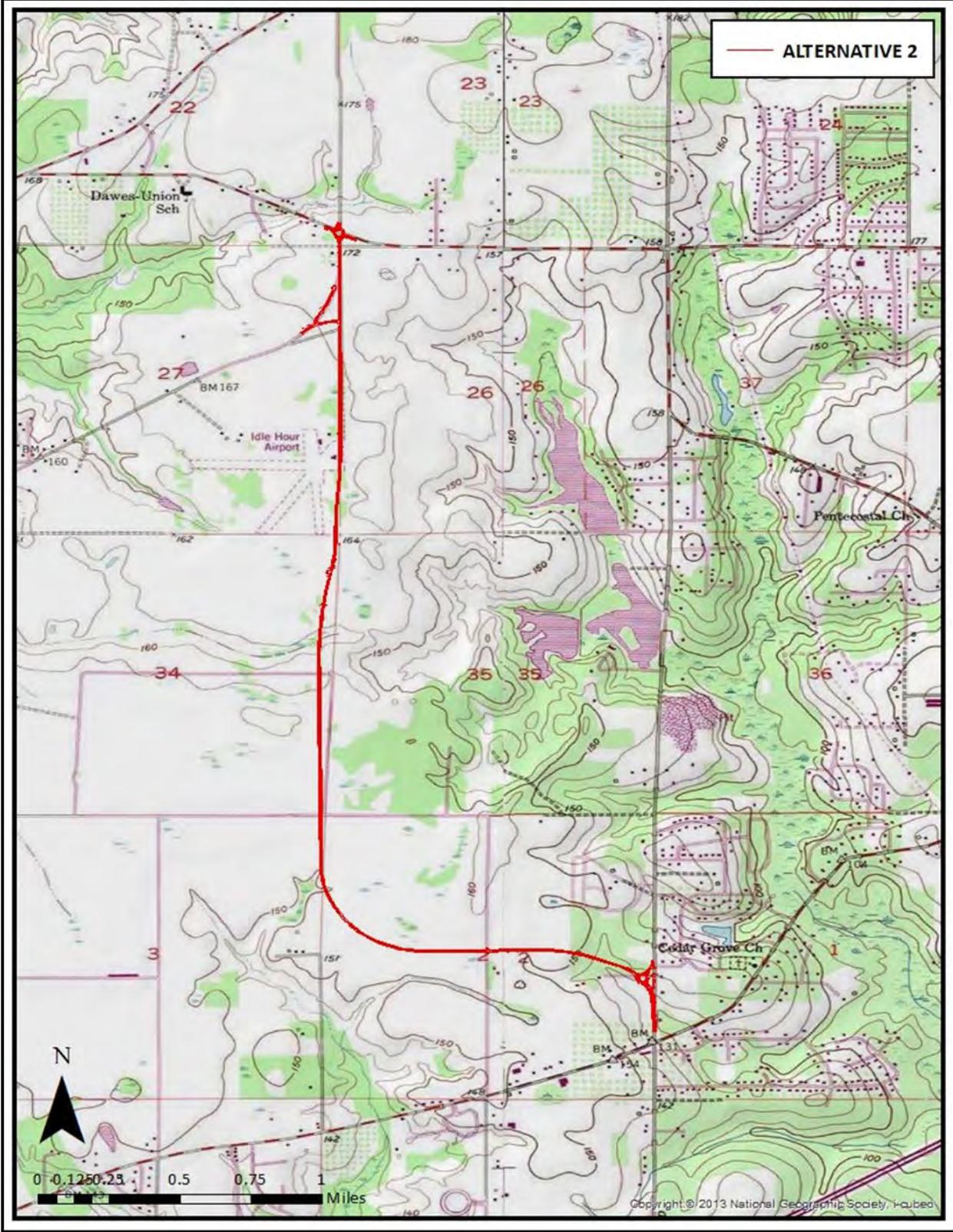


Figure 6. 2012 USGS Topographic Map of Alternative 2

2.0 SPECIES OF CONCERN

The study area is primarily surrounded by agricultural and residential properties. However, the project proposes to impact bottomland hardwood wetlands within the Escatawpa Watershed.

McFarland Road has been identified as a priority for replacement based on current and future traffic loads as urban sprawl continues to increase in the area. Within the potentially affected area of the project, several habitats were observed including barren uplands, forested uplands, bottomland hardwoods.

Given the general geographic location of the proposed undertaking, U.S. Fish and Wildlife Service (USFWS) recommendations and Alabama Department of Conservation and Natural Resources (ADCNR) guidance (Appendix B), 22 federally listed, and an additional 160 state listed species, are known to occur, or could potentially occur, within a two-mile radius of the proposed project.

2.1 Federally Listed Species

The U.S. Endangered Species Act (U.S. ESA) is the primary legislation that authorizes federal legal protections to threatened and endangered species in the U.S. and is administered by the U.S. Fish and Wildlife Service (USFWS). Endangered species are defined as species that are “in danger of extinction within the foreseeable future throughout all or a significant portion of its range.” Threatened species are “those animals and plants likely to become endangered within the foreseeable future throughout all or a significant portion of their ranges.” ESA status definitions are as follows:

- Listed Endangered (LE)
- Listed Threatened (LT)
- Proposed Endangered (PE) – species proposed to be listed as endangered
- Proposed Threatened (PT) – species proposed to be listed as threatened
- Candidate (C) – species under consideration for a federal listing
- Species of Concern (SC) – species that have been identified as important to monitor
- Under Review (UR) – species under review in the candidate or petition process

Of the 22 federally listed species, eight are endangered, eleven are threatened, two are under review, and one species is in a federal recovery program (R). See Table 1 for more detailed information.

Table 1. Federally Listed Threatened and Endangered Species

Scientific Name	Common Name	Federal Status (P/T/E)
MAMMALS		
<i>Trichechus manatus</i>	West Indian Manatee	T
BIRDS		
<i>Calidris canutus rufa</i>	Red Knot	T
<i>Charadrius melodus</i>	Piping Plover	T
<i>Grus canadensis pulla</i>	Mississippi Sandhill Crane	E
<i>Haliaeetus leucocephalus</i>	Bald Eagle	R
<i>Laterallus jamaicensis jamaicensis</i>	Eastern Black Rail	T
<i>Mycteria americana</i>	Wood Stork	T
FISH		
<i>Acipenser oxyrhynchus desotoi</i>	Gulf Sturgeon	T
<i>Fundulus jenkinsi</i>	Saltmarsh Topminnow	UR
<i>Scaphirhynchus suttkusi</i>	Alabama sturgeon	E
REPTILES		
<i>Caretta caretta</i>	Loggerhead Sea Turtle	T
<i>Dermochelys coriacea</i>	Leatherback Sea Turtle	E
<i>Drymarchon corais couperi</i>	Eastern Indigo Snake	T
<i>Eretmochelys imbricata</i>	Hawksbill Sea Turtle	E
<i>Gopherus polyphemus</i>	Gopher Tortoise	T
<i>Lepidochelys kempii</i>	Kemp's Ridley Sea Turtle	E
<i>Pituophis melanoleucus lodingi</i>	Black Pine Snake	T
<i>Pseudemys alabamensis</i>	Alabama Red-Bellied Turtle	E
AMPHIBIANS		
<i>Rana sevosa</i>	Dusky Gopher Frog	E
CLAMS		
<i>Pleurobema decisum</i>	Southern Clubshell	E
<i>Potamilus inflatus</i>	Inflated Heelsplitter	T
INSECTS		
<i>Hesperapis oraria</i>	Gulf Coast Solitary Bee	UR

The following is a description of each federally listed species.

- *Trichechus manatus* (West Indian manatee) – The West Indian manatee is an aquatic mammal that occurs in rivers, estuaries, and coastal areas of the Gulf of Mexico. They have large, seal-shaped bodies with paired flippers and a round, paddle-shaped tail. Most manatee sightings, primarily between June and November, in Mississippi have occurred in tidal rivers, bays, and near shore in the Mississippi Sound.
- *Calidris canutus rufa* (Red knot) – The red knot is a medium-sized shorebird about 9-11 inches in length with a proportionally small head and eyes as well as a short neck and legs. The knot winters in Mississippi generally during October through March. They forage along sandy beaches, tidal mudflats, salt marshes, and peat banks.
- *Charadrius melodus* (Piping plover) – Piping plovers are small shorebirds, approximately seven inches long with sand-colored plumage and white underparts. Plovers winter in Mississippi are generally found along coastal beaches and barrier islands.
- ***Grus canadensis pulla* (Mississippi sandhill crane) – The Mississippi sandhill crane is only found in Jackson County on and adjacent to the Mississippi Sandhill Crane National Wildlife Refuge. They prefer wet pine savannahs and cypress swamps. They are between three and four feet tall with a seven-foot or more wingspan. Adults are gray with a red crown and white cheek patch.**
- *Haliaeetus leucocephalus* (bald eagle) – Adult bald eagles are large, weighing up to 15 pounds, and have a six to eight-foot wingspan. Fledglings and subadults typically have brown plumage on the entire body. The head and tail turn white as they reach adulthood. They nest in Mississippi from December through mid-May in mature trees (e.g., bald cypress, sycamore, willow, etc.) near fresh marshes, estuaries, or open water. Nest sites include a perch with a clear view of their foraging area.
- *Laterallus jamaicensis jamaicensis* (eastern black rail) – The eastern black rail is a small, secretive marsh dependent bird. They are historically uncommon in Mississippi but may be found in coastal marshes during winter months. It can be found in salt, brackish, and freshwater marshes, but their specific habitat requires dense herbaceous vegetation to provide shelter and cover.
- *Mycteria americana* (wood stork) – A large, long-legged wading bird, the wood stork is about 50 inches tall with a 60- to 65-inch wingspan. Their plumage is primarily white with a short, black tail. The head and neck are unfeathered and dark gray. Typical foraging sites include freshwater marshes, swales, ponds,

hardwood and cypress swamps, narrow tidal creeks or shallow tidal pools, and artificial wetlands.

- *Acipenser oxyrinchus desotoi* (Gulf sturgeon) – The body of the gulf sturgeon is sub-cylindrical; the head consists of an extended snout with four tactile barbs on the chin in front of the mouth. It lacks teeth, and instead of scales, has bony plates called scutes. Critical habitat in Mississippi has been designated to include portions of the Bogue Chitto, Bouie, Chickasawhay, Leaf, Pascagoula, and Pearl Rivers and the Gulf of Mexico. They are primitive, anadromous fish that annually migrate from the Gulf of Mexico to freshwater streams to spawn. Adults spend eight to nine months in the river systems.
- *Fundulus jenkinsi* (saltmarsh topminnow) – Small topminnow, averaging approximately 1.75 inches (44 mm) in length. The saltmarsh topminnow exhibits a series of small, round, black spots on the mid-side of the body, often forming two rows. This species is found in saltmarshes of small tidal meanders to areas just outside the mouth.
- *Scaphirhynchus suttkusi* (Alabama sturgeon) – **Bluish gray sturgeon reaching up to 30 inches (78 cm) in length. The Alabama sturgeon has a flat snout that is elongated and pointed with spines at the tip. There are between 14 and 18 dorsal scutes, 40-48 lateral scutes, and 9-13 ventral scutes. Most of the belly is smooth and light gray to milky white. The Alabama sturgeon’s range is limited to the Mobile Basin, which includes the Coosa, Cahaba, Alabama, Black Warrior, Mobile, Tensaw, Tallapoosa, and Tombigbee rivers.**
- *Percina aurora* (pearl darter) – The pearl darter is currently only found in the Pascagoula river system. It prefers stable gravel riffles or sandstone exposures with large gravel or rock. It grows up to 64 millimeters long and has a black spot at the base of the tail fin.
- *Caretta caretta* (Loggerhead sea turtle) – These marine turtles have a heart-shaped carapace, generally a reddish-brown hue with olive tones which is often covered with commensal organisms such as barnacles and algae. The skin is dull to reddish brown dorsally and medium to pale yellow around the edges and ventrally. The plastron is cream to yellow. Critical habitat includes Horn and Petit Bois Islands in Jackson County.
- *Dermochelys coriacea* (Leatherback sea turtle) – **This is the largest of the living turtles, as it can reach up to 7 feet in length. They have a secondary palate, formed by vomer and palatine bones. The shell is present but is not visible. The carapace consists of bones that are buried into its dark brown or black skin. It has seven pronounced ridges in its back and five on the underside.**

Predominantly marine turtles, leatherbacks nest on barrier island and mainland beaches.

- *Drymarchon corais couperi* (eastern indigo snake) – The eastern indigo snake is the longest snake native to the U.S., between 60 and 84 inches (152-213 cm) in length. It is a shiny bluish-black color, but the chin and sides of the head are colored reddish or orange-brown. Indigo snakes are restricted to areas of xeric pine-oak sandhills, which are also usually inhabited by gopher tortoises.
- *Eretmochelys imbricata* (Hawksbill sea turtle) – **The hawksbill is recognized for their hawk like beak with a non-serrated jaw. The head is narrow and has two pairs of scales in front of its eyes. Carapace is bony without ridges and has large, over-lapping scutes present and has four lateral scutes. Carapace is elliptical in shape and can be orange, brown, or yellow in color. Adults grow between two and three feet in length and can weigh up to 150 pounds. These sea turtles are typically found around coastal reefs, rocky areas, estuaries, and lagoons.**
- *Gopherus polyphemus* (gopher tortoise) – The gopher tortoise occupies a wide range of upland habitats but prefer longleaf pine systems. Substrate in these areas should be well-drained, sandy soils to allow easy burrowing, and there should be an abundance of diverse herbaceous ground cover. The tortoise is characterized by its large size (up to 15 inches) and elephant-like feet. They have a tan or brown carapace with a yellow plastron.
- *Lepidochelys kempii* (Kemp's Ridley sea turtle) – **The Kemp's Ridley sea turtle can grow up to 2.5 feet long and weigh 100 pounds. It has a triangular-shaped head with a slightly hooked beak. Adults are grayish green in color on top with a pale yellowish bottom shell. The carapace is circular and contains five pairs of costal scutes. They are distributed throughout the Gulf of Mexico, nesting on sandy beaches.**
- *Pituophis melanoleucus lodingi* (black pinesnake) – The black pinesnake is a slender, black snake that can grow up to six feet long. It prefers uplands with well-drained soils in pine-dominated forests, particularly longleaf pine. Critical habitat is proposed in Forrest, George, Greene, Harrison, Jones, Marion, Perry, Stone, and Wayne Counties.
- *Pseudemys alabamensis* (Alabama red-bellied turtle) – This turtle typically grows to 12 inches in length. The carapace color may be greenish to dark brown or black with yellowish, orangish, or reddish vertical markings along the sides. The plastron (under shell) may be pale yellow to red with or without dark markings. Their range is restricted to the Mobile-Tensaw River Delta in Mobile and Baldwin counties

adjacent to Mobile Bay. They are found in shallow vegetated backwaters of freshwater streams, rivers, bays, and bayous in or adjacent to Mobile Bay. They seem to prefer habitats having soft bottoms and extensive beds of submergent aquatic macrophytes.

- ***Rana sevosia* (dusky gopher frog) – Dusky gopher frogs are found in upland sandy sites, historically longleaf pine savannahs, and isolated temporary forested wetland breeding sites. They average between two and four inches long and are deep gray to a pattern of reddish-brown spots.**
- ***Pleurobema decisum* (southern clubshell) – The southern clubshell is a medium sized mussel up to 3.6 inches (93 mm) long. It has a thick shell and heavy hinge plate and teeth. The periostracum is yellow to yellow brown with green rays or spots. They are usually found in highly oxygenated surface waters with sand and gravel substrate in shoals of large rivers to small streams. They can be found in sand and gravel in the center of the stream or in sand along its margins.**
- *Potamilus inflatus* (inflated heelsplitter) – The inflated heelsplitter has an oval, compressed, thin shell and can grow up to 5.5 inches (140 mm) in length. The valves gape anteriorly, the umbos are low, and there is a prominent posterior wing that may extend anterior to the beak in young individuals. The shell is brown to black and may have green rays in young individuals. The nacre is pink to purple. They are found in sand, mud, silt, and sandy-gravel substrates in slow to moderate currents. They are usually collected on the protected side of bars in waters up to 20 feet deep.
- *Hesperapis oraria* (Gulf Coast solitary bee) – Adult *Hesperapis* bees have two pairs of wings, dark brown legs with reddish tarsi. Their bodies are covered in dense, branched hairs, and their abdomens have distinct black and white bands. Females range from 11 to 13 mm in length, and males range from 8 to 11 mm in length. This bee only forages on pollen and nectar from the *Balduina angustifolia* (coastal plain honeycomb head) plant; therefore, their habitat range is restricted to areas where this vegetation species can be found.

2.2 State Listed Species

Although not listed as federal conservation priorities, some species are ranked imperiled in individual states based on reduction in occurrences due human impacts such as habitat destruction. Alabama state rankings are divided into 11 categories:

- S1 – Critically imperiled in AL (≤ 5 occurrences or very few remaining individuals or acres)
- S2 – Imperiled in AL because of rarity (6 to 20 occurrences or few remaining individuals or acres)
- S3 – Vulnerable, rare, or uncommon in AL (21 to 100 occurrences)
- S4 – Apparently Secure in AL (>100 occurrences)
- S5 – Secure, common, widespread, and abundant in AL
- SX – Presumed Extirpated
- SH – Historical (possibly extirpated)
- SNR – Unranked
- SNA – Conservation rank not applicable
- SU – Unrankable
- SE – Exotic species

In addition to the 22 federally listed species occurring in Mobile County, 160 state listed species of concern (ranked as S1, S2, or S3) were identified as potentially inhabiting the project area (Table 2).

Table 2. State Listed Species of Concern

Scientific Name	Common Name	State Ranking (LE/LT/S1/S2/S3)
MAMMALS		
<i>Lasiurus intermedius</i>	Northern Yellow Bat	S1
<i>Perimyotis subflavus</i>	Tri-Colored Bat	S3
<i>Ursus americana</i>	Black Bear	S2
BIRDS		
<i>Ammodramus henslowii</i>	Henslow's Sparrow	S2
<i>Ammodramus leconteii</i>	Le Conte's Sparrow	S3
<i>Ammodramus nelson</i>	Nelson's Sparrow	S3
<i>Ammodramus maritimus</i>	Seaside Sparrow	S2
<i>Anus fulvigula</i>	Mottled Duck	S3
<i>Asio flammeus</i>	Short-Eared Owl	S2
<i>Athene cunicularia</i>	Burrowing Owl	S2
<i>Botaurus lentiginosus</i>	American Bittern	S3
<i>Charadrius nivosus</i>	Snowy Plover	S2
<i>Charadrius wilsonia</i>	Wilson's Plover	S1
<i>Circus cyaneus</i>	Northern Harrier	S3
<i>Columbina passerine</i>	Common Ground Dove	S3
<i>Coturnicops noveboracensis</i>	Yellow Rail	S2
<i>Crotophaga sulcirostris</i>	Groove-Billed Ani	S2
<i>Egretta rufescens</i>	Reddish Egret	S3
<i>Elanoides forficatus</i>	Swallow-Tailed Kite	S2
<i>Eudocimus albus</i>	White Ibis	S3
<i>Haematopus palliatus</i>	American Oystercatcher	S1
<i>Ixobrychus exilis</i>	Least Bittern	S2
<i>Laterallus jamaicensis</i>	Black Rail	S2
<i>Numenius americanus</i>	Long-Billed Curlew	S2
<i>Passerina ciris</i>	Painted Bunting	S2
<i>Peucaea aestivalis</i>	Bachman's Sparrow	S3
<i>Picoides borealis</i>	Red-Cockaded Woodpecker	S2
<i>Plegadis falcinellus</i>	Glossy Ibis	S3

BIRDS (cont.)		
<i>Porphyrio marinus</i>	Purple Gallinule	S2
<i>Rallus longirostris</i>	Clapper Rail	S2
<i>Thryomanes bewickii</i>	Bewick's Wren	S1
<i>Tyrannus dominicensis</i>	Gray Kingbird	S1
<i>Tyrannus forficatus</i>	Scissor-Tailed Flycatcher	S2
<i>Zanaisa asiatica</i>	White-Winged Dove	S3
FISH		
<i>Ammocrypta vivax</i>	Scaly Sand Darter	S1
<i>Atractosteus spatula</i>	Alligator Gar	S2
<i>Alosa alabamae</i>	Alabama Shad	S2
<i>Ammocrypta bifascia</i>	Florida Sand Darter	S1
<i>Cycleptus meridionalis</i>	Southeastern Blue Sucker	S3
<i>Enneacanthus gloriosus</i>	Bluespotted Sunfish	S3
<i>Etheostoma fusiforme</i>	Swamp Darter	S3
<i>Etheostoma lynceum</i>	Brighteye Darter	S1
<i>Fundulus blaire</i>	Western Starhead Topminnow	S3
<i>Fundulus chrysotus</i>	Golden Topminnow	S3
<i>Fundulus cingulatus</i>	Banded Topminnow	S2
<i>Fundulus dispar</i>	Starhead Topminnow	S2
<i>Fundulus pulvereus</i>	Bayou Killifish	S2
<i>Lucania parva</i>	Rainwater Killifish	S3
<i>Lythrurus roseipinnis</i>	Cherryfin Shiner	S2
<i>Notropis maculatus</i>	Tailight Shiner	S3
<i>Noturus nocturnus</i>	Freckled Madtom	S3
<i>Perca flavescens</i>	Yellow Perch	S3
<i>Poecilia latipinna</i>	Sailfin Molly	S2
<i>Polyodon spathula</i>	Paddlefish	S3
<i>Pteronotropis signipinnis</i>	Flagfin Shiner	S3
REPTILES		
<i>Apalone ferox</i>	Florida Softshell	S2
<i>Coluber flagellum</i>	Coach Whip	S3
<i>Crotalus adamanteus</i>	Eastern Diamond-Backed Rattlesnake	S3

REPTILES (cont.)		
<i>Deirochelys reticularia</i>	Chicken Turtle	S3
<i>Farancia erythrogramma</i>	Rainbow Snake	S3
<i>Graptemys nigrinoda delticola</i>	Southern Black-Knobbed Map Turtle	S2
<i>Graptemys pulchra</i>	Alabama Map Turtle	S3
<i>Lampropeltis calligaster rhombomaculata</i>	Mole Kingsnake	S3
<i>Lampropeltis nigra holbrooki</i>	Eastern Speckled Kingsnake	S3
<i>Macrochelys temminckii</i>	Alligator Snapping Turtle	S3
<i>Malaclemys terrapin pileate</i>	Mississippi Diamond-Backed Terrapin	S2
<i>Micrurus fulvius</i>	Harlequin Coralsnake	S3
<i>Nerodia clarkii clarkii</i>	Gulf Saltmarsh Watersnake	S2
<i>Ophisaurus mimicus</i>	Mimic Glass Lizard	S1
<i>Pituophis melanoleucus lodingi</i>	Black Pinesnake	S2
<i>Plestiodon anthracinus</i>	Coal Skink	S3
<i>Plestiodon inexpectatus</i>	Southeastern Five-Lined Skink	S3
<i>Rhadinaea flavilata</i>	Pine Woods Littersnake	S2
<i>Sternotherus carinatus</i>	Razor-Backed Musk Turtle	S1
AMPHIBIANS		
<i>Ambystoma bishop</i>	Reticulated Flatwoods Salamander	S1
<i>Ambystoma tigrinum</i>	Eastern Tiger Salamander	S3
<i>Amphiuma means</i>	Two-Toed Amphiuma	S3
<i>Amphiuma pholeter</i>	One-Toed Amphiuma	S1
<i>Desmognathus auriculatus</i>	Southern Dusky Salamander	S2
<i>Lithobates heckscheri</i>	River Frog	S1
BIVALVES		
<i>Glebula rotundata</i>	Round Pearlshell	S2
<i>Ligumia subrostrata</i>	Pondmussel	S2
SNAILS		
<i>Ferrisia mcneili</i>	Hood Ancyloid	S2
CRUSTACEANS		
<i>Cambarellus diminutus</i>	Least Crayfish	S2
<i>Cambarellus lesliei</i>	Angular Dwarf Crayfish	S2
<i>Cambarellus shufeldtii</i>	Cajun Dwarf Crayfish	S2

CRUSTACEANS (cont.)		
<i>Fallicambarus byersi</i>	Burrowing Bog Crayfish	S1
<i>Fallicambarus danielae</i>	Speckled Burrowing Crayfish	S2
<i>Fallicambarus oryktes</i>	Flatwoods Digger	S1
<i>Procambarus bivittatus</i>	Ribbon Crayfish	S3
<i>Procambarus clemmeri</i>	Cockscomb Crayfish	S2
<i>Procambarus evermanni</i>	Panhandle Crayfish	S3
<i>Procambarus leconteii</i>	Mobile Crayfish	S3
<i>Procambarus shermani</i>	Gulf Crayfish	S2
PLANTS		
<i>Agalinis aphylla</i>	Leafless False-Foxglove	S2
<i>Agalinis filicaulis</i>	Thin-Stemmed False-Foxglove	S2
<i>Agalinis linifolia</i>	Flax-Leaf False-Foxglove	S2
<i>Agrimonia incisa</i>	Incised Grooverbur	S2
<i>Aristida mohrii</i>	Mohr's Tree-Awn Grass	S1
<i>Astragalus villosus</i>	Hoary Milkvetch	S2
<i>Botrychium jenmanii</i>	Alabama Grapefern	S1
<i>Calopogon barbatus</i>	Bearded Grass-Pink	S1
<i>Canna flaccida</i>	Bandana of the Everglades	S1
<i>Carex striata</i>	Walter's Sedge	S1
<i>Chasmanthium nitidum</i>	Shiny Spikegrass	S1
<i>Cirsium lecontei</i>	Le Conte's Thistle	S1
<i>Cirsium nuttallii</i>	Nuttall's Thistle	S1
<i>Coreopsis gladiata</i>	Southeastern Tickseed	S2
<i>Coreopsis nudata</i>	Georgia Tickseed	S1
<i>Eleocharis olivacea</i>	Capitate Spikerush	S1
<i>Eleocharis robbinsii</i>	Robbin's Spikerush	S1
<i>Eleocharis rostellata</i>	Beaked Spikerush	S1
<i>Epidendrum magnoliae</i>	Green-Fly Orchid	S2
<i>Eriocaulon texense</i>	Texas Pipewort	S2
<i>Gordonia lasianthus</i>	Loblolly Bay	S1
<i>Helianthemum Arenicola</i>	Coastal Sand Frostweed	S1
<i>Hibiscus coccineus</i>	Brilliant Hibiscus	S1

<i>PLANTS (cont.)</i>		
<i>Hypericum reductum</i>	Atlantic St. Johnswort	S2
<i>Ilex Amelanchier</i>	Serviceberry Holly	S2
<i>Iva microcephala</i>	Small-Headed Marsh Elder	S1
<i>Juncus gymnocarpus</i>	Naked Fruited Rush	S2
<i>Kosteletzkya smilacifolia</i>	Southern Seashore Mallow	S1
<i>Lachnocaulon digynum</i>	Pineland Bogbutton	S2
<i>Lachnocaulon minus</i>	Small's Bogbutton	S1
<i>Lepuropetalon spathulatum</i>	Southern Lepuropetalon	S2
<i>Lilaeopsis carolinensis</i>	Carolina Lilaeopsis	S1
<i>Lindera subcoriacea</i>	Bog Spicebush	S1
<i>Linum macrocarpum</i>	Flax	S1
<i>Ludwigia arcuate</i>	Pond Seedbox	S1
<i>Ludwigia spathulate</i>	Spathulate Seedbox	S2
<i>Lycium carolinianum</i>	Christmas Berry	S2
<i>Macranthera flammea</i>	Flame Flower	S2
<i>Myriophyllum laxum</i>	Loose Watermilfoil	S2
<i>Nuphar lutea</i> ssp. <i>Ulvacea</i>	West Florida Cowlily	S1
<i>Orthochilus ecristatus</i>	Crestless Eulophia	S1
<i>Pieris phillyreifolia</i>	Climbing Fetter-Bush	S2
<i>Pinguicula planifolia</i>	Chapman's Butterwort	S2
<i>Platanthera blephariglottis</i> var. <i>conspicua</i>	Large White Fringed Orchid	S2
<i>Platanthera integra</i>	Yellow Fringeless Orchid	S2
<i>Platanthera nivea</i>	Snowy Orchid	S2
<i>Peltandra sagittifolia</i>	Spoon-Flower	S2
<i>Polygala crenata</i>	Crenate Milkwort	S1
<i>Ptilimnium costatum</i>	Eastern Bishop Weed	S1
<i>Quercus similis</i>	Bottomland Post Oak	S1
<i>Rhynchospora crinipes</i>	Hairy-Peduncled Beakrush	S1
<i>Rhynchospora macra</i>	Southern White Beak Rush	S1
<i>Rhynchospora stenophylla</i>	Chapman Beak Rush	S2
<i>Rhynchospora tracyi</i>	Tracy's Beak Rush	S1
<i>Ruellia noctiflora</i>	Night Flowering Wild Petunia	S1

<i>PLANTS (cont.)</i>		
<i>Sageretia minutiflora</i>	Tiny-Leaved Buckthorn	S1
<i>Sarracenia leucophylla</i>	Whitetop Pitcher-Plant	S3
<i>Sarracenia rubra</i> ssp. <i>wherryi</i>	Wherry's Sweet Pitcher-Plant	S3
<i>Schizachyrium maritimum</i>	Gulf bluestem	S1
<i>Schwalbea americana</i>	Chaffseed	S1
<i>Spiranthes longilabris</i>	Giant Spiral Ladies' Tresses	S1
<i>Tridens carolinianus</i>	Carolina Fluff Grass	S1
<i>Utricularia floridana</i>	Florida Bladderwort	S2
<i>Xyris chapmanii</i>	Chapman's Yellow-Eyed Grass	S1
<i>Xyris drummondii</i>	Drummond's Yellow-Eyed Grass	S3
<i>Xyris scabrifolia</i>	Harper's Yellow-Eyed Grass	S2

3.0 Biological Assessment Survey and Methods

Sections 3.1 and 3.2 below describe methods associated with the biological assessment conducted on February 4 and 24 (Alternative 2), and March 30 and 31 (Alternative 1) of 2021. The assessment including preliminary research for the general area of the proposed project and a ground investigation within the boundaries of study areas. The biological assessment included a wetlands delineation as well as a walking survey for federally and state listed species. Photographs taken during the site assessment can be found in Appendix A.

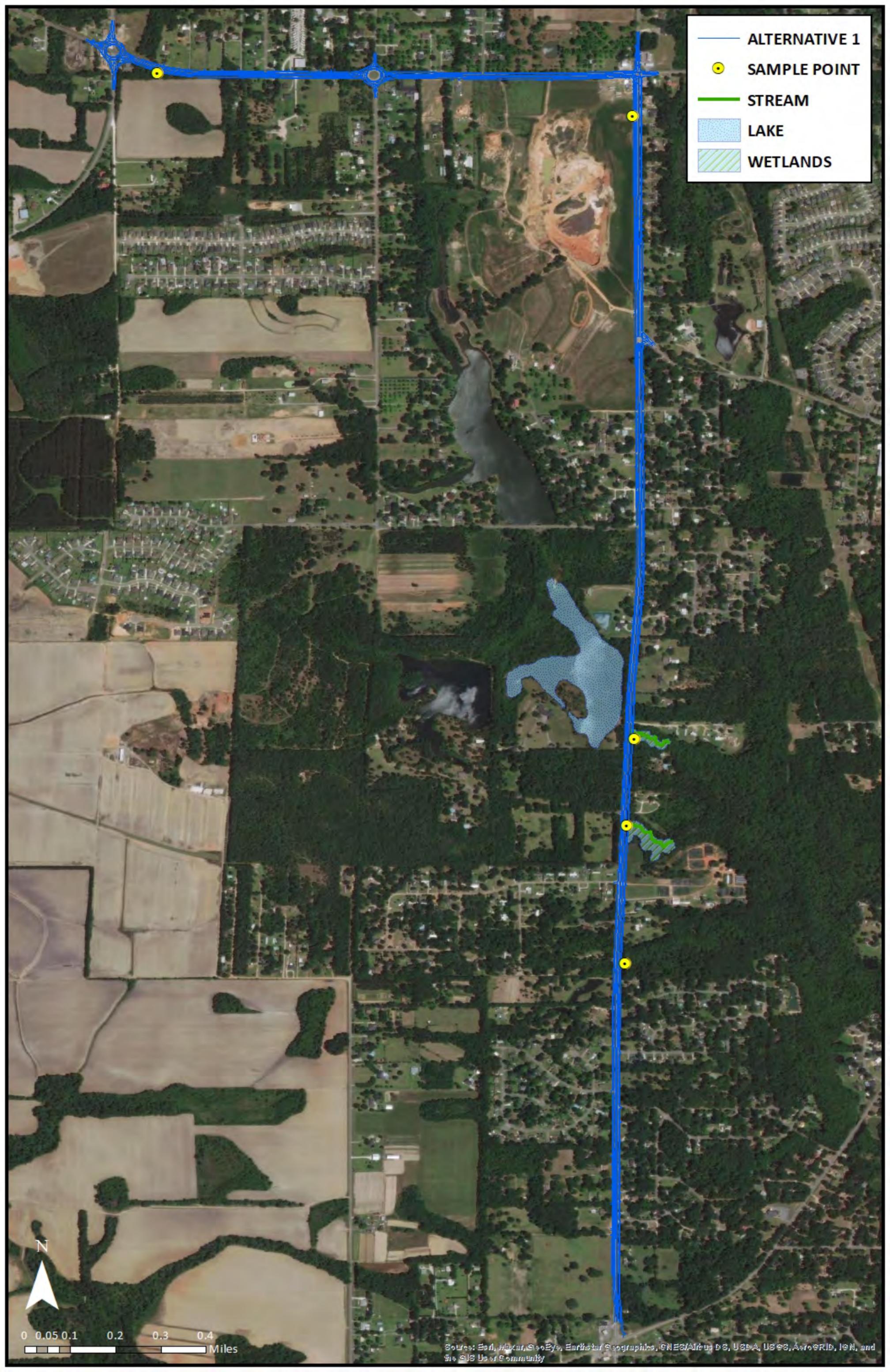
3.1 Wetlands Delineation

A wetlands delineation uses a site survey and reference materials to identify upland and wetland areas. Reference materials used for the determination included topographic maps, historic and current aerial photographs, U.S. Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS) soil survey maps, and U.S. Fish and Wildlife Service USFWS National Wetlands Inventory (NWI) maps.

On February 4 and 24, 2021, a wetlands delineation was performed by Cori Gavin, Senior Biologist for Neel-Schaffer within the Alternative 2 study corridor, and on March 30 and 31, 2021, a wetlands delineation was performed for the Alternative 1 study corridor. By using soils, indicators for hydrology, and vegetation parameters to differentiate the upland boundary line, the investigation separated non-regulated uplands from potentially jurisdictional wetlands and waters and waters of the U.S. During the field survey, all potentially jurisdictional boundaries were mapped using a Bad Elf GNSS Surveyor with sub-meter accuracy. A total of 3.17 acres of wetlands, one 19.2-acre lake, and 605 linear feet of perennial streams were identified within the Alternative 1 study corridor (see Figure 7). A total of 3.84 acres of potentially jurisdictional wetlands were found within Alternative 2 study corridor (see Figure 8).

Figure 7. Sample Locations and Identified Wetlands and Other Waters within Alternative 1 Study Area

-  ALTERNATIVE 1
-  SAMPLE POINT
-  STREAM
-  LAKE
-  WETLANDS



0 0.05 0.1 0.2 0.3 0.4 Miles

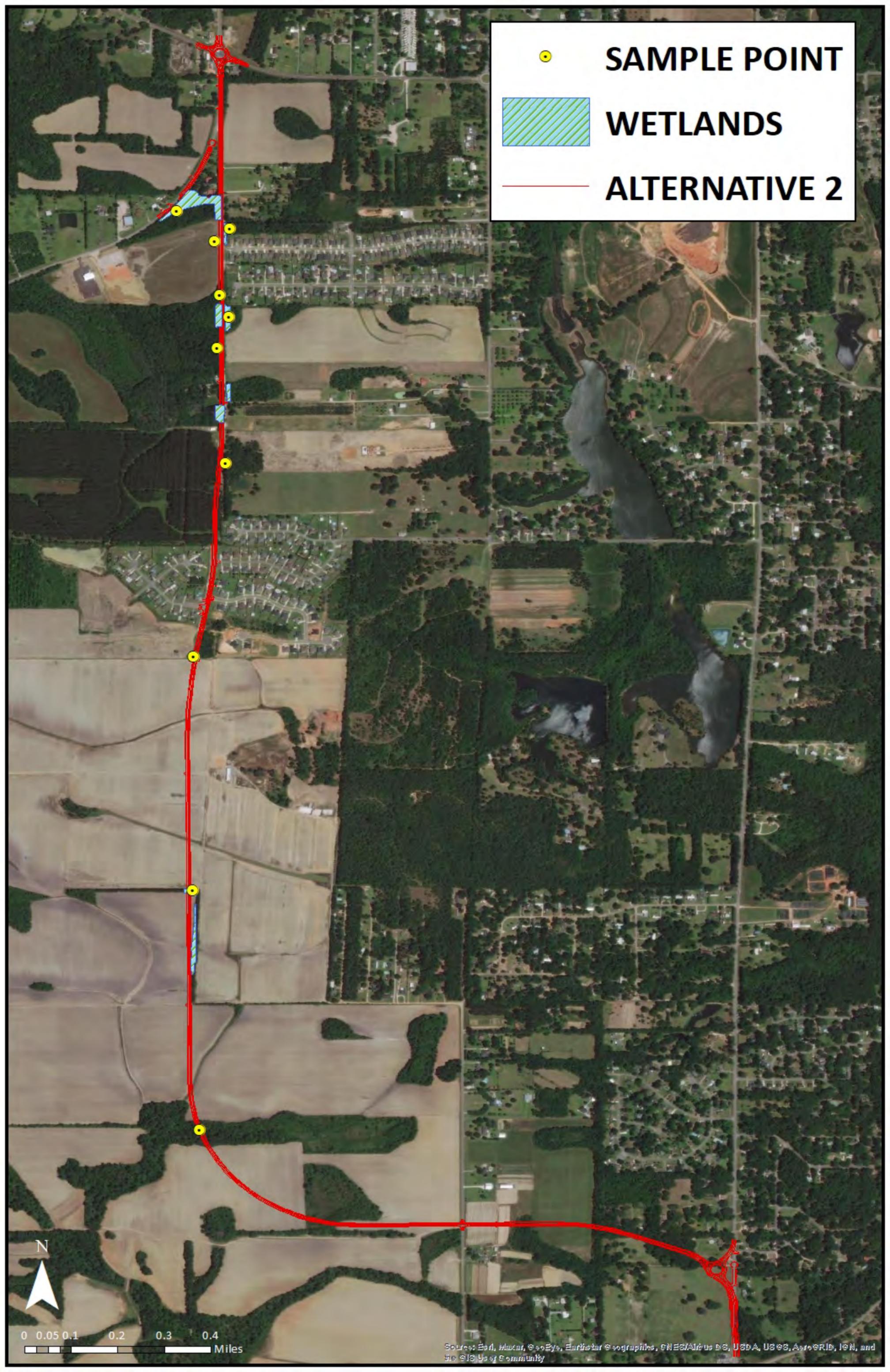
Source: Esri, DeLorme, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Figure 8. Sample Locations and Identified Wetlands and Other Waters within Alternative 2 Study Area

● **SAMPLE POINT**

 **WETLANDS**

 **ALTERNATIVE 2**



Source: Esri, Maxar, © 2022, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

3.2 Federally and State Listed Species Survey

A survey was conducted to identify any federally and/or state listed species within the study area. Cori Gavin, Senior Biologist for Neel-Schaffer, Inc. on February 4 and 24, and March 30 and 31, 2021. The survey was performed by walking the entirety of the project corridor. North-south transects, spaced approximately 50 feet apart, were performed to investigate the presence of all listed species that may potentially inhabit the study area. On the day of the investigation, no species of concern were observed within the project area.

3.3 Habitats and Plant Communities

The western and eastern boundaries of the study area are primarily residentially and commercially developed. A north-south power utility line traverses the western portion of the corridor, and there are scattered areas of undeveloped and forested land.

3.3.1 Critical Habitats within Project Area

The Alternative 1 project corridor exhibits habitat that may be considered suitable for *Gopherus polyphemus* (gopher tortoises), which can be found in agriculturally developed fields adjacent and cleared spaces to wooded areas. Additionally, the sandy streams Alternative 1 crosses may be considered suitable habitat for *Pleurobema decisum* (southern clubshell) and *Potamilus inflatus* (inflated heelsplitter). Gopher tortoise and mussel surveys were performed by the methods described in Section 3.2. No individuals of this species were observed on the days of the site investigation.

The Alternative 2 project corridor contains agricultural fields suitable for *Gopherus polyphemus* and slow moving, sandy streams suitable for *Pleurobema decisum* and *Potamilus inflatus*. Gopher tortoise and mussel surveys were performed by methods described in Section 3.2. No individuals of these species were observed on the days of the site investigation.

3.3.2 Plant Communities

Plant communities in the Alternative 1 study area ranged from barren uplands, forested uplands, and bottomland hardwoods. Barren uplands were located adjacent to residential areas and were predominated by *Andropogon virginicus* (broomsedge bluestem), *Paspalum notatum* (bahiagrass), *Paspalum urvillei* (Vasey's grass), and *Stenotaphrum secundatum* (St. Augustine grass). Forested uplands were dominated by *Ilex vomitoria* (yaupon), *Lygodium japonicum* (Japanese climbing fern), *Magnolia grandiflora* (southern magnolia), *Pinus echinata* (shortleaf pine), *Pinus taeda* (loblolly pine), *Quercus virginiana* (live oak), *Rubus argutus* (sawtooth blackberry), *Smilax* spp. (greenbriar), and *Triadica sebifera* (Chinese tallow). Bottomland hardwoods were predominated by *Carex glaucescens* (southern waxy sedge), *Cyrilla racemiflora* (swamp titi), *Dichantheium*

scoparium (velvet panicum), *Magnolia virginiana* (sweetbay), *Morella cerifera* (wax myrtle), *Osmunda cinnamomea* (cinnamon fern), and *Pinus elliottii* (shortleaf pine).

Alternative 2 exhibited similar habitats as Alternative 1 except for agriculturally developed fields producing cotton at the time of the survey. Plant communities in bottomland hardwoods differed as well to include *Nyssa aquatica* (water tupelo), *Nyssa biflora* (swamp tupelo), *Taxodium ascendens* (pond cypress), and *Taxodium distichum* (bald cypress).

4.0 PROPOSED ACTION

The northern terminus of Alternates 1 and 2 originate at the intersection of McFarland Road, which turns into Ben Hamilton Road on the south side of the east-west oriented Three Notch-Kroner Road. The Alternate 1 alignment (see Figures 3 and 4) turns south to extend along McDonald Road for approximately 2.8 miles to the terminus at Old Pascagoula Road. From the same northern terminus, Alternate 2 follows Ben Hamilton Road for approximately 0.1 mile before continuing to extend south along Airport Road for approximately 0.6 mile, where Airport Road terminates (see Figures 5 and 6). Alternate 2 continues south through a short stretch of planted pine, continuing south along a subdivision road (Rex Drive) for another short distance. South of Rex Drive the alignment crosses a series of agricultural fields, eventually turning to the east and joining McDonald Road just north of the Old Pascagoula Road intersection. Alternate 2 has a total distance of 3.5 miles. Near the north origin point, a short stretch of Ben Hamilton Road will be improved to accommodate the new Alternate 2 design.

4.1 Direct Effects

Direct effects of both Alternative 1 and Alternative 2 to federally and state listed species and/or their habitats are described as follows:

- Minor toxic vapors and potential petroleum releases from construction equipment may potentially harm or exterminate sensitive aquatic individuals, such as juvenile fish and mussels utilizing the area.
- Minimal loss of critical habitat within the study area is anticipated due to the constructing a new roadway for Alternative 1 and widening of the existing corridor for Alternative 2.

4.2 Indirect Effects

Indirect effects of Alternative 1 and Alternative 2 to threatened and endangered species include potential relocation or disturbance of nesting and/or foraging areas. Increased human activity, i.e. truck traffic, within the study area may deter individuals from foraging or nesting in areas which they may expand under natural conditions.

4.3 Interrelated and Interdependent Actions

If strict stormwater pollution and erosion control measures are not enforced during construction, the potential exists for sedimentation and foreign hazardous releases to impact the surrounding environment. Stormwater runoff during rainfall events is a major concern for pollutant sources into the bayou.

4.4 Cumulative Effects

The effects of both Alternative 1 and Alternative 2, described in Sections 4.1, 4.2, and 4.3, can accumulate to increase the degree and severity of negative impacts within and around the study area. Nutrient loading as a result of demolition, construction, an ineffective SWPPP, and poor monitoring could increase in a way that negatively affects not only the area of concern, but downstream of the project. In addition, future development adjacent to the new thoroughfare could cause additional degradation and loss of critical habitat used by federally and state listed species of concern, which is directly associated with their decline.

5.0 CONSERVATION MEASURES

Implementation and monitoring of a stringent stormwater pollution prevention plan (SWPPP) is critical to prevent additional nutrient loading into the bayou. Grading and other topographical modifications should be planned to achieve four objectives:

1. Limit area of disturbed soil;
2. Divert surface water away from disturbed areas;
3. Reduce velocity of surface water flow; and
4. Establishment of seeding for stabilization.

Native vegetation should be established on disturbed areas as soon as possible, and silt fences should be installed around construction easements. Silt fences, core logs, etc. should be monitored and appropriately maintained.

Other conservation may be defined and implemented during consultation with federal and state regulatory agencies. All recommendations should be enforced and monitored during construction.

Should these measures fail to be enforced and maintained resulting in severe negative impacts to the environment, costly fines may be enforced by state and/or federal agencies. Additionally, some impacts, such as unauthorized fill of wetlands or jurisdictional waters, could initiate a cease-and-desist order by the USFWS, EPA, or other regulatory agencies. These actions could not only increase project costs but can suspend the construction for months at a time.

6.0 CONCLUSIONS

Neel Schaffer has performed a Biological Assessment in conformance with U.S. Fish and Wildlife Service scope and recommendations of the ALDOT Project STPMB-4918(250) located in Mobile County, Alabama. This assessment included research into the prior uses of the property; prior and current uses of adjacent properties; prior and current permitted activities associated with the property; a survey of the property for listed species of concern, their critical/associated habitats, wetlands, and all other biological aspects within the property boundaries. The Biological Assessment has revealed the proposed undertaking “*may affect*” species identified and described herein. However, if conservation measures described in Section 5.0 are strictly implemented and monitored, the proposed action for Alternative 1 “*may affect, but is not likely to adversely affect*” federally and state listed specie. Similarly, if conservation measures and BMPs described in Section 5.0 are strictly implemented and monitored, the proposed action for Alternative 2 “*may affect, but is not likely to adversely affect*” federally and state listed species.

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8.0 LIST OF PREPARERS

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Bob Portera, Professional Engineer, Transportation Engineer Manager for Neel-Schaffer, Inc.
Brian Morgan, Project Manager for Neel-Schaffer, Inc.

APPENDIX A
ALTERNATIVE 1 STUDY AREA PHOTOGRAPHS



NORTHERN TERMINUS, FACING SOUTH FROM BEN HAMILTON ROAD



PROJECT CORRIDOR ALONG AIRPORT ROAD, FACING NORTH



PROJECT CROSSING AT MAURICE POIROUX ROAD, FACING SOUTH



PROJECT TERMINUS AT McDONALD ROAD, FACING EAST



AGRICULTURE DEVELOPMENT WITHIN PROJECT CORRIDOR

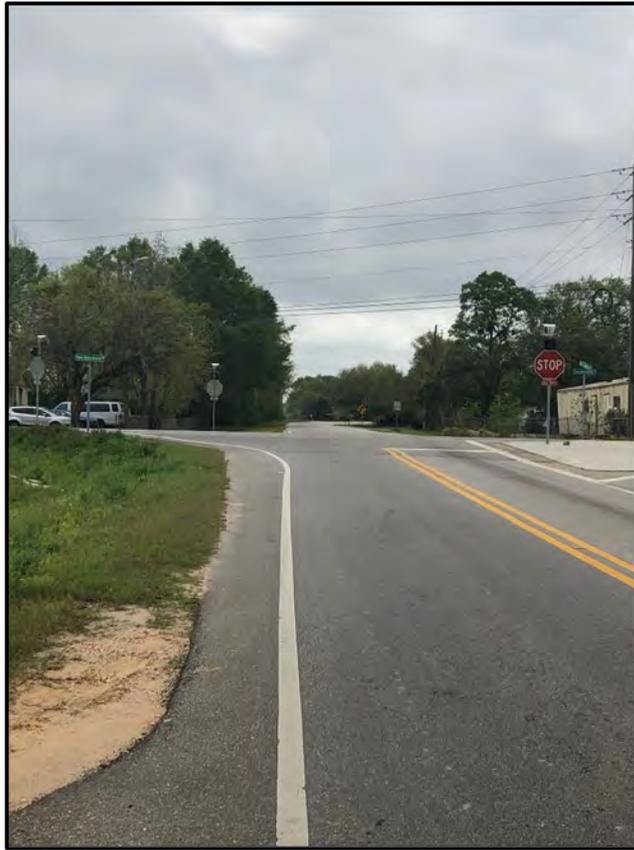


FORESTED UPLANDS WITHIN PROJECT CORRIDOR



BOTTOMLAND HARDWOODS WITHIN PROJECT CORRIDOR

APPENDIX B
ALTERNATIVE 2 STUDY AREA PHOTOGRAPHS



INTERSECTION OF MCFARLAND ROAD AND THREE NOTCH ROAD, FACING SOUTH FROM MCFARLAND ROAD



ROUNDBOUT AT THREE NOTCH ROAD AND SCHILLINGER ROAD, FACING WEST FROM THREE NOTCH ROAD



INTERSECTION AT McDONALD ROAD AND THREE NOTCH ROAD, FACING SOUTH FROM McDONALD ROAD



INTERSECTION AT McDONALD ROAD AND THEODORE DAWES ROAD, FACING SOUTH FROM McDONALD ROAD



FACING SOUTH ON MCFARLAND ROAD AT WESTERN ADJACENT LAKE



WESTERN ADJACENT LAKE, FACING WEST FROM MCFARLAND ROAD



STREAM HABITAT WITHIN STUDY AREA



INTERSECTION AT MCFARLAND ROAD AND OLD PASCAGOULA ROAD, FACING SOUTH FROM MCFARLAND ROAD

Appendix P

Early Coordination

506
ETB

OFFICE OF THE GOVERNOR



ALABAMA DEPARTMENT OF ECONOMIC
AND COMMUNITY AFFAIRS

KAY IVEY
GOVERNOR

KENNETH W. BOSWELL
DIRECTOR

STATE OF ALABAMA

January 28, 2021

Mr. Steven E. Walker, P.E.
State Design Engineer
Alabama Department of Transportation
1409 Coliseum Boulevard
Montgomery, AL 36130-3050



Re: Project No.: STPMB-4918(250)
New Alignment of CR-25 (McFarland Road) from CR-28 (Old Pascagoula Road)
to CR-358 (Three Notch Road)
Mobile County, AL

Dear Mr. Walker:

Thank you for the opportunity to review the proposed new alignment of CR-25 (McFarland Road) from CR-28 (Old Pascagoula Road) to CR-358 (Thee Notch Road) near the Theodore community in Mobile County.

While the submittal did not contain sufficient information to determine the exact extent of the proposed project, there appear to be at least three streams in the general area of the proposed project. Three of these streams are Fowl River, Jackson Creek, and Baker Creek. There are both Zone AE and Zone A floodplains in the general area of the proposed project.

Because the Office of Water Resources is unable to make an official determination, please contact Matthew Barclift, Engineering Manager and Floodplain Administrator for Mobile County, to obtain an official determination.

Please ensure that all requirements of 44 CFR 60.3(c) are met. This may include, but is not limited to, obtaining a Conditional Letter of Map Revision (CLOMR) or a No Rise Certificate. All requirements of the local community for proposed construction and other developments will also need to be met. Mr. Barclift's contact information is as follows:

Matthew Barclift
Engineering Manager and Floodplain Administrator
Mobile County
1110 Schillinger Road North
Suite 100
Mobile, AL 36608

If you have any questions or if we can be of further assistance, please contact our Risk MAP Program Manager, Casie Pritchard, by email at casie.pritchard@adeca.alabama.gov or by telephone at (334) 353-5061 or our LOMR Program Coordinator, Bobby Douglass, by email at bobby.douglass@woodplc.com or by telephone at (205) 980-6402.

Sincerely,


J. Brian Atkins, P.E.
Division Chief
Office of Water Resources

cc: Matthew Barclift, Engineering Manager and Floodplain Administrator, Mobile County

County Engineer
W. Bryan Kegley II, P.E., P.L.S.

Assistant County Engineer
Kimberly N. Sanderson, P. E.

Engineering Manager - Construction
James Vorpahl, P.E.

Engineering Manager - Development/Inspections
Matthew Barclift, P. E., C.F.M.

Engineering Manager - Federal Projects
Richard R. Spraggins, P. E.



Public Works Director
Richard A. Mitchell, P. E.

Deputy Public Works Director
R. Neal Howard, P. E.

Public Works Assistant Superintendent
Richard H. Crist, Sr., P. L. S.

Division Transportation Superintendents
Donald Dixon
Tom Hudson
Albert Newberry
Patrick Williams

MOBILE COUNTY ENGINEERING & PUBLIC WORKS

February 12, 2021

Mr. Stanley C. Biddick, PE
State Design Engineer
Alabama Department of Transportation
1409 Coliseum Boulevard
Montgomery, AL 36110
Attn: Natasha Clay



Re: *STPMB-4918(250) McFarland Road*

Dear Sir or Madam:

We thank you for your letter dated January 15, 2021, and for the opportunity to provide a few comments pertaining to the above referenced project. Several years ago, the planners for the city of Mobile adopted a proposed alignment for the extension of McFarland Road southward to Old Pascagoula Road. Since that time, the City of Mobile used the subdivision plat approval process within the extraterritorial planning jurisdiction to enforce the dedication of right-of-way along the adopted route.

With the growth of West Mobile, it has become imperative that the County develop additional traffic capacity in both east-west corridors as well as north-south corridors in the project area. The proposed southern tie of the referenced project will allow direct access to the I-10 Interchange recently constructed by the State.

After careful evaluation, the Mobile County Engineering Department has determined that the most feasible and economic corridor would be the direct route proposed. The Mobile County Commission welcomes the much-needed project and the positive influence it will have on the development of southwest Mobile County.

Sincerely,

W. Bryan Kegley II, PE, PLS
County Engineer



WBK/slg

copy: Commissioner Merceria Ludgood – President
Commissioner Connie Hudson
Commissioner Randall Dueitt
File: MCR-2016-003



U.S. Department
of Transportation
**Federal Aviation
Administration**

Jackson Airports District Office
100 West Cross Street, Suite B
Jackson, MS 39208-2307
(601) 664-9900 Fax: (601) 664-9901

April 7, 2021

Ms. Natasha Clay
Alabama Dept. of Transportation
1409 Coliseum Blvd.
Montgomery, AL 36110

**RE: STPMB-4918(205) New Alignment of
McFarland Rd. Mobile County, AL**

Dear Ms. Clay:

Thank you for contacting us in regards to your proposed project in Mobile County. The project sites described in your letter dated January 15, 2021, will not impact the Runway Safety Area of the nearest airport. However, the site is within proximity to a navigation facility at St. Elmo Airport and in accordance with Title 14 of the Code of Federal Regulations, Part 77.9, we request further notification for review by the Federal Aviation Administration (FAA) for potential effects on aviation.

Notification must occur at least 45 days before start of construction, but may be accomplished sooner. A convenient web-based tool for submitting your project is available at the OE-AAA website for Obstruction Evaluation / Airport Airspace Analysis (OE/AAA)
<https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp>

Evaluation of proposed off-airport construction is managed by the Air Traffic Organization, which is separate from our office. If you have questions or need additional assistance, please contact either Ladonna James at ladonna.james@faa.gov or (310)725-6558; or Earl Newalu, at earl.newalu@faa.gov or (404)305-7082.

Upon completion of our analysis, you will receive written notice of the FAA's final determination of the proposal's effect on aviation. Again, thank you for contacting us, and best wishes in your proposed endeavor.

Sincerely,
Brian Hendry

Community Planner



ALABAMA DEPARTMENT OF TRANSPORTATION

1409 Coliseum Boulevard, Montgomery, Alabama 36110
P. O. Box 303050, Montgomery, Alabama 36130-3050



Kay Ivey
Governor

John R. Cooper
Transportation Director

January 15, 2021

MEMORANDUM

TO: Joe H. Lister, P.E.
State Office Engineer

FROM: Stanley C. Biddick, P.E.
State Design Engineer

BY: 
Natasha Clay
State Environmental Administrator

RE: STPMB-4918(250)
New Alignment of CR-25(McFarland Road) from
CR-28 (Old Pascagoula Road) to CR-358 (Three Notch Road)
Mobile County, AL

Dear Sir:

Please find attached a letter requesting views and comments, a map of the project area, and a list of agencies contacted as a part of the early coordination procedures for the subject project.

NC/JJC/mem
Attachment

Cc: Mr. Matthew Ericksen
Mr. Tim Colquett
Mr. Clarence Hampton
Mr. Brian Ingram
Mr. David Welch
Mr. Terry McDuffie
Ms. LaTasha Merchant
Mr. Lee Daughtry
Mr. Scott George
Ms. Lynne Urquhart
ETS File



ALABAMA DEPARTMENT OF TRANSPORTATION

1409 Coliseum Boulevard, Montgomery, Alabama 36110
P. O. Box 303050, Montgomery, Alabama 36130-3050



Kay Ivey
Governor

John R. Cooper
Transportation Director

January 15, 2021

«Title» «First_Name» «Last_Name»
«Company_Name»
«Address_Line_1»
«Address_Line_2»
«City», «State» «ZIP_Code»

RE: STPMB-4918(250)
New Alignment of CR-25(McFarland Road) from
CR-28 (Old Pascagoula Road) to CR-358 (Three Notch Road)
Mobile County, AL

Dear Sir or Madam:

The Alabama Department of Transportation (ALDOT), Mobile County, and the Federal Highway Administration (FHWA) are studying a proposal to provide for additional capacity along McFarland Road from Old Pascagoula Road to Three Notch Road. The project is located in southwest Mobile County and is in the community of Theodore, Alabama. Please see the attached location map. Right-of-way will be required for the proposed project.

The purpose of this project is to provide additional capacity along the project corridor to relieve congestion on McDonald Road and Three Notch Road. Additional capacity in the corridor will be obtained by providing a facility capable of addressing traffic needs along McDonald Road and Three Notch Road.

ALDOT is investigating all aspects of this proposal in order to determine its feasibility. We are very much interested in the views of public officials and agencies concerning this proposed highway facility. We welcome public input concerning the project's purpose, need, and alternatives. The early identification of effects a highway project may have on an area is needed to assure proper planning.

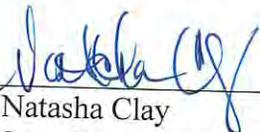
Also, we are interested in your review of this proposal so that we may satisfy the intent of certain Federal Statute (Section 204 of the Demonstration Cities and Metropolitan Development Act of 1966 and Section 401 of the Intergovernmental Review Act of 1968). Although Federal-Aid Highway Planning, Research, and Construction projects may not have been selected for review under Alabama's "Intergovernmental Review of Federal Programs" (Executive Order 12372) process, we must still meet these other requirements. Therefore, your review is requested.

Page 2
January 15, 2021

We would appreciate any comments or useful information that you might have on potential social, economic, or environmental effects of the proposed project. We also solicit your comments on the purpose and need for the proposed project and potential alternatives to the project. The comments will be taken under consideration during the preparation of the environmental document.

Sincerely,

Stanley C. Biddick, P.E.
State Design Engineer

By: 
Natasha Clay
State Environmental Administrator
Environmental Technical Section

NC/JJC/mem

pc: ETS File

The Honorable Don Davis
Judge of Probate
Mobile County Courts
PO Box 7
Mobile, AL 36601

The Honorable Jerry Carl
President
Mobile County Commission
205 Government St
Mobile, AL 36602

Sheriff Sam Cochran
Mobile County Sheriff's Office
PO Box 113
Mobile, AL 36601

Mr. Rickey Rhodes, Director
South Alabama Regional Planning
Commission
PO Box 1665
Mobile, AL 36633

The Honorable Merceria L. Ludgood
Mobile County Commission
District 1
205 Government St
Mobile, AL 36602

Mr. Brian Kegley
County Engineer
Mobile County Engineering Dept
205 Government St
Mobile, AL 36644

The Honorable Chris Pringle
AL House of Representatives
101st District
11 S Union St - Ste 402
Montgomery, AL 36130

The Honorable Connie Hudson
Mobile County Commission
District 2
205 Government St
Mobile, AL 36602

Mr. Chresal Threadill
Superintendent of Education
Mobile County Schools
1 Magnum Pass
Mobile, AL 36618

The Honorable Jack W. Williams
Senate of Alabama
34th District
11 S Union St - Ste 735
Montgomery, AL 36130

Appendix Q

Public Involvement

STPMB-4918(250) Public Involvement Meeting Comment Summary and Response

Comment	Response
1. Five (5) comments in agreement with the project (Alternative 1).	Alternative 1 is being considered in the Environmental Document as the preferred alternate.
2. One (1) comment would like more turn signals at Three Notch-Kroner Rd and McDonald Road or construct roundabout.	During the design process, this intersection on Alternative 1 will be evaluated and designed in accordance with accepted design criteria. The intersection at Three Notch-Kroner Road and McDonald Road is expected to be expanded with a roundabout.
3. One (1) comment would like to ensure that the pecan trees adjacent to Three Notch-Kroner Road are not disturbed.	The design of Alternative 1 will be done to minimize impacts through the use of a best-fit alignment. Since the intersection at Three Notch-Kroner Road and McDonald Road is expected to be expanded with a roundabout; it is likely that some pecan trees will be impacted.
4. One (1) comment does not want any additional traffic on McDonald Road.	The fastest growing part of Mobile County since the mid-1970's has been the area west of Interstate 65 and north of Interstate 10. McDonald Road has experienced growth attributed to the opening of the I-10/McDonald Road interchange and the recently improved Extension (from Three Notch Road to Cottage Hill Road). Traffic is going to increase along McDonald Road with or without the proposed project. A traffic analysis is included in Section 1.4 of the Environmental Assessment.
5. One (1) comment doesn't want to lose any land and is concerned about noise pollution (Alternative 1).	The design of Alternative 1 will be done to minimize impacts. Alternative 1 is expected to impact 4 receptors with noise increases. These noise increases are expected to range from 3 decibels to 5 decibels over the existing noise. Substantial noise increases are not expected. A detailed noise analysis is included in Appendix G of the Environmental Assessment.
6. One (1) comment doesn't want a major road close to their home. An extensive and costly drainage system was just installed on Three Notch-Kroner Road (Alternative 1).	The proposed project avoids all potential drainage impacts along Three Notch-Kroner Road.
7. One (1) comment does not think there is an issue with traffic volume on either Three Notch-Kroner Road and McDonald Road. Only left and right turn lanes are needed in all directions at the intersection (Alternative 1).	Traffic studies have been performed and are included in Section 1.4 and Appendix C of the Environmental Assessment. Areas along McDonald Road would operate an unacceptable level of service without Alternative 1. Alternative 1 as proposed, including additional lanes, is expected to provide a desirable level of service (lower

STPMB-4918(250) Public Involvement Meeting Comment Summary and Response

	travel times and less congestion) when constructed.
8. One (1) comment supports Alternative 2 because it will require the least amount of right of way.	Alternative 2 is a new location road and would require more right of way than Alternative 1.
9. One (1) comment supports Alternative 2 because it would help eliminate speeding traffic in front of their home.	The project will include appropriate speed limit signing. Speeding will need to be addressed through local law enforcement.
10. Four (4) comments support Alternative 2 because it would give motorists two options, balance traffic and divert traffic from ever reaching the intersection of McDonald Road and Three Notch-Kroner Road.	Alternative 2 would give motorists another option instead of using McDonald Road.
11. One (1) comment supports Alternative 2 because it is constructed through fields and there would not be traffic disruptions.	Alternative 2 would have the least amount of traffic disruptions, however it would have more impacts to farmland. Temporary traffic disruptions would still occur at the intersection of Old Pascagoula Road/McDonald Road and at the intersection of Three Notch-Kroner Road/Ben Hamilton Road during construction.
12. One (1) comment suggests a traffic light with left turn signals at the intersection of McDonald Road and Three Notch-Kroner Road and construct Alternative 2.	Alternative 2 does not include any design changes to the intersection of Three Notch-Kroner Road and McDonald Road. It is not needed to provide acceptable levels of service for Alternative 2.
13. Twenty-nine (29) comments oppose Alternative 2 since the road would be constructed through their neighborhood. Other concerns include safety concerns, a decline in property values, increased noise, and destruction of farmland south of the neighborhood. Additional concerns are that the subdivision would be used as a cut-through and create traffic hazards for the residents.	Alternative 2 would be constructed within existing right of way and would connect to the neighborhood. This would increase access to the neighborhood from the new roadway. There is potential for motorists to utilize the neighborhood as a route to McDonald Road. Noise studies performed indicate that noise impacts will occur. Alternative 2 would require acquisition of farmland south of the neighborhood.
14. One (1) comment suggests McDonald Road be widened to decrease congestion.	Traffic studies have been performed and show that the need for additional lanes to meet the purpose and need are necessary. The construction of Alternative 1 would decrease congestion.
15. One (1) comment suggests adding turn lanes at the intersection of McDonald Road and Three Notch-Kroner Road.	Turn lanes are included at the intersection of McDonald Road and Three Notch-Kroner Road.

STPMB-4918(250) Public Involvement Meeting Comment Summary and Response

<p>16. Two (2) comments suggest widening McDonald Road since it is an existing roadway.</p>	<p>Alternative 1 would widen an existing road and be constructed on a best-fit alignment.</p>
<p>17. Two (2) comments suggest the intersection of McDonald Road and Three Notch-Kroner Road needs to be improved and widen McDonald Road.</p>	<p>Traffic studies have been performed and show that the need for additional lanes to meet the purpose and need are necessary. The construction of Alternative 1 would decrease congestion. The intersection at Three Notch-Kroner Road and McDonald Road is expected to be expanded with a roundabout</p>
<p>18. Two (2) comments support Alternative 1 but suggest Alternative 2 be shown with a cul-de-sac on Maurice Poiroux Road. Concerns also include Maurice Poiroux Road being used as a cut through and create a dangerous intersection at Maurice Poiroux Road and Old Pascagoula Road and destruction of farmland.</p>	<p>Alternative 1 is being considered the preferred alternate and would not require modifications to Maurice Poiroux Road. If Alternative 2 is carried forward, a cul-de-sac will be evaluated for Maurice Poiroux Road. Farmland impacts are evaluated in Appendix E of the Environmental Assessment.</p>
<p>19. One (1) comment is opposed to Alternative 2 due to the large amount of right of way acquisition and impacts a large amount of farmland. A benefit to cost ratio should be performed for each alternative. A four-lane roadway going into a roundabout near the Old Pascagoula Road intersection will cause traffic issues with a high probability of accidents. Alternative 2 should be shown with a cul-de-sac at Maurice Poiroux Road. If not, Maurice Poiroux Road would be used as a cut through.</p>	<p>Alternative 2 would require right of way acquisition through farmland. Farmland impacts are being studied for both alternates. The design would be developed to accommodate future traffic and in accordance with accepted design criteria. Alternative 1 is being considered the preferred alternate and would not require modifications to Maurice Poiroux Road.</p>
<p>20. One (1) comment is opposed to Alternative 2 due to increased maintenance costs due to the addition of a new roadway. Other concerns include the roundabout near the Old Pascagoula Road intersection. The concerns are that it would create congestion problems and that it is located in a prominent vertical curve to the north and a substantial horizontal curve that will create line of sight issues for drivers. Also, the dissection of the farmland would be less efficient to farm and would create safety concerns due to equipment crossing the road.</p>	<p>The design would be developed to accommodate future traffic and in accordance with accepted design criteria. No sight distance issues for drivers are anticipated. Alternative 2 would require right of way acquisition through farmland. Alternative 1 is being considered the preferred alternate and would not bisect farmland and require equipment to cross the roadway.</p>

STPMB-4918(250) Public Involvement Meeting Comment Summary and Response

<p>21. Three (3) comments are in regard to the roundabout at the Intersection of Old Pascagoula Road and McDonald Road. The approach from the north has a sharp crest vertical curve and sharp horizontal curve that could be a hazard at night. Two side streets with the roundabout will create hazards. The roundabout is too close to the intersection and approach speeds from the south may be too fast especially at night with a lane taper.</p>	<p>The design would be developed to accommodate future traffic and in accordance with accepted design criteria.</p>
<p>22. One (1) comment opposes Alternative 2 since the proposed design will create a shortcut from Old Pascagoula Road along Maurice Poiroux Road to the proposed new road. It would overload Maurice Poiroux Road and create traffic hazards for local residents.</p>	<p>Alternative 1 is being considered the preferred alternate and would not require modifications to Maurice Poiroux Road.</p>
<p>23. One (1) comment states that Alternative 2 crosses properties used as farmland for over 40 years and that it crosses the site of the former Flowerwood Nursery. The former nursery and farmland have most likely been exposed to repeated use of fertilizers and pesticides and would cause an environmental issue for impacted property owners in the area.</p>	<p>A hazardous materials assessment has been completed and is included in Section 2.6 and Appendix H of this Environmental Assessment. Past agricultural practices were not identified as potential hazardous materials impacts for this project.</p>
<p>24. Two (2) comments oppose Alternative 2 due to the impacts of the farmland used by the Driscoll family and Eugene Poiroux. The farmers use heavy machinery and the alignment will impact the ability to farm on a high traffic roadway. Eugene Poiroux's property is considered a homestead, not "undeveloped" land.</p>	<p>Alternative 1 is being considered the preferred alternate. Farmland impacts are evaluated in Appendix E of the Environmental Assessment.</p>
<p>25. One (1) comment states that Alternate 1 reduces right of way, less impacts to the environment, will help current traffic flow on McDonald Road and would not destroy farmland and wildlife habitat. Alternative 2 would create a shortcut from Old Pascagoula Road along Maurice Poiroux Road and create traffic hazards to the local residents.</p>	<p>Alternative 1 is being considered the preferred alternate and would not require modifications to Maurice Poiroux Road. If Alternative 2 is carried forward, a cul-de-sac will be evaluated for Maurice Poiroux Road. Farmland impacts are evaluated in Appendix E of the Environmental Assessment.</p>
<p>26. One (1) comment states that Mobile County does not have any zoning or governance over land use and development. Alternative 2 divides a large portion of undeveloped farmland. McDonald Road near exit 10 is experiencing heavy truck traffic.</p>	<p>Alternative 1 is being considered the preferred alternate and land use is expected to develop in the same manner west Mobile has developed since the late 1970s with residential development along McDonald Road. Farmland impacts are evaluated in Appendix E of the Environmental Assessment.</p>

STPMB-4918(250) Public Involvement Meeting Comment Summary and Response

<p>27. One (1) comment is that drivers will use Maurice Poiroux Road as a cut through to avoid the roundabout as shown on Alternative 2. The roundabout is situated on a slope which causes visibility problems. The roundabout does not show any capacity for future widening. Drivers in the cul-de-sac and from Lake Tahoe Drive will experience unsafe driving conditions to access McDonald Road or the planned connector.</p>	<p>Alternative 1 is being considered the preferred alternate and would not require modifications to Maurice Poiroux Road. If Alternative 2 is carried forward, a cul-de-sac will be evaluated for Maurice Poiroux Road.</p>
<p>28. One (1) comment is Alternative 2 does not alleviate traffic congestion, only reroutes it to the north and west of McDonald Road and creates hazardous traffic conditions through the roundabout and intersection of Old Pascagoula Road and McDonald Road.</p>	<p>Detailed traffic studies have been performed and Alternative 2 would operate at acceptable levels of service along with providing a new location route currently not available to vehicles traveling along existing McDonald Road. As a result, future congestion along McDonald road is expected to decrease if Alternative 2 is constructed. Traffic studies have been performed and are included in Section 1.4 and Appendix C of the Environmental Assessment. The design of the roundabout would be developed to accommodate future traffic and in accordance with accepted design criteria.</p>
<p>29. One (1) comment states that Alternative 2 would split a family farm in half and increase traffic in a rural residential area.</p>	<p>Alternative 1 is being considered the preferred alternate. Farmland impacts are evaluated in Appendix E of the Environmental Assessment. The proposed project avoids impacts to resources eligible for the National Register of Historic Places. Alternative 2 would direct traffic along a new route. Traffic studies have been performed and are included in Section 1.4 and Appendix C of the Environmental Assessment.</p>
<p>30. One (1) comment states that Alternative 2 would funnel even more traffic to an already over congested intersection at Old Pascagoula Road and McDonald Road. A better option would be to look at March Road as an option to move traffic from McFarland Road to Interstate 10. This would also give the Wal Mart distribution center an alternate access to the interstate.</p>	<p>The use of March Road would not meet the purpose and need of this project and therefore was not within the scope of the project. Detailed traffic studies have been performed and Alternative 2 would operate at acceptable levels of service and meet the project purpose and need.</p>

STPMB-4918(250) Public Involvement Meeting Comment Summary and Response

<p>31. One (1) comment states that if McDonald Road is expanded any further west, it would undermine the stability of an earthen dam adjacent to the road and impact property values associated with the lake the dam forms.</p>	<p>The alignment for Alternative 1 along McDonald Road in the vicinity of the dam transitions to widening to the east. Widening to the east would eliminate impacts to the spillway and dam. The spillway and dam are located 50 feet west of the existing southbound travel lane on McDonald Road. Transitioning to the east avoids reconstructing the existing spillway and 800 feet of dam. The existing lake is not expected to be impacted. Property values associated with the existing lake are not expected to be impacted.</p>
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MOBILE COUNTY COMMISSION

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ALABAMA DEPARTMENT OF TRANSPORTATION



PUBLIC INVOLVEMENT MEETING

McFarland Road from 0.1 Mile North of Old Pascagoula
Road to Three Notch – Kroner Road

MOBILE COUNTY PROJECT NO: MCR-2016-003

ALDOT PROJECT NO: STPMB-4918 (250)

Public Involvement Meeting Report

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SECTION 3: SUMMARY OF COMMENTS

SECTION 4: RECOMMENDATION

SECTION 1
PRE-MEETING ACTIVITIES

Due to public health concerns, an alternative to a normal open house PIM was discussed. It was decided to have an online, open form, meeting using the ALDOT website. A webpage was created to allow the public to view project information and submit comments. Additionally, contact information was provided for people to call to discuss the project or request a meeting. The virtual meeting was held between July 15, 2021, and August 15, 2021.

On June 30, 2021, a public notice was published in the Lagniappe advertising the dates and website. A copy of the public notice is included in this section.

On July 6th, 2021, invitations were mailed to local residents and landowners. A copy of an invitation is attached in this section. A copy of the residents who were mailed an invitation is also included in this section.

**Online Public Involvement
Project No. STPMB-4918(250)**

McFarland Road From 0.1 Mile North
of Old Pascagoula Road to
Three Notch-Kroner Road
Mobile County

Notice is hereby given that the State of Alabama Department of Transportation and Mobile County will hold an Online Public Involvement Meeting on Project No. STPMB-4918(250). This project is located in Mobile County. This project will require the purchase of additional Right-of-Way. The presentation will be available as follows:

Website:

www.aldotinvolved.com

July 15 – August 15, 2021

Lagniappe HD June 30, 2021



ALABAMA DEPARTMENT OF TRANSPORTATION ONLINE PUBLIC INVOLVEMENT



Project: STPMB-4918(250)

McFarland Rd from 0.1 Mile North of Old Pascagoula Rd to Three Notch-Kroner Rd

The Alabama Department of Transportation (ALDOT), in collaboration with the Federal Highway Administration (FHWA) and the Mobile County Commission, are proposing two alternatives for Project STPMB-4918(250). Alternative 1 will widen McDonald Road from Old Pascagoula Road to Three Notch-Kroner Road and Three Notch-Kroner Road to McFarland Road/Ben Hamilton Road. Alternative 2 will construct McFarland Road on a new alignment beginning at the intersection of Old Pascagoula Road and ending at the intersection of McFarland Road/Three Notch-Kroner Road. **Your comments on the proposed project must be submitted by August 15, 2021.**



<p>FOR MORE INFORMATION Website: www.ALDOTinvolved.com “McFarland Rd from 0.1 Mile North of Old Pascagoula Rd to Three Notch-Kroner Road”</p>	<p>Project Description The purpose of the proposed project is to relieve traffic congestion along McDonald Road and Three Notch-Kroner Road in Mobile County. Congestion often means stopped or stop-and-go traffic and usually relates to an excess of vehicles on a portion of roadway at a particular time resulting in speeds that are slower than normal or “free flow” speeds. Congestion along McDonald Road and Three Notch-Kroner Road is due to increased development throughout the study area. This development has resulted in an increasing number of vehicles utilizing both roads in the project area.</p>
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SUBMIT A COMMENT

Online Comment Form: www.ALDOTinvolved.com

FAX: (251) 574-4722

Mail Comments to:

Email: McFarland.Comments@mobilecountyal.gov
VOICE MAIL COMMENTS: (251) 574-5624

Mobile County Engineering Department
Attn: Rhonda Gullledge, PE
205 Government Street
6th Floor, South Tower
Mobile, Alabama 36644

Comment Forms are available in the SW Region ALDOT office and at the Mobile County Engineering Department. Due to COVID-19 precautions, paper comment forms are available by appointment only. Please call Rhonda Gullledge at (251) 574-8595 to schedule.

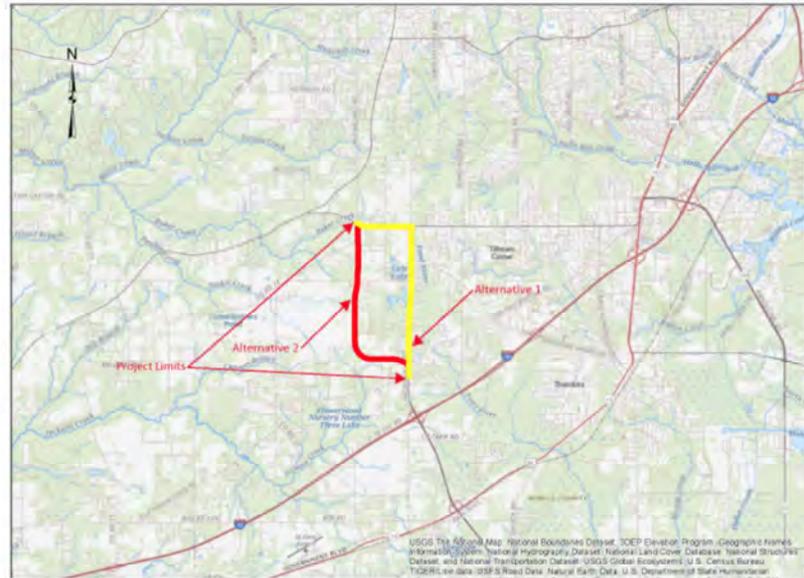
In order to be included in the administrative record, comments must be received by August 15, 2021.

SECTION 2
PUBLIC INVOLVEMENT MEETING

On Thursday, July 15, the project webpage was activated for the public to access. The webpage and comment period would remain open until August 15, 2021. The webpage contained information about the project and included a short, narrated video presentation. The information included project location, purpose, map, and printable flyer. The webpage also had instructions for leaving comments using an on-line survey, a printable mail-in comment form and telephone voice mail. Instructions on how to request an in-person meeting was also provided. The comment period ended August 15, 2021. There were 145 comments received. Of the 145 comments, there were 96 individual comments and 47 comments from individuals that had already commented.



Online Public Involvement: McFarland Rd from North of Old Pascagoula Rd to Three Notch-Kroner Rd



Project Overview

Location: [Mobile \(Mobile County\)](#)

Thank you for visiting our website.

The Mobile County Commission, in collaboration with the Alabama Department of Transportation (ALDOT) and the Federal Highway Administration (FHWA) are proposing two alternatives for Project STPMB-4918(250).

- Alternative 1 will widen McDonald Road from Old Pascagoula Road to Three Notch-Kroner Road and Three Notch-Kroner Road to McFarland Road/Ben Hamilton Road.
- Alternative 2 will construct McFarland Road on a new alignment beginning at the intersection of Old Pascagoula Road and ending at the intersection of McFarland Road/Three Notch-Kroner Road.

Additional right-of-way is required for this project construction.

ALDOT is conducting online public involvement for the proposed project. All comments regarding this project must be received on or before [August 15, 2021](#).



ALABAMA DEPARTMENT OF TRANSPORTATION ONLINE PUBLIC INVOLVEMENT



Project: STPMB-4918(250)

McFarland Rd from 0.1 Mile North of Old Pascagoula Rd to Three Notch-Kroner Rd

The Alabama Department of Transportation (ALDOT), in collaboration with the Federal Highway Administration (FHWA) and the Mobile County Commission, are proposing two alternatives for Project STPMB-4918(250). Alternative 1 will widen McDonald Road from Old Pascagoula Road to Three Notch-Kroner Road and Three Notch-Kroner Road to McFarland Road/Ben Hamilton Road. Alternative 2 will construct McFarland Road on a new alignment beginning at the intersection of Old Pascagoula Road and ending at the intersection of McFarland Road/Three Notch-Kroner Road. **Your comments on the proposed project must be submitted by August 15, 2021.**



<p>FOR MORE INFORMATION Website: www.ALDOTinvolved.com “McFarland Rd from 0.1 Mile North of Old Pascagoula Rd to Three Notch-Kroner Road”</p>	<p>Project Description The purpose of the proposed project is to relieve traffic congestion along McDonald Road and Three Notch-Kroner Road in Mobile County. Congestion often means stopped or stop-and-go traffic and usually relates to an excess of vehicles on a portion of roadway at a particular time resulting in speeds that are slower than normal or “free flow” speeds. Congestion along McDonald Road and Three Notch-Kroner Road is due to increased development throughout the study area. This development has resulted in an increasing number of vehicles utilizing both roads in the project area.</p>
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SUBMIT A COMMENT

Online Comment Form: www.ALDOTinvolved.com

FAX: (251) 574-4722

Mail Comments to:

Email: McFarland.Comments@mobilecountyal.gov
VOICE MAIL COMMENTS: (251) 574-5624

Mobile County Engineering Department
Attn: Rhonda Gulledge, PE
205 Government Street
6th Floor, South Tower
Mobile, Alabama 36644

Comment Forms are available in the SW Region ALDOT office and at the Mobile County Engineering Department. Due to COVID-19 precautions, paper comment forms are available by appointment only. Please call Rhonda Gulledge at (251) 574-8595 to schedule.

In order to be included in the administrative record, comments must be received by August 15, 2021.

PUBLIC INVOLVEMENT COMMENT SHEET

STPMB-4918(250)

McFarland Rd from 0.1 Mile North of Old Pascagoula Rd to Three Notch-Kroner Rd
MOBILE COUNTY

Visit ALDOTinvolved.com for additional information.

Name: _____ Date: _____

Address: _____

Telephone Number: _____

Interest in Project

Area Resident: _____ Work Commuter: _____ Personal or Leisure Traveler: _____

Opinion of Project

In Favor of Project: _____ Not In Favor of Project: _____

Comments or Suggestions:

Please complete and return comment sheet to the following address by _____.

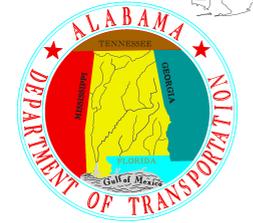
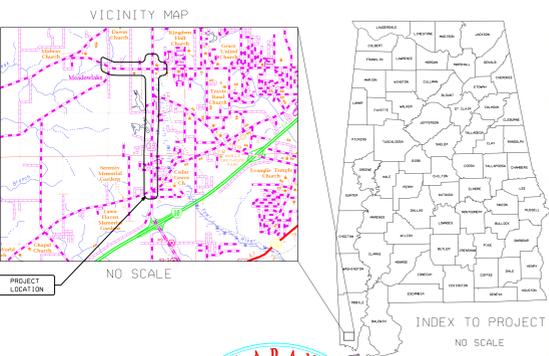
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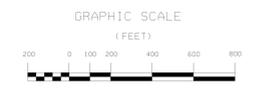


Visit ALDOTinvolved.com for additional information.



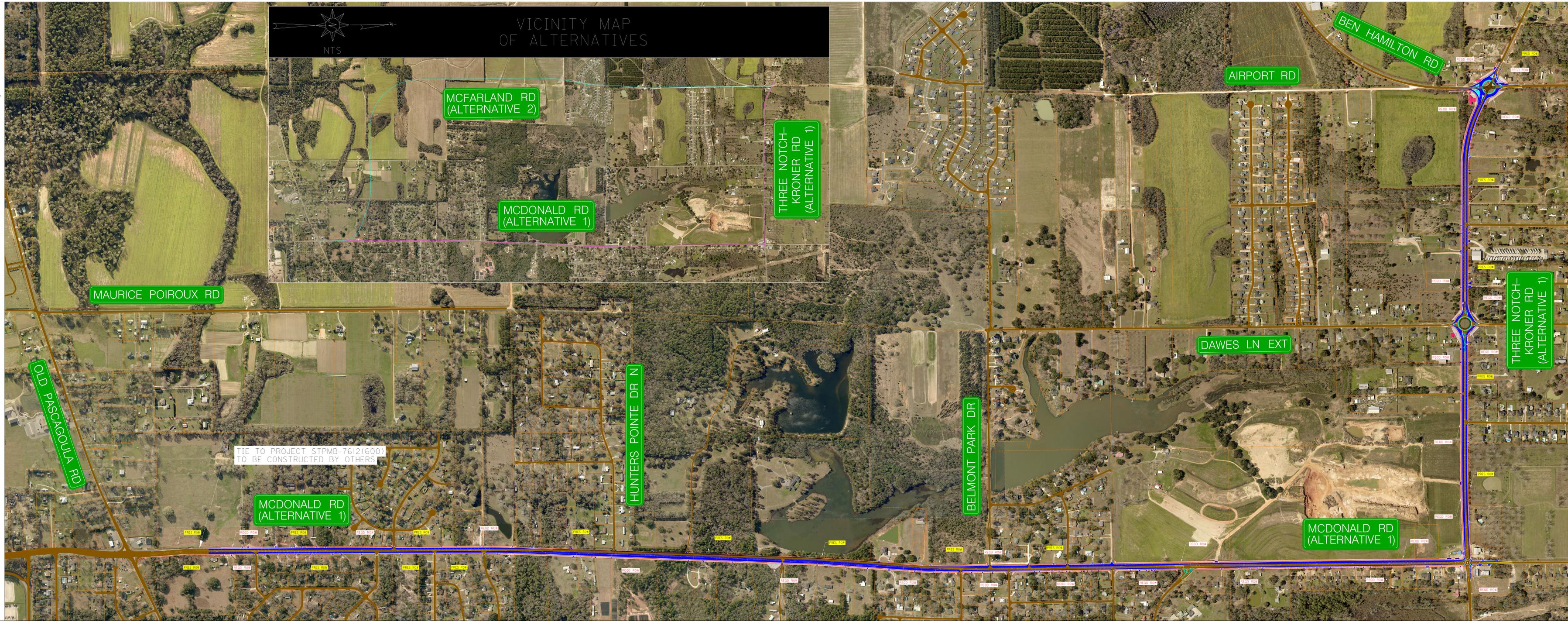
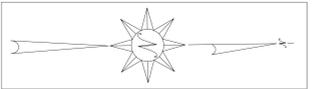


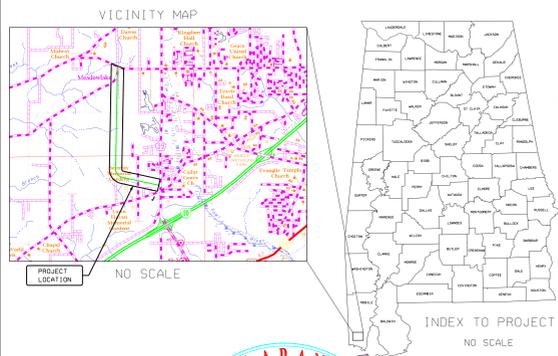
ALABAMA DEPARTMENT OF TRANSPORTATION
PROJECT NO. STPMB-4918 (250)
MCFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - KRONER ROAD
MOBILE COUNTY
ALTERNATIVE #1



LEGEND

EXISTING PAVEMENT TO BE RETAINED	
EXISTING PAVEMENT TO BE REMOVED	
REMOVE STRUCTURE	
REQUIRED PAVEMENT	
REQUIRED SIDEWALK	
REQUIRED CONCRETE	
REQUIRED RIGHT OF WAY	
EXISTING RIGHT OF WAY	
PROPERTY LINES	





ALABAMA DEPARTMENT OF TRANSPORTATION

PROJECT NO. STPMB-4918 (250)

MCFARLAND ROAD FROM 0.1 MILE NORTH OF OLD PASCAGOULA ROAD TO THREE NOTCH - KRONER ROAD

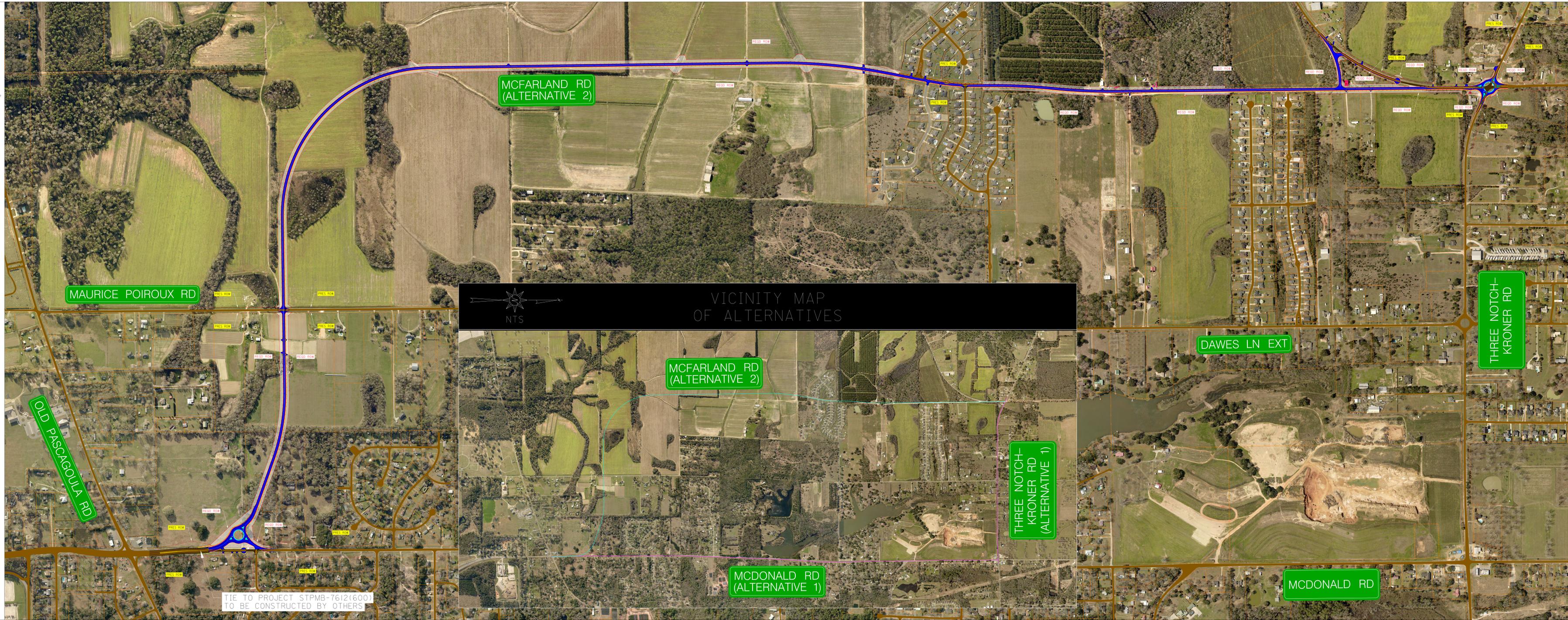
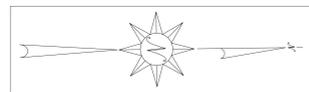
MOBILE COUNTY

ALTERNATIVE #2



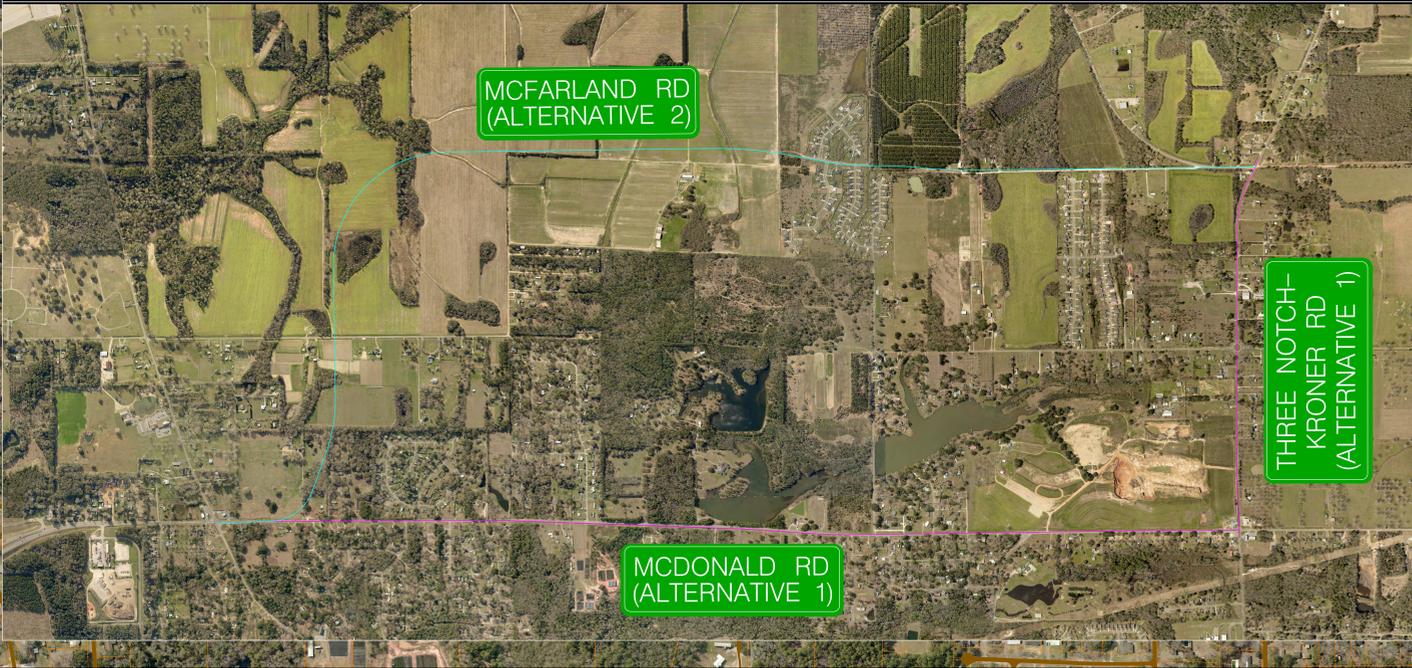
LEGEND

EXISTING PAVEMENT TO BE RETAINED	
EXISTING PAVEMENT TO BE REMOVED	
REMOVE STRUCTURE	
REQUIRED PAVEMENT	
REQUIRED SIDEWALK	
REQUIRED CONCRETE	
REQUIRED RIGHT OF WAY	
EXISTING RIGHT OF WAY	
PROPERTY LINES	



VICINITY MAP OF ALTERNATIVES

NTS



SECTION 3
SUMMARY OF COMMENTS

PROJECT DESCRIPTION: The purpose of the proposed project is to relieve traffic congestion along McDonald Road and Three Notch-Kroner Road in Mobile County. Congestion often means stopped or stop-and-go traffic and usually relates to an excess of vehicles on a portion of roadway at a particular time resulting in speeds that are slower than normal or “free flow” speeds. Congestion along McDonald Road and Three Notch-Kroner Road is due to increased development throughout the study area. This development has resulted in an increasing number of vehicles utilizing both roads in the project area.

COMMENT PERIOD: July 15, 2021, through August 15, 2021.

COMMENT SUMMARY:

Approximately 145 comments were received. Of the 145 comments, there were 96 individual comments and 47 comments from individuals that had already commented. A summary of the comments received are shown below:

ALTERNATIVE 1		ALTERNATIVE 2		SUPPORTIVE OF PROJECT	
FOR	AGAINST	FOR	AGAINST	YES	NO
14	4	13	59	3	3

Specific comments pertaining to this particular project are summarized below:

ALTERNATIVE 1

APPROVE

- It needs to be done. The mailboxes need to be relocated to the same side of the road as the houses.
- The widening of McDonald Road and Three Notch Rd is more than needed for the amount of traffic in the area.
- Alternate 1 would be the better route.
- Alternative 1 proposed widening of an existing roadway thereby reducing the Right of Way requirements, less impact to the environment, and enhances current traffic patterns.
- Alternative 1 does not destroy the productive farmlands that Alternative 2 requires. Some of this farmland has been used continuously since 1942. We need to protect historic farmlands.
- Widen McDonald Rd and let that be it. There needs to be more turn signals at 3 Notch & McDonald or turn it into a roundabout.
- Our neighborhood was created on an old pecan orchard. You can follow its design and history by the tree locations (far back into the open landscape behind us). My understanding is that Alternative #1 will take out the first rows of old pecan trees adjacent to Three Notch. I would like to ensure these trees are not disturbed.

DISAPPROVE

- We don't want any more traffic and four-laning it will be a disaster to residents here.
- I am against the road construction on McDonald Road because I could lose valuable land my initial purchase was based on, an increase in traffic causing added noise pollution.
- Our home is uncomfortably close to the road. I do not want my children that close to a major 5 lane roadway. It doesn't make sense to spend more on a newly widened and paved area of roadway. The drainage system that was very recently completed was extensive and costly. Alternative 2 will divert traffic away from McDonald Rd and Three Notch Rd more effectively and at a lesser cost, as it is a 2 lane with 1 sidewalk option. The majority of the traffic is headed to and from the West end of Three Notch pas Ben Hamilton anyway.
- There is not a traffic volume on either Three Notch or McDonald. The traffic backs up in the evening hours 4:30 – 5:30 due to the red light at the intersection. The problem is the intersection. There needs to be left and right turning lanes in all directions. There is no traffic slow down until you reach the light.

ALTERNATIVE 2

APPROVE

- The alternative that I support is Alternative 2 because Alternative 2 will require the least amount of right of way.
- Alternative #2 would help eliminate speeding traffic in front of our home. Alternative #2 allows for heavy work travel at a reasonable speed.
- Extending McFarland makes perfect sense. That way motorist would have two options. It would relieve congestion at the McDonald Road/Three Notch intersection.
- Built through fields, no traffic disruption during construction.
- I travel in this area and the main times the congestion occurs is when people are returning home from work, a little before and after 5pm on normal Monday through Friday work days. The congestion or traffic backup that occurs at the McDonald and Three Notch-Kroner traffic light is because there is not a left hand turn light/signal on McDonald Road or Goldmine Rd. If there was a left hand turn light/signal for both McDonald Rd and Goldmine Rd this would allow for a safer and quicker left hand turn onto Three Notch Kroner-Rd which would allow for a smoother and better flow of traffic through this intersection. Right now there is traffic flowing south on both McFarland and Dawes Lane to Dawes Lane East leading to the Dawes Lane East, Dawes Lanes Extension and Three Notch Kroner around about then to the McDonald Rd/Three Notch-Kroner traffic light. I believe if the McFarland Rd (Alternative 2 was extended to the Old Pascagoula Rd this would open another north south passage for traffic to reach the I-10 area and relieve some traffic coming from west on Three Notch-Kroner Rd and south from Dawes Lane and McFarland Rd. I also think if the Alternative 1 was constructed it would make the traffic on Three Notch-Kroner worst now and for sure worst in the future by still just having Schillinger Rd and McDonald Rd as the only north-south passage to I-10 in this area. At third north-south route or passage to and from I-10 would be plus now and in the future.

- A traffic light with left turn signals at MacDonald and Three Notch Rd would much improve the back up at the five o'clock PM time frame. Widening McFarland has already occurred, so continue that project for this problem with Alternative 2, which would provide a widened road on McFarland all the way north to Cottage Hill Road.
- It will not help to dump more traffic onto that short stretch of Three Notch to be bottle necked at the roundabout circle. It would make more sense for alternative 2 to divert the traffic from ever reaching the Three Notch and McDonald intersection since most of the traffic is headed west of the traffic circle anyway.
- The widening of McDonald Road will only increase the traffic to and from interstate 10. By adding an alternate route for drivers will balance traffic activities and potentially be safer of the used McDonald Road.

DISAPPROVE

- I am opposed to Alternative 2, it makes no sense to build a new high speed road through a neighborhood, which is a safety concern, but also destroy productive farmland, which is diminishing at an alarming rate. Another issue is a traffic circle just north of an over crowded intersection at McDonald rd and Old Pascagoula rd.
- McDonald needs to widen to decrease the congestion. All the cars come from the interstate and a majority take a right turn onto three notch road.
- All you need to do is add turning lanes on McDonald Road and extend the ones on Three-Notch. There is no need to do what is being proposed and destroying existing neighborhoods.
- What seems to make the most sense to me would be to add turning lanes to McDonald Road and Three Notch.
- Several things we have to think about are property values, safety concerns, and increased noise just to name a few.
- The road would create more problems than it would help. The neighborhood is full of children and this road would create more traffic creating a bigger safety issue.
- Alternative 2 makes no sense to me because it would have a main road going through the middle of our neighborhood and it would cut through and divide farmland south of our neighborhood.
- McDonald Road should be widened vice running a main road through the middle of a neighborhood.
- Why wouldn't you just widen a road that is already there?
- The only work that needs to happen is three notch and McDonald rd. intersection needs to be improved and widen three notch the rest of the way along McDonald Road.
- I really feel that It would make more sense to widen McDonald road and keep the traffic on the main road. Also, I have never seen traffic backed up on McDonald. It would honestly help if the intersection at Three Notch and McDonald Road had more turn lanes and a better traffic light.
- The 2nd option would make traffic through my family's subdivision busier and unsafe for the families and children.

- Please consider just widening of McDonald Road and Three Notch Road with a revision of the intersection at McDonald and Three Notch eliminating all of the congestion in the area.
- Alternative 2 goes right through the middle of the Labrador Run subdivision. The extra traffic and noise will have a negative effect on the quality of life in the subdivision. Alternative 2 seems to be longer and much more expensive and impacts and breaks up numerous parcels of land including our subdivision.
- Alternative 2 would increase traffic along Maurice Poiroux Road. It is already dangerous and difficult to exit Maurice Poiroux Road onto Old Pascagoula Road as it is not. Many children reside on Maurice Poiroux Road, and this becomes a safety issue. Also, the farmland that will be taken has been in use for many years and is vital to the community. Alternative 1 (McDonald Road) can be widened with very little impact to property owners or the environment. It is an existing road. I oppose Alternative 2, however it should show a cul-de-sac at Maurice Poiroux Road (South) to prevent cut through traffic and create an even more dangerous intersection.
- Alternative 2 should be shown with a cul-de-sac at Maurice Poiroux Road (south). It is already dangerous and difficult to exit Maurice Poiroux Road onto Old Pascagoula Road. Any increase in traffic along Maurice Poiroux Road would be very dangerous. Also, the land that would be taken for Alternative 2 has been farmed for years. It is a very valuable part of the community.
- Expanding McFarland Road in the current outline on the map would take a busy road directly through the middle of my neighborhood. This new road would divide my neighborhood into 3 different sections. The increased traffic would cause a danger to the current residents. It would no longer be safe to walk/jog or ride a bike. Children would no longer be able to ride their bikes down the streets or our neighborhood. Our property values would decline due to the increased traffic and noise and the decreased safety. Expanding McFarland Road through the Labrador Run neighborhood would be a detriment to all residents of the neighborhood.
- Alternative 2 will require a large amount of real estate acquisition (60+ acres), will be crossing wetlands and numerous drainage ways. The roadway alignment will require substantial undercutting and major drainage structures. Alternative 2 will be cutting through some of the most productive farmland in the County. I consider this historical farm and has been a substantial asset to the surrounding community. The road analysis appears to only address traffic congestions. It does not consider impacts to the operational function of the land that the road passes through or the impact to the surrounding community. This is a flaw in the alternative analysis. A benefit to cost ratio should be performed for each alternative. This analysis should consider negative benefits (impacts). Alternative 1 would not only serve McFarland Road but also Three Notch, Goldmine, Leroy Stevens and Cottage Hill Roads. Alternative 2 would basically only serve McFarland Road. Alternative 2 – A four lane roadway from the South (McDonald Road) leading into a roundabout into two two lane roadways is going to cause a traffic nightmare with a high probability of accidents. With regret, if Alternative 2 is the selected alternative of Maurice the intent is recommended that the South end of Maurice Poiroux be a dead-end street with a cul-de-sac and not connected

to the new roadway. If connected it would serve as a cut thru road and create an unsafe condition.

- Alternative 1 will require less real estate acquisition, less overall drainage structures, and eliminate the roundabout. Alternative 2 would increase the long term maintenance for the County Public Works. Alternative 1 will slightly increase maintenance costs for the County while Alternative 2 will require increased maintenance costs because of adding a new roadway. The concept design of Alternative 2 is flawed. The roundabout is only a few hundred feet from the intersection with Old Pascagoula Road. During heavy traffic periods vehicles will be backed up to the roundabout and create congestion problems. Also, the roundabout is located in a location of a prominent vertical curve coming from the North side of McDonald Road into a substantial horizontal curve. This creates line of sight problem for drivers and is a safety issue. Alternative 2 will dissect some of the last large track farmland in the County. This will hamper the efficient farming of this property. It is also a safety concern because of the large farm equipment having to cross the road to get to the dissected tracts of land.
- Alternative 2 brings a busy road directly through a populated neighborhood. The safety of each resident in the Labrador Run neighborhood will be in jeopardy if this proposal moved forward. Many residents walk, run, or ride bikes on a regular basis. These activities include pushing their children in strollers while walking or running. All streets in this neighborhood do not have access to sidewalks. This gives no alternative to the existing streets for riding bikes or walking. These activities will no longer be feasible if the expansion is approved. Considering that the proposed expansion of McFarland Road will divide the existing 3 separate sections, children will no longer be able to visit with friends living in other sections of their neighborhood. Currently, there is only one entrance/exit to Labrador Run. If this expansion is approved, there will be 3 entrances/exits. It is conceivable that this will increase the traffic on Labrador Trail Road South, East and North as local residents realize that they can use the road to cut through from McFarland Road to McDonald Road. Currently, there aren't any speed bumps/humps to slow this traffic down. This is one of the roads that doesn't have a sidewalk leaving its residents no option but to walk in the street when needing to visit a neighbor. In addition to the above safety concerns, I strongly believe that this expansion will increase crime in the neighborhood since it will provide easy access to the neighborhood from several entrances. In addition, I believe the above listed safety concerns and potential increases in crime, will cause property values to decline.
- This new road proposal having a highway going through a neighborhood is not safe for any of us. There are so many kids out playing in the neighborhood and so many animals get out and we post on our neighborhood page. If you were planning to build a highway there, then why let a neighborhood get built there in the first place.
- Alt2 proposed roundabout on southern end. The approach from the north along McDonald has a sharp crest vertical curve. Having a crest vertical curve and a sharp horizontal curve in the same location is not a good design. Could be a hazard especially at night.
- Alt2 proposed round-about on southern end. Two side streets within the round-about zone will create potential hazards.

- Alt 2. Proposed round-about has design issues. 1 – too close to existing intersection of McDonald and Old Pas rd. approach speeds from south may be too fast especially at night with a lane taper approaching from the south.
- Alternative 2 proposed design will create a shortcut from Old Pascagoula Road along Maurice Poiroux Road to the proposed new road. This additional traffic will overload Poiroux Road and create a traffic hazard for the local residences.
- Alternative 2 crosses a myriad of properties west of Maurice Poiroux Road that have been used as farmland for over 40 years. The route also passes near the former Flowerwood Nursery just south of Labrador Run Subdivision. The former nursery and historic farmland have most likely been exposed to repeated use of fertilizers and pesticides and would most likely cause an environmental issues for impacted property owners and property owners in the area.
- The proposed alignment of Alternative two on the west side of Maurice Poiroux Road will negatively impact the farming operation for the Driscoll family who on parcel key number 1518539. This is a large farming operation with areas spanning west to March Road. The farmers use heavy machinery, and the alignment will impact their ability to farm on a high traffic roadway.
- Alternative 2 negatively impacts the homestead property of Eugene Poiroux (parcel key number 1216357) and parcel key number 1216348 to the north. A simple view of an aerial image shows Mr. Eugen’s use of the “undeveloped” parcel for farming. The study may look at tax parcels that are undeveloped but the area crossing Maurice Poiroux is a homestead.
- We are opposed to using Rexx Drive as the connector. We believe it introduces additional security risks to the neighborhood, reduces the area where children can play, and presents a challenge to entering and leaving the neighborhood from Maxwell Drive North, Champ Cove and Labrador Trail South.
- Alternate 1 reduces right of way issues, has less impact to the environment, and will really help the current traffic flow on McDonald Rd. Alternate 1 does not destroy the prime farmland & wildlife habitat that Alternate 2 would require. Alternate 2 would create a “shortcut” from Old Pascagoula Rd along Maurice Poiroux Rd to the new road. This additional traffic would overload Maurice Poiroux Rd which would create traffic hazards for the local residences.
- Our property value will drop dramatically, but we will see an increase in crime rates as well. I believe there are other routes that can be developed, that does NOT include cutting our neighborhood in half.
- The biggest traffic issue on McDonald Road is that there is no left turn lane or turn signal at the light at Three Notch/McDonald/Goldmine. Alternative 2 would disrupt productive farmland and ecosystems that have thus far avoided construction. Alternative 2 would also split a quiet, established neighborhood. Alternative 2 would create dangerous situations for the neighborhood kids as cars would be speeding down that proposed road. Checking the mail would become a hazard for so many families that have a mailbox in the center of the neighborhood.
- I live in Labrador Run neighborhood and this road would cut right through the middle of our neighborhood. This road would destroy what this neighborhood is all about.

- This road would come straight through our neighborhood and ruin it. It would put young children in danger. We could not walk with our kids anymore. Our kids couldn't ride their bikes. It would ruin a ton of farm land. It would decrease our property value.
- I live in Labrador run subdivision and just purchased this home as it's in a quiet subdivision and where our kid can play with other kids and we can walk in the evenings. Putting a road thru the center of this subdivision would eliminate all of that from happening. Please just consider widening of McDonald road and three notch road with a revision of the intersection at McDonald and threenotch eliminating all of the congestion in the area.
- The road would depreciate the value of the neighborhood tremendously and drive a lot of the residents out. It poses a safety issue, not only to our children playing, but also by creating multiple entrances and exist throughout the subdivision. I feel there are numerous other options that would make more sense than to put a highway through the middle of an established neighborhood.
- Alternate 2 would cut the Labrador Run Neighborhood in half and would create traffic hazards for the residents.
- Mobile County does not have any zoning or governance over land use and development. A new road would open new lands for development and the number of vehicles on the roadway will increase. Alternative 2 divides a large portion of undeveloped farmland that has been used for over 40 years. McDonald Road near Exit 10 is experiencing heavy commercial trucking traffic from a Wal Mart logistics center and a Love's Truck Stop. A future 1300 acre warehousing and distribution park has recently been approved for construction at the southeast intersection of McDonald Road and Interstate 10. Alternative 2 steers west mobile commuter traffic to one interstate exit where heavy trucking traffic is expected to increase.
- Drivers will use Maurice Poiroux Road as a cut through to avoid the roundabout as shown on Alternative 2. The proposed widening of McDonald Road from I-10 north to 4 lanes of traffic will force 4 traffic lanes into two roads with two traffic lanes while requiring all vehicles to traverse through the roundabout. The potential for hazardous driving conditions is high. The roundabout is situated on a slope which causes visibility problems for drivers along McDonald Road. The roundabout does not appear to show any capacity for future widening due to its limited design for two lane roads. It appears drivers in the small cul-de-sac and from Lake Tahoe Drive will also experience unsafe driving conditions to access either McDonald Road or the planned connector in all directions.
- Alternative 2 does not alleviate traffic congestion, it only reroutes it to the north and west of McDonald Road and creates hazardous traffic conditions throughout the planned roundabout and intersection of Old Pascagoula and McDonald Roads.
- This project would make our neighborhood a cut-through which would put the children who play, those who ride bikes, people in wheelchairs, people on horseback, and people exercising who live in the neighborhood in danger of being harmed by the increased traffic from the road.
- If this new road that connects McFarland Rd/Airport Rd/Rex Dr. to Old Pascagoula Rd, is put in our neighborhood, our neighborhood will no longer be safe for our children.

- If there is a road put through the middle of the subdivision, then it eliminates that for all residents when the only traffic issue is at McDonald road and three notch road with the pascal of four lane and turning lanes and proper working traffic lights to help with people turning left or right. That's the only traffic that backs up daily and could be helped with a rework of that very intersection and not a new road thru farmland and our subdivision.
- The alternative 2 that involves building a new road I think is a bad idea because it will cut our neighborhood (Labrador Run) in half. I also think much of the traffic going up McDonald does go to Dawes Road and they would not utilize the new road as much.
- Some cons for this project are loss of farmland and increased traffic in a rural residential area. Option 2 would split a family farm in half.
- Option 2 of this proposal drastically changes the landscape of the neighborhood in which we purchased. We purchased in this area specifically because it had no thoroughfare roads and only one entrance to get in and out. The proposal of this cuts our neighborhood in half in an odd manner. I also fear this will change our property values as it's not as discreet and quiet of a location anymore at that point.
- The second option on this proposal will cut our neighborhood in half and endanger people trying to check their mail at the community mailbox in the neighborhood. Plus, it will increase traffic noise. A major road through this neighborhood will be detrimental and divisive.
- This will divide our neighborhood in half and ruin the appeal of our neighborhood. This will also decrease the value of our properties because it decreases the desirability of our neighborhood. This proposed route will also decrease the safety of our children.
- This will ruin our neighborhood and cut it in half. This will divide our neighborhood in half and ruin the appeal of our neighborhood. This will also decrease the value of our properties because it decreases the desirability of our neighborhood. This proposed route will also decrease the safety for our children.
- Alternative 2 makes no sense to me because it would have a main road going through the middle of our neighborhood and it would cut through and divide farmland south of our neighborhood.
- Option 2 would quite literally cut our small, quiet, SAFE, community IN HALF for the community to easily have access to. I do not support the concept of running a busy roadway through a residential neighborhood that has a large number of small children riding their bikes and playing with each other in the front yards.
- What I disagree with is the new McFarland Rd extension proposal. That would funnel even more traffic to an already over congested intersection of McDonald Rd and Old Pascagoula Rd. One of the problems I have seen in Mobile County is that more traffic keeps getting funneled to the same area. A better option would be to look at March Rd as an option to move traffic from McFarland Rd to Interstate 10. That would take some pressure off the already congested Bayou la Batre – Dawes exits, and also give the potential for the Wal Mart Distribution Center to have an alternative access to I-10 via the intersection of E Gully Way and March Road. Please take this into consideration in the future development of this area.

SECTION 4
RECOMMENDATION

Review of the public comments show that 15% of those who responded were in favor of Alternative 1 while 4% were against the alternative. For Alternative 2 there were 14% in favor while 61% were against the alternative. Based on the Public Involvement responses and the need for the project, the County recommends moving forward with Alternative 1 as the preferred alternative.