U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration

Natural Gas Distribution Infrastructure Safety and Modernization Grant Program
City of Graysville, AL Tier 2 Site Specific Environmental Assessment
NGDISM-FY22-EA-2023-10

PHMSA Approval:

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Overview:

The purpose of this Tier 2 Site Specific Environmental Assessment (Tier 2) is to (1) document the proposed action (the Project) and the need for the action (2) identify existing conditions; (3) assess the social, economic, and environmental effects using appropriate tools and agency coordination to comply with local, state, and federal environmental laws, regulations, and ordinances; to (4) document applicable mitigation commitments that would avoid, minimize, or mitigate potential effects; and (5) seek comments from the public.. This Tier 2 analysis informs PHMSA's assessment as to whether the Project is consistent with the impacts described in the Tier 1 Nationwide Environmental Assessment for the Natural Gas Distribution Infrastructure Safety and Modernization Grant Program.[1]

As part of this Tier 2, PHMSA is soliciting public comments through a public comment period. This Tier 2 is available on PHMSA's website where comments can be submitted to the contact noted below. PHMSA will accept public comments for 30 days on this Tier 2. PHMSA will consider comments received and incorporate them in the decision-making process. Consultation with appropriate agencies on related processes, regulations, and permits is ongoing. Please submit all comments to: PHMSABILGrantNEPAComments@dot.gov and reference NGDISM-FY22-EA-2023-10 in your response.

At the conclusion of the EA process, PHMSA will either issue a "Finding of No Significant Impact," further supplement this EA with additional analysis or mitigation measures or prepare an Environmental Impact Statement.

I. Project Description/Proposed Action

Project Title	City of Graysville
Project Location	Graysville, Jefferson County, Alabama

Project Description/Proposed Action:

The City proposes to replace approximately 51,700 linear feet (LF) of cast iron pipeline in the Adamsville and Forestdale areas in Graysville, Alabama. The pipeline replacement consists of approximately 2,845 LF of 4-inch pipeline, 48,090 LF of 2-inch pipeline, and 765 LF of 1-inch pipeline. The existing cast iron gas lines were installed in the 1960s approximately 2-3 feet deep. The installation of new pipeline would take place within the existing right-of-way (ROW) for Jefferson County, Adamsville, and the Alabama Department of Transportation (DOT) and no new ROW or easement would be needed. The replacement pipeline would be installed a minimum of 3 feet away from the existing pipeline, depending on the locations of the existing utilities and ROW width, using directional boring and cut-and-cover (trenching). Installation of new pipeline would be on the same side of the street of the existing pipeline, avoiding existing utilities when necessary; however, some of the existing pipelines are under the road surface where new pipeline installation would then be installed on the side closest to the edge of the existing pavement. The Tier 1 EA described that the majority of site-specific projects would utilize the insertion method of pipe replacement. As described in this document, the City of Graysville would utilize directional boring and open trench methods, which generally involve greater soil disturbance and use of heavy equipment, in comparison to the insertion method. The existing pipeline would be abandoned in place. Existing service lines, located in easements along the grassy areas between the pipelines and the gas meters located at the front or side of adjacent buildings, would be replaced by open trenching or plowing. Road

[1] https://www.federalregister.gov/documents/2022/11/09/2022-24378/pipeline-safety-notice-of-availability-of-the-tier-1-nationwide-environmental-assessment-for-the

and driveway crossings would be installed by directional drilling methods.

In addition to the pipeline and service line replacement, six regulation stations with obsolete equipment would be replaced in their existing locations with new piping and equipment. Work at the stations would include replacing two 2-inch gas regulator/monitor runs with 4-inch inlet and outlet piping, one relief valve and in-service connections (hot-taps) to existing 4-inch high-pressure inlet piping and 6-inch medium-pressure outlet piping. All work for the regulation station replacements would take place within the existing fenced enclosure for the station.

The staging area would be located in a fenced property at 648 Crumly Chapel Road in Forestdale, which is owned by the City. The maximum depth of disturbance for the project work is 4 feet with a minimum of 3 feet cover over the gas line, and the trench widths for pipeline replacement would be between 12 and 18 inches.

No Action:

The No Action alternative, as required under NEPA, serves as a baseline, and is used to compare impacts resulting from the Proposed Action. Under the No Action alternative, PHMSA would not fund this pipeline replacement project. Additionally, PHMSA would not be able to reduce the inventory of methane leaks and reduce safety risks by replacing pipe prone to leakage. Under this alternative, the City of Graysville would continue to use cast iron and other leak prone pipeline material and conduct repairs or replacements in the future using non-federal sources of funding, and potentially on an emergency basis, when a pipeline fails. Impacts and benefits associated with replacing the leak prone pipeline within the City of Graysville with updated material would not be seen in the near term. The safety risks and methane leaks would persist. The replacement pipeline activities would either not be taken or they would be undertaken at a later, uncertain date. Even if pipe replacement were to happen at some point in the future, environmental mitigation measures during such a replacement would be unknown. Furthermore, existing economic losses, and increased risk associated with prolonged gas leaks would continue.

Need for the Project:

The overall needs addressed by this project would include (1) improving upon the safe delivery of energy by reducing incidents, as well as methane leaks; (2) avoiding economic losses caused by pipeline failures; and (3) protecting our environment and reducing climate impacts by remediating aged and failing pipelines and pipe prone to leakage.

Description of the Environmental Setting of the Project Area:

The cast iron pipe replacement project is located in two different areas of Graysville. Segment 1 is in the Adamsville area and Segment 2 is in the Forestdale area. See Appendix A, Project Maps. All work on the main lines would be within the existing ROW. ROW widths vary from 30 feet to 60 feet in width and include roadway surfaces, curb and gutter in some areas, driveways to residences, mailboxes, shrubs and trees, drainage pipes and other utilities.

II. Resource Review

Air Quality and Greenhouse Gases (GHG)	
Question	**Information and Justification**
Is the project located in an area designated by the EPA as non-attainment or maintenance status for one or more of the National Ambient Air Quality Standards (NAAQS)?	Yes, based on a review of the EPA Green Book.[2]
Will the construction activities produce emissions that exceed de minimis thresholds (tons per year) described in the initial Tier 2 EA worksheet?	No
Will mitigation measures be used to capture blowdown[3]?	No
Does the system have the capability to reduce pressure on the segments to be replaced? If yes, what is the lowest psi your system can reach prior to venting?	No, 20 pounds per square inch (PSI) is the lowest the system can reach without specialized cross compression equipment.
Will project proponent commit to reducing pressure on the line to this psi prior to venting? Please calculate venting emissions based on this commitment and also provide comparison figure of venting emissions volume without pressure reduction/drawdown using calculation methods identified in the initial Tier 2 EA worksheet.	The existing system operates at 20 PSI. Based on the sizes of the existing pipes, approximately 3.1 thousand cubic feet (MCF) of methane would be vented during construction. [4]
Estimate the current leak rate per mile based on the type of pipeline material. Based on mileage of replacement and new pipeline material, estimate the total reduction of methane.	The existing leak rate is estimated to be 44,681 kg/year. Replacement would result in a leak rate of approximately 280 kg/year or a reduction of approximately 887,927 kg over a 20-year timeframe.

Conclusion:
The project area is located within the City of Graysville in Jefferson County, Alabama. Based on EPA's Green Book, the project area is a maintenance area for PM 2.5 (2006 standard). Additionally, the project falls in an orphan maintenance area[5] for the 8-hour ozone national ambient air quality standard (NAAQS).

No Action:

Under the No Action alternative, existing and planned pipeline activities, including construction and maintenance activities, would continue unchanged. The project proponent would continue to use the existing legacy cast iron pipes. The total methane emissions for the pipelines within the project area were extrapolated over 20 years to represent the continuation of methane release under the No Action alternative. Under the No Action alternative, PHMSA estimates that 44,681 kg of methane would be released each year from the existing pipelines within the project area. This amounts to 893,620 kg of methane over a 20-year time frame. See

[2] https://www.epa.gov/green-book/green-book-national-area-and-county-level-multi-pollutant-information
[3] Blowdown refers to the venting of natural gas in current facilities, in order to begin rehabilitation, repair, or replacement activities.
[4] Leak rates are based on Pre-1990 Installation emission factors found in *Table 1 Average methane emission factors for natural gas pipelines (adopted from EPA GHG Inventory, Annex 3.6, Table 3.62)* in the November 9, 2022, PHMSA: Natural Gas Distribution Infrastructure Safety and Modernization Grant Program Programmatic Environmental Assessment, Tier 1 Nationwide Environmental Analysis.
[5] https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100VQME.pdf#:~:text=Orphan%20nonattainment%20areas%20were%20defined%20in%20the%20court,this%20NAAQS%20%2877%20FR%2030160%2C%20May%2021%2C%202012%29.

Appendix B, Methane Calculations, for estimated methane leak rate calculations.

Proposed Action:

The proposed project is in an EPA designated maintenance area for PM 2.5 and an orphan maintenance area for ozone and therefore, PHMSA must ensure that the project would not interfere with the state's plan to maintain national standards for air quality. The Proposed Action alternative consists of replacing 9.8 miles of cast iron pipes, which would result in minor air quality impacts associated with construction activities, including the intentional venting of methane contained in the existing pipelines prior to replacement. Venting of methane, referred to as "pipeline blowdowns" are typically necessary to ensure that construction and maintenance work can be conducted safely on depressurized natural gas facilities and pipelines. Venting methane is required when service is switched from the existing line to the newly constructed line, but the volume of vented gas can depend on the ability to reduce pressure on the pipe segment or other mitigation actions. Therefore, some methane would be vented into the atmosphere during construction. Based on an operating pressure of 20 PSI and the existing pipe sizes (ranging from one inch to four inches in diameter), PHMSA estimates 3.1 MCF of methane (or 94.2 kg) would be vented into the atmosphere during construction. See Appendix B, Methane Calculations, for the methane blowdown calculations.

The project does include activities that could contribute to the pollutants that impact the state's ability to conform to PM 2.5 and ozone standards. Construction equipment used during pipeline installation can contribute to fine particle pollution, including PM 2.5 and ozone. Therefore, PHMSA reviewed information provided by the City of Graysville and estimated the emissions that would likely be produced by the construction equipment that would be used to install pipelines and used information from EPA's MOVES[6] model to determine if the project would exceed EPA's thresholds for NAAQS.[7] PHMSA's assessment was that the estimated emissions for the project fell well below EPA's established de minimis rates. Due to the relatively minor scope of the proposed action, impacts to local air quality resulting from construction activities such as dust and exhaust from construction equipment, would be temporary and considered de minimis. Thus, the Proposed Action alternative does not require a General Conformity Analysis under Section 176(c)(4) of the Clean Air Act at the proposed project sites. See Appendix B, Methane Calculations, for emissions calculations.

As described in the Tier 1 EA, methane leaks from natural gas distribution pipelines increase with age and are considerably higher for cast iron and steel pipelines, as compared with plastic. Replacing leak prone pipe with newer, more durable materials would reduce leaks and methane emissions. Based on the current leak rate of the existing pipe within the project area, this project would reduce overall emissions by 44,307 kg in the first year (when considering the methane that would be released from blowdown that would occur during construction) and would reduce 44,401 kg of methane per year thereafter. With a life expectancy of approximately 20 years, the total reduction in methane emissions resulting from the conversion to plastic pipeline would be approximately 887,927 kg (over the 20-year span post construction). Therefore, it is PHMSA's assessment that the proposed project would provide a net benefit to air quality from the overall reduction of greenhouse gas emissions and that there are no indirect or cumulate impacts would result from the Proposed Action.

Mitigation Measures:

The City of Graysville shall implement the following mitigation measures:

[6] https://www.epa.gov/moves
[7] https://www.epa.gov/general-conformity/de-minimis-tables

- Efficient use of on-road and non-road vehicles, by minimizing speeds and vehicles;
- Minimizing excavation to the greatest extent practical;
- Use of cleaner, newer, non-road equipment as practicable;
- Minimizing all vehicle idling and at minimum, conforming with local idling regulations;
- Ensuring that all vehicles and equipment are in proper operating condition;
- On-road and non-road engines must meet EPA exhaust emission standards (40 CFR Parts 85, 86, and 89);
- Covering open-bodied trucks while transporting materials;
- Watering, or use of other approved dust suppressants, at construction sites and on unpaved roadways, as necessary;
- Minimizing the area of soil disturbance to those necessary for construction;
- Minimizing construction site traffic by the use of offsite parking and shuttle buses, as necessary.

Water Resources	
Question	**Information and Justification**
Are there water resources within the project area, such as wetlands, streams, rivers, or floodplains? If so, would the project temporarily or permanently impact wetlands or waterways?	No, according to USFWS National Wetland Inventory (NWI), and Federal Emergency Management Agency (FEMA) National Flood Hazard Layer FIRMette maps.
Under the Clean Water Act, is a Section 401 State certification potentially required? If yes, describe anticipated permit and how project proponent will ensure permit compliance.	No
Under the Clean Water Act, is a USACE Section 404 Permit required for the discharge of dredge and fill material? If yes, describe anticipated permit and how project proponent will ensure permit compliance.	No
Under the Clean Water Act, is an EPA or State Section 402 permit required for the discharge of pollutants into the waters of the United States? Is a Stormwater Pollution Prevention Plan (SWPPP) required?	Yes - The State of Alabama would require a Construction Stormwater Permit for this project.
Will work activities take place within a FEMA designated floodplain? If so, describe any permanent or temporary impacts and the required coordination efforts with state or local floodplain regulatory agencies.	No
Will the proposed project activities potentially occur within a coastal zone[8] or affect any coastal use or natural resource of the coastal zone, requiring a Consistency Determination and Certification?	No
Conclusion: PHMSA reviewed NWI maps to assist in identifying aquatic features including wetlands, streams, and other water resources in or near the project area. Based on a review of the NWI maps, NRCS soils maps, topographic	

[8] The term "coastal zone" means the coastal waters (including the lands therein and thereunder) and the adjacent shorelands (including the waters therein and thereunder), strongly influenced by each other and in proximity to the shorelines of the several coastal states, and includes islands, transitional and intertidal areas, salt marshes, wetlands, and beaches.)

maps, and information provided by the City of Graysville, several tributaries were identified in or near the project area. One tributary was identified in the Forestdale segment and is classified by USFWS as a R4SBC (Riverine, Intermittent, Streambed, Seasonally Flooded). This tributary is shown on the NWI maps starting near Forestwood Road, flowing south and crossing Forestwood Drive, and continuing south on the east side of Tomahawk Road. The tributary runs parallel to Tomahawk Road and continues southeast outside of the project area. Black Creek tributary is also found within the Forestdale segment, identified by USFWS as a R4SBC, located east of Devine Drive. Black Creek continues south and enters the project area again north of Sheridan Road. South of Sheridan, Black Creek forks off the main tributary and is located just north of the project area on Fairfax and Elba Avenue. There is one additional tributary, Second Creek, located in close proximity to the project area in the Forestdale segment just west of the project area. There are no aquatic resources identified within the fenced areas where the regulating stations are located. See Appendix C, Water Resources for the location and configuration of the tributaries in or near the project area.

Based on a review of NWI maps, there were no tributaries or wetlands identified in the Adamsville Segment.

PHMSA also reviewed FEMA's National Flood Hazard Layer to identify any Special Flood Hazard Areas potentially impacted by the project. The FIRMette map indicates the project includes areas designated as Zone X. Areas designated as Zone X are outside of any designated special flood hazard areas.

No Action:

Under the No Action alternative, the existing pipeline would remain in the current location and normal maintenance activities would continue. Depending on the location of the activities, maintenance work could be in close proximity to an aquatic resource where the City of Graysville would need to take precautions to avoid adverse impacts to these sensitive areas.

Proposed Action:

The proposed Action Alternative includes replacing 9.792 miles of existing pipelines. The replacement pipeline would be installed a minimum of 3 feet away from the existing pipeline, depending on the locations of the existing utilities and ROW width, using directional boring and cut-and-cover (trenching) construction methods. The existing pipeline would be abandoned in place. Existing service lines, which are in easements along the grassy areas between the pipelines and the gas meters located at the front or side of adjacent buildings, would be replaced by open trenching or plowing. The service lines are 24 inches deep, and any trenches would have a width of between 6 to 12 inches. The regulation stations are all located in upland, fenced areas.

As noted above, there are various aquatic resources identified in the project area, in close proximity to where the work would occur. However, because work is limited to the ROW, there would be no direct impact to wetlands or other waters. Where work would be conducted on Forestwood Drive, where the project area crosses the piped tributary, the pipeline would be installed by directional boring. Because the pipeline in this area would be installed by directional boring methods, the aquatic resource would not be impacted by the project. The tributaries identified near Tomahawk Road and Devine Drive do not cross the project boundaries and therefore would not be impacted. See Appendix C, Water Resources.

Based on information provided by the City of Graysville and a review of available information, it is PHMSA's assessment that there would be no permanent impacts to water resources located within the project. The pipeline placement and abandonment of the existing pipeline is not anticipated to cause any reasonably

foreseeable indirect effects or cumulative effects to water resources. Therefore, it is PHMSA's assessment that there would be no adverse impacts to water resources.
Mitigation Measures: The City of Graysville shall utilize best management practices during construction to control sediment and erosion and prevent pollutants from entering adjacent waterways.

Groundwater and Hazardous Materials/Waste	
Question	**Information and Justification**
Does the project have potential to encounter and impact groundwater? If yes, describe potential impacts from construction activities.	No
Will the project require boring or directional drilling that may require pits containing mud and inadvertent return fluids? If yes, describe measures that will be taken during construction activities to prevent impacts to groundwater resources.	Yes. The City of Graysville would use vacuum trucks, wattles, hay bales, etc. to prevent loss of drilling fluids.
Will the project potentially involve a site(s) contaminated by hazardous waste? Is there any indication that the pipeline was ever used to convey coal gas? If yes, PHMSA will work with the project proponent for required studies.	No
Does the project have the potential to encounter or disturb lead pipes or asbestos?	No
Conclusion PHMSA reviewed EPA's NEPAssist website to identify any hazardous waste, brownfields properties or superfund sites identified in the project area for either segment. There were numerous hazardous waste sites identified in close proximity to the project area. Hazardous waste information is identified in the Resource Conservation and Recovery Act Information (RCRAInfo), which is a national program that includes an inventory of all generators, transporters, treaters, storers, and disposers of hazardous waste that are required to provide information about their activities to state environmental agencies.[9] It is noted that the presence of a hazardous waste site does not indicate an identified environmental concern. There were no brownfields sites or superfund sites identified in the project area. (See Appendix D, Hazardous Materials). PHMSA obtained a custom soil report for the project area from the USDA, NRCS's web soil survey which indicates that the project area for the Adamsville Segment is comprised mainly of soils classified as Nauvoo-Urban land complex and Townley-Urban land complex. The Forestdale Segment is comprised of Montevallo-Nauvoo-Urban land complex, Townley-Urban land complex, and Navoo-Urban land complex and Nauvoo fine sandy loam. These are all well-drained soils where the depth to the water table is found somewhere greater than 80 inches.	

[9] RCRAInfo Overview | US EPA

No Action:

Under the No Action alternative, the cast iron pipes would remain in their current location and ongoing and routine maintenance activities would occur. Pipes would be replaced under failed circumstances. While there are no adverse impacts to groundwater anticipated by the No Action alternative, increased methane emissions are likely to occur if cast iron pipes remain (EPA, PRO Fact Sheet No. 402[10]) and risks of failure is higher among this type of pipe. Therefore, under the No Action Alternative, PHMSA anticipates an increased risk for the release of methane resulting from leaks or pipeline failure, which could then result in ground disturbances from construction activities, potentially impacting ground water.

Proposed Action:

Under the Proposed Action alternative, the City of Graysville would replace approximately 10 miles of existing pipelines within the ROW for Jefferson County, Adamsville, and the Alabama DOT. The majority of the new gas lines would be located next to the existing gas lines. The existing gas line would be abandoned, in accordance with PHMSA requirements, and would be purged of natural gas and sealed on each end. The new gas main lines would be installed at an average depth of three feet below grade and would be installed by either directional drilling or cut and cover (trenching). The service lines would be installed approximately 24 inches deep. All disturbed areas would be re-seeded or paved (as appropriate) and restored to preexisting conditions.

With the inclusion of mitigative measures to assist in the prevention of potential impacts, PHMSA's assessment is that there would be no adverse impacts to groundwater associated with the project. Trenching and/or directional drilling work is not likely to intercept groundwater but if this occurs, the City of Graysville would use appropriate dewatering methods. Additionally, there are no brownfields, or superfund sites identified in the area where work would occur that could be potentially impacted by the Proposed Action Alternative. While there are identified sites that contain, store or dispose of hazardous materials, these are not within the construction areas as work is limited to existing ROW and no RCRA sites would be impacted by the proposed project. PHMSA has not identified any indirect or cumulative effects to groundwater or hazardous materials.

Mitigation Measures:

In the event of a release of hazardous materials/waste into the environment during construction, the City of Graysville shall notify the appropriate emergency response agencies, potentially impacted residents, and regulatory agencies of the release or exposure.

The City of Graysville shall utilize a Stormwater Pollution Prevention Plan which would identify appropriate construction and restoration activities to minimize the potential impacts to groundwater. All impacted areas would be restored to pre-construction conditions.

Soils	
Will all bare soils be stabilized using methods using methods identified in the initial Tier 2 EA worksheet? Will additional measures be required?	Yes - all bare soils be stabilized.

[10] Insert Gas Main Flexible Liners at https://www.epa.gov/sites/default/files/2016-06/documents/insertgasmainflexibleliners.pdf#:~:text=Methane%20emissions%20reductions%20come%20from%20lower%20leakage%20rates,pipe%20and%20external%20corrosion%20in%20unprotected%20steel%20piping.

Will the project require unique impacts related to soils?	No

Conclusion:

PHMSA obtained a custom soil report for the project area from the USDA, NRCS's web soil survey which indicates that the project area for the Adamsville Segment is comprised mainly of soils classified as Nauvoo-Urban land complex and Townley-Urban land complex. The Forestdale Segment is comprised mainly of Montevallo- Nauvoo-Urban land complex, Townley-Urban land complex, Navoo-Urban land complex and also includes areas of Nauvoo fine sandy loam. These are all well-drained soils where the depth to the water table is found somewhere greater than 80 inches. It is noted that the project area is an urban, residential area where ground disturbance activities have already occurred and there are very few areas, if any, that remain in a natural state. Therefore, while the soils report provides valuable information, the soils have been disturbed and likely contain some degree of fill material brought in as a suitable base for construction.

No Action:

Under the No Action alternative, the cast iron pipes would remain in their current location and soils would remain in their current state and condition. Normal maintenance activities would occur, and pipes would be replaced under failed circumstances. Some soil disturbance would occur during emergency repairs and the affected areas would be restored upon completion. Under either scenario, no adverse impacts to soils would be anticipated under the No Action alternative.

Proposed Action:

The City of Graysville would replace cast iron pipelines within the existing ROW consisting of roadway surfaces, curb and gutter, driveways to residences, mailboxes, shrubs and trees, drainage pipes and other utilities. Ground disturbance would be in grassy areas away from the pavement and road and driveway crossings would be installed by directional drilling methods. Normally installation would occur on the same side of the street of the existing pipeline; however, some of the existing pipelines are located under the road surface. In these areas, new pipeline would be installed on the side closest to the edge of the existing pavement to avoid any existing utilities in the ROW. The new gas lines would be installed at a maximum depth of 48 inches below grade with 36 inches of soil covering the pipeline. All disturbed areas would be re-seeded or paved (as appropriate) and restored to pre-existing conditions. The City of Graysville would utilize best management practices during construction to prevent any erosion and sedimentation from migrating into adjacent waters. Therefore, PHMSA's assessment is that there would be no adverse impact to soils resulting from the Proposed Action alternative. Additionally, there are no indirect or cumulative impacts anticipated as the City of Graysville would restore all areas to pre-construction conditions.

Mitigation Measures:

The City of Graysville shall utilize best management practices, as appropriate, to control sediment and erosion during construction which may include silt fencing, check dams, and promptly covering all bare areas. All impacted areas shall be restored to pre-construction conditions.

Biological Resources	
Question	**Information and Justification**
Based on review of IPaC and NOAA Fisheries database, are there any federally threatened or endangered species and/or critical habitat potentially occurring within the geographic range of the project area?[11] If no, no further analysis is required.	Yes, based on review of the USFWS's Information for Planning and Consultation (IPaC) and NOAA Fisheries website. Additionally, Alabama state resources were inventoried to identify potential state listed species.[12]
Will the project impact any areas in or adjacent to habitat for Federally, listed threatened or endangered species or their critical habitat? If no, provide justification and avoidance measures. If yes, PHMSA will work with the project proponent to conduct necessary consultation with resource agencies.	No. There is no critical habitat within the project area. This project would not impact any of the species listed herein or their habitat.

Conclusion:

PHMSA requested an official species list through the USFWS's IPaC website to obtain a list of species under USFWS' jurisdiction and reviewed NOAA's fisheries website to obtain a list of potential species under NOAA Fisheries' jurisdiction. See Appendix F, Biological Resources: Threatened and Endangered Species. The following were identified as potentially occurring within the geographic area:

- Indiana Bat (mammal) *Myotis sodalis* -Endangered
- Northern Long-eared Bat (mammal) *Myotis septentrionalis*- Endangered
- Tricolored Bat (mammal) *Perimyotis subflavus*- Proposed Endangered
- Grey Bat (mammal) *Myotis grisescens*- Endangered
- Whooping Crane (bird) *Grus americana* - Experimental Population, Non-Essential
- Black Warrior Waterdog (amphibian) *Necturus alabamensis* -Endangered
- Flattened Musk Turtle (reptile) *Sternotherus depressus* -Threatened
- Alligator Snapping Turtle (reptile) *Macrochelys temminckii* -Proposed Threatened
- Cahaba Shiner (fish) *Notropis cahabae*- Endangered
- Rush Darter (fish) *Etheostoma phytophilum*- Endangered
- Watercress Darter (fish) *Etheostoma nuchale*- Endangered
- Finelined Pocketbook (clam) *Hamiota altilis*- -Threatened
- Ovate Clubshell (clam) *Pleurobema perovatum* -Endangered
- Upland Combshell (clam) *Epioblasma metastriata* -Endangered
- Monarch Butterfly (insect) *Danaus plexippus* -Candidate

The Northern Long-eared Bat (NLEB) is a wide-ranging, federally threatened bat species, found in 37 states and eight provinces in North America.[13] The species typically overwinters in caves or mines and spends the remainder of the year in forested habitats. As its name suggests, the northern long-eared bat is distinguished by

[11] https://ipac.ecosphere.fws.gov/ and https://www.fisheries.noaa.gov/species-directory/threatened-endangered
[12] https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/index.htm
[13] https://ecos.fws.gov/ecp/species/9045

its long ears, particularly as compared to other bats in the genus *Myotis*.

The Gray bat has glossy light brown to brown fur and ears that are longer than any other *Myotis* species and is found in limestone areas marked by caves, sinkholes and springs in the southeastern and Midwestern U.S. Unlike other protected bats that roost in high places, out of reach to normal human activities, gray bats roost on the ceilings of caves and rear young in places where humans can disturb them with their presence through physical touch, noise and artificial lighting.[14]

The tricolored bat is one of the smallest bats found in North America and can be distinguished from others by its unique tricolored fur that appears dark at the base, lighter in the middle and dark at the tip. These bats overwinter in large groups in caves, abandoned mines and tunnels, and are sometimes found in culverts under roadways. During the summer months, the Indiana bat can be found in forested habitats roosting among live and dead leaf clusters.[15]

The Indiana bat is a small, migratory bat that is brown to dark grey in color with ears and wing membranes that are dull, unlike other bats whose ears and wings have more of a sheen. Indiana bats hibernate in groups in caves and mines in the winter and in the summer are found in forests foraging and roosting. The females roost under the peeling bark of dead or dying trees. [16]

The Black Warrior Waterdog occurs only in Alabama and can be found in moderate to large streams with moderate flows and alternating pools and rapids where rocks and other cover are generally present. They are often located in submerged accumulations of leaf litter at the bottom of streams which is thought to be important, especially to post hatchlings and juveniles.[17]

The flattened musk turtle is a small aquatic turtle only known to occur in the state of Alabama. They are often found in free-flowing large creeks or small rivers with approximately 2 feet vegetated shallows with 3.6-5 feet deep pools. In impounded systems, these turtles can be found in the headwaters and around the outside edges of lakes.[18]

Alligator snapping turtles are associated normally found as adults in deep water habitats while hatchlings and juveniles tend to occupy shallower water. Alligator snapping turtles can also be found around tree root masses, stumps, submerged trees, and the like. They often occupy areas with shaded with canopy cover or undercut stream banks.[19]

The Whooping Crane population is this area is an experimental population that breeds, migrates, winters, and forages in a variety of wetland and other aquatic habitats. For feeding, whooping cranes primarily use shallow, seasonally and semi permanently flooded palustrine wetlands for roosting, and various cropland and emergent wetlands. The project area does not contain suitable habitat for Whooping Crane.[20]

Monarch butterflies are found wherever suitable feeding, breeding, and overwintering habitat exists. As caterpillars, monarchs feed exclusively on the leaves of milkweed. As adults, monarchs feed on nectar from a

[14] https://www.fws.gov/species/gray-bat-myotis-grisescens
[15] Tricolored Bat (Perimyotis subflavus) | U.S. Fish & Wildlife Service (fws.gov)
[16] https://www.fws.gov/species/indiana-bat-myotis-sodalis
[17] https://www.fws.gov/species/black-warrior-waterdog-necturus-alabamensis
[18] https://fws.gov/species/flattened-musk-turtle-sternotherus-depressus
[19] U.S. Fish and Wildlife Service. 2021. Species status assessment report for the alligator snapping turtle (Macrochelys temminckii), Version 1.2. March 2021. Atlanta, GA.
[20] https://www.fws.gov/species/whooping-crane-grus-americana

wide range of blooming native plants but can only lay eggs on milkweed plants. [21]

The upland combshell is a small to medium mussel with a yellow-brown shell, occasionally found with green dots or stripes. It can be found in actively moving freshwater streams with stable gravel and sandy-gravel substrates.

The ovate clubshell is a small to medium mussel with an oval to elliptical shape with a yellow to dark brown shell. It can be found in moving freshwater streams with stable gravel and sandy-gravel substrates.

The finelined pocketbook is a suboval shaped clam, yellow-brown to black in color found in small creeks and large rivers alike.

Additionally, the Alabama Heritage Trust Program information was reviewed to assist in identifying potential species protected by the of Alabama. A list of state protected species can be found in Appendix F, Biological Resources.

No Action:

Under the No Action alternative, existing conditions would remain, and normal maintenance activities would occur. The project area is in an urbanized environment which has very limited biological resources present. Maintenance activities are not anticipated to have any effect on the species identified above, due to unavailable habitat.

Proposed Action:

The project area consists of an urbanized environment where the areas of disturbance would be limited to the transportation ROW. Because the transportation ROW has been previously impacted by roadway and utilities, and contains an active roadway, the immediate project area has very limited biological resources present. Additionally, the project area does not contain suitable habitat for the species listed above as there are no forests, caves, or hibernacula needed for bat species present in the ROW, nor does the project area contain requisite streams or rivers necessary for fish, reptile, amphibian or clam species. Additionally, no wetlands or waters necessary for whooping cranes were identified in the project area. There are several state protected species (that are also not Federally listed) which may occur within the geographic range of the project area; however, no appropriate habitat was identified.

Because the project areas are within existing ROW that have been previously impacted by pipeline and other utilities or in areas where regulating stations already exist, the project areas for both segments and the areas where regulating stations would be updated have very limited biological resources present. These areas do not contain suitable habitat for either federal or state listed species. As a result, it is PHMSA's assessment that the project is unlikely to have any detrimental effects to federally- listed species or critical habitat. To ensure the Proposed Action alternative would not have any impact to protected species, in accordance with Section 7 of the Endangered Species Act, PHMSA used the IPaC determination key *'Clearance to Proceed with Federally-Insured Loan and Grant Project Requests'*; dated May 18, 2023, in the U.S. Fish and Wildlife Service's online IPaC tool to evaluate potential impacts to listed species. As a result, it was PHMSA's assessment that the project would be unlikely to have any detrimental effects to federally- listed species or critical habitat and that the project would have no effect to federally threatened or endangered species. This is documented in a letter from USFWS dated October 19, 2023, which can be found in Appendix F, Biological Resources.

[21] https://www.fws.gov/species/monarch-danaus-plexippus

Federal proposed threatened, federal candidate species, and state listed species are not subject to Section 7 of the Endangered Species Act. PHMSA's assessment is that the project is unlikely to have any detrimental effects to other biological resources and there would be no indirect or cumulative impacts resulting from the Proposed Action alternative.
Mitigation Measures: The City of Graysville is responsible for abiding by all applicable federal, state, and local regulations.

Cultural Resources	
Question	**Information and Justification**
Does the project include any ground disturbing activities, modifications to buildings or structures, or construction or installation of any new aboveground components?	Yes. Existing above ground gas regulating stations currently enclosed in rectangular fence would be replaced with new equipment and piping.
Is the project located within a previously identified local, state, or National Register historic district or adjacent to any locally or nationally recognized historic properties? This information can be gathered from the local government and/or State Historic Preservation Office.[22]	No
Does the project or any part of the project take place on tribal lands or land where a tribal cultural interest may exist?[23]	Yes. According to the HUD Tribal Directory Assessment Tool (TDAT), four Tribes have cultural interests in Jefferson County, Alabama: - Alabama-Coushatta Tribe of Texas - Alabama-Quassarte Tribal Town - Coushatta Tribe of Louisiana - Muscogee (Creek) Nation
Are there any nearby properties or resources that either appear to be or are documented to have been constructed more than 45 years ago?[24] Does there appear to be a group of properties of similar age, design, or method of construction? Any designed landscapes such as a park or cemetery? Please provide photographs to show the context of the project area and adjacent properties.	Yes. While several properties in the project area appear to have been constructed prior to 1978, there are no properties listed on the National Register of Historic Places nor the Alabama Historic Preservation Map.

[22] Many SHPOs have an online system at https://www.nps.gov/subjects/nationalregister/state-historic-preservation-offices.htm that can tell you previously identified historic properties in your project area. The National Register list at https://www.nps.gov/subjects/nationalregister/database-research.htm can also be accessed online.
[23] The SHPO may have information on areas of tribal interest, or a good source is the HUD TDAT website at https://egis.hud.gov/TDAT/.
[24] Local tax and property records or historic maps may indicate dates of construction.

Has the entire area and depth of construction for the project been previously disturbed by the original installation or other activities? If so, provide any documentation of prior ground disturbances.	Yes. New pipe installation would take place immediately adjacent to prior pipe installation, within the same existing right of way.
Will project implementation require removal or disturbance of any stone or brick sidewalk, roadway, or landscape materials or other old or unique features? Please provide photos of the project area that include the roadway and sidewalk materials in the project and staging areas.	No.

Conclusion:

PHMSA must consider the impact of projects for which they provide funding on historic and archeological properties in accordance with Section 106 of the National Historic Preservation Act (Section 106). Pursuant to 36 CFR 800.4(a)(1), the Area of Potential Effects (APE) is defined as the geographic area(s) within which the Undertaking may directly or indirectly affect historic resources. Based on the proposed scope of work, PHMSA has delineated the APE for this Undertaking to encompass the existing ROW where the pipeline replacements would take place; adjacent parcels where the service line work would take place; the parcel at 648 Crumly Chapel Road in Forestdale, which would be used for staging; and the fenced enclosures of each regulating station to be replaced. The ROW width varies throughout the project area and includes the roadway, some driveways to residences, mailboxes, trees and shrubs, drainage pipes, and other utilities. The APE extends to the depth of proposed ground disturbance of up to 4 ft. It includes the limits of disturbance. The Undertaking does not have the potential to cause visual or audible effects after the completion of construction. (See Appendix G, Cultural Resources. Photos and maps were redacted due to visibility of pipeline equipment)

No Action:

Under the No Action alternative, existing conditions would remain, and normal maintenance activities would occur. These activities could result in ground disturbance that might affect historic resources. However, no federal funding would be applied and therefore Section 106 would not be required.

Proposed Action:

PHMSA identified properties based on available information on previously identified historic properties in the APE, including the National Register of Historic Places (NRHP) database and data received from the Alabama Division of Historical Resources. PHMSA also conducted research to determine if there are any previously unidentified properties within the APE that are 45 years of age or older and may be eligible for the NRHP.

There are no NRHP-eligible or NRHP-listed above-ground resources identified within the APE. Additionally, a search of the AHC Historic Preservation GIS Map found no known potentially significant above-ground resources within the APE. While the service line replacements would take place from the pipeline and leading up to buildings, no alterations to buildings are anticipated. Additionally, although the regulating station equipment is housed in small, historic-age, one-room brick sheds at some locations, they are simple, common building types with no distinct style or significant historical associations and do not have the potential to be eligible for the NRHP under Criteria A, B, or C. Project work at the regulating stations would be limited to the replacement of interior equipment and would not directly impact the building.

Due to the scale and nature of the Undertaking, the identification effort for above-ground resources near the pipeline and service line replacements focused on identifying properties that are susceptible to the effects of this work and could experience diminished integrity as a result of the Undertaking. A review of the APE found no potentially significant above-ground resources that have the potential to be affected by the Undertaking.

The Alabama Cultural Resources Online Database (ACROD) was examined to identify the presence of previously recorded archaeological sites and previously conducted archaeological surveys within the APE. As a result, three previous surveys were identified as intersecting the APE, and no previously recorded archaeological sites were identified within the APE. Historic topographic maps and aerials indicate that historic-age archaeological deposits may be present in parts of the APE. However, density of modern buildings and construction of roads, sidewalks, and underground utility corridors have likely disturbed any archaeological deposits. While there is potential for archaeological deposits within the APE, the Undertaking would occur near or within previous road construction and utility installation corridors in the existing right-of-way that lack soil integrity. Due to the limited scope of work and likelihood of disturbed context of the APE, an archaeological survey is not recommended at this time.

PHMSA's assessment concludes that there are no historic properties as defined in 36 CFR § 800.16(l) within the APE. Therefore, in accordance with 36 CFR Part 800.4(d)(1), the Undertaking would result in No Historic Properties Affected.

A letter was sent on December 7, 2023, to the Alabama State Historic Preservation Officer (SHPO) and all consulting parties outlining the Section 106 process, including a description of the undertaking, delineation and justification of the APE, identification of historic properties and an evaluation and proposed finding of effects. PHMSA has requested comments on the Section 106 process, identification of historic properties, and proposed finding within 30 days of receipt of the letter. See Appendix G, Cultural Resources, for additional information. Photos and maps were redacted due to visibility of pipeline equipment.

PHMSA also invited the following federally recognized tribes to participate in consultation by separate letter dated December 7, 2023:

Alabama-Coushatta Tribe of Texas
Alabama-Quassarte Tribal Town
Coushatta Tribe of Louisiana
Muscogee (Creek) Nation

Mitigation Measures:

The City of Graysville shall notify PHMSA immediately of any changes to the scope of work that may change the impacts to historic properties or the areas that may be impacted, including location of work, depth of construction, or change in construction methods.

If, during project implementation, and features or human remains are discovered or effects to historic properties occur that were not anticipated during the Section 106 process, PHMSA must be immediately notified and all construction in the area of the discovery must halt until further direction is provided. The provisions of the Alabama Burial Act (Code of Alabama 1975, §13A-7-23.1, as amended; Alabama Historical Commission Administrative Code Chapter 460-X-10 Burials) should also be followed. This stipulation shall be placed on the construction plans to ensure contractors are aware of it.

Section 4(f)	
Question	**Information and Justification**
Are there Section 4(f) properties within or immediately adjacent to the project area? If yes, provide a list of properties or as an attachment.	Yes. Spring Street Park in Adamsville. Lat. = 33.587450, Long. = -86.958723
Will any construction activities occur within the property boundaries of a Section 4(f) property? If so, please detail these activities and indicate if these are temporary or permanent uses of the Section 4(f) property. Further coordination with PHMSA is required for all projects that might impact a Section 4(f) property.	No

Section 4(f) of the US Department of Transportation (USDOT) Act of 1966 as amended (Section 4(f)) (49 U.S.C. § 303(c)); is a federal law that applies to transportation projects that require funding or other approvals by the USDOT. Section 4(f) prohibits the Secretary of Transportation from approving any program or project which requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or any land from an historic site of national, state, or local significance unless:

- There is no feasible and prudent alternative to the use of the land;
- The program or project includes all possible planning to minimize harm to such park, recreational area, wildlife and waterfowl refuge, or historic site, resulting from such use.

There is one potential 4(f) resource identified in the project area in Segment 1, Spring Street Park.

No Action:

Under the No Action alternative, there would be no change to existing pipeline infrastructure pursuant to federal funding provided by the Program. Therefore, there would be no use of Section 4(f) property under the No Action alternative.

Proposed Action:

Under the Proposed Action alternative, construction activities would not impact Spring Street Park. Access to the facility would remain throughout the duration of construction, no staging of equipment and no physical use of the park would occur. In addition, as described in the Noise section of this Tier 2 EA, no adverse impacts associated with construction noise have been identified that could affect the use of this property. Therefore, PHMSA's assessment is that there would be no use of any Section 4(f) resources. See Appendix H, 4(f).

Mitigation Measures:

The City of Graysville shall ensure that full public use and access to Spring Street Park is maintained during construction.

Land Use and Transportation	
Question	**Information and Justification**
Will the full extent of the project boundaries remain within the existing right-of-way or easements? If no, please describe any right-of-way acquisitions or additional easements needed.	Yes
Will the project result in detours, transportation restrictions, or other impacts to normal traffic flow or to existing transportation facilities during construction? Will there be any permanent change to existing transportation facilities? If so, what are the changes, and how would changes affect the public?	Yes. Yes, temporary traffic impacts would occur and could require the closing of short sections of one lane and other minor disruptions to street parking. The project would not result in a permanent change to existing transportation facilities. The project could require the closing of a short section of one lane in which a traffic control plan would be implemented, in accordance with MUTCD.
Will the project interrupt or impede emergency response services from fire, police, ambulance or any other emergency or safety response providers? If so, describe any coordination that will occur with emergency response providers?	No

Conclusion:

The project is located in Adamsville and Forestdale communities in Graysville, Alabama consisting of residential and light commercial areas.

No Action:

Under the No Action alternative, the cast iron pipes would remain in their current location and no changes to land use would occur. Normal maintenance activities would occur, and pipes would be replaced under failed circumstances.

Proposed Action:

The City of Graysville is proposing to replace pipeline infrastructure within existing ROW and would not include adding pipeline to serve new areas. During construction, there may be short-term impacts to adjacent residences, businesses and normal traffic patterns. Potential impacts include an increase in noise, dust, and transportation accessibility, as a result of construction and construction staging. Local and state regulations guide the transport of machinery, equipment, and automobiles around the construction areas. Temporary traffic impacts may occur on the local road network and adjacent pedestrian routes. The project may result in short lane closures. Consideration of emergency response vehicles, travel restrictions, and other impacts to local transportation are anticipated to be temporary and would only last for the duration of construction. Minor disruptions to on street parking may occur, but access to existing residences and businesses is not anticipated.

The City of Graysville would coordinate with the appropriate local and state agencies regarding interruptions to traffic and appropriate protocol would be used where traffic would be temporarily diverted to one-lane. Normal traffic flow would be maintained to the extent possible and traffic control measures would be utilized to assist traffic negotiating through construction areas, as needed. The City of Graysville would notify emergency services

of the scheduled work and traffic implications of the work that would be conducted and would use various methods of communication to notify any potentially impacted residents, business owners, and the general public. Therefore, because the work consists of the replacement of existing pipelines, would not convert any new areas into a different use and impacts would only occur during construction, PHMSA's assessment is that there would be no permanent impact to land use.

PHMSA considered the cumulative effects of this action with ongoing and planned transportation related construction projects that could cumulatively impact land use and transportation. The City of Graysville, like other municipalities, has various maintenance, drainage improvement, and other projects occurring in the city limits at any given time. All municipalities and businesses must abide by the same requirements and coordinate with state and local agencies regarding disruptions to normal traffic patterns. Through this coordination, the overall cumulative effects of multiple projects occurring would be minimized by planning and scheduling efforts with responsible agency oversight. Land use changes are not anticipated as the projects are occurring in an urbanized area that is built out and therefore would not change the existing residential or commercial use.

Mitigation Measures:

The City of Graysville shall maintain traffic flows to the extent possible and use traffic control measures to assist traffic negotiating through construction areas, as needed.

The City of Graysville shall coordinate with state and local agencies regarding detours and/or routing adjustments during construction and will notify any potentially impacted residents and/or business owners.

The City of Graysville shall have a traffic control plan in place, prior to construction, and coordinate with appropriate agencies.

Noise and Vibration	
Question	**Information and Justification**
Will the project construction occur for longer than a month at a single project location?	No
Will the project location be in proximity (less than 50-feet) to noise sensitive receivers (residences, schools, houses of worship, etc.)? If so, what measures will be taken to reduce noise and vibration impacts to sensitive receptors?	Yes, the project would adhere to local noise regulations, limit construction activities to normal weekday business hours (Adamsville segment), and make sure equipment mufflers have proper maintenance.
Will the project require high-noise and vibration inducing construction methods? If so, please specify.	No.
Will the project comply with state and local ordinances? If so, identify applicable ordinances and limitations on noise/vibration times or sound levels.	Yes. The City of Adamsville has the only noise ordinance in the project area which limits noise between 10 pm and 7 am except for an exemption for emergency repairs or maintenance. There are no applicable ordinances to the Forestdale segment.
Will construction activities require large bulldozers, hoe ram, or other vibratory equipment within 20 feet of a	No

structure?	

Conclusion:

The project is located in the Adamsville and Forestdale areas in Graysville, Alabama. The ambient noise in the project area consists of a combination of environmental noise from road traffic, construction, residential areas, the built environment, population density and other sources. There are sensitive noise receptors (residences, churches, etc.) located adjacent to the streets where work would occur.

No Action:

Under the No Action, the project would not move forward and the pipelines along the designated streets in the project area would not be replaced at this time. It is likely that these pipelines would need to be repaired or replaced due to leaks or deteriorating conditions in the future. If replacement or repairs occur under emergency conditions, noise from construction equipment would add to that of the current ambient noise and would be of a shorter duration.

Proposed Action:

Excavators, dump trucks, skid steers, rollers, pavers, and other similar construction equipment would be used to excavate a trench, lay pipe, compact soils and re-pave the affected areas. Pipeline may be installed in some areas via directional bore methods where drill rigs, excavators, reamers, and similar equipment would be used to install pipeline by horizontal directional drilling. Sensitive noise receptors are likely to experience temporary noise impacts in the vicinity of the work; however, PHMSA's assessment is that the noise impacts would be minor and temporary and no adverse vibration impacts would result from the proposed work.

PHMSA considered the cumulative effects of this action with ongoing and planned transportation related construction projects that could cumulatively have an impact on the noise and vibration impacts within the City of Graysville. Rural areas often have paving, drainage improvement, and other construction or maintenance projects on going which could occur within or near the project area which would contribute to increased noise. These construction and maintenance projects could occur at the same time as the Proposed Action alternative and would contribute to an increase in cumulative noise effects during construction. However, adhering to local noise ordinances would ensure the project does not cause cumulatively more than minor adverse noise or vibration impacts.

Mitigation Measures:

The City of Graysville shall adhere to applicable local and/or state noise ordinances.

Environmental Justice	
Question	**Information and Justification**
Using the EPA EJScreen or census data[25], is the project located in an area of minority and/or low-income individuals as defined by USDOT Order 5610.2(c)? If so, provide demographic data for minority and/or low-	Yes, based on review of socioeconomic data using EPA's EJScreen, the population residing within the general project area contains the following:

[25] https://www.census.gov/quickfacts/fact/table/US/PST045222

income individuals within ½ mile from the project area as a percentage of the total population.	Forestdale Low income 32%, People of minority 84%. Adamsville - Low income 42%, People of minority 63%,
Will the project displace existing residents or workers from their homes and communities? If so, what is the expected duration?	No
Will the project require service disruptions to homes and communities? If so, what is the expected communication and outreach plan to the residents and the duration of the outages?	Yes. Temporary service outages would occur in order to reconnect the new service line to the meter. Homeowners would be notified of the temporary outage in advance and service would be restored as quickly as possible.
Are there populations with Limited English Proficiency located in the project area? If so, what measures will be taken to provide communications in other languages?	No

Conclusion:

Executive Order (E.O.) 14096—"Revitalizing Our Nation's Commitment to Environmental Justice for All" was enacted on April 21, 2023. E.O. 14096 on environmental justice does not rescind E.O. 12898 – "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," which has been in effect since February 11, 1994, and is currently implemented through DOT Order 5610.2C. This implementation would continue until further guidance is provided regarding the implementation of the new E.O. 14096 on environmental justice.

PHMSA reviewed socioeconomic data using the EPAs EJScreen and found the population residing within the project areas of Forestdale contains 32% low income and 84% minority populations and Adamsville contains 42% low income and 63% minority populations. Jefferson County consists of 33% low income and 51% minority populations and therefore Forestdale and Adamsville both contain above the county average for minority populations. Adamsville has a higher percentage of low-income population when compared to the county. See Appendix I, Environmental Justice, for socioeconomic data.

No Action:

Under the No Action alternative, existing and planned pipeline activities, including construction and maintenance activities, would continue unchanged. The City of Graysville would continue to use leak-prone pipe material that could lead to safety incidents and service disruptions. Additionally, if a pipeline segment is not repaired or replaced prior to failure, it is likely to be associated with even more emissions under the No Action alternative. Thus, emissions benefits to the community associated with repairing or replacing existing pipelines with updated material would not be achieved and the incident risks and leaks would remain. There would be some degree of air pollution associated with construction activities for maintenance and repairs of existing pipelines, relative to the size and extent of the repair activities, under the No Action alternative, either through planned repair or replacement efforts or unplanned, emergency repairs or replacements.

Proposed Action:

The Proposed Action alternative would result in an overall reduction in GHG emissions. Construction activities would result in minor temporary air quality impacts, including the intentional venting of existing distribution lines prior to replacement. Noise impacts associated with construction are anticipated to be minor. Traffic impacts would be temporary and only minor disruptions or delays would occur. However, removal of leak prone

pipe would reduce leaks and the potential for incidents, resulting in an increase in pipeline safety across the system while also improving operation and reliability. Therefore, consistent with Executive Order 12898 and DOT Order 5610.2(c), PHMSA's assessment is that the project would not result in disproportionately high and adverse effects on minority or low-income populations, or other underserved and disadvantaged communities. The project would have an overall beneficial effect on environmental justice populations and would not result in indirect or cumulative impacts.

Mitigation Measures:

The City of Graysville shall provide advanced notification of service disruptions and construction schedule to all affected parties including residents and businesses adjacent to the project area.

Safety	
Question	**Information and Justification**
Has a risk profile been developed to describe the condition of the current infrastructure and potential safety concerns?	Yes, the current infrastructure has been assessed to determine significant safety concern if the pipeline and regulator stations are not replaced.
Has a public awareness program been developed and implemented that follows the guidance provided by the American Petroleum Institute (API) Recommended Practice (RP) 1162?	Yes, public awareness and public notice would be implemented following API RP 1162.
Does the project area include pipes prone to leakage?	Yes, cast iron pipes are prone to leaks.
Will construction safety methods and procedures to protect human health and prevent/minimize hazardous materials releases during construction, including personal protection, workplace monitoring and site-specific health and safety plans, be utilized? If yes, document measures and reference appropriate safety plans.	Yes, construction safety measures would be implemented to protect health and minimize hazardous releases during construction. Safety would include personal protection, site monitoring, and site-specific safety plans. Graysville Gas Operation and Maintenance and Emergency Plan
Has an assessment of the project been performed to analyze the risk and benefits of implementation?	Yes, the age of the pipeline and propensity for leakage demonstrates considerable benefits for implementation of this project. There is significant risk if the pipeline is not replaced.

Conclusion:

The proposed project would replace historic cast iron pipes. Pipelines that are known to leak based on the material include cast iron, bare steel, wrought iron, and historic plastics with known issues (PIPES Act of 2020). PHMSA establishes safety regulations for all pipelines (49 CFR Parts 190-199). In 2011, following major natural gas pipeline incidents, DOT and PHMSA issued a Call to Action to accelerate the repair, rehabilitation, and replacement of the highest-risk pipeline infrastructure. Among other factors, pipeline age and material are significant risk indicators. Pipelines constructed of cast and wrought iron, as well as bare steel, are among the pipelines that pose the highest risk. Cast iron pipes are a concern in the City of Graysville's DIMP plan and are a

priority to eliminate as they continually leak requiring repair (some immediate), emit emissions into the atmosphere (Section 114) and cause a loss of revenue. PHMSA continues to encourage legacy pipeline repair or replacement to increase the safety of these segments of the gas distribution systems. Pipeline incidents can result in death, injury, property damage, and environmental damage.

No Action:

Under the No Action alternative, the cast iron pipes would remain in their current location, state, and condition. Normal maintenance activities would occur, and pipes would be replaced under failed circumstances. Safety risks resulting from existing leak prone pipes remaining in place would persist until the existing leak-prone pipes are replaced.

Proposed Action:

The proposed project is necessary to replace leak prone pipes. This replacement is in alignment with the City of Graysville's DIMP plan, increasing the overall safety of the community.
The project would reduce the risk profile of existing pipeline systems prone to methane leakage and would also benefit disadvantaged rural and urban communities with the safe provision of natural gas. The project responds to the need to address the potentially unsafe condition of the natural gas distribution system of pipelines. The repair, rehabilitation, or replacement of pipelines would be constructed in accordance with industry best practices and would comply with all local, state, and federal regulations, including those for safety.

The abandonment of the existing pipeline would be conducted in accordance with PHMSA requirements found in 49 CRF 192.727 and 195.402(c)(10). These requirements include disconnecting pipelines from all sources and supplies of gas, purging all combustibles and sealing the facilities left in place. These requirements for purging and sealing abandoned pipelines would ensure that the abandoned pipelines are properly purged and cleaned and pose no risk to safety in their abandoned state. Therefore, PHMSA's assessment is that this replacement project would improve the overall safety of Graysville's infrastructure.

Mitigation Measures:

The City of Graysville shall ensure their DIMP procedures are updated as necessary, the work is constructed in accordance with industry best practices and the project will comply with all local, state, and federal regulations, including those for safety.

The City of Graysville shall use standard construction safety methods and procedures; and conduct regular safety audits of crews performing work in the field and subsequent follow-up reporting and/or training, as required.

The City of Graysville shall develop and implement a public awareness program following American Petroleum Institute (API) Recommended Practice (RP) 1162.

III. Public Involvement

On November 9, 2022, PHMSA published a Federal Register notice (87 FR 67748) with a 30-day comment period soliciting comments on the "Tier 1 Nationwide Environmental Assessment for the Natural Gas Distribution Infrastructure Safety and Modernization Grant Program." During the 30-day comment period, PHMSA received one comment letter from the APGA on various aspects of the program and air quality related analysis in the EA on

December 9, 2022. This APGA letter is available for public review at the Docket No: PHMSA-2022-0123[26]. PHMSA reviewed the comment letter and determined the comments were not substantial and did not warrant further analysis. One comment provided by the APGA indicated that the majority of construction methods used for pipe replacements would be replacement by open trenching and that some may want to abandon the existing pipe rather than removing it for replacement. Any departures from methods described in the Tier 1 EA will require additional documentation from the project proponent, as reflected in this Tier 2.

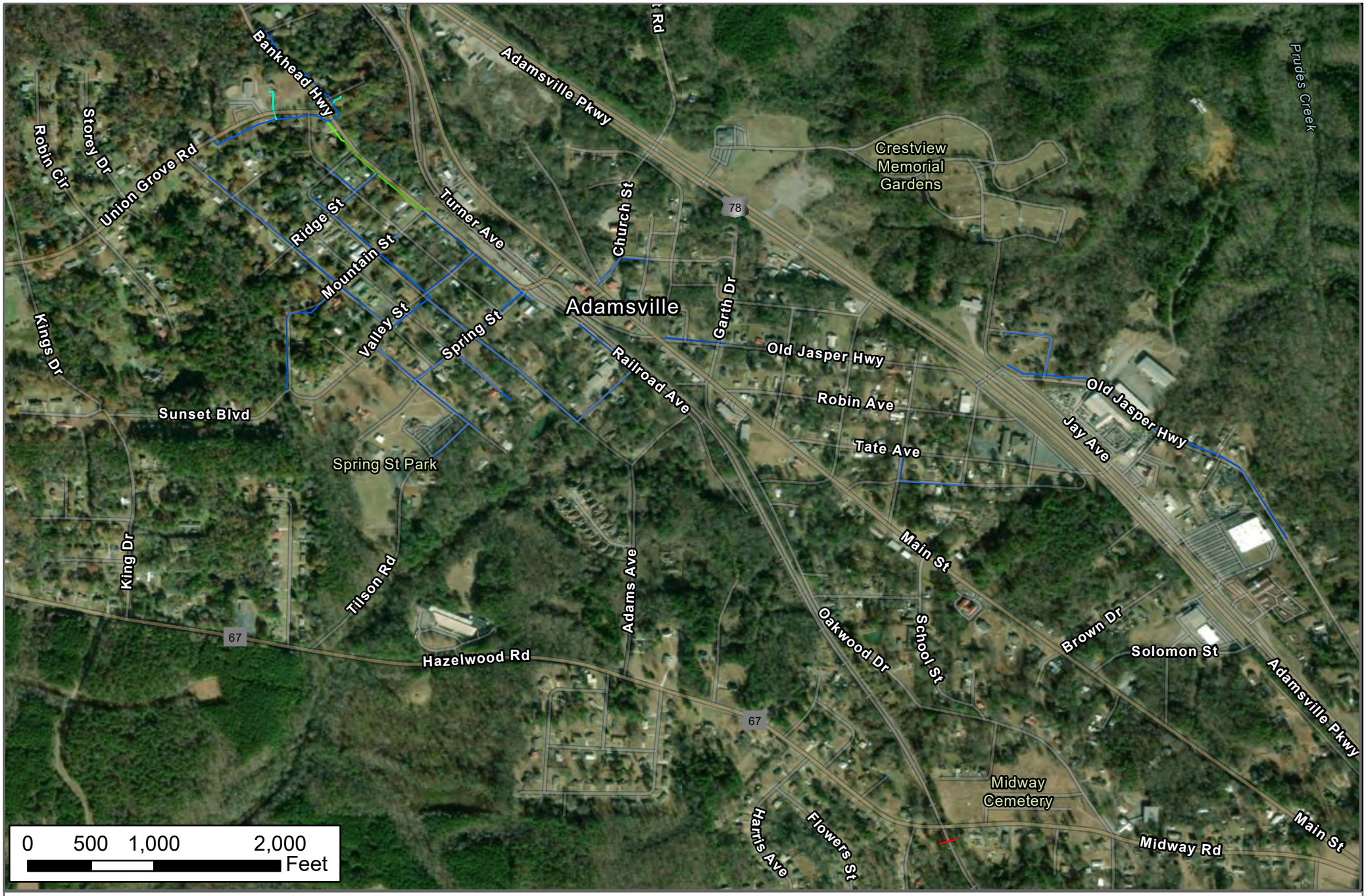
As part of this Tier 2, PHMSA is soliciting public comments through a public comment period. This Tier 2 is available on PHMSA's website where comments can be submitted to the contact noted below. PHMSA will accept public comments for 30 days on this Tier 2. PHMSA will consider comments received and incorporate them in the decision-making process. Consultation with appropriate agencies on related processes, regulations, and permits is ongoing. Please submit all comments to: PHMSABILGrantNEPAComments@dot.gov and reference NGDISM-FY22-EA-2023-10 in your response.

[26] https://www.regulations.gov/document/PHMSA-2022-0123-0002/comment

Appendix A

Project Maps

Project Map

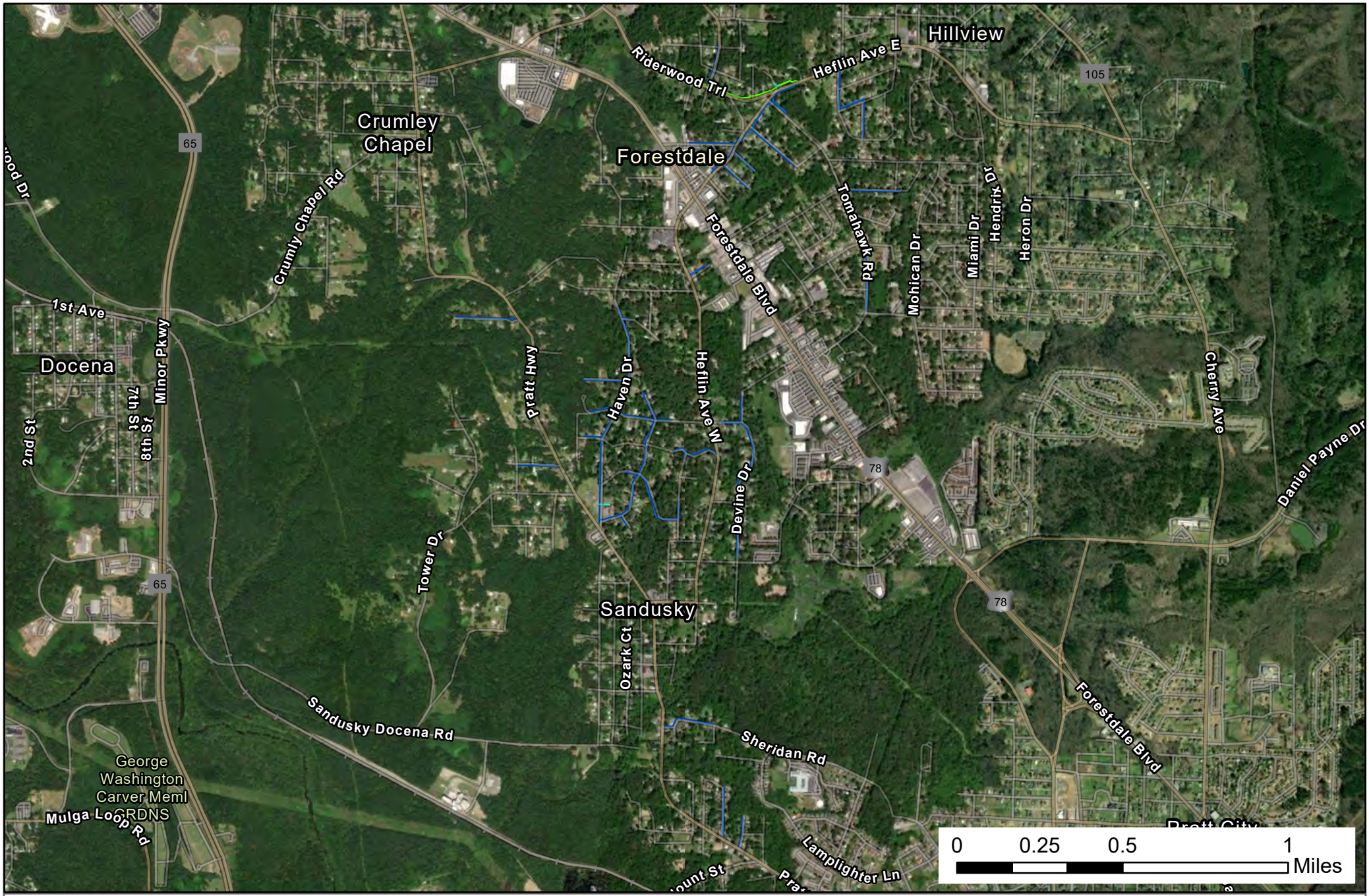


Name: Graysville, AL
Area A - Adamsville Gas Line Replacement
Scale: 12,000

1" PE Pipeline
2" PE Pipeline
4" PE Pipeline
2" Steel PE Pipeline

N

Project Map



Name: Graysville, AL
Area F - Forestdale Gas Line Replacement
Scale: 24,000
1" PE Pipeline to be Replaced
2" PE Pipeline to be Replaced
4" PE Pipeline to be Replaced

N

2" PE Pipeline to be Replaced
4" PE Pipeline to be Replaced

Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/ NASA, USGS, EPA, NPS, US Census Bureau, USDA, Maxar

Appendix B

Methane Calculations

Table 1. Average methane emission factors for natural gas pipelines (adapted from EPA GHG Inventory, Annex 3.6, Table 3.6-2)

Pipeline Material	Pre-1990 Installation (kg/mile)	1990-2020 Installation (kg/mile)	Average Rate (kg/mile/year)
Cast Iron	4,597.40	1,157.30	2,877.35
Unprotected steel	2,122.30	861.3	1,491.80
Protected steel	59.1	96.7	77.90
Plastic	190.9	28.8	109.85

Table 2. No Action Leak Rate

Pipeline Material Type	Average Rate (kg/mile/year)	Miles	Current Methane Leak Rate (kg/year)
Cast Iron	4,597.40	9.71875	44681
Unprotected steel	2,122.30	0	0
Protected steel	59.1	0	0
Plastic	190.9	0	0
Total Annual Methane Leak Rate			44681
20-year Methane Emissions			893620

Table 3. Proposed Action Leak Rate

Pipeline Material Type	Average Rate (kg/mile/year)	Miles	New Methane Leak Rate (kg/year)
Plastic	28.8	9.71875	280
Year 1 Methane Reduction			44307
Annual Methane Reduction			44401
20-year Methane Reduction			888022

Equation 1 was used to estimate blowdown emissions in MCF, assuming a pipeline diameter (d) and pressure (P) described in Table 3.

$$E_{blowdown} = V \times \frac{P_{pipe} + P_{atm}}{P_{atm}} \qquad (1)$$

Where the pipeline volume (V) is calculated by multiplying the cross-sectional area of the pipe by the length of pipeline (L):

$$V = \pi \times \frac{d^2}{4} \times L \qquad (2)$$

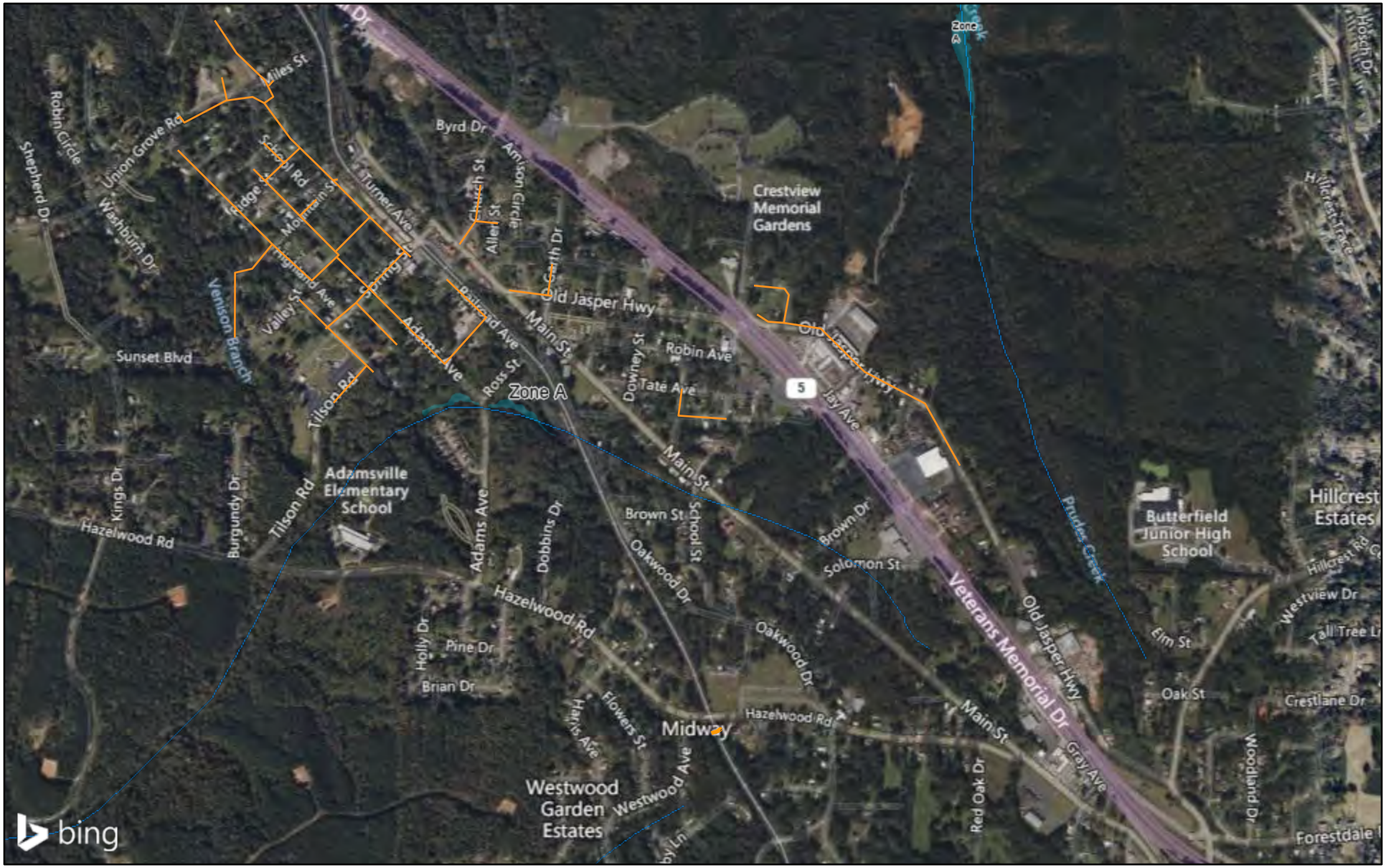
Table 4 Proposed Action - Methane Blowdown

Equation Inputs	Pipe Section		
Diameter (inches)	4	2	1
Blowdown Pressure	20	20	20
Length of Blowdown (feet)	2845	48090	765
Blowdown (MCF)	0.59	2.47	0.01
Total MCF	0.59	2.47	0.01
Total kg/yr	94		

Appendix C

Water Resources

Segment A



November 2, 2023

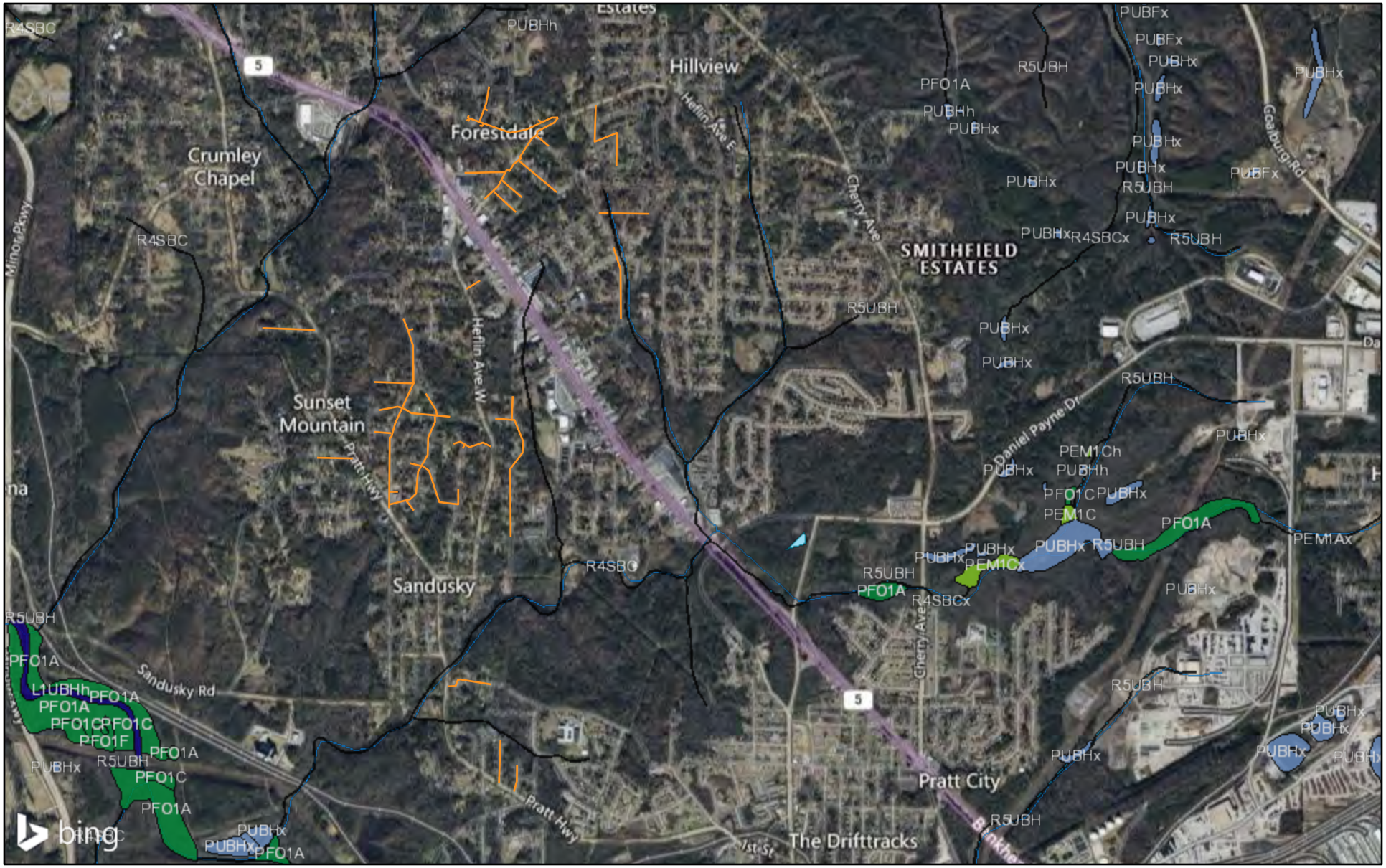
Project 1 graysville Streams

1:18,056

0 0.13 0.25 0.5 mi

0 0.2 0.4 0.8 km

Segment F



November 2, 2023

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- graysville
- Streams
- Water Bodies

1:36,112

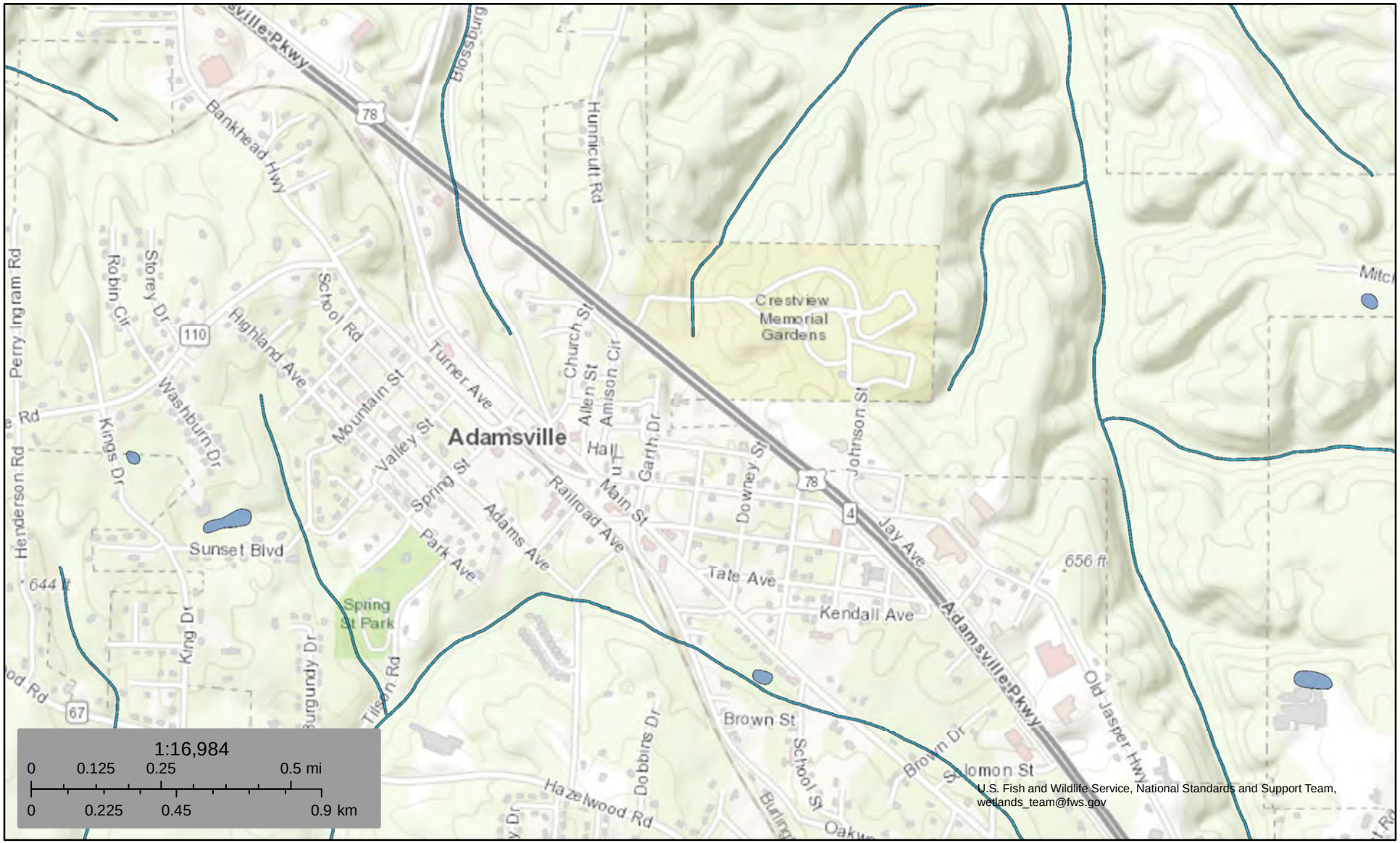
0 0.25 0.5 1 mi

0 0.4 0.8 1.6 km

U.S. Fish and Wildlife Service

National Wetlands Inventory

Graysville- Adamsville Segment



October 19, 2023

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

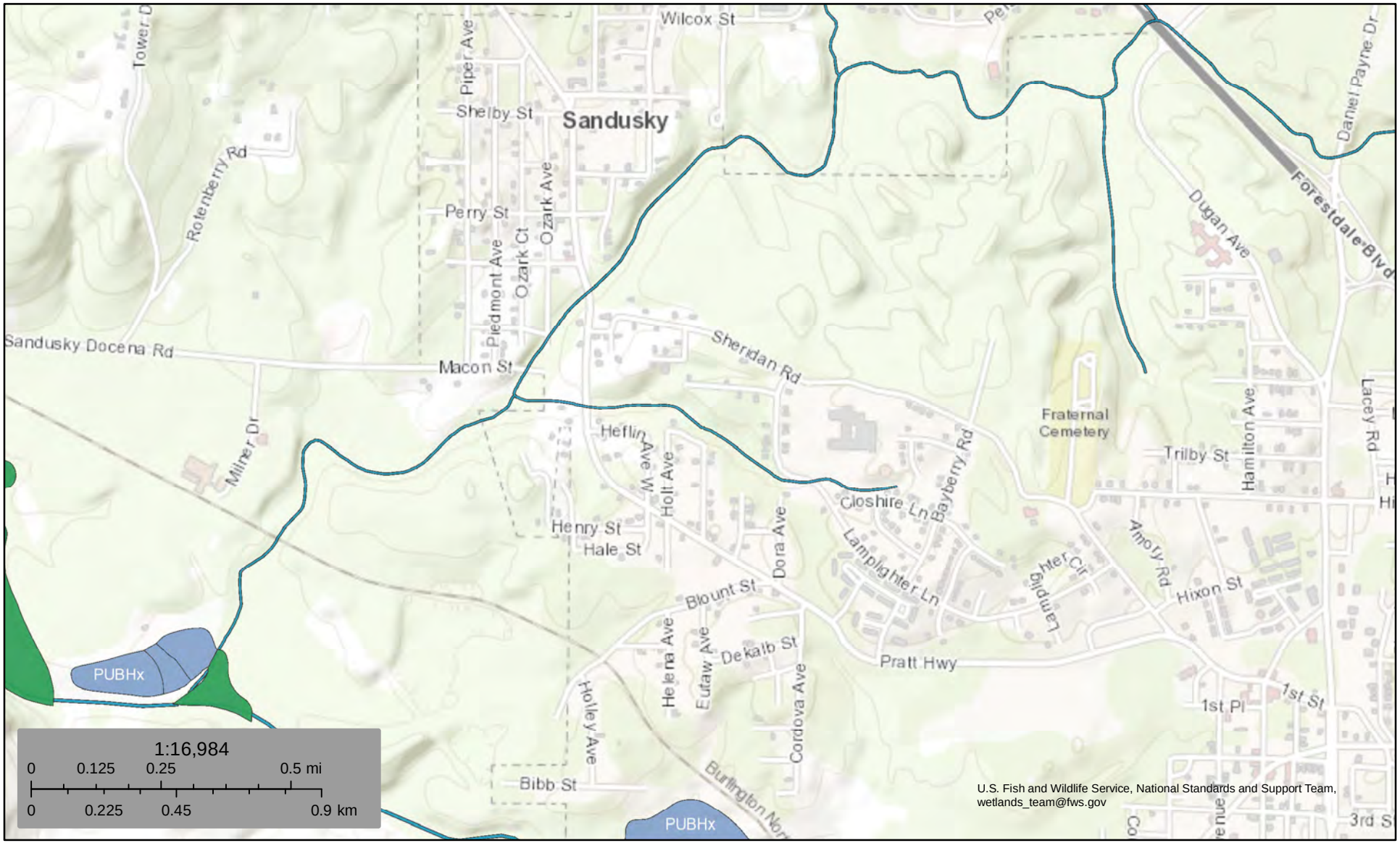
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

U.S. Fish and Wildlife Service
National Wetlands Inventory

Graysville- Forestdale (south) Segment



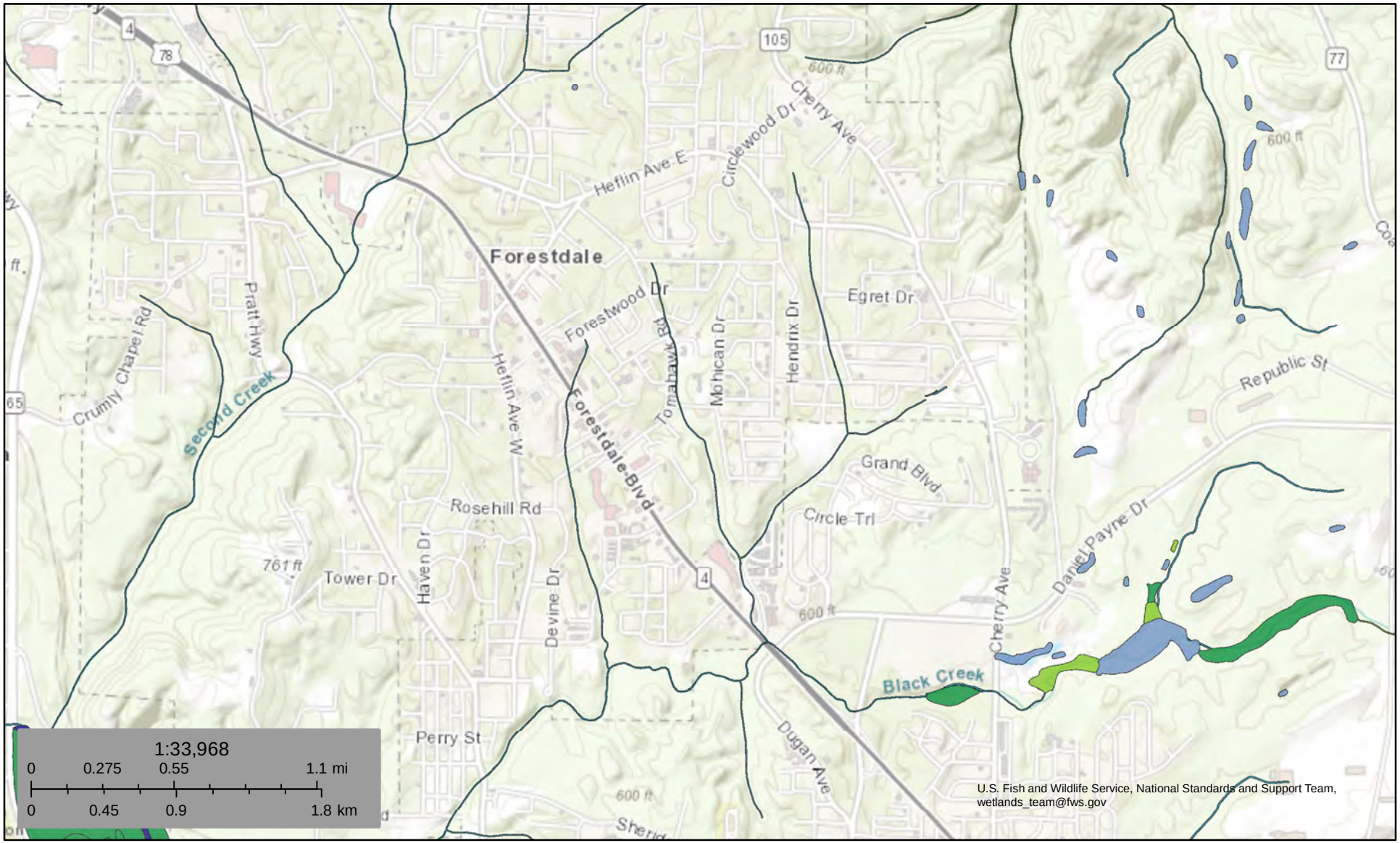
October 19, 2023

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

U.S. Fish and Wildlife Service
National Wetlands Inventory

Graysville- Forestdale Segment



October 19, 2023

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
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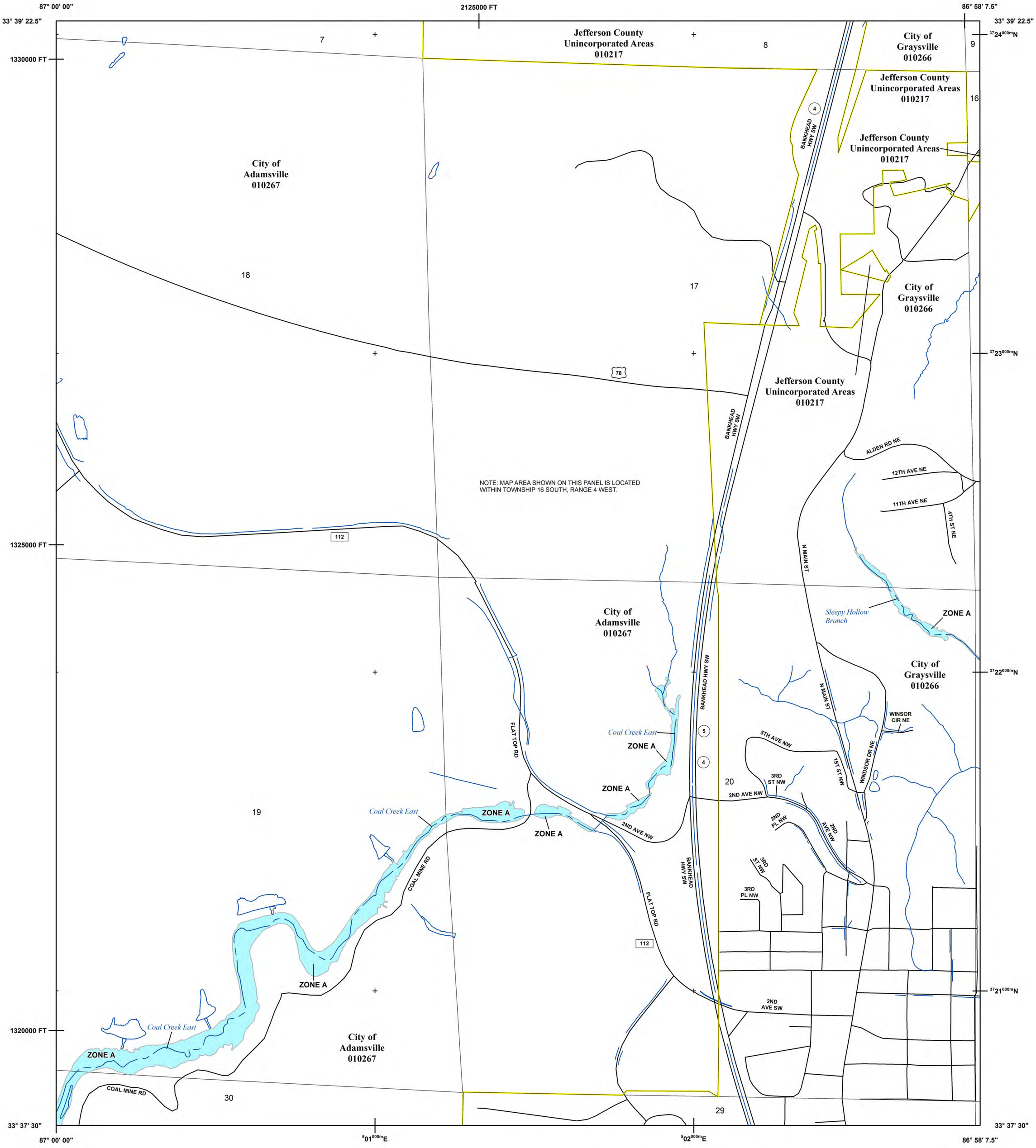

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A,V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF 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 *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- E 18.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
- 8 — Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 — Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions of this FIRM, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

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Please visit www.adeca.alabama.gov/floods for more information.

SCALE

N

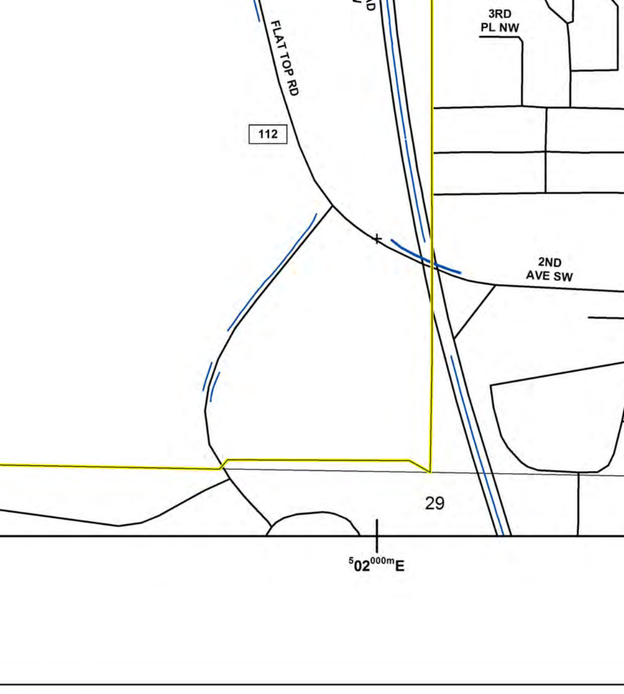
Map Projection:
Universal Transverse Mercator Zone 16N; North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 500 feet — 1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



* PANEL NOT PRINTED

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

JEFFERSON COUNTY, ALABAMA

and Incorporated Areas

PANEL 188 OF 755

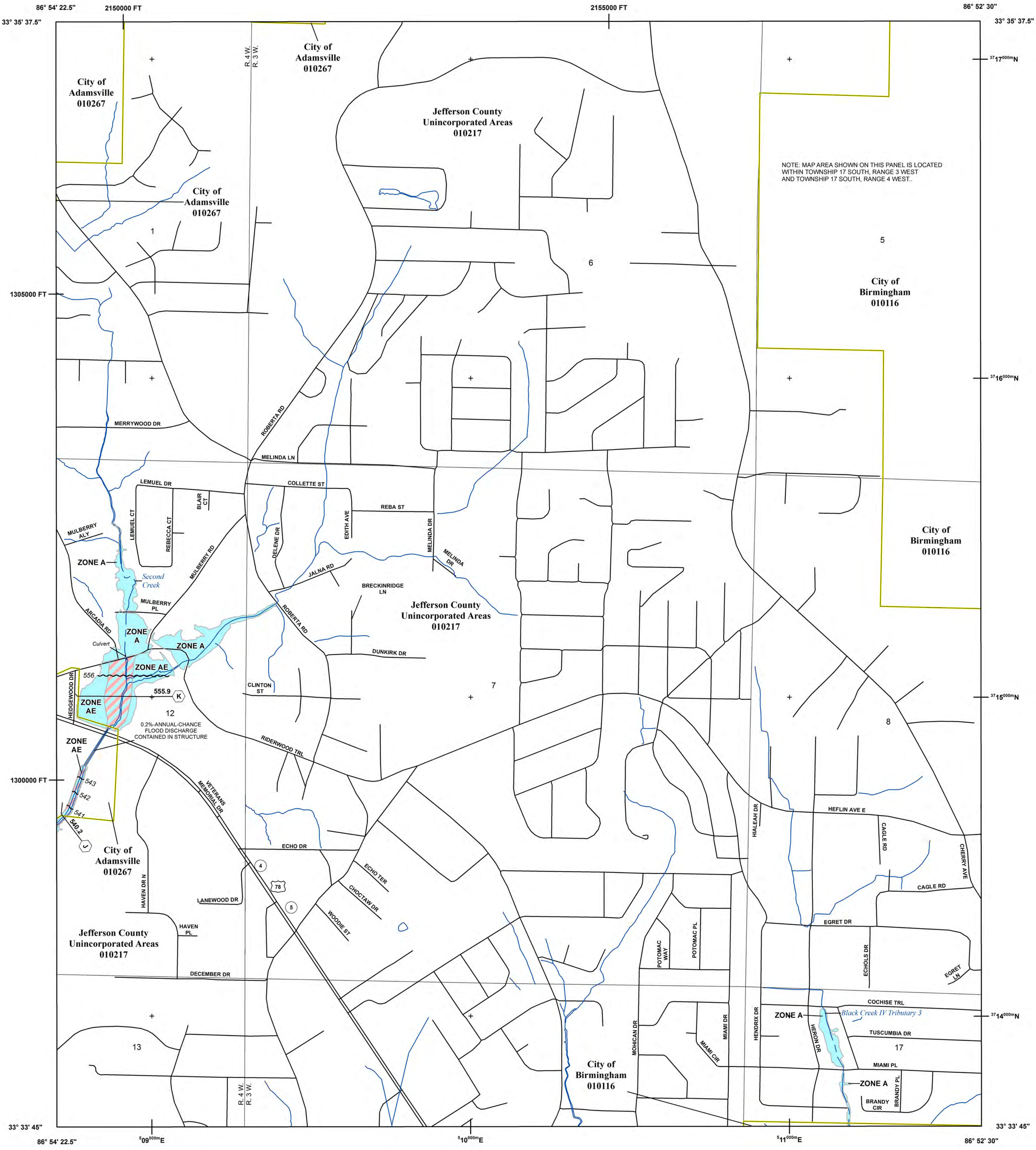
Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
CITY OF ADAMSVILLE	010267	0188	H
CITY OF GRAYSVILLE	010266	0188	H
JEFFERSON COUNTY	010217	0188	H

VERSION NUMBER
2.3.3.3

MAP NUMBER
01073C0188H

MAP REVISED
March 21, 2019



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- Area with Reduced Flood Risk due to Levee See Notes *Zone X*

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
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GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- E 18.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
- 8 Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

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SCALE

N

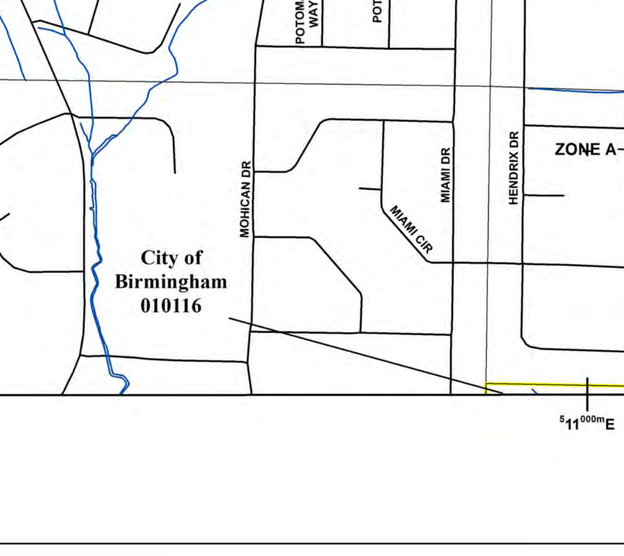
Map Projection:
Universal Transverse Mercator Zone 16N; North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 500 feet 1:6,000

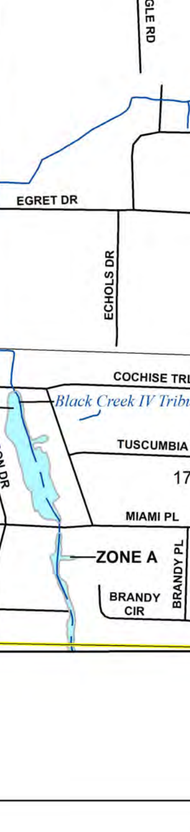
0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



* PANEL NOT PRINTED



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

JEFFERSON COUNTY, ALABAMA

and Incorporated Areas

PANEL 359 OF 755

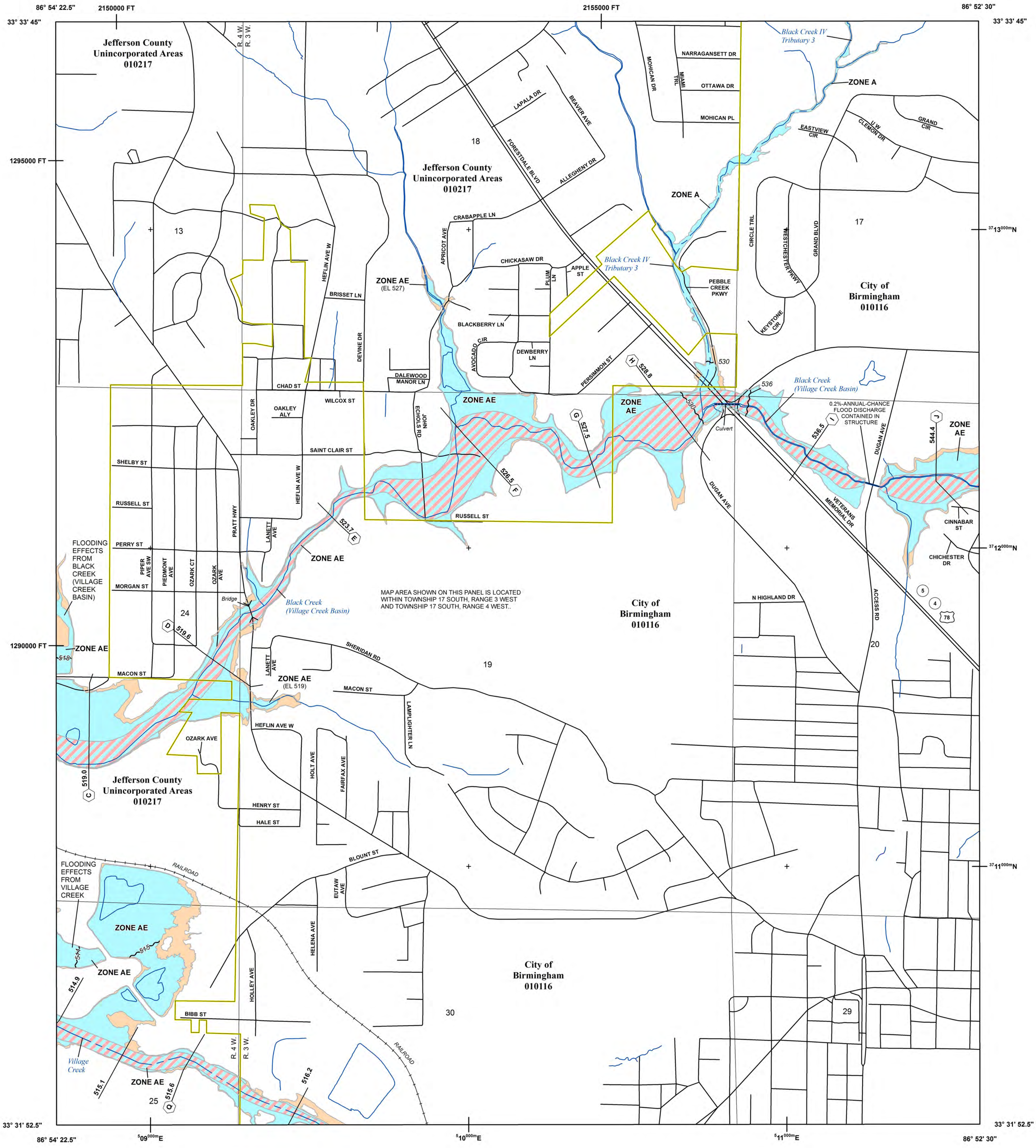
Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
CITY OF ADAMSVILLE	010267	0359	H
CITY OF BIRMINGHAM	010116	0359	H
JEFFERSON COUNTY	010217	0359	H

VERSION NUMBER
2.3.3.3

MAP NUMBER
01073C0359H

MAP REVISED
March 21, 2019



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SCALE

N

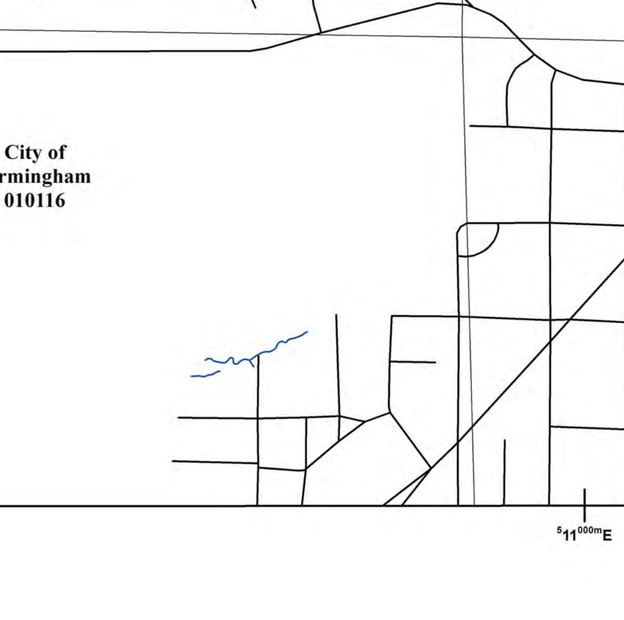
Map Projection:
Universal Transverse Mercator Zone 16N; North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



* PANEL NOT PRINTED

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

JEFFERSON COUNTY, ALABAMA
and Incorporated Areas

PANEL 367 OF 755

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
CITY OF BIRMINGHAM	010116	0367	H
JEFFERSON COUNTY	010217	0367	H

VERSION NUMBER
2.3.3.3

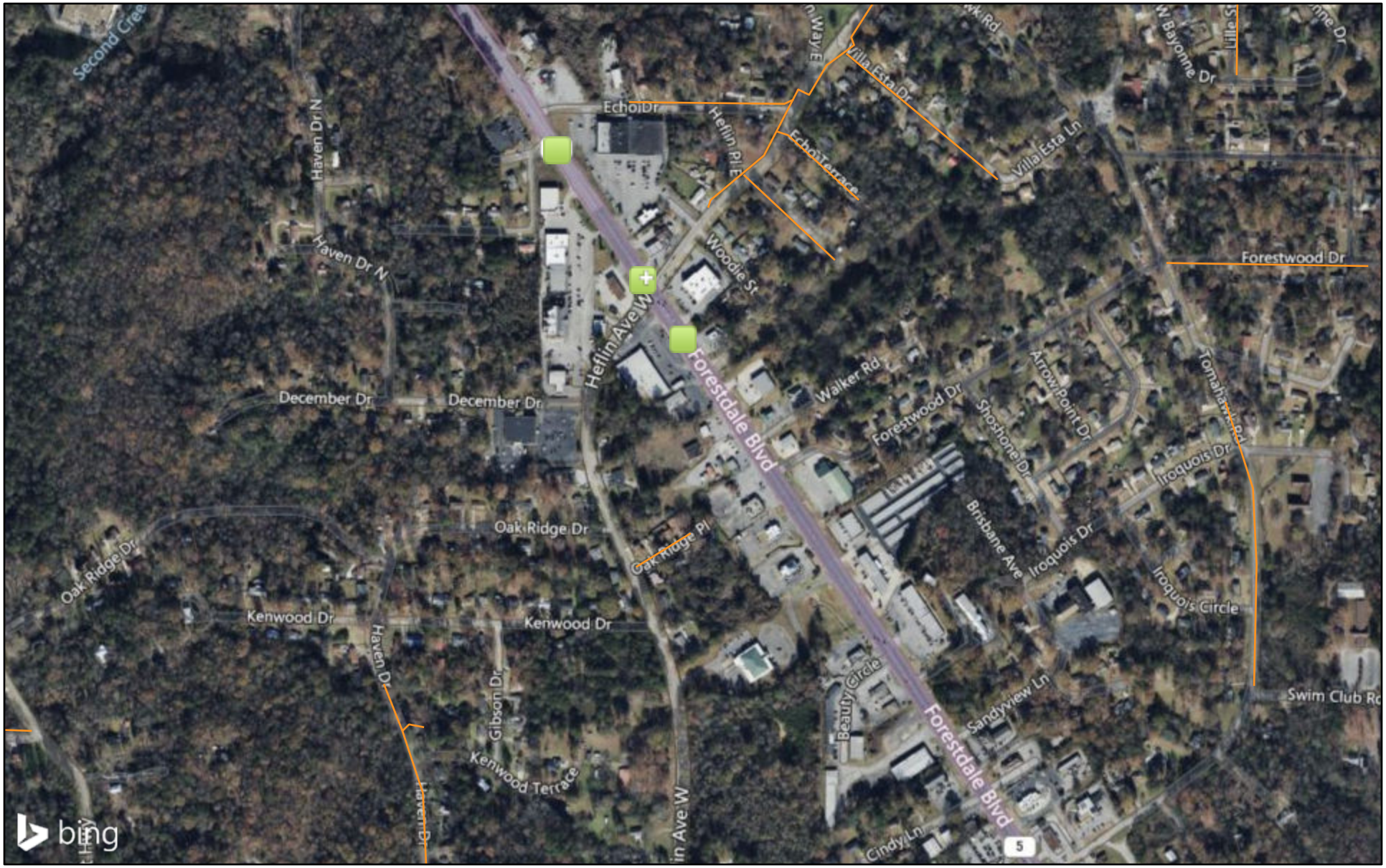
MAP NUMBER
01073C0367H

MAP REVISED
March 21, 2019

Appendix D

Hazardous Materials

Graysville- Forestdale Segment 2



October 12, 2023

Hazardous Waste (RCRAInfo)

graysvillegaslines

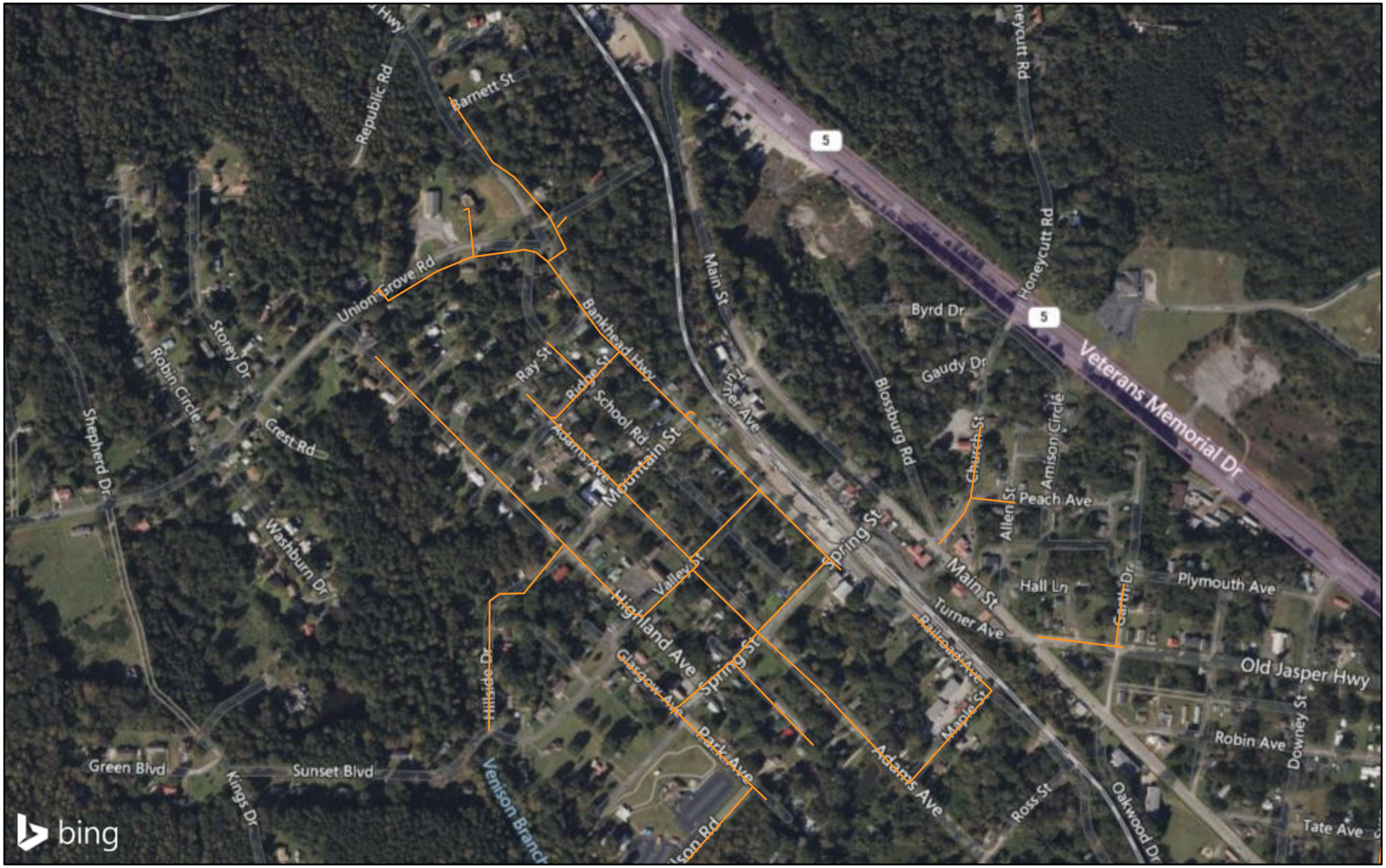
Hazardous Waste (RCRAInfo)

1:9,028

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

Graysville- Adamsville Segment 1



October 12, 2023

graysvillegaslines

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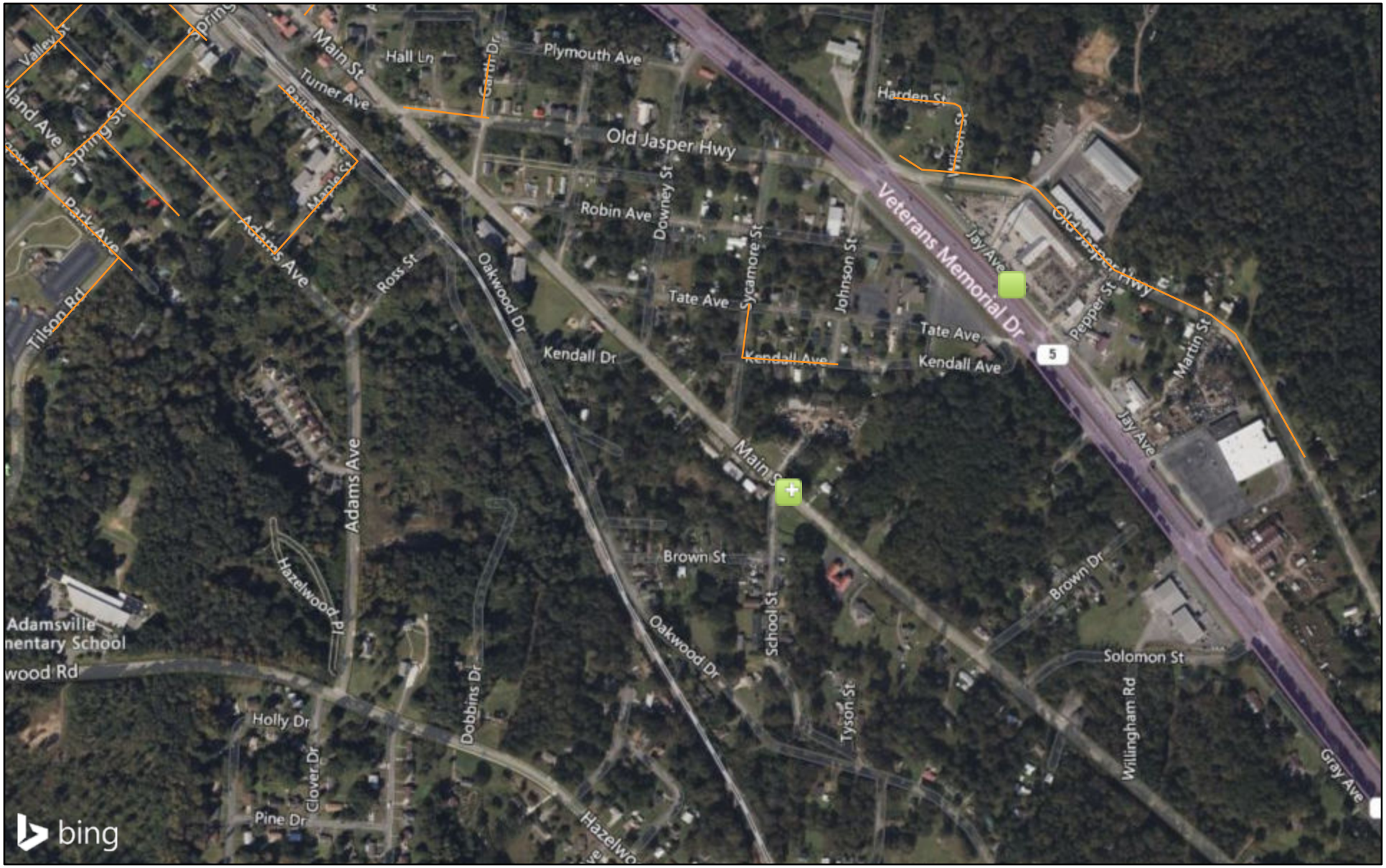
Graysville- Adamsville Segment 1



October 12, 2023

Hazardous Waste (RCRAInfo)

graysvillegaslines

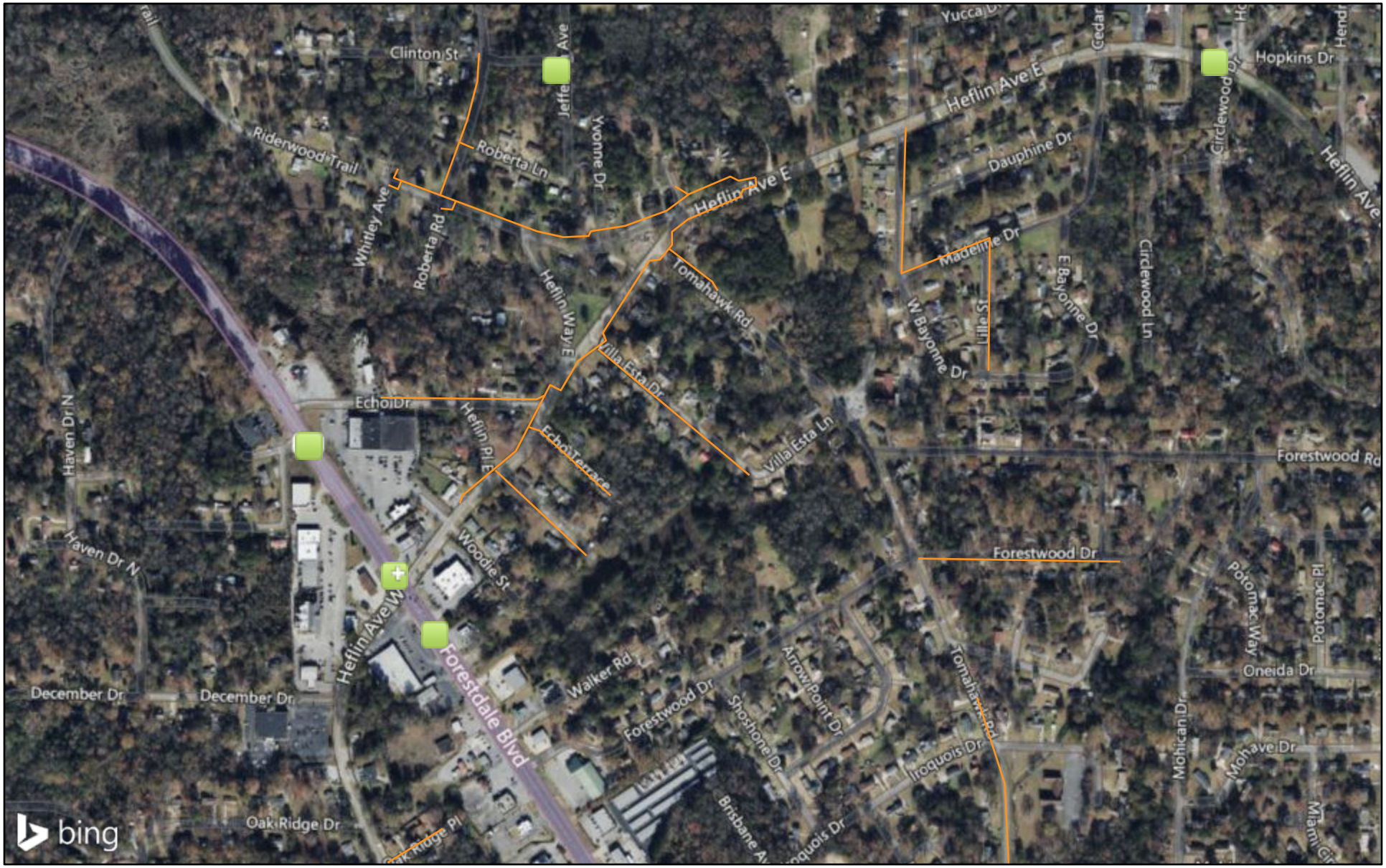
Hazardous Waste (RCRAInfo)

1:9,028

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

Graysville- Forestdale Segment



October 12, 2023

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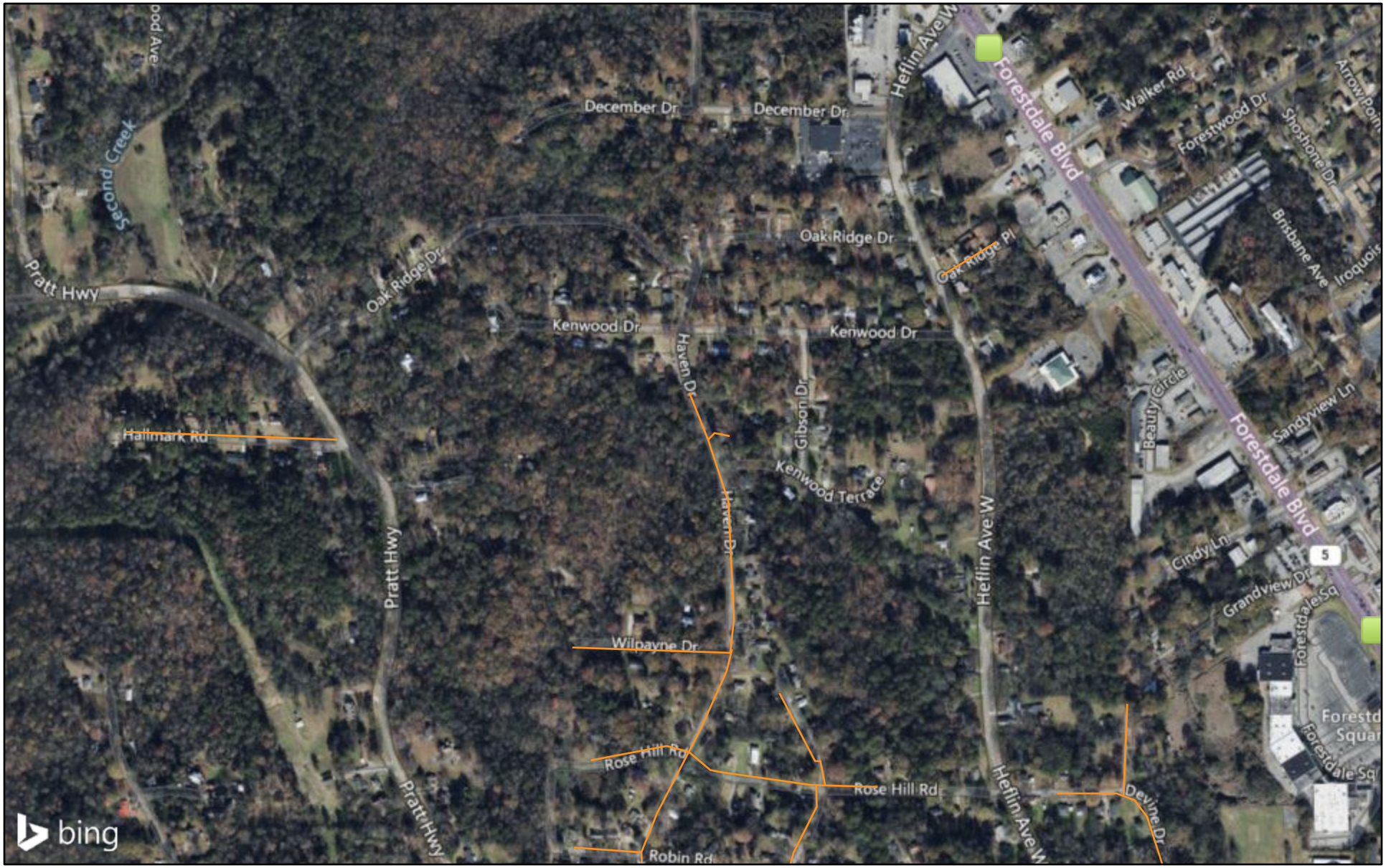
0 0.1 0.2 0.4 km

Graysville- Forestdale Segment 2



October 12, 2023

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graysvillegaslines

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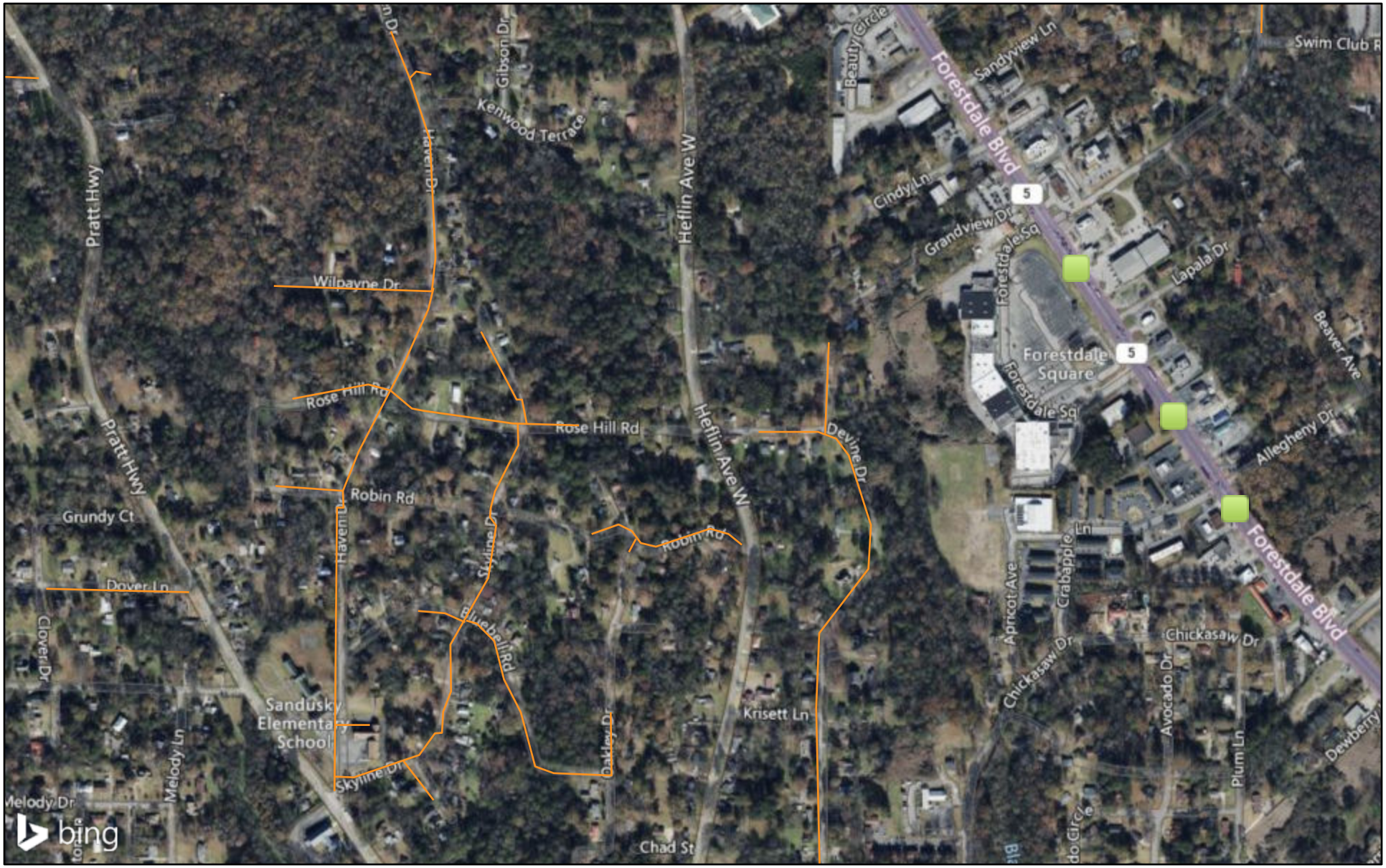

October 12, 2023

Hazardous Waste (RCRAInfo)

graysvillegaslines

1:9,028

0 0.05 0.1 0.2 mi

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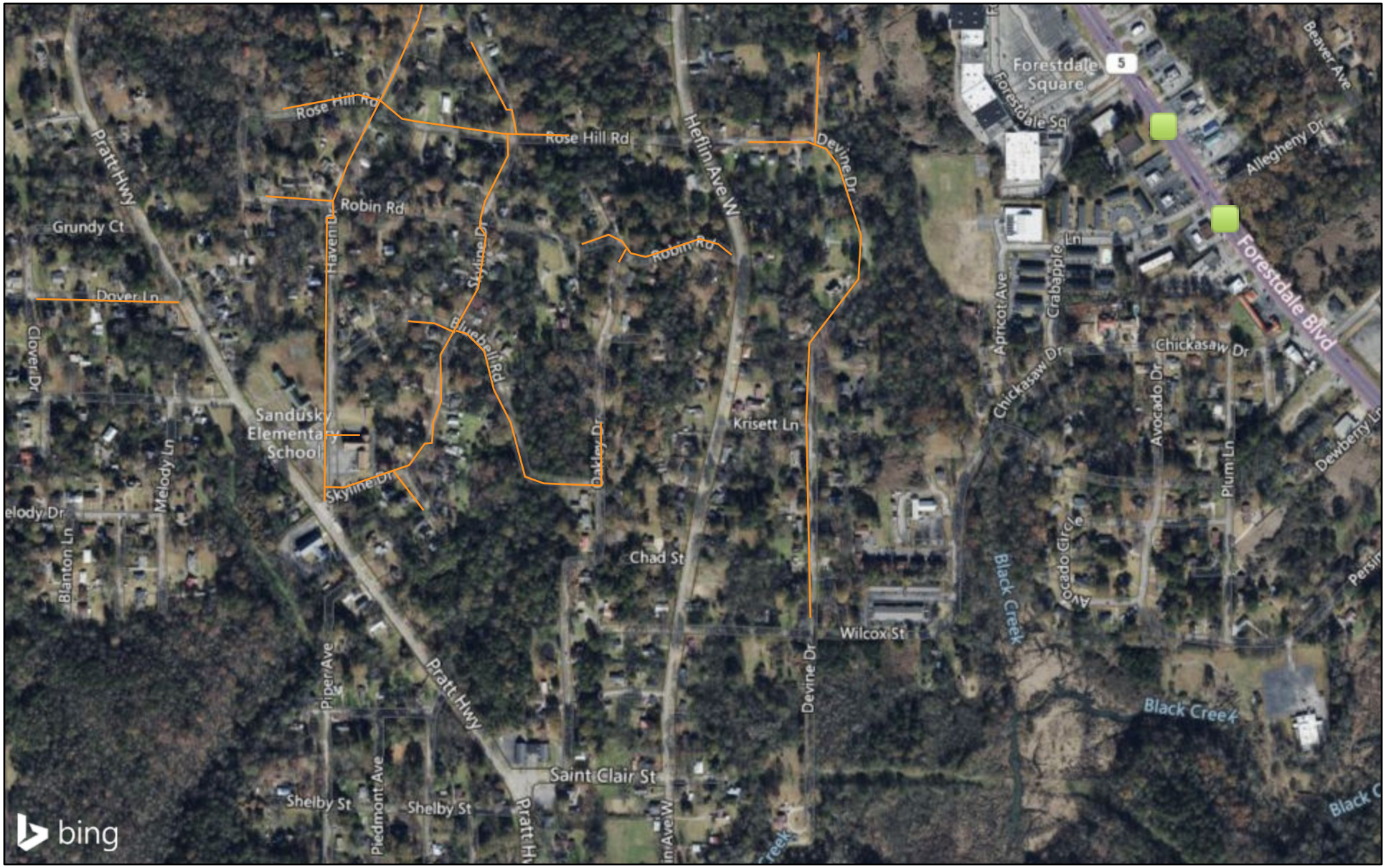
Graysville- Forestdale Segment 2



October 12, 2023

Hazardous Waste (RCRAInfo)

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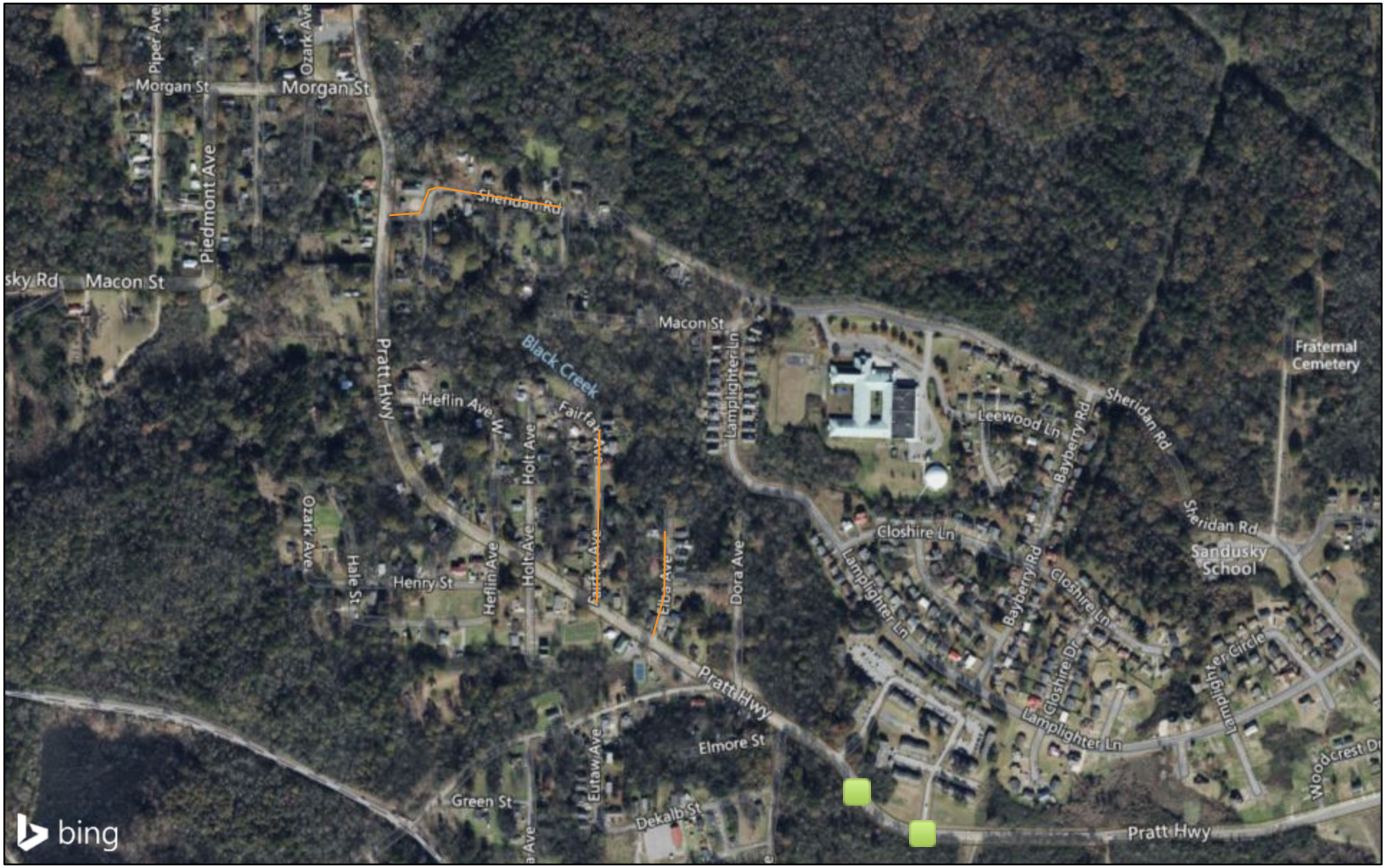

October 12, 2023

Hazardous Waste (RCRAInfo)

graysvillegaslines

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Appendix E

Soils

United States Department of Agriculture

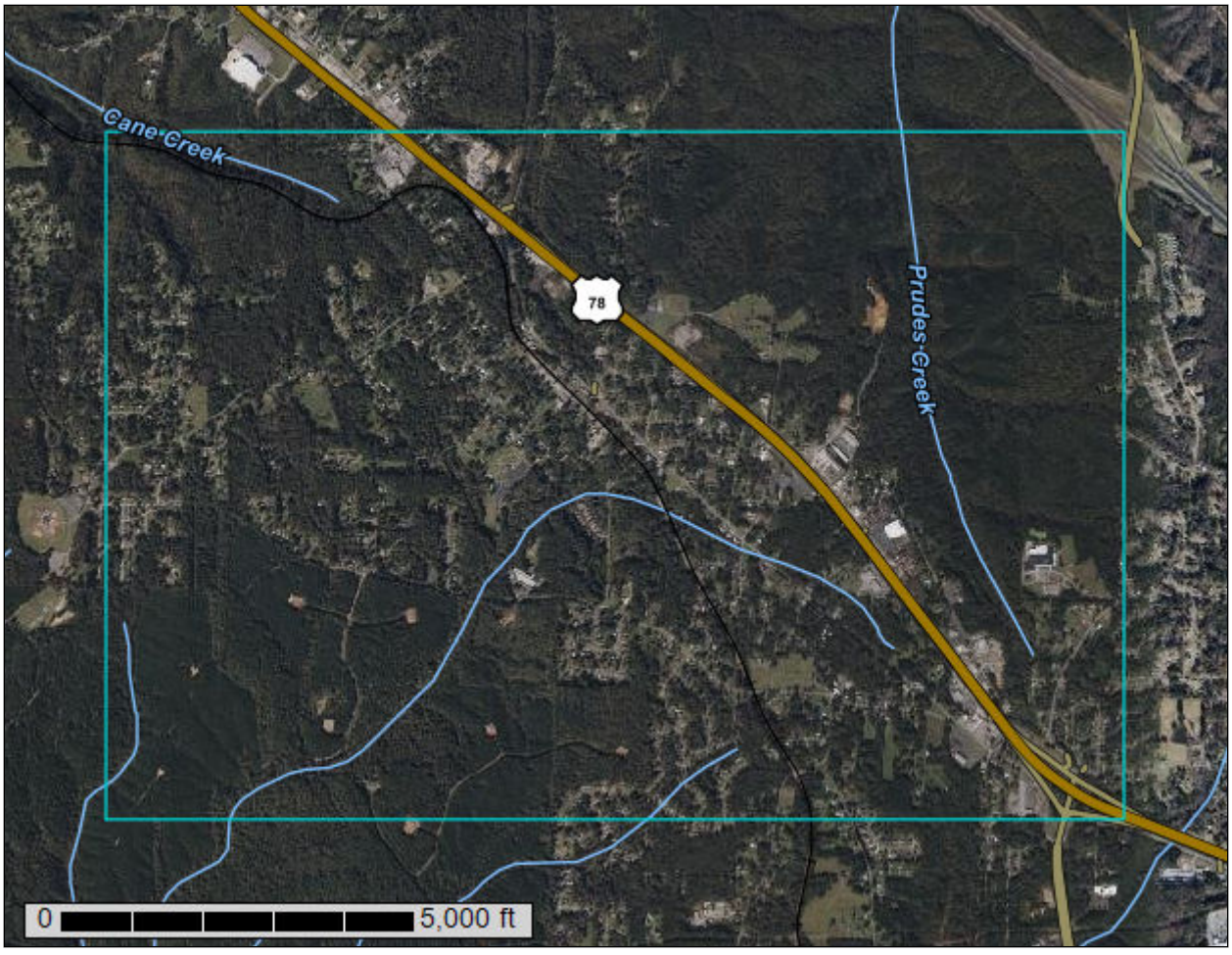
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Jefferson County, Alabama

Area A - Adamsville



October 19, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

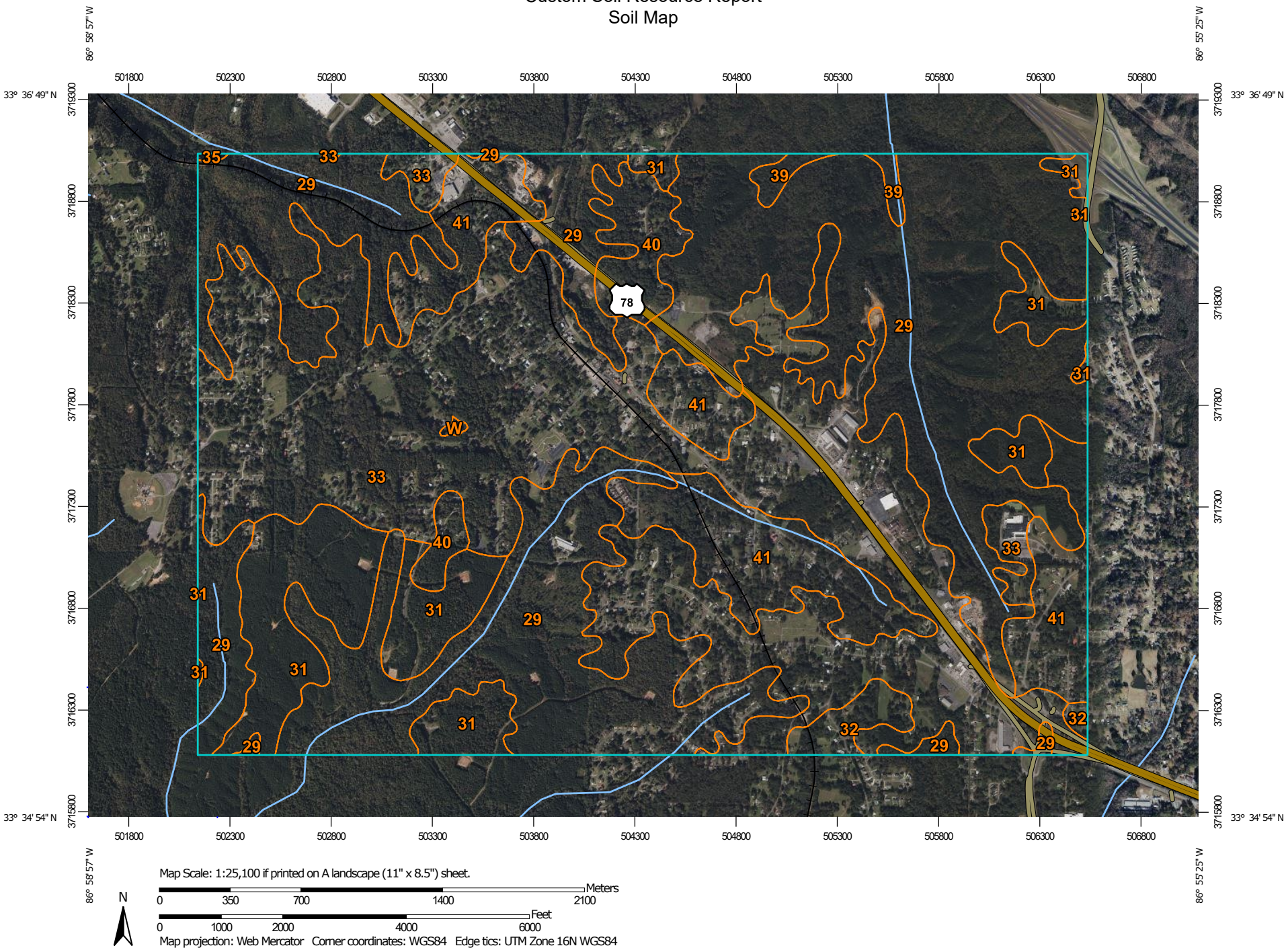
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Jefferson County, Alabama
Survey Area Data: Version 16, Sep 11, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 7, 2019—Dec 22, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
29	Montevallo-Nauvoo association, 6 to 45 percent slopes	1,348.0	41.8%
31	Nauvoo fine sandy loam, 8 to 15 percent slopes	282.2	8.8%
32	Nauvoo-Urban land complex, 2 to 8 percent slopes	33.9	1.1%
33	Nauvoo-Urban land complex, 8 to 15 percent slopes	1,134.2	35.2%
35	Palmerdale complex, steep	1.1	0.0%
39	Sullivan-State complex, 0 to 2 percent slopes	17.0	0.5%
40	Townley-Nauvoo complex, 8 to 15 percent slopes	78.0	2.4%
41	Townley-Urban land complex, 8 to 15 percent slopes	326.9	10.1%
W	Water	1.7	0.1%
Totals for Area of Interest		**3,223.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas

are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Jefferson County, Alabama

29—Montevallo-Nauvoo association, 6 to 45 percent slopes

Map Unit Setting

National map unit symbol: 2s8mt
Elevation: 300 to 980 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Montevallo and similar soils: 45 percent
Nauvoo and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montevallo

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy residuum weathered from shale and siltstone

Typical profile

A - 0 to 6 inches: channery silt loam
B - 6 to 16 inches: very channery silt loam
Cr - 16 to 80 inches: bedrock

Properties and qualities

Slope: 15 to 45 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: F129XY006WV - Steep Shale
Hydric soil rating: No

Description of Nauvoo

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy residuum weathered from sandstone and shale

Typical profile

A - 0 to 12 inches: fine sandy loam
Bt - 12 to 34 inches: clay loam
C - 34 to 46 inches: sandy loam
Cr - 46 to 80 inches: bedrock

Properties and qualities

Slope: 6 to 15 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F129XY006WV - Steep Shale
Hydric soil rating: No

31—Nauvoo fine sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2wc1n
Elevation: 300 to 1,080 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Nauvoo and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nauvoo

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear

Across-slope shape: Convex
Parent material: Loamy residuum weathered from sandstone and shale

Typical profile

A - 0 to 7 inches: fine sandy loam
BE - 7 to 12 inches: fine sandy loam
Bt - 12 to 34 inches: clay loam
C - 34 to 46 inches: sandy loam
Cr - 46 to 80 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F128XY501WV - Thermic Interbedded Sedimentary Uplands
Hydric soil rating: No

32—Nauvoo-Urban land complex, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2wc11
Elevation: 360 to 1,020 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Nauvoo and similar soils: 55 percent
Urban land: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nauvoo

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex

Parent material: Loamy residuum weathered from sandstone and shale

Typical profile

A - 0 to 7 inches: fine sandy loam
BE - 7 to 12 inches: fine sandy loam
Bt - 12 to 34 inches: clay loam
C - 34 to 46 inches: sandy loam
Cr - 46 to 80 inches: bedrock

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F128XY501WV - Thermic Interbedded Sedimentary Uplands
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

33—Nauvoo-Urban land complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2wc10
Elevation: 330 to 1,080 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Nauvoo and similar soils: 55 percent
Urban land: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nauvoo

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy residuum weathered from sandstone and shale

Typical profile

A - 0 to 7 inches: fine sandy loam
BE - 7 to 12 inches: fine sandy loam
Bt - 12 to 34 inches: clay loam
C - 34 to 46 inches: sandy loam
Cr - 46 to 80 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F128XY501WV - Thermic Interbedded Sedimentary Uplands
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

35—Palmerdale complex, steep

Map Unit Setting

National map unit symbol: c2b1
Elevation: 50 to 790 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Palmerdale and similar soils: 70 percent
Minor components: 1 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Palmerdale

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Gravelly mine spoil or earthy fill derived from sandstone and shale

Typical profile

H1 - 0 to 6 inches: very channery silt loam
H2 - 6 to 60 inches: very channery silt loam

Properties and qualities

Slope: 15 to 60 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: F129XY004WV - Mine Spoil
Hydric soil rating: No

Minor Components

Kinston

Percent of map unit: 1 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: Yes

39—Sullivan-State complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: c2b5
Elevation: 20 to 1,300 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Sullivan and similar soils: 50 percent
State and similar soils: 25 percent
Minor components: 1 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sullivan

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loamy alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 39 inches: silt loam
H2 - 39 to 66 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: NoneFrequent
Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B
Ecological site: F128XY502WV - Thermic Floodplain Alluvium
Hydric soil rating: No

Description of State

Setting

Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy alluvium derived from igneous and metamorphic rock

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 40 inches: clay loam
H3 - 40 to 80 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: NoneOccasional
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B
Ecological site: F128XY502WV - Thermic Floodplain Alluvium
Hydric soil rating: No

Minor Components

Kinston

Percent of map unit: 1 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: Yes

40—Townley-Nauvoo complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2sr8k
Elevation: 250 to 900 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Townley and similar soils: 50 percent
Nauvoo and similar soils: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Townley

Setting

Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Clayey residuum weathered from sandstone and shale

Typical profile

A - 0 to 4 inches: silt loam
Bt - 4 to 25 inches: silty clay
Cr - 25 to 80 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: F128XY501WV - Thermic Interbedded Sedimentary Uplands
Hydric soil rating: No

Description of Nauvoo

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy residuum weathered from sandstone and shale

Typical profile

A - 0 to 7 inches: fine sandy loam
BE - 7 to 12 inches: fine sandy loam
Bt - 12 to 34 inches: clay loam
C - 34 to 46 inches: sandy loam
Cr - 46 to 80 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: F128XY501WV - Thermic Interbedded Sedimentary Uplands
Hydric soil rating: No

41—Townley-Urban land complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: c2b8
Elevation: 50 to 1,600 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Townley and similar soils: 45 percent
Urban land: 35 percent
Minor components: 1 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Townley

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Clayey residuum weathered from shale

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 25 inches: silty clay loam
H3 - 25 to 80 inches: weathered bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: F128XY501WV - Thermic Interbedded Sedimentary Uplands
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Minor Components

Kinston

Percent of map unit: 1 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Linear

Hydric soil rating: Yes

W—Water

Map Unit Setting

National map unit symbol: c2bk
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Farmland classification: Not prime farmland

Map Unit Composition

Water: 95 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

United States Department of Agriculture

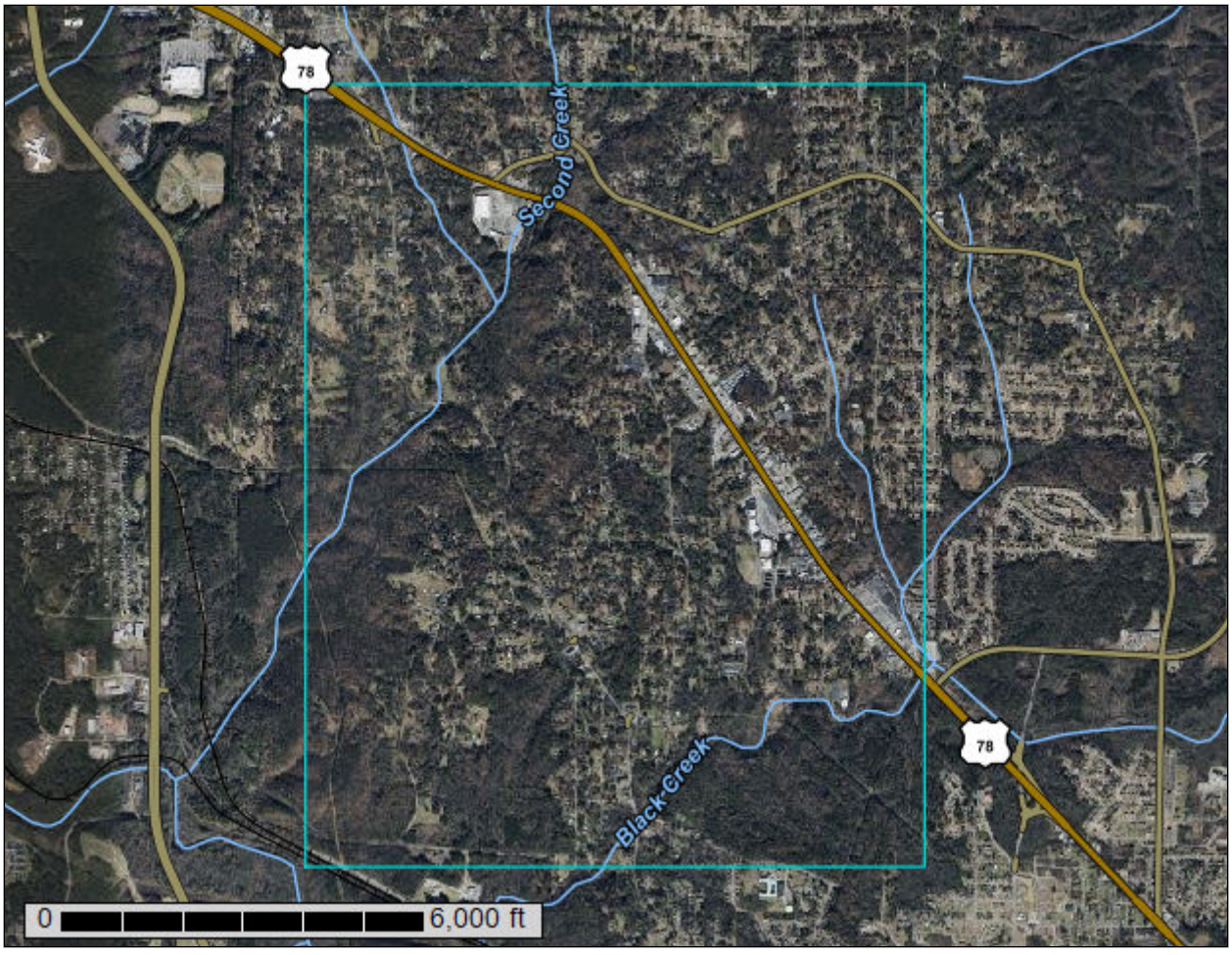
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Jefferson County, Alabama

Area F - Forestdale



October 19, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

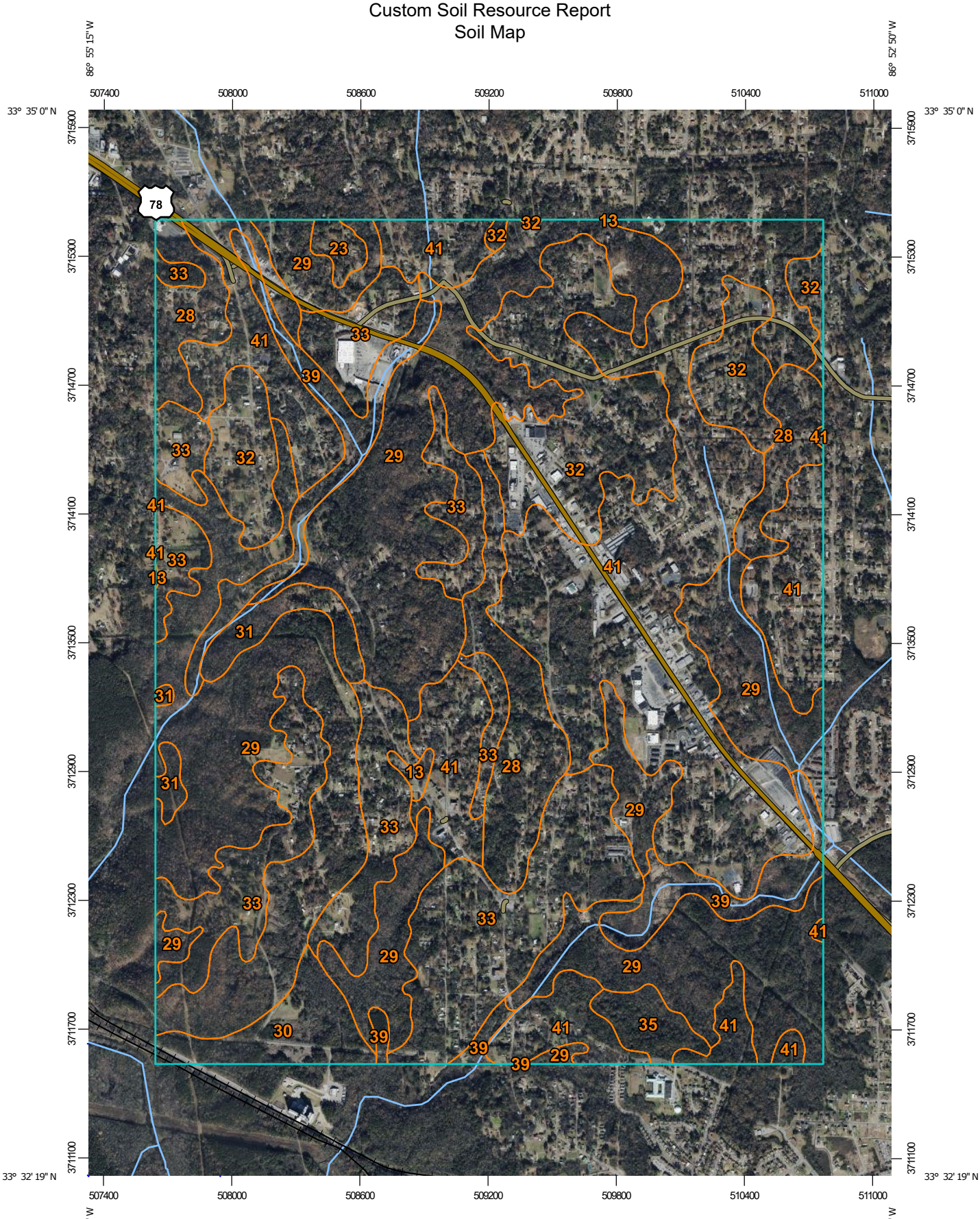
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:24,200 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 350 700 1400 2100

Feet: 0 1000 2000 4000 6000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Jefferson County, Alabama
Survey Area Data: Version 16, Sep 11, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 8, 2020—Mar 8, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
13	Docena complex, 0 to 4 percent slopes	6.2	0.2%
23	Hanceville-Urban land complex, 2 to 8 percent slopes	12.6	0.4%
28	Montevallo-Nauvoo-Urban land complex, 10 to 40 percent slopes	183.3	6.0%
29	Montevallo-Nauvoo association, 6 to 45 percent slopes	988.3	32.4%
30	Nauvoo fine sandy loam, 2 to 8 percent slopes	60.5	2.0%
31	Nauvoo fine sandy loam, 8 to 15 percent slopes	43.6	1.4%
32	Nauvoo-Urban land complex, 2 to 8 percent slopes	299.7	9.8%
33	Nauvoo-Urban land complex, 8 to 15 percent slopes	481.8	15.8%
35	Palmerdale complex, steep	27.7	0.9%
39	Sullivan-State complex, 0 to 2 percent slopes	134.0	4.4%
41	Townley-Urban land complex, 8 to 15 percent slopes	811.6	26.6%
Totals for Area of Interest		**3,049.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called

noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can

be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Jefferson County, Alabama

13—Docena complex, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: c298
Elevation: 200 to 1,200 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Docena and similar soils: 85 percent
Minor components: 1 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Docena

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from shale

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 40 inches: silt loam
H3 - 40 to 58 inches: silty clay loam
H4 - 58 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 11.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Ecological site: F128XY510WV - Thermic Moderately Well Drained Alfic Limestone Uplands
Hydric soil rating: No

Minor Components

Guthrie

Percent of map unit: 1 percent

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

23—Hanceville-Urban land complex, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: c29m
Elevation: 600 to 1,800 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Hanceville and similar soils: 55 percent
Urban land: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanceville

Setting

Landform: Mountains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Clayey residuum weathered from sandstone and shale

Typical profile

H1 - 0 to 9 inches: fine sandy loam
H2 - 9 to 80 inches: clay

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B

Ecological site: F128XY501WV - Thermic Interbedded Sedimentary Uplands
Hydric soil rating: No

Description of Urban Land

Setting
Landform: Mountains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Linear

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

28—Montevallo-Nauvoo-Urban land complex, 10 to 40 percent slopes

Map Unit Setting
National map unit symbol: 2s8mv
Elevation: 390 to 980 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition
Montevallo and similar soils: 35 percent
Nauvoo and similar soils: 20 percent
Urban land: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montevallo

Setting
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy residuum weathered from shale and siltstone

Typical profile
A - 0 to 6 inches: channery silt loam
B - 6 to 16 inches: very channery silt loam
Cr - 16 to 80 inches: bedrock

Properties and qualities
Slope: 25 to 40 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock

Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: F129XY006WV - Steep Shale
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Description of Nauvoo

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy residuum weathered from sandstone and shale

Typical profile

A - 0 to 12 inches: fine sandy loam
Bt - 12 to 34 inches: clay loam
C - 34 to 46 inches: sandy loam
Cr - 46 to 80 inches: bedrock

Properties and qualities

Slope: 10 to 25 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: F129XY006WV - Steep Shale
Hydric soil rating: No

29—Montevallo-Nauvoo association, 6 to 45 percent slopes

Map Unit Setting

National map unit symbol: 2s8mt
Elevation: 300 to 980 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Montevallo and similar soils: 45 percent
Nauvoo and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montevallo

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy residuum weathered from shale and siltstone

Typical profile

A - 0 to 6 inches: channery silt loam
B - 6 to 16 inches: very channery silt loam
Cr - 16 to 80 inches: bedrock

Properties and qualities

Slope: 15 to 45 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: F129XY006WV - Steep Shale
Hydric soil rating: No

Description of Nauvoo

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy residuum weathered from sandstone and shale

Typical profile

A - 0 to 12 inches: fine sandy loam
Bt - 12 to 34 inches: clay loam
C - 34 to 46 inches: sandy loam
Cr - 46 to 80 inches: bedrock

Properties and qualities

Slope: 6 to 15 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F129XY006WV - Steep Shale
Hydric soil rating: No

30—Nauvoo fine sandy loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2wc1r
Elevation: 300 to 850 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Nauvoo and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nauvoo

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy residuum weathered from sandstone and shale

Typical profile

A - 0 to 7 inches: fine sandy loam
BE - 7 to 12 inches: fine sandy loam
Bt - 12 to 34 inches: clay loam
C - 34 to 46 inches: sandy loam
Cr - 46 to 80 inches: bedrock

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F128XY501WV - Thermic Interbedded Sedimentary Uplands
Hydric soil rating: No

31—Nauvoo fine sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2wc1n
Elevation: 300 to 1,080 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Nauvoo and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nauvoo

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy residuum weathered from sandstone and shale

Typical profile

A - 0 to 7 inches: fine sandy loam
BE - 7 to 12 inches: fine sandy loam
Bt - 12 to 34 inches: clay loam
C - 34 to 46 inches: sandy loam
Cr - 46 to 80 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F128XY501WV - Thermic Interbedded Sedimentary Uplands
Hydric soil rating: No

32—Nauvoo-Urban land complex, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2wc11
Elevation: 360 to 1,020 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Nauvoo and similar soils: 55 percent
Urban land: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nauvoo

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy residuum weathered from sandstone and shale

Typical profile

A - 0 to 7 inches: fine sandy loam
BE - 7 to 12 inches: fine sandy loam
Bt - 12 to 34 inches: clay loam
C - 34 to 46 inches: sandy loam
Cr - 46 to 80 inches: bedrock

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F128XY501WV - Thermic Interbedded Sedimentary Uplands
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

33—Nauvoo-Urban land complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2wc10
Elevation: 330 to 1,080 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Nauvoo and similar soils: 55 percent
Urban land: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nauvoo

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy residuum weathered from sandstone and shale

Typical profile

A - 0 to 7 inches: fine sandy loam
BE - 7 to 12 inches: fine sandy loam
Bt - 12 to 34 inches: clay loam
C - 34 to 46 inches: sandy loam
Cr - 46 to 80 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F128XY501WV - Thermic Interbedded Sedimentary Uplands
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

35—Palmerdale complex, steep

Map Unit Setting

National map unit symbol: c2b1
Elevation: 50 to 790 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Palmerdale and similar soils: 70 percent
Minor components: 1 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Palmerdale

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Gravelly mine spoil or earthy fill derived from sandstone and shale

Typical profile

H1 - 0 to 6 inches: very channery silt loam
H2 - 6 to 60 inches: very channery silt loam

Properties and qualities

Slope: 15 to 60 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: F129XY004WV - Mine Spoil
Hydric soil rating: No

Minor Components

Kinston

Percent of map unit: 1 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: Yes

39—Sullivan-State complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: c2b5
Elevation: 20 to 1,300 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Sullivan and similar soils: 50 percent
State and similar soils: 25 percent
Minor components: 1 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sullivan

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loamy alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 39 inches: silt loam
H2 - 39 to 66 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: NoneFrequent
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B
Ecological site: F128XY502WV - Thermic Floodplain Alluvium
Hydric soil rating: No

Description of State

Setting

Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy alluvium derived from igneous and metamorphic rock

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 40 inches: clay loam
H3 - 40 to 80 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: NoneOccasional
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B
Ecological site: F128XY502WV - Thermic Floodplain Alluvium
Hydric soil rating: No

Minor Components

Kinston

Percent of map unit: 1 percent
Landform: Drainageways

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: Yes

41—Townley-Urban land complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: c2b8
Elevation: 50 to 1,600 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Townley and similar soils: 45 percent
Urban land: 35 percent
Minor components: 1 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Townley

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Clayey residuum weathered from shale

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 25 inches: silty clay loam
H3 - 25 to 80 inches: weathered bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: F128XY501WV - Thermic Interbedded Sedimentary Uplands
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Minor Components

Kinston

Percent of map unit: 1 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: Yes

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix F

Biological Resources

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Alabama Ecological Services Field Office
1208 B Main Street
Daphne, AL 36526-4419
Phone: (251) 441-5181 Fax: (251) 441-6222
Email Address: alabama@fws.gov

In Reply Refer To: October 19, 2023
Project Code: 2024-0007005
Project Name: City of Graysville NGDISM Pipeline Replacement

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Project consultation requests may be submitted by mail or email (Alabama@fws.gov). **Ensure that the Project Code in the header of this letter is clearly referenced in any request for consultation or correspondence submitted to our office.**

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Ensure that the Project Code in the header of this letter is clearly referenced with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

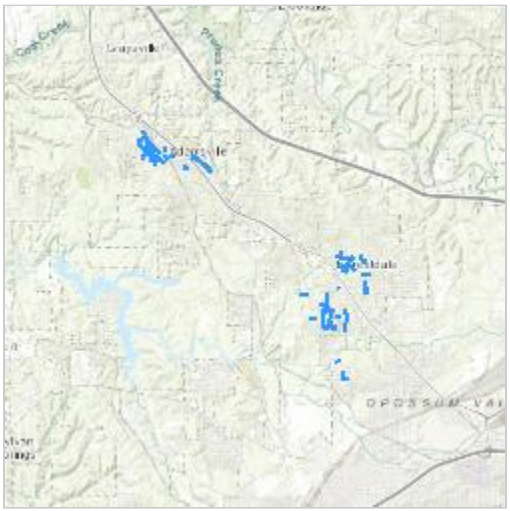
This species list is provided by:

Alabama Ecological Services Field Office
1208 B Main Street
Daphne, AL 36526-4419
(251) 441-5181

PROJECT SUMMARY

Project Code: 2024-0007005
Project Name: City of Graysville NGDISM Pipeline Replacement
Project Type: Distribution Line - Maintenance/Modification - Below Ground
Project Description: Graysville, AL
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.56837295,-86.8889895,14z



Counties: Jefferson County, Alabama

ENDANGERED SPECIES ACT SPECIES

There is a total of 15 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Whooping Crane *Grus americana* Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non-Essential

REPTILES

NAME	STATUS
Alligator Snapping Turtle *Macrochelys temminckii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4658	Proposed Threatened
Flattened Musk Turtle *Sternotherus depressus* Population: Black Warrior R. system upstream from Bankhead Dam No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6961	Threatened

AMPHIBIANS

NAME	STATUS
Black Warrior (=sipsey Fork) Waterdog *Necturus alabamensis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5426	Endangered

FISHES

NAME	STATUS
Cahaba Shiner *Notropis cahabae* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/650	Endangered
Rush Darter *Etheostoma phytophilum* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2779	Endangered
Watercress Darter *Etheostoma nuchale* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1838	Endangered

CLAMS

NAME	STATUS
Finelined Pocketbook *Hamiota altilis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1393	Threatened
Ovate Clubshell *Pleurobema perovatum* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5430	Endangered
Upland Combshell *Epioblasma metastriata* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/317	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Department of Transportation
Name: Elizabeth Williams
Address: 55 Broadway
City: Cambridge
State: MA
Zip: 02142
Email elizabeth.williams1@dot.gov
Phone: 8572599218

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Alabama Ecological Services Field Office
1208 B Main Street
Daphne, AL 36526-4419
Phone: (251) 441-5181 Fax: (251) 441-6222
Email Address: alabama@fws.gov

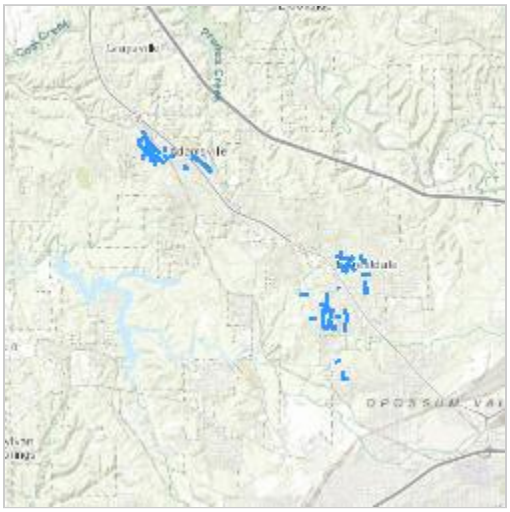
In Reply Refer To: October 19, 2023
Project code: 2024-0007005
Project Name: City of Graysville NGDISM Pipeline Replacement
Please provide this document to the Federal agency or their designee with your loan/grant application.

Subject: Consistency letter for the project named 'City of Graysville NGDISM Pipeline Replacement' for specified threatened and endangered species that may occur in your proposed project location, pursuant to the IPaC determination key titled 'Clearance to Proceed with Federally-Insured Loan and Grant Project Requests'.

To whom it may concern:

On October 19, 2023, Elizabeth Williams used the IPaC determination key 'Clearance to Proceed with Federally-Insured Loan and Grant Project Requests'; dated May 18, 2023, in the U.S. Fish and Wildlife Service's online IPaC tool to evaluate potential impacts to listed species from a project named 'City of Graysville NGDISM Pipeline Replacement' in Jefferson County, Alabama (shown below):

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.56837295,-86.8889895,14z



The following description was provided for the project 'City of Graysville NGDISM Pipeline Replacement':

Graysville, AL

Based on your answers provided, the proposed project is unlikely to have any detrimental effects to federally-listed species or critical habitat. Therefore, per this guidance, Elizabeth Williams has determined that City of Graysville NGDISM Pipeline Replacement will have No Effect on the species listed below.

This letter serves as documentation of your consideration of endangered species, bald eagles, and migratory birds. No further coordination with the Service is necessary.

Please be advised that, if later modifications are made to the project that do not meet the criteria described above, if additional information involving potential effects to listed species becomes available, or if a new species is listed, reinitiation of consultation may be necessary.

AMPHIBIANS

- Black Warrior (=sipsey Fork) Waterdog *Necturus alabamensis* Endangered

BIRDS

- Whooping Crane *Grus americana* Experimental Population, Non-Essential

CLAMS

- Finelined Pocketbook *Hamiota altilis* Threatened
- Ovate Clubshell *Pleurobema perovatum* Endangered
- Upland Combshell *Epioblasma metastriata* Endangered

FISHES

- Cahaba Shiner *Notropis cahabae* Endangered
- Rush Darter *Etheostoma phytophilum* Endangered
- Watercress Darter *Etheostoma nuchale* Endangered

INSECTS

- Monarch Butterfly *Danaus plexippus* Candidate

MAMMALS

- Gray Bat *Myotis grisescens* Endangered
- Indiana Bat *Myotis sodalis* Endangered
- Northern Long-eared Bat *Myotis septentrionalis* Endangered
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

REPTILES

- Alligator Snapping Turtle *Macrochelys temminckii* Proposed Threatened
- Flattened Musk Turtle *Sternotherus depressus* Threatened

ADDITIONAL CONSIDERATIONS FOR NON-FEDERALLY LISTED SPECIES

- **Bald Eagle Nest Issues.** If any of the above-referenced activities (rehabilitation, demolition, or rebuilding) are proposed to occur **within 660 feet** of an active or alternate bald eagle (*Haliaeetus leucocephalus*) nest during the nesting season (October 1 through May 15), we recommend the applicant or their designated agent coordinate with the agency responsible for managing wildlife in their state. For additional information, please visit the Service's regional web page: https://www.fws.gov/service/3-200-71-eagle-take-associated-not-purpose-activity-incidental-take.
- **Migratory Bird Issues.** If any native birds are using the structures for nesting then actions should be taken so as not to disturb the adults, nests, eggs, or chicks as this could lead to a potential violation of the Migratory Bird Treaty Act. If nests are present or any birds are using the structures regularly for roosting purposes, we recommend the applicant or their designated agent coordinate with the appropriate Service's Field Office and visit the Service's Migratory Bird Program website at https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds for recommendations on how impacts can be avoided and minimized.

Elizabeth Williams answered the determination key questions for this project as follows:

1. Does the project intersect Monroe County, FL?

   Automatically answered
   No

2. Is the project exclusively a Federal loan transfer, where the original lending or mortgage institutions for existing project are no longer holding the loan and the property is being transferred via a federally-backed loan?

   *No, this is **not** a Federal loan transfer as described above, or includes activities in addition to a Federal loan transfer.*

3. Does the project include a federally-insured loan or federal grant funding?

   Yes, the project includes a federally-insured loan or federal grant funding.

4. Is the entire site currently developed/hard-surfaced (i.e., the site consists entirely of existing roads, sidewalks, buildings, driveways, etc., and does not contain any undeveloped and/or vegetated areas)?

   No, the site contains some undeveloped and/or vegetated areas.

5. Does the project site overlap designated or proposed critical habitat for any federally listed species?

   Automatically answered
   No

6. Will completion of this project require clearing of **undisturbed** habitat (*e.g.*, native habitat, agricultural areas, pasture, etc.) beyond the original footprint of the existing project?

   *No, this project will **not** require clearing of any undisturbed habitat.*

7. Is the federally-insured loan or federal grant funding being used for demolition, rehabilitation, renovation, and/or rebuilding of one or more existing facilities (*e.g.*, residential, commercial and industrial sites, or utilities)?

   Yes, the project includes Federal funding for work on existing facilities.

8. Will the project significantly alter the present capacity of an existing structure?

   No, this project will not alter the present capacity of any existing structure.

9. Does your project involve structures that are being used by any federally endangered or threatened species (*e.g.*, roosting bonneted bats, denning indigo snakes, etc.) or are there known reports of species using the site?

   *No, the site and/or structure(s) are **not** being used by any federally listed species.*

Attachments:

- Project questionnaire
- Standard manatee construction conditions
- Determination key description: Clearance to Proceed with Federally-Insured Loan and Grant Project Requests
- U.S. Fish & Wildlife Service contact list

PROJECT INFORMATIONAL QUESTIONNAIRE

As part of completing the determination key, Elizabeth Williams provided the following information about their project:

1. Please describe the loan/grant program you are using

   Natural Gas Distribution Infrastructure Safety and Modernization (NGDISM) Grant Program

2. Which Federal Agency is the lead agency providing the funding?

   PHMSA

3. Which types of activities you will be conducting:

   Utilities

4. Which types of structures this funding will address:

   natural gas pipeline

5. Please describe the activity you will be conducting:

   natural gas pipeline replacement

6. How many square feet of facilities will be affected by this project?

   930000

7. Are there bald eagles within 660 feet of the site, or migratory birds or bats using structures on the site?

   None of the above

DETERMINATION KEY DESCRIPTION: CLEARANCE TO PROCEED WITH FEDERALLY-INSURED LOAN AND GRANT PROJECT REQUESTS

This key was last updated in IPaC on May 18, 2023. Keys are subject to periodic revision.

This determination key is for all Federally-insured loans, loan transfers, or grant requests for projects that may be completed without requiring additional clearing of undisturbed habitat beyond the original footprint of the existing project. For the purposes of this key, Federal loan transfers are those transfers where the original lending or mortgage institutions for existing projects are no longer holding the loans and the properties are being transferred via federally backed loans. Projects may include demolition, rehabilitation, renovations, and/or rebuilding of existing structures (*e.g.*, commercial buildings, multi-family housing, single-family housing), and various utilities projects such as water and wastewater treatment facilities, sewer or power line repair, etc.

The U.S. Fish and Wildlife Service is the lead Federal agency charged with the protection and conservation of Federal Trust Resources, such as threatened and endangered species and migratory birds, in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 et seq.), the Bald and Golden Eagle Protection Act, (16 U.S.C. 668-668d) (Eagle Act), and the Migratory Bird Treaty Act (40 Stat. 755; 16 U.S.C. 701 et seq.).

Recently, many Federal agencies have activated programs that have resulted in an increased consumer demand to initiate projects through federally-backed loans and grants, all of which require those same Federal agencies to comply with Section 7 of the Act. Consequently, we have experienced an increase in the number of requests for review of these government-backed loan and grant projects. These include, but are not limited to:

1. U.S. Department of Housing and Urban Development’s (HUD) Neighborhood Stabilization and Community Development Block Grant programs, which may be managed by Florida’s Department of Economic Opportunity;

2. U.S. Department of Energy’s (DOE) Energy Efficiency and Renewable Energy program;

3. U.S. Department of Agriculture’s (USDA) Housing Assistance and Rural Development Loan and Grant Assistance programs;

4. U.S. Federal Aviation Administration (FAA) regulatory airport and runway modifications;

5. U.S. Federal Emergency Management Agency’s (FEMA) Hazard Mitigation Assistance program; and

6. U.S. Environmental Protection Agency’s (EPA) Clean Water State Revolving Fund.

In order to fulfill the Act’s statutory obligations in a timely and consistent manner, and to assist Federal agencies, State and local governments, and consultants in addressing Section 7 and National Environmental Policy Act (NEPA) environmental impact review requirements, we provide the following guidance and clearance relative to the criteria stated below for Federally-insured loan and grant project requests.

This guidance is based on the signed letters:
U.S. Fish and Wildlife Service Clearance to Proceed with Federally-Insured Loan and Grant Project Requests in Florida.
U.S. Fish and Wildlife Service Clearance to Proceed with Federally-Insured Loan and Grant Project Requests in Alabama, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee.

IPAC USER CONTACT INFORMATION

Agency: Department of Transportation
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Address: 55 Broadway
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State: MA
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Email elizabeth.williams1@dot.gov
Phone: 8572599218

Alabama Natural Heritage Program - State Species

Source: https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/index.htm (11/6/23)

TAX_GROUP	SCIENTIFIC_NAME	COMMON_NAME	G_RANK	S_RANK	FED_STATUS	STATE_STATUS	COUNTIES
Freshwater Mussels	Amblema plicata	Threeridge	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Amblema plicata	Threeridge	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Amblema plicata	Threeridge	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Amblema plicata	Threeridge	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Amblema plicata	Threeridge	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Amblema plicata	Threeridge	G5	S5		CHM	Jefferson (AL)
Spiders and other Chelicerates	Aphrastochthonius pecki	A Cave Obligate Pseudoscorpion	G1	S1			Jefferson (AL)
Spiders and other Chelicerates	Appaleptoneta jonesi	A Cave Spider	G1	S1			Jefferson (AL)
Dragonflies and Damselflies	Argia plana	Springwater Dancer	G5	S1			Jefferson (AL)
Dicots	Berberis canadensis	American Barberry	G3G4	S1			Jefferson (AL)
Dicots	Bigelowia nuttallii	Nuttall's Rayless Goldenrod	G3G4	S3			Jefferson (AL)
Crayfishes	Cambarus ludovicianus	Painted Devil Crayfish	G5	S2			Jefferson (AL)
Crayfishes	Cambarus ludovicianus	Painted Devil Crayfish	G5	S2			Jefferson (AL)
Crayfishes	Cambarus ludovicianus	Painted Devil Crayfish	G5	S2			Jefferson (AL)
Monocots	Carex decomposita	Cypress-knee Sedge	G3G4	S1			Jefferson (AL)
Caddisflies	Cheumatopsyche cahaba	Caddisfly	G1	S1			Jefferson (AL)

State Status Codes*: SP- State Protected, PSM- Partial Status Mussels, CHM- Commercially Harvestable Mussel

*https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/about_data/state.htm

Dicots	Cladrastis kentukea	Yellowwood	G4	S3			Jefferson (AL)
Dicots	Clinopodium glabellum	Ozark Savory	G3Q	S1			Jefferson (AL)
Dicots	Cuscuta harperi	Harper's Dodder	G2G3	S2			Jefferson (AL)
Freshwater Mussels	Cyclonaias asperata	Alabama Orb	G4	S5		PSM	Jefferson (AL)
Freshwater Mussels	Cyclonaias asperata	Alabama Orb	G4	S5		PSM	Jefferson (AL)
Freshwater Mussels	Cyclonaias asperata	Alabama Orb	G4	S5		PSM	Jefferson (AL)
Freshwater Mussels	Cyclonaias asperata	Alabama Orb	G4	S5		PSM	Jefferson (AL)
Freshwater Mussels	Cyclonaias asperata	Alabama Orb	G4	S5		PSM	Jefferson (AL)
Freshwater Mussels	Cyclonaias asperata	Alabama Orb	G4	S5		PSM	Jefferson (AL)
Freshwater Mussels	Cyclonaias asperata	Alabama Orb	G4	S5		PSM	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Cyprinella caerulea	Blue Shiner	G2	S1	LT	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Cyprinella caerulea	Blue Shiner	G2	S1	LT	SP	Jefferson (AL)
Dicots	Dalea foliosa	Leafy Prairie Clover	G2G3	S1	LE		Jefferson (AL)

Dicots	Delphinium alabamicum	Alabama Larkspur	G3	S3			Jefferson (AL)
Freshwater Snails	Elimia cahawbensis	Cahaba Elimia	G4	S4			Jefferson (AL)
Freshwater Snails	Elimia cahawbensis	Cahaba Elimia	G4	S4			Jefferson (AL)
Freshwater Snails	Elimia cahawbensis	Cahaba Elimia	G4	S4			Jefferson (AL)
Freshwater Snails	Elimia cahawbensis	Cahaba Elimia	G4	S4			Jefferson (AL)
Freshwater Snails	Elimia cahawbensis	Cahaba Elimia	G4	S4			Jefferson (AL)
Freshwater Snails	Elimia cahawbensis	Cahaba Elimia	G4	S4			Jefferson (AL)
Freshwater Snails	Elimia cahawbensis	Cahaba Elimia	G4	S4			Jefferson (AL)
Freshwater Snails	Elimia cahawbensis	Cahaba Elimia	G4	S4			Jefferson (AL)
Freshwater Snails	Elimia cahawbensis	Cahaba Elimia	G4	S4			Jefferson (AL)
Freshwater Snails	Elimia cahawbensis	Cahaba Elimia	G4	S4			Jefferson (AL)
Freshwater Snails	Elimia cahawbensis	Cahaba Elimia	G4	S4			Jefferson (AL)
Freshwater Snails	Elimia carinifera	Sharp-crest Elimia	G5	S5			Jefferson (AL)
Freshwater Snails	Elimia carinifera	Sharp-crest Elimia	G5	S5			Jefferson (AL)
Freshwater Snails	Elimia carinifera	Sharp-crest Elimia	G5	S5			Jefferson (AL)
Freshwater Snails	Elimia carinocostata	Fluted Elimia	G4Q	S4			Jefferson (AL)
Freshwater Snails	Elimia carinocostata	Fluted Elimia	G4Q	S4			Jefferson (AL)

Alabama Natural Heritage Program - State Species

Source: https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/index.htm (11/6/23)

Freshwater Snails	Elimia carinocostata	Fluted Elimia	G4Q	S4			Jefferson (AL)
Freshwater Snails	Elimia carinocostata	Fluted Elimia	G4Q	S4			Jefferson (AL)
Freshwater Snails	Elimia carinocostata	Fluted Elimia	G4Q	S4			Jefferson (AL)
Freshwater Snails	Elimia clara	Riffle Elimia	G3	S3			Jefferson (AL)
Freshwater Snails	Elimia clara	Riffle Elimia	G3	S3			Jefferson (AL)
Freshwater Snails	Elimia clara	Riffle Elimia	G3	S3			Jefferson (AL)
Freshwater Snails	Elimia clara	Riffle Elimia	G3	S3			Jefferson (AL)
Freshwater Snails	Elimia clara	Riffle Elimia	G3	S3			Jefferson (AL)
Freshwater Mussels	Ellipsaria lineolata	Butterfly	G4G5	S4		PSM	Jefferson (AL)
Freshwater Mussels	Elliptio arctata	Delicate Spike	G2G3Q	S2	UR	PSM	Jefferson (AL)
Freshwater Mussels	Elliptio arctata	Delicate Spike	G2G3Q	S2	UR	PSM	Jefferson (AL)
Freshwater Mussels	Elliptio crassidens	Elephantear	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Elliptio crassidens	Elephantear	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Elliptio crassidens	Elephantear	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Epioblasma metastriata	Upland Combshell	GH	SX	LE	SP	Jefferson (AL)
Horsetails	Equisetum arvense	Field Horsetail	G5	S2			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma chermocki	Vermilion Darter	G1	S1		SP	Jefferson (AL)

State Status Codes*: SP- State Protected, PSM- Partial Status Mussels, CHM- Commercially Harvestable Mussel

*https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/about_data/state.htm

Alabama Natural Heritage Program - State Species
Source: https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/index.htm (11/6/23)

Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma chermocki	Vermilion Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma chermocki	Vermilion Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma chermocki	Vermilion Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma chermocki	Vermilion Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma chermocki	Vermilion Darter	G1	S1	LE	SP	Jefferson (AL)

State Status Codes*: SP- State Protected, PSM- Partial Status Mussels, CHM- Commercially Harvestable Mussel

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Alabama Natural Heritage Program - State Species

Source: https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/index.htm (11/6/23)

Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma chermocki	Vermilion Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma chermocki	Vermilion Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma chermocki	Vermilion Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma chermocki	Vermilion Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma chermocki	Vermilion Darter	G1	S1	LE	SP	Jefferson (AL)

State Status Codes*: SP- State Protected, PSM- Partial Status Mussels, CHM- Commercially Harvestable Mussel

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Alabama Natural Heritage Program - State Species
Source: https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/index.htm (11/6/23)

Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma chermocki	Vermilion Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma chermocki	Vermilion Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma chermocki	Vermilion Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma chermocki	Vermilion Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma chermocki	Vermilion Darter	G1	S1	LE	SP	Jefferson (AL)

State Status Codes*: SP- State Protected, PSM- Partial Status Mussels, CHM- Commercially Harvestable Mussel

*https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/about_data/state.htm

Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma douglasi	Tuskaloosa Darter	G3	S3			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma douglasi	Tuskaloosa Darter	G3	S3			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma douglasi	Tuskaloosa Darter	G3	S3			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma douglasi	Tuskaloosa Darter	G3	S3			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma douglasi	Tuskaloosa Darter	G3	S3			Jefferson (AL)

Alabama Natural Heritage Program - State Species
Source: https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/index.htm (11/6/23)

Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma douglasi	Tuskaloosa Darter	G3	S3			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma douglasi	Tuskaloosa Darter	G3	S3			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma douglasi	Tuskaloosa Darter	G3	S3			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma douglasi	Tuskaloosa Darter	G3	S3			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma douglasi	Tuskaloosa Darter	G3	S3			Jefferson (AL)

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*https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/about_data/state.htm

Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma douglasi	Tuskaloosa Darter	G3	S3			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma douglasi	Tuskaloosa Darter	G3	S3			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma nuchale	Watercress Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma nuchale	Watercress Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma nuchale	Watercress Darter	G1	S1	LE	SP	Jefferson (AL)

Alabama Natural Heritage Program - State Species
Source: https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/index.htm (11/6/23)

Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma nuchale	Watercress Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma nuchale	Watercress Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma nuchale	Watercress Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma phytophilum	Rush Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma phytophilum	Rush Darter	G1	S1	LE	SP	Jefferson (AL)

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Alabama Natural Heritage Program - State Species

Source: https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/index.htm (11/6/23)

Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma phytophilum	Rush Darter	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma rupestre	Rock Darter	G4	S4			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma rupestre	Rock Darter	G4	S4			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma rupestre	Rock Darter	G4	S4			Jefferson (AL)
Dicots	Euonymus atropurpureus	Wahoo	G5	S3			Jefferson (AL)
Dicots	Euonymus atropurpureus	Wahoo	G5	S3			Jefferson (AL)
Dicots	Frasera caroliniensis	Carolina Gentian	G5	S2			Jefferson (AL)
Freshwater Mussels	Fusconaia cerina	Gulf Pigtoe	G5	S4		PSM	Jefferson (AL)
Freshwater Mussels	Hamiota altilis	Finelined Pocketbook	G2G3	S2	LT	SP	Jefferson (AL)

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Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Hybopsis winchelli	Clear Chub	G5	S5			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Hybopsis winchelli	Clear Chub	G5	S5			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Hybopsis winchelli	Clear Chub	G5	S5			Jefferson (AL)
Caddisflies	Hydropsyche hageni	A Caddisfly	G5	S2			Jefferson (AL)
Monocots	Hymenocallis coronaria	Shoals Spider-lily	G3?	S2			Jefferson (AL)
Monocots	Hymenocallis coronaria	Shoals Spider-lily	G3?	S2			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Ichthyomyzon castaneus	Chestnut Lamprey	G4	S4			Jefferson (AL)

Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Ichthyomyzon castaneus	Chestnut Lamprey	G4	S4			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Ichthyomyzon castaneus	Chestnut Lamprey	G4	S4			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Ichthyomyzon castaneus	Chestnut Lamprey	G4	S4			Jefferson (AL)
Freshwater Mussels	Lampsilis ornata	Southern Pocketbook	G5	S4		PSM	Jefferson (AL)
Freshwater Mussels	Lampsilis ornata	Southern Pocketbook	G5	S4		PSM	Jefferson (AL)
Freshwater Mussels	Lampsilis ornata	Southern Pocketbook	G5	S4		PSM	Jefferson (AL)
Freshwater Mussels	Lampsilis ornata	Southern Pocketbook	G5	S4		PSM	Jefferson (AL)
Freshwater Mussels	Lampsilis ornata	Southern Pocketbook	G5	S4		PSM	Jefferson (AL)
Freshwater Mussels	Lampsilis ornata	Southern Pocketbook	G5	S4		PSM	Jefferson (AL)
Freshwater Mussels	Lampsilis ornata	Southern Pocketbook	G5	S4		PSM	Jefferson (AL)

Alabama Natural Heritage Program - State Species
Source: https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/index.htm (11/6/23)

Reptiles	Pituophis melanoleucus melanoleucus	Northern Pinesnake	G4T4	S3	SC	SP	Jefferson (AL)
Freshwater Mussels	Lampsilis teres	Yellow Sandshell	G5	S5		PSM	Jefferson (AL)
Freshwater Mussels	Lampsilis teres	Yellow Sandshell	G5	S5		PSM	Jefferson (AL)
Freshwater Mussels	Lampsilis teres	Yellow Sandshell	G5	S5		PSM	Jefferson (AL)
Freshwater Mussels	Lasmigona alabamensis	Alabama Heelsplitter	G3	S3		PSM	Jefferson (AL)
Freshwater Mussels	Lasmigona alabamensis	Alabama Heelsplitter	G3	S3		PSM	Jefferson (AL)
Freshwater Mussels	Lasmigona alabamensis	Alabama Heelsplitter	G3	S3		PSM	Jefferson (AL)
Freshwater Mussels	Lasmigona alabamensis	Alabama Heelsplitter	G3	S3		PSM	Jefferson (AL)
Dicots	Leavenworthia exigua var. lutea	Pasture Glade-cress	G4T1	S1			Jefferson (AL)
Dicots	Leavenworthia exigua var. lutea	Pasture Glade-cress	G4T1	S1			Jefferson (AL)
Freshwater Mussels	Leptodea fragilis	Fragile Papershell	G5	S5		PSM	Jefferson (AL)
Freshwater Mussels	Leptodea fragilis	Fragile Papershell	G5	S5		PSM	Jefferson (AL)
Freshwater Mussels	Leptodea fragilis	Fragile Papershell	G5	S5		PSM	Jefferson (AL)
Freshwater Mussels	Leptodea fragilis	Fragile Papershell	G5	S5		PSM	Jefferson (AL)
Freshwater Mussels	Leptodea fragilis	Fragile Papershell	G5	S5		PSM	Jefferson (AL)
Freshwater Mussels	Leptodea fragilis	Fragile Papershell	G5	S5		PSM	Jefferson (AL)

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Alabama Natural Heritage Program - State Species

Source: https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/index.htm (11/6/23)

Freshwater Mussels	Leptodea fragilis	Fragile Papershell	G5	S5		PSM	Jefferson (AL)
Freshwater Mussels	Leptodea fragilis	Fragile Papershell	G5	S5		PSM	Jefferson (AL)
Freshwater Mussels	Leptodea fragilis	Fragile Papershell	G5	S5		PSM	Jefferson (AL)
Freshwater Mussels	Ligumia recta	Black Sandshell	G4G5	S2		PSM	Jefferson (AL)
Monocots	Listera australis	Southern Twayblade	G4	S3			Jefferson (AL)
Dicots	Neviusia alabamensis	Alabama Snow-wreath	G3	S2			Jefferson (AL)
Dicots	Neviusia alabamensis	Alabama Snow-wreath	G3	S2			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Notropis asperifrons	Burrhead Shiner	G4	S4			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Notropis asperifrons	Burrhead Shiner	G4	S4			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Notropis asperifrons	Burrhead Shiner	G4	S4			Jefferson (AL)

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Alabama Natural Heritage Program - State Species

Source: https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/index.htm (11/6/23)

Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Notropis cahabae	Cahaba Shiner	G2	S2	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Notropis cahabae	Cahaba Shiner	G2	S2	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Notropis cahabae	Cahaba Shiner	G2	S2	LE	SP	Jefferson (AL)
Freshwater Mussels	Obliquaria reflexa	Threehorn Wartyback	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Obliquaria reflexa	Threehorn Wartyback	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Obliquaria reflexa	Threehorn Wartyback	G5	S5		CHM	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Percina brevicauda	Coal Darter	G2	S2			Jefferson (AL)

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Alabama Natural Heritage Program - State Species
Source: https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/index.htm (11/6/23)

Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Percina brevicauda	Coal Darter	G2	S2			Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Percina brevicauda	Coal Darter	G2	S2	UR		Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Percina brevicauda	Coal Darter	G2	S2	UR		Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Percina brevicauda	Coal Darter	G2	S2	UR		Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Percina brevicauda	Coal Darter	G2	S2	UR		Jefferson (AL)

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*https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/about_data/state.htm

Alabama Natural Heritage Program - State Species
Source: https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/index.htm (11/6/23)

Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Percina brevicauda	Coal Darter	G2	S2	UR		Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Percina shumardi	River Darter	G5	S3			Jefferson (AL)
Dicots	Phemeranthus mengesii	Menge's Fame-flower	G3	S3			Jefferson (AL)
Amphibians	Plethodon websteri	Webster's Salamander	G3G4	S3			Jefferson (AL)
Freshwater Mussels	Pleurobema decisum	Southern Clubshell	G2	S2	LE	SP	Jefferson (AL)
Freshwater Mussels	Pleurobema decisum	Southern Clubshell	G2	S2	LE	SP	Jefferson (AL)
Freshwater Mussels	Potamilus purpuratus	Bleufer	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Potamilus purpuratus	Bleufer	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Potamilus purpuratus	Bleufer	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Potamilus purpuratus	Bleufer	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Potamilus purpuratus	Bleufer	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Potamilus purpuratus	Bleufer	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Potamilus purpuratus	Bleufer	G5	S5		CHM	Jefferson (AL)

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Alabama Natural Heritage Program - State Species

Source: https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/index.htm (11/6/23)

Freshwater Mussels	Ptychobranchus foremanianus	Rayed Kidneyshell	G1	S1	LE	SP	Jefferson (AL)
Freshwater Mussels	Ptychobranchus foremanianus	Rayed Kidneyshell	G1	S1	LE	SP	Jefferson (AL)
Freshwater Mussels	Pyganodon grandis	Giant Floater	G5	S5		PSM	Jefferson (AL)
Freshwater Mussels	Quadrula apiculata	Southern Mapleleaf	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Quadrula apiculata	Southern Mapleleaf	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Quadrula apiculata	Southern Mapleleaf	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Quadrula apiculata	Southern Mapleleaf	G5	S5		CHM	Jefferson (AL)
Freshwater Mussels	Epioblasma metastriata	Upland Combshell	GH	SX	LE	SP	Jefferson (AL)
Freshwater Mussels	Quadrula rumphiana	Ridged Mapleleaf	G4	S3		PSM	Jefferson (AL)
Freshwater Mussels	Quadrula verrucosa	Pistolgrip	G4G5	S4		CHM	Jefferson (AL)
Freshwater Mussels	Quadrula verrucosa	Pistolgrip	G4G5	S4		CHM	Jefferson (AL)
Freshwater Mussels	Quadrula verrucosa	Pistolgrip	G4G5	S4		CHM	Jefferson (AL)
Freshwater Mussels	Quadrula verrucosa	Pistolgrip	G4G5	S4		CHM	Jefferson (AL)
Freshwater Mussels	Quadrula verrucosa	Pistolgrip	G4G5	S4		CHM	Jefferson (AL)
Freshwater Mussels	Quadrula verrucosa	Pistolgrip	G4G5	S4		CHM	Jefferson (AL)
Dicots	Quercus boyntonii	Boynton's Sand Post Oak	G1	S1			Jefferson (AL)
Dicots	Quercus boyntonii	Boynton's Sand Post Oak	G1	S1			Jefferson (AL)

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Alabama Natural Heritage Program - State Species

Source: https://www.auburn.edu/cosam/natural_history_museum/alnhp/data/index.htm (11/6/23)

Dicots	Quercus boyntonii	Boynton's Sand Post Oak	G1	S1			Jefferson (AL)
Dicots	Quercus georgiana	Georgia Oak	G3	S2			Jefferson (AL)
Dicots	Rudbeckia auriculata	Eared Coneflower	G2	S2			Jefferson (AL)
Dicots	Rudbeckia auriculata	Eared Coneflower	G2	S2			Jefferson (AL)
Dicots	Rudbeckia auriculata	Eared Coneflower	G2	S2			Jefferson (AL)
Dicots	Rudbeckia auriculata	Eared Coneflower	G2	S2			Jefferson (AL)
Dicots	Rudbeckia auriculata	Eared Coneflower	G2	S2			Jefferson (AL)
Dicots	Scutellaria alabamensis	Alabama Skullcap	G2	S2			Jefferson (AL)
Mammals	Spilogale putorius	Eastern Spotted Skunk	G4	S2S3		SP	Jefferson (AL)
Turtles	Sternotherus depressus	Flattened Musk Turtle	G1	S2	LT	SP	Jefferson (AL)
Monocots	Trillium decumbens	Decumbent Trillium	G4	S3S4			Jefferson (AL)
Monocots	Trillium decumbens	Decumbent Trillium	G4	S3S4			Jefferson (AL)
Monocots	Trillium decumbens	Decumbent Trillium	G4	S3S4			Jefferson (AL)
Dicots	Triosteum angustifolium	Yellowleaf Tinker's-weed	G5	S1			Jefferson (AL)
Freshwater Mussels	Villosa vibex	Southern Rainbow	G5	S4		PSM	Jefferson (AL)
Freshwater Snails	Elimia carinocostata	Fluted Elimia	G4Q	S4			Jefferson (AL)

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Alabama Natural Heritage Program - State Species

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Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma rupestre	Rock Darter	G4	S4			Jefferson (AL)
Freshwater Mussels	Ptychobranchus foremanianus	Rayed Kidneyshell	G1	S1	LE	SP	Jefferson (AL)
Fishes - Freshwater and Anadromous Bony, Cartilaginous; Lampreys	Etheostoma rupestre	Rock Darter	G4	S4			Jefferson (AL)
Dicots	Sedum nevii	Nevius' Stonecrop	G3	S3			Jefferson (AL)
Freshwater Snails	Elimia clara	Riffle Elimia	G3	S3			Jefferson (AL)
Dicots	Monarda clinopodia	Basil Bee-balm	G5	S2			Jefferson (AL)
Freshwater Snails	Elimia cahawbensis	Cahaba Elimia	G4	S4			Jefferson (AL)

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Appendix G

Cultural Resources

U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

December 7, 2023

Lisa D. Jones
Executive Director, State Historic Preservation Officer
Alabama Historical Commission
468 South Perry Street
PO Box 300900
Montgomery, AL 36130-0900

Section 106 Consultation: PHMSA Pipeline Replacement Project in Graysville, Alabama
Grant Recipient: City of Graysville
Project Location: Cities of Graysville and Adamsville and Community of Forestdale in Jefferson County, Alabama

Dear Lisa D. Jones:

The Pipeline and Hazardous Materials Safety Administration (PHMSA) provides funds authorized under the Natural Gas Distribution Infrastructure Safety and Modernization Grant Program. PHMSA proposes to provide funds to the City of Graysville (City) for the replacement of pipelines (Undertaking). PHMSA is initiating consultation for the above referenced Undertaking in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and the associated implementing regulations, 36 CFR Part 800 (Section 106). The information provided below supplements the Alabama Historical Commission's (AHC) Section 106 Project Review Consultation Form, which is enclosed in **Attachment A**.

Project Description/Background

The City proposes to replace approximately 51,700 linear feet (LF) of cast iron pipeline in Adamsville and Forestdale, Alabama. The pipeline replacements consist of approximately 2,845 LF of 4-inch (in.) polyethylene (PE) pipeline, 47,975 LF of 2-in. PE pipeline, 765 LF of 1-in. PE pipeline, and 115 LF of 2-in. steel pipeline. The existing cast iron gas lines were installed in the 1960s at an average depth of 3 feet (ft). The installation of replacement pipeline will take place within the existing right-of-way (ROW) for Jefferson County, the City of Adamsville, and the Alabama Department of Transportation (DOT); no new ROW or easement will be needed. The replacement pipeline will be installed a minimum of 3 ft. away from the existing pipeline, depending on the locations of the existing utilities and ROW width, using directional boring and cut-and-cover (trenching). The width of the trenches will be between 12 and 18 in. The existing pipeline will be abandoned in place. Existing service lines, which are in easements along the grassy areas between the pipelines and the gas meters located at the front or side of adjacent buildings, will also be replaced by open trenching or plowing. The service lines are 24 in. deep, and any trenches will have a width of between 6 to 12 in.

In addition to the pipeline and service line replacement, six regulation stations with obsolete equipment will be replaced in place with new piping and equipment. Work at the stations will include replacing two 2-in. gas regulator/monitor runs with 4-in. inlet and outlet piping, replacing one 2x3 relief valve, replacing in-

service connections (hot-taps) to existing 4-in. high-pressure inlet piping, and replacing 6-in. medium-pressure outlet piping. All work for the regulation station replacements will take place within the existing fenced enclosure for the station.

The maximum depth of disturbance for the project work will be 4 ft. The staging area for the Undertaking will be a fenced property at 648 Crumly Chapel Road in Forestdale, which is owned by the City. Project location maps are enclosed in **Attachment B**. Photographs showing the overall character of the project areas are included in **Attachment C**.

Area of Potential Effects (APE)

Pursuant to 36 CFR 800.4(a)(1), the Area of Potential Effects (APE) is defined as the geographic area(s) within which the Undertaking may directly or indirectly affect historic resources. Based on the proposed scope of work, PHMSA has delineated the APE for this Undertaking to encompass the existing ROW where the pipeline replacements will take place; adjacent parcels where the service line work will take place; the parcel at 648 Crumly Chapel Road in Forestdale, which will be used for staging; and the fenced enclosures of each regulating station to be replaced. The ROW width varies throughout the project area and includes the roadway, some driveways to residences, mailboxes, trees and shrubs, drainage pipes, and other utilities. The APE extends to the depth of proposed ground disturbance of up to 4 ft. and includes the limits of disturbance. The Undertaking does not have the potential to cause visual or audible effects after the completion of construction. The APE is shown on the map in **Attachment B**.

Identification and Evaluation

To identify historic properties in the APE, individuals who meet the Secretary of the Interior's (SOI) Professional Qualification Standards reviewed available information on previously identified historic properties in the APE, including the National Register of Historic Places (NRHP) database, AHC Historic Preservation GIS Map, Alabama Online Cultural Resources Database (ACROD), University of Alabama's Cemeteries Web Atlas, historic aerials, and the United States Department of Agriculture's (USDA) Web Soil Survey. SOI-qualified individuals also conducted research to determine if there are any previously unidentified properties within the APE that are 45 years of age or older and may be eligible for the NRHP.

Historic Architecture

There are no NRHP-eligible or NRHP-listed above-ground resources within the APE. Additionally, a search of the AHC Historic Preservation GIS Map found no known potentially significant above-ground resources within the APE. While the service line replacements will take place from the pipeline and leading up to buildings, no alterations to buildings are anticipated. Although the regulating station equipment is housed in small, historic-age, one-room brick sheds at some locations, they are simple, common building types with no distinct style or significant historical associations and do not have the potential to be eligible for the NRHP under Criteria A, B, or C (see Photo 10 in **Attachment C**). Project work at the regulating stations is limited to the replacement of interior equipment and will not directly impact the building.

Due to the scale and nature of the Undertaking, the identification effort for above-ground resources near the pipeline and service line replacements focused on identifying properties that are susceptible to the effects of this work and could experience diminished integrity as a result of the Undertaking. A review of the APE found no potentially significant above-ground resources that have the potential to be affected by the Undertaking.

Archaeology

Alabama's archaeological site file database, ACROD, was examined to identify the presence of previously recorded archaeological sites and previously conducted archaeological surveys within the APE. As a result, three previous surveys were identified as intersecting the APE, and no previously recorded archaeological

sites were identified within the APE (Table 1). In 1997, Houston conducted a cultural resources survey for road improvements across Jefferson County. In 2001, Bizzoco conducted a Phase I cultural resources assessment of roadway bridges in Jefferson County. In 2007, McSwain conducted a Phase I cultural resources survey of a bridge replacement in Jefferson County.

Table 1. Previously Conducted Archaeological Surveys within the APE

Report	Citation	Report Number
A Cultural Resources Survey of Six Proposed Phase VII Highway Improvements in Jefferson County, Alabama	Houston 1997	4058985
A Cultural Resource Assessment (Phase I) Survey of Selected Bridges in Jefferson County, Alabama	Bizzoco 2001	4063633
A Phase I Cultural-Resource Survey of the Proposed Pratt Highway Black Creek Bridge (BIN 023-37-M002) Replacement Project, Jefferson County, Alabama	McSwain 2007	4072963

A half-mile search radius was also examined for previously recorded archaeological surveys and sites. In addition to the three surveys conducted within the APE, six archaeological surveys have been conducted within a half-mile of the APE (Table 2). While no previously recorded archaeological sites were identified within the APE, seven sites were identified within a half-mile radius (Table 3).

Table 2. Previously Conducted Archaeological Surveys within a Half-Mile of the APE

Report	Citation	Report Number
An Intensive Archaeological and Historical Survey of the Alabama Highway Department Project M-7050(1) in Jefferson County, Alabama	AHC 1977	4051210
Proposed Forestdale Cell Phone Tower Site, Jefferson County, Alabama	Cooper and Keith 2001	4063942
Archaeological and Historic Architectural Survey, Hillcrest Road Relocation, Jefferson County, Alabama	Watts-Edwards 2001	4063973
A Phase I Cultural Resources Assessment of the Proposed Docena Park at Docena, Alabama	Bergstresser 2002	4072664
Archaeological Survey of the Mulberry Water Supply Pipeline	Thatcher 1982	Unknown
Report name unknown – survey of Tutwiler Coal Coke and Iron Company operation	Pratt 1997	Unknown

Of the seven archaeological sites identified in previous surveys within a half-mile of the APE, three sites are eligible, two sites are recommended not eligible, and two sites have not been evaluated for NRHP eligibility. The three eligible sites (sites 1JE532, 1JE533, and 1JE534) are associated with the Tutwiler Coal Coke and Iron Company's coke oven operation. The AHC's web viewer names this operation the Blossburg Hollow Coke Ovens, though the archaeological site forms refer to them as the Tutwiler Coal Coke and Iron Company ovens. Based on information contained in archaeological site form records for the aforementioned

sites, two other surveys were conducted in or near the APE that are not shown in ACROD. A 1982 survey by Nance Archaeological Services was conducted for the Mulberry Water Supply Pipeline that identified sites 1JE120-123. Another survey conducted in 1997 by Panamerican Consultants identified sites 1JE532-534. Although no records of the surveys were available through ACROD, it is assumed that these surveys were conducted within a half-mile of the project area. No archaeological sites or surveys were found in the southernmost segment of the APE along Birmingport Road in McDonald Chapel, Alabama.

Table 3. Previously Recorded Archaeological Sites within a Half-Mile of the APE

Site Number	Type	NRHP	Citation
1JE120	Precontact lithic scatter	Not Eligible	Thatcher 1982
1JE121	Precontact lithic scatter	Unknown	Thatcher 1982
1JE122	Precontact lithic scatter	Unknown	Thatcher 1982
1JE123	Precontact lithic scatter	Not Eligible	Thatcher 1982
1JE532	Historic coke ovens	Eligible	Pratt 1997
1JR533	Historic coke oven refuse dump	Eligible	Pratt 1997
1JE534	Historic mine associated with coke ovens	Eligible	Pratt 1997

An examination of Web Soil Survey data within the APE reveals four soil classes including Docena, Montevallo, Nauvoo, and Townley soils (Table 4). Well-drained and moderately well-drained soils can be indicative of human habitation during both the pre-contact and historic periods. All soils within the APE are well-draining or moderately well-draining soil types. Typically slopes greater than 15 percent are not suitable for human occupation, and soil types within the APE vary from 0 to 45 percent slope. The APE is comprised of nearly all well-drained soils indicating suitable conditions for human habitation in both the pre-contact and historic periods.

Table 4. Soil Types within the APE

Map Unit Name	Drainage Class	Slope	Percent of APE
Docena Complex	Moderately well-drained	0-4%	0.4
Montevallo-Nauvoo-Urban land complex	Well-drained	10-40%	7.5
Montevallo-Nauvoo association	Well-drained	6-45%	8.8
Nauvoo fine sandy loa	Well-drained	8-15%	1.9
Nauvoo-Urban land complex	Well-drained	2-15%	55.3
Townley-Urban land complex	Well-drained	8-15%	26.1

Historic topographic maps from 1892, 1906 and 1959 and historic aerial photographs from 1947 and 1970 were examined for archaeological resource potential within the APE. The presence of structures on historic maps and aerial photography may indicate the likelihood of historic period archaeological deposits associated with the occupation of these structures. The APE is comprised of the town centers of Adamsville, Sandusky, and Forestdale and their immediate surroundings. The 1892 topographic map shows buildings in both Adamsville and Sandusky and calls the towns out by name. Forestdale is not shown. The coke oven

operation is also noted on the map by two structures and the name "Blossburg," though it is shown just outside the half-mile search radius. In the southeastern portion of the APE at Sandusky, the 1892 map also shows the Pratt Mines, though this mine is not recorded in the archaeological record. The 1906 topographic map shows greater detail of road layout and development in both Adamsville and Sandusky. Several churches, schools, and a drive-in movie theater are shown on the 1959 topographic map, all structures alluding to widespread development in the APE. These historic areas of development indicate a possibility of historic archaeological deposits associated with these locales. Historic aerial photography in Adamsville shows the town was highly developed by 1947, with several roads and neighborhood clusters surrounding the town center. By 1970, US Highway 78 was constructed through Adamsville. Similarly, aerial photography from 1947 shows Sandusky and Forestdale developed with residential neighborhoods. By 1970, the residential streets expand in both Sandusky and Forestdale.

The University of Alabama's Cemeteries Web Atlas was reviewed to identify the presence of historic-age cemeteries in the vicinity of the APE. The closest historic-age cemetery, Midway United Methodist Church, is across Midway Road in Adamsville, outside the APE. While the full extent of the cemetery is unknown and not all burials may be marked, it is assumed that burials from this cemetery do not extend into the APE based on the location across a roadway. However, in the case of an unanticipated discovery, all construction in the area of the discovery will cease until further direction is provided, and PHMSA will continue consultation with the AHC and participating federally recognized tribes as appropriate.

Background research revealed seven archaeological sites and seven surveys within a half-mile of the APE. No archaeological sites were identified within the APE. Examination of soils within the APE indicates suitable conditions for human habitation. However, most of the APE is located in upland areas away from perennial streams or rivers, and clustered within urban areas. Several small creeks and streams are located within a half-mile and very limited portions of the APE are located near these waterways. Within these portions, modern building and road construction has occurred and portions have also been previously surveyed for archaeological resources (i.e. McSwain 2007). The precontact archaeological sites identified within a half-mile are located along creek floodplains or creek terraces. Many streams adjacent or within the APE appear to be ephemeral or intermittent, and not suitable locations for precontact habitation due to lack of water during significant parts of the year or heavily sloped topography. The historic sites, all pertaining to the coke oven operation, are also located along a perennial stream, a necessary component of the operation.

Historic topographic maps and aerials indicate that historic-age archaeological deposits may be present in parts of the APE. However, density of modern buildings and construction of roads, sidewalks, and underground utility corridors have likely disturbed any archaeological deposits. While there is potential for archaeological deposits within the APE, the Undertaking will occur near or within previous road construction and utility installation corridors in the existing right-of-way that lack soil integrity. Due to the limited scope of work and likelihood of disturbed context of the APE, an archaeological survey is not recommended at this time.

Determination of Effect

Based on the aforementioned identification and evaluation, PHMSA has determined that there are no historic properties as defined in 36 CFR 800.16(l) within the APE. Therefore, in accordance with 36 CFR Part 800.4(d)(1), PHMSA finds the Undertaking will result in No Historic Properties Affected.

Consulting Party Outreach

PHMSA identified parties that may be interested in the Undertaking and its effects on historic properties. PHMSA invites the individuals/organizations copied on this letter to participate as Section 106 consulting parties. Invited parties should indicate their willingness to participate as a consulting party and provide comments on the enclosed form (**Attachment D**) within 30 calendar days from the date on this letter. Note that a non-

response is considered to be a declination to participate; however, interested parties can request to join consultation at any time in the process. If any invited party expresses concerns about the Undertaking's potential effects to historic properties, PHMSA will consult with the party to resolve those concerns prior to project implementation.

PHMSA will also invite the following federally recognized tribes to participate in consultation by separate letter:

- Alabama-Coushatta Tribe of Texas
- Alabama-Quassarte Tribal Town
- Coushatta Tribe of Louisiana
- Muscogee (Creek) Nation

Request for Section 106 Concurrence

Based on the information presented above, PHMSA finds that the Undertaking will result in No Historic Properties Affected. PHMSA is submitting this Undertaking to your office for your review and comment. PHMSA requests your concurrence with this determination of effect within 30 calendar days of the date of this letter. Should you need additional information, please contact Amy Hootman, Section 106 specialist, at PHMSASection106@dot.gov or 857-998-9981.

Sincerely,

Matt Fuller
Senior Environmental Protection Specialist

MF/ah

cc: Elizabeth Williams, Environmental Protection Specialist, USDOT Volpe Center
Damond Smith, PHMSA Grant Coordinator
Tommy Greene, Comptroller, City of Graysville
Carl H. Marbury, Chairman, Jefferson County Historical Commission

Enclosures:
Attachment A: Section 106 Project Review Consultation Form
Attachment B: Project Location and APE Maps
Attachment C: Project Area Photographs
Attachment D: Consulting Party Response Form

ATTACHMENT A

Section 106 Project Review Consultation Form

ALABAMA HISTORICAL COMMISSION
STATE HISTORIC PRESERVATION OFFICE
SECTION 106 PROJECT REVIEW CONSULTATION FORM

Federal laws exist to ensure that federal agencies or their designated applicants carefully consider historic preservation in federally funded, licensed, or permitted projects. Section 106 of the National Historic Preservation Act of 1966, as amended directs this review. http://www.achp.gov/106summary.html. At a minimum, submission of this completed form and attachments constitutes a request for review by the Alabama Historical Commission, which is the Alabama State Historic Preservation Office (SHPO). **The responsibility for preparing documentation, including the identification of archaeological and architectural properties and the assessment of potential effects resulting from the project, rests with the federal or state agency, or its designated applicant.** The role of the Alabama SHPO is to review, comment, and consult with federal/state agencies or their designees. The Alabama SHPO's ability to complete a timely project review largely depends on the quality of the material submitted. Some applicants may find it advantageous to hire a professional consultant with expertise in archaeology, history and/or architectural history.

PROJECT NAME
PHMSA Pipeline Replacement Project in Graysville, Alabama

FEDERAL AGENCY PROVIDING FUNDS, LICENSE, OR PERMIT
Pipeline and Hazardous Materials Safety Administration (PHMSA)

FEDERAL PROJECT NUMBER
N/A

FEDERAL AGENCY CONTACT NAME AND E-MAIL/PHONE NUMBER
Amy Hootman, Environmental Protection Specialist, PHMSASection106@dot.gov, 857-998-9981

STATE AGENCY PROVIDING FUNDS, LICENSE, OR PERMIT (IF APPLICABLE)
N/A

STATE AGENCY CONTACT NAME AND E-MAIL ADDRESS, PHONE NUMBER, MAILING ADDRESS
N/A

AHC NUMBER (If project has been previously submitted)
N/A

APPLICANT NAME:
N/A

APPLICANT MAILING ADDRESS:
N/A

APPLICANT TELEPHONE:
N/A

APPLICANT EMAIL:
N/A

CONTACT NAME (if different than applicant):
N/A

CONTACT MAILING ADDRESS:
N/A

CONTACT TELEPHONE:
N/A

CONTACT EMAIL (Person to whom AHC should email response letter):
N/A

CONTRACTOR TYPE: ☐ ARCHAEOLOGIST; ☐ARCHITECTURAL HISTORIAN; ☑NONE; ☐OTHER:

CONTRACTOR NAME:
N/A

CONTRACTOR MAILING ADDRESS:
N/A

CONTRACTOR TELEPHONE:
N/A

CONTRACTOR EMAIL:
N/A

PROJECT LOCATION

STREET ADDRESS	CITY
Various Locations	Graysville, Adamsville, Forestdale

COUNTY	ZIP CODE
Jefferson County	Various

LATITUDE / LONGITUDE: USE DECIMAL DEGREES EXAMPLE: 32.3722N, -86.3083W

Various; Northern edge: 33.61838, -86.9707; Southern

PROJECT DESCRIPTION

Will the project involve any of the following? Check all that apply.

- ☐ exterior rehabiliation work;
- ☐ interior rehabilitation work;
- ☐ cellular equipment located on buildings;
- ☐ streetscapes/sidewalks/lighting;
- ☐ new construction; and/or
- ☐ demolition

Describe the overall project in DETAIL. Be sure to describe any items checked above. Use additional pages if necessary.

See cover letter.

AREA OF POTENTIAL EFFECT (APE)

The APE varies with project types and can be direct or indirect (physical, visual, auditory, etc.). The APE is defined as "the geographic area or areas within which an undertaking may cause changes in the character of use of historic properties, if any such properties exist." Factors to consider when determining the APE include; topography, vegetation, existing development, orientation of an existing resource to the project, physical siting of a resource, and existing and planned future development. For example:

1) Rehabilitation, renovation, and/or demolition of a historic building or structure, or new construction: the APE might include the building itself and the adjacent setting.
2) Streetscapes: the APE might include the viewshed from the street.
3) Pedestrian/bicycle facilities: the APE might extend the length of the corridor and for some distance on both sides of the corridor.
4) Underground utilities: the APE would usually be limited to the area of ground disturbance.

Attach a map indicating the precise location of the project and the boundaries of the APE, preferably a clear color copy of a USGS topographic quadrangle map (7.5 minute). For projects in urban areas, also include a city map that shows more detail. USGS topographic maps can be printed from this website: https://ngmdb.usgs.gov/topoview/viewer/. City maps can be printed using www.google.com/maps.

Provide current, high resolution color photographs that illustrate the project area and the entire APE as defined above.

ARCHAEOLOGY (Ground Disturbing Activities)

Has the ground in the project area been disturbed other than by agriculture (i.e. grading, grubbing, clear cutting, filling, etc.)?
☑Yes ☐No ☐Don't know ☐N/A

If yes, describe in detail. Use additional pages as necessary. Photographs are helpful.

See cover letter.

Describe the present use and condition of the property. Use additional pages as necessary.

See cover letter.

To your knowledge, has a Cultural Resource Assessment (CRA) been conducted in the proposed project area?
☑Yes ☐No ☐Don't know ☐N/A

If yes, attach a copy of the cultural resources assessment report.

ARCHITECTURAL INFORMATION

Above-ground properties within the Area of Potential Effect (APE) should be evaluated for the eligibility for the National Register of Historic Places. It is the federal agency's (or their designee) responsibility to identify properties in the APE, apply the National Register (NR) criteria, and determine whether a property is eligible or not. Those determinations are sent to our office for review and comment. All properties evaluated should be accompanied by current photographs, and these locations should be keyed to a good quality USGS topographic map. Some applicants may find it advantageous to hire a historic preservation professional with expertise in history and/or architectural history to complete the identification and evaluation of historic properties. The Alabama Historical Commission publishes a GIS map of properties that have been documented by or through our office. The map includes properties listed in the National Register of Historic Places, Alabama Register of Landmarks & Heritage, Alabama Historic Cemetery Register, county architectural surveys, and other files. The GIS map can be accessed here: https://ahc.alabama.gov/historicpreservationmap.aspx The GIS map should function as a research tool, not an up-to-the-minute inventory about every historic and/or architecturally significant property in the state. This tool allows researchers to investigate and review potentially significant properties according to the best data that is available in the Alabama Historical Commission's files. The absence of a property from the map does not imply that an unidentified property lacks historic or architectural importance.

1) Within the APE, are there properties listed in or eligible for the National Register of Historic Places?

☐ YES If yes, identify the properties by name, address, and photo number.

☑ NO If no, identify the properties by name, address, and photo number. Provide an explanation as to why properties identified are not eligible for the National Register. A discussion of the National Register seven aspects of integrity and the applicable National Register criteria must be included. Refer to the National Park Service's website: https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf Use additional pages as necessary.

See cover letter.

EFFECTS DETERMINATION

An effect occurs when an action alters the characteristics of a property that may qualify it for the National Register of Historic Places. How will this project affect any of the properties identified in the previous section? Will the project take away or change anything within the boundaries of a historic property? Will the project change the view from or the view to any historic properties? Will the project introduce any audible or atmospheric elements? Will the project result in the transfer, lease, or sale of any of the identified properties? Use additional sheets as necessary.

Based on the identification and evaluation, PHMSA has determined that there are no historic properties as defined in 36 CFR 800.16(l) within the APE. Therefore, in accordance with 36 CFR Part 800.4(d)(1), PHMSA finds the Undertaking will result in No Historic Properties Affected.

CHECKLIST: Did you provide the following information?	
☑ Completed form.	☑ Photographs* of current site conditions and all identified historic properties keyed to a site map.
☑ Maps with project area, APE, and any historic properties marked and identified.	☐ For new construction, rehabilitations, etc., attach work plans, drawings, etc.
☐ Other supporting documents (if necessary to explain the project).	☑ Description of present use and condition of the project area.

*A note about photographs: Digital photos must be current, high resolution, and adequately show the resource. Take photographs of the overall property and the exterior of each building on the property, including outbuildings. Include views of the overall setting, views of the building in its immediate surrounding showing the relationship of the building to neighboring buildings, and views of significant landscape features (i.e. tree lined approaches, stone walls, formal gardens, etc.). Exterior views of the building should include full views of each side (if possible) and views of important architectural details. Key all photographs to a site map.

If the project involves rehabilitation, include photographs of the building(s) involved and especially the areas of the building slated for rehab work. Label each exterior view to a site map and label all interior views. If the project involves new construction, include photographs of the surrounding area looking out from the project site. Include photographs of any buildings that are located on the project property or on adjoining property.

NOTE: Section 106 regulations provide for a 30-day response time by the Alabama SHPO from the date of receipt. Project activities may not begin until our office has reviewed this information and issued comments.

Upon receipt, applications and attachments become the property of the State of Alabama.

For questions regarding this form or the Section 106 Review Process, contact Amanda McBride, Section 106 Coordinator, at 334.230.2692 or Amanda.McBride@ahc.alabama.gov.

All projects must be submitted digitally

E-mail this form and supporting documents to Section.106@ahc.alabama.gov This is the only approved e-mail address for project submission. Projects sent to any other e-mail address will not be accepted. The attachment size cannot exceed 19 MB. Alternatively, you may submit projects with larger attachments through an online system to be determined by the AHC.

Please limit your submission to cultural resources information only.

Contact Amanda McBride for any questions on digital submissions

ATTACHMENT B

Project Location and APE Maps

REDACTED

ATTACHMENT C

Project Area Photographs

Photo 1. View looking south down APE along Highland Avenue at Union Grove Road in Adamsville.

Photo 2. View looking west down APE along Peach Avenue at Allen Street in Adamsville.

Photo 3. View looking north down APE along Sycamore Street in Adamsville.

Photo 4. View of APE along the east side of the railroad in Adamsville.

Photo 5. View looking west down APE along Hallmark Road in Forestdale.

Photo 6. View looking west down APE along Will Payne Drive at Haven Drive in Forestdale.

Photo 7. View looking north down APE along Devine Drive in Forestdale.

Photo 8. View looking west down APE along Macon Street at Lamplighter Lane in Forestdale.

Photo 9. View looking east down APE along Villa Esta Drive in Forestdale.

Photo 10. REDACTED

ATTACHMENT D

Consulting Party Response Form

Section 106 Consulting Party Response Form

Pipeline and Hazardous Materials Safety Administration (PHMSA)

Natural Gas Distribution Infrastructure Safety and Modernization Grant Program

Project Name/Location:

Date: _____ **Organization:** _____

Name: _____ **Affiliation:** _____

Address: _____ **Phone Number:** _____

_____ **E-mail:** _____

_____

Please check one of the following:

○ **Yes,** I, or my organization, would like to participate in consultation on the project's potential effects to historic properties. I, or my organization, has a legal or economic relation to the project or affected properties or have a concern with the project's effects on historic properties.

○ **No,** I, or my organization, do(es) not wish to participate as a consulting party for the project.

Do you know of any other potential consulting parties that should be contacted? If so, please list the name, email, or other contact information below.

_____

_____

_____

Comments: _____

_____

_____

_____

Please return by:

Please return to: Kathering Giraldo
USDOT Volpe Center
220 Binney Street, Cambridge, MA
E-mail: PHMSASection106@dot.gov

U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

December 7, 2023

Ricky Sylestine
Chairperson
Alabama-Coushatta Tribe of Texas
571 State Park Road 56
Livingston, TX 77351

Section 106 Consultation: PHMSA Pipeline Replacement Project in Graysville, Alabama
Grant Recipient: City of Graysville
Project Location: Cities of Graysville and Adamsville and Community of Forestdale in Jefferson County, Alabama

Dear Chairperson Sylestine:

The Pipeline and Hazardous Materials Safety Administration (PHMSA) provides funds authorized under the Natural Gas Distribution Infrastructure Safety and Modernization Grant Program. PHMSA proposes to provide funds to the City of Graysville (City) for the replacement of pipelines (Undertaking). PHMSA is initiating consultation for the above referenced Undertaking in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and the associated implementing regulations, 36 CFR Part 800 (Section 106). The purpose of this letter is to initiate Section 106 consultation for the Undertaking to determine if there are historic properties of cultural or religious significance to your Tribe that may be affected by the Undertaking, to determine if you want to be a consulting party, and to notify your Tribe of PHMSA's intention to make a finding of No Historic Properties Affected. PHMSA is also available for Government-to-Government consultation on this Program.

Project Description/Background

The City proposes to replace approximately 51,700 linear feet (LF) of cast iron pipeline in Adamsville and Forestdale, Alabama. The pipeline replacements consist of approximately 2,845 LF of 4-inch (in.) polyethylene (PE) pipeline, 47,975 LF of 2-in. PE pipeline, 765 LF of 1-in. PE pipeline, and 115 LF of 2-in. steel pipeline. The existing cast iron gas lines were installed in the 1960s at an average depth of 3 feet (ft). The installation of replacement pipeline will take place within the existing right-of-way (ROW) for Jefferson County, the City of Adamsville, and the Alabama Department of Transportation (DOT); no new ROW or easement will be needed. The replacement pipeline will be installed a minimum of 3 ft. away from the existing pipeline, depending on the locations of the existing utilities and ROW width, using directional boring and cut-and-cover (trenching). The width of the trenches will be between 12 and 18 in. The existing pipeline will be abandoned in place. Existing service lines, which are in easements along the grassy areas between the pipelines and the gas meters located at the front or side of adjacent buildings, will also be replaced by open trenching or plowing. The service lines are 24 in. deep, and any trenches will have a width of between 6 to 12 in.

In addition to the pipeline and service line replacement, six regulation stations with obsolete equipment will be replaced in place with new piping and equipment. Work at the stations will include replacing two 2-in. gas regulator/monitor runs with 4-in. inlet and outlet piping, replacing one 2x3 relief valve, replacing in-service connections (hot-taps) to existing 4-in. high-pressure inlet piping, and replacing 6-in. medium-pressure outlet piping. All work for the regulation station replacements will take place within the existing fenced enclosure for the station.

The maximum depth of disturbance for the project work will be 4 ft. The staging area for the Undertaking will be a fenced property at 648 Crumly Chapel Road in Forestdale, which is owned by the City. Project location maps are enclosed in **Attachment A**. Photographs showing the overall character of the project areas are included in **Attachment B**.

Area of Potential Effects (APE)

Pursuant to 36 CFR 800.4(a)(1), the Area of Potential Effects (APE) is defined as the geographic area(s) within which the Undertaking may directly or indirectly affect historic resources. Based on the proposed scope of work, PHMSA has delineated the APE for this Undertaking to encompass the existing ROW where the pipeline replacements will take place; adjacent parcels where the service line work will take place; the parcel at 648 Crumly Chapel Road in Forestdale, which will be used for staging; and the fenced enclosures of each regulating station to be replaced. The ROW width varies throughout the project area and includes the roadway, some driveways to residences, mailboxes, trees and shrubs, drainage pipes, and other utilities. The APE extends to the depth of proposed ground disturbance of up to 4 ft. and includes the limits of disturbance. The Undertaking does not have the potential to cause visual or audible effects after the completion of construction. The APE is shown on the map in **Attachment A**.

Identification and Evaluation

To identify historic properties in the APE, individuals who meet the Secretary of the Interior's (SOI) Professional Qualification Standards reviewed available information on previously identified historic properties in the APE, including the National Register of Historic Places (NRHP) database, Alabama Historical Commission's (AHC's) Historic Preservation GIS Map, Alabama Online Cultural Resources Database (ACROD), University of Alabama's Cemeteries Web Atlas, historic aerials, and the United States Department of Agriculture's (USDA) Web Soil Survey. SOI-qualified individuals also conducted research to determine if there are any previously unidentified properties within the APE that are 45 years of age or older and may be eligible for the NRHP.

Historic Architecture

There are no NRHP-eligible or NRHP-listed above-ground resources within the APE. Additionally, a search of the AHC Historic Preservation GIS Map found no known potentially significant above-ground resources within the APE. While the service line replacements will take place from the pipeline and leading up to buildings, no alterations to buildings are anticipated. Although the regulating station equipment is housed in small, historic-age, one-room brick sheds at some locations, they are simple, common building types with no distinct style or significant historical associations and do not have the potential to be eligible for the NRHP under Criteria A, B, or C (see Photo 10 in **Attachment B**). Project work at the regulating stations is limited to the replacement of interior equipment and will not directly impact the building.

Due to the scale and nature of the Undertaking, the identification effort for above-ground resources near the pipeline and service line replacements focused on identifying properties that are susceptible to the effects of this work and could experience diminished integrity as a result of the Undertaking. A review of the APE found no potentially significant above-ground resources that have the potential to be affected by the Undertaking.

Archaeology

Alabama's archaeological site file database, ACROD, was examined to identify the presence of previously recorded archaeological sites and previously conducted archaeological surveys within the APE. As a result, three previous surveys were identified as intersecting the APE, and no previously recorded archaeological sites were identified within the APE (Table 1). In 1997, Houston conducted a cultural resources survey for road improvements across Jefferson County. In 2001, Bizzoco conducted a Phase I cultural resources assessment of roadway bridges in Jefferson County. In 2007, McSwain conducted a Phase I cultural resources survey of a bridge replacement in Jefferson County.

Table 1. Previously Conducted Archaeological Surveys within the APE

Report	Citation	Report Number
A Cultural Resources Survey of Six Proposed Phase VII Highway Improvements in Jefferson County, Alabama	Houston 1997	4058985
A Cultural Resource Assessment (Phase I) Survey of Selected Bridges in Jefferson County, Alabama	Bizzoco 2001	4063633
A Phase I Cultural-Resource Survey of the Proposed Pratt Highway Black Creek Bridge (BIN 023-37-M002) Replacement Project, Jefferson County, Alabama	McSwain 2007	4072963

A half-mile search radius was also examined for previously recorded archaeological surveys and sites. In addition to the three surveys conducted within the APE, six archaeological surveys have been conducted within a half-mile of the APE (Table 2). While no previously recorded archaeological sites were identified within the APE, seven sites were identified within a half-mile radius (Table 3).

Table 2. Previously Conducted Archaeological Surveys within a Half-Mile of the APE

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Report name unknown – survey of Tutwiler Coal Coke and Iron Company operation	Pratt 1997	Unknown

Of the seven archaeological sites identified in previous surveys within a half-mile of the APE, three sites are eligible, two sites are recommended not eligible, and two sites have not been evaluated for NRHP eligibility. The three eligible sites (sites 1JE532, 1JE533, and 1JE534) are associated with the Tutwiler Coal

Coke and Iron Company's coke oven operation. The AHC's web viewer names this operation the Blossburg Hollow Coke Ovens, though the archaeological site forms refer to them as the Tutwiler Coal Coke and Iron Company ovens. Based on information contained in archaeological site form records for the aforementioned sites, two other surveys were conducted in or near the APE that are not shown in ACROD. A 1982 survey by Nance Archaeological Services was conducted for the Mulberry Water Supply Pipeline that identified sites 1JE120-123. Another survey conducted in 1997 by Panamerican Consultants identified sites 1JE532-534. Although no records of the surveys were available through ACROD, it is assumed that these surveys were conducted within a half-mile of the project area. No archaeological sites or surveys were found in the southernmost segment of the APE along Birmingport Road in McDonald Chapel, Alabama.

Table 3. Previously Recorded Archaeological Sites within a Half-Mile of the APE

Site Number	Type	NRHP	Citation
1JE120	Precontact lithic scatter	Not Eligible	Thatcher 1982
1JE121	Precontact lithic scatter	Unknown	Thatcher 1982
1JE122	Precontact lithic scatter	Unknown	Thatcher 1982
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1JR533	Historic coke oven refuse dump	Eligible	Pratt 1997
1JE534	Historic mine associated with coke ovens	Eligible	Pratt 1997

An examination of Web Soil Survey data within the APE reveals four soil classes including Docena, Montevallo, Nauvoo, and Townley soils (Table 4). Well-drained and moderately well-drained soils can be indicative of human habitation during both the pre-contact and historic periods. All soils within the APE are well-draining or moderately well-draining soil types. Typically slopes greater than 15 percent are not suitable for human occupation, and soil types within the APE vary from 0 to 45 percent slope. The APE is comprised of nearly all well-drained soils indicating suitable conditions for human habitation in both the pre-contact and historic periods.

Table 4. Soil Types within the APE

Map Unit Name	Drainage Class	Slope	Percent of APE
Docena Complex	Moderately well-drained	0-4%	0.4
Montevallo-Nauvoo-Urban land complex	Well-drained	10-40%	7.5
Montevallo-Nauvoo association	Well-drained	6-45%	8.8
Nauvoo fine sandy loa	Well-drained	8-15%	1.9
Nauvoo-Urban land complex	Well-drained	2-15%	55.3
Townley-Urban land complex	Well-drained	8-15%	26.1

Historic topographic maps from 1892, 1906 and 1959 and historic aerial photographs from 1947 and 1970 were examined for archaeological resource potential within the APE. The presence of structures on historic maps and aerial photography may indicate the likelihood of historic period archaeological deposits associated with the occupation of these structures. The APE is comprised of the town centers of Adamsville,

Sandusky, and Forestdale and their immediate surroundings. The 1892 topographic map shows buildings in both Adamsville and Sandusky and calls the towns out by name. Forestdale is not shown. The coke oven operation is also noted on the map by two structures and the name "Blossburg," though it is shown just outside the half-mile search radius. In the southeastern portion of the APE at Sandusky, the 1892 map also shows the Pratt Mines, though this mine is not recorded in the archaeological record. The 1906 topographic map shows greater detail of road layout and development in both Adamsville and Sandusky. Several churches, schools, and a drive-in movie theater are shown on the 1959 topographic map, all structures alluding to widespread development in the APE. These historic areas of development indicate a possibility of historic archaeological deposits associated with these locales. Historic aerial photography in Adamsville shows the town was highly developed by 1947, with several roads and neighborhood clusters surrounding the town center. By 1970, US Highway 78 was constructed through Adamsville. Similarly, aerial photography from 1947 shows Sandusky and Forestdale developed with residential neighborhoods. By 1970, the residential streets expand in both Sandusky and Forestdale.

The University of Alabama's Cemeteries Web Atlas was reviewed to identify the presence of historic-age cemeteries in the vicinity of the APE. The closest historic-age cemetery, Midway United Methodist Church, is across Midway Road in Adamsville, outside the APE. While the full extent of the cemetery is unknown and not all burials may be marked, it is assumed that burials from this cemetery do not extend into the APE based on the location across a roadway. However, in the case of an unanticipated discovery, all construction in the area of the discovery will cease until further direction is provided, and PHMSA will continue consultation with the AHC and participating federally recognized tribes as appropriate.

Background research revealed seven archaeological sites and seven surveys within a half-mile of the APE. No archaeological sites were identified within the APE. Examination of soils within the APE indicates suitable conditions for human habitation. However, most of the APE is located in upland areas away from perennial streams or rivers, and clustered within urban areas. Several small creeks and streams are located within a half-mile and very limited portions of the APE are located near these waterways. Within these portions, modern building and road construction has occurred and portions have also been previously surveyed for archaeological resources (i.e. McSwain 2007). The precontact archaeological sites identified within a half-mile are located along creek floodplains or creek terraces. Many streams adjacent or within the APE appear to be ephemeral or intermittent, and not suitable locations for precontact habitation due to lack of water during significant parts of the year or heavily sloped topography. The historic sites, all pertaining to the coke oven operation, are also located along a perennial stream, a necessary component of the operation.

Historic topographic maps and aerials indicate that historic-age archaeological deposits may be present in parts of the APE. However, density of modern buildings and construction of roads, sidewalks, and underground utility corridors have likely disturbed any archaeological deposits. While there is potential for archaeological deposits within the APE, the Undertaking will occur near or within previous road construction and utility installation corridors in the existing right-of-way that lack soil integrity. Due to the limited scope of work and likelihood of disturbed context of the APE, an archaeological survey is not recommended at this time.

Determination of Effect

Based on the aforementioned identification and evaluation, PHMSA has determined that there are no historic properties as defined in 36 CFR 800.16(l) within the APE. Therefore, in accordance with 36 CFR Part 800.4(d)(1), PHMSA proposes a finding that the Undertaking will result in No Historic Properties Affected.

Request for Information and Comments

PHMSA requests that you provide any information you have regarding historic properties of religious or cultural significance to your Tribe that may be present in the APE and affected by the Undertaking. If your Tribe is unaware of any historic properties in the APE, PHMSA is notifying your Tribe of our intention to make a No Historic Properties Affected finding. Please notify us within 30 days from the date of receipt of this letter if you have any concerns about the project's effects to historic properties. Should you need additional information, please contact Amy Hootman, Section 106 specialist, at PHMSASection106@dot.gov or 857-998-9981.

Sincerely,

Matt Fuller
Senior Environmental Protection Specialist

MF/ah

cc: Elizabeth Williams, Environmental Protection Specialist, USDOT Volpe Center
Damond Smith, PHMSA Grant Coordinator
Bryan Celestine, Tribal Historic Preservation Officer, Alabama-Coushatta Tribe of Texas

Enclosures:
Attachment A: Project Location and APE Maps
Attachment B: Project Area Photographs

U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

December 7, 2023

Wilson Yargee
Chief
Alabama-Quassarte Tribal Town
PO Box 187
Wetumka, OK 74883

Section 106 Consultation: PHMSA Pipeline Replacement Project in Graysville, Alabama
Grant Recipient: City of Graysville
Project Location: Cities of Graysville and Adamsville and Community of Forestdale in Jefferson County, Alabama

Dear Chief Yar:

The Pipeline and Hazardous Materials Safety Administration (PHMSA) provides funds authorized under the Natural Gas Distribution Infrastructure Safety and Modernization Grant Program. PHMSA proposes to provide funds to the City of Graysville (City) for the replacement of pipelines (Undertaking). PHMSA is initiating consultation for the above referenced Undertaking in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and the associated implementing regulations, 36 CFR Part 800 (Section 106). The purpose of this letter is to initiate Section 106 consultation for the Undertaking to determine if there are historic properties of cultural or religious significance to your Tribe that may be affected by the Undertaking, to determine if you want to be a consulting party, and to notify your Tribe of PHMSA's intention to make a finding of No Historic Properties Affected. PHMSA is also available for Government-to-Government consultation on this Program.

Project Description/Background

The City proposes to replace approximately 51,700 linear feet (LF) of cast iron pipeline in Adamsville and Forestdale, Alabama. The pipeline replacements consist of approximately 2,845 LF of 4-inch (in.) polyethylene (PE) pipeline, 47,975 LF of 2-in. PE pipeline, 765 LF of 1-in. PE pipeline, and 115 LF of 2-in. steel pipeline. The existing cast iron gas lines were installed in the 1960s at an average depth of 3 feet (ft). The installation of replacement pipeline will take place within the existing right-of-way (ROW) for Jefferson County, the City of Adamsville, and the Alabama Department of Transportation (DOT); no new ROW or easement will be needed. The replacement pipeline will be installed a minimum of 3 ft. away from the existing pipeline, depending on the locations of the existing utilities and ROW width, using directional boring and cut-and-cover (trenching). The width of the trenches will be between 12 and 18 in. The existing pipeline will be abandoned in place. Existing service lines, which are in easements along the grassy areas between the pipelines and the gas meters located at the front or side of adjacent buildings, will also be replaced by open trenching or plowing. The service lines are 24 in. deep, and any trenches will have a width of between 6 to 12 in.

In addition to the pipeline and service line replacement, six regulation stations with obsolete equipment will be replaced in place with new piping and equipment. Work at the stations will include replacing two 2-in. gas regulator/monitor runs with 4-in. inlet and outlet piping, replacing one 2x3 relief valve, replacing in-service connections (hot-taps) to existing 4-in. high-pressure inlet piping, and replacing 6-in. medium-pressure outlet piping. All work for the regulation station replacements will take place within the existing fenced enclosure for the station.

The maximum depth of disturbance for the project work will be 4 ft. The staging area for the Undertaking will be a fenced property at 648 Crumly Chapel Road in Forestdale, which is owned by the City. Project location maps are enclosed in **Attachment A**. Photographs showing the overall character of the project areas are included in **Attachment B**.

Area of Potential Effects (APE)

Pursuant to 36 CFR 800.4(a)(1), the Area of Potential Effects (APE) is defined as the geographic area(s) within which the Undertaking may directly or indirectly affect historic resources. Based on the proposed scope of work, PHMSA has delineated the APE for this Undertaking to encompass the existing ROW where the pipeline replacements will take place; adjacent parcels where the service line work will take place; the parcel at 648 Crumly Chapel Road in Forestdale, which will be used for staging; and the fenced enclosures of each regulating station to be replaced. The ROW width varies throughout the project area and includes the roadway, some driveways to residences, mailboxes, trees and shrubs, drainage pipes, and other utilities. The APE extends to the depth of proposed ground disturbance of up to 4 ft. and includes the limits of disturbance. The Undertaking does not have the potential to cause visual or audible effects after the completion of construction. The APE is shown on the map in **Attachment A**.

Identification and Evaluation

To identify historic properties in the APE, individuals who meet the Secretary of the Interior's (SOI) Professional Qualification Standards reviewed available information on previously identified historic properties in the APE, including the National Register of Historic Places (NRHP) database, Alabama Historical Commission's (AHC's) Historic Preservation GIS Map, Alabama Online Cultural Resources Database (ACROD), University of Alabama's Cemeteries Web Atlas, historic aerials, and the United States Department of Agriculture's (USDA) Web Soil Survey. SOI-qualified individuals also conducted research to determine if there are any previously unidentified properties within the APE that are 45 years of age or older and may be eligible for the NRHP.

Historic Architecture

There are no NRHP-eligible or NRHP-listed above-ground resources within the APE. Additionally, a search of the AHC Historic Preservation GIS Map found no known potentially significant above-ground resources within the APE. While the service line replacements will take place from the pipeline and leading up to buildings, no alterations to buildings are anticipated. Although the regulating station equipment is housed in small, historic-age, one-room brick sheds at some locations, they are simple, common building types with no distinct style or significant historical associations and do not have the potential to be eligible for the NRHP under Criteria A, B, or C (see Photo 10 in **Attachment B**). Project work at the regulating stations is limited to the replacement of interior equipment and will not directly impact the building.

Due to the scale and nature of the Undertaking, the identification effort for above-ground resources near the pipeline and service line replacements focused on identifying properties that are susceptible to the effects of this work and could experience diminished integrity as a result of the Undertaking. A review of the APE found no potentially significant above-ground resources that have the potential to be affected by the Undertaking.

Archaeology

Alabama's archaeological site file database, ACROD, was examined to identify the presence of previously recorded archaeological sites and previously conducted archaeological surveys within the APE. As a result, three previous surveys were identified as intersecting the APE, and no previously recorded archaeological sites were identified within the APE (Table 1). In 1997, Houston conducted a cultural resources survey for road improvements across Jefferson County. In 2001, Bizzoco conducted a Phase I cultural resources assessment of roadway bridges in Jefferson County. In 2007, McSwain conducted a Phase I cultural resources survey of a bridge replacement in Jefferson County.

Table 1. Previously Conducted Archaeological Surveys within the APE

Report	Citation	Report Number
A Cultural Resources Survey of Six Proposed Phase VII Highway Improvements in Jefferson County, Alabama	Houston 1997	4058985
A Cultural Resource Assessment (Phase I) Survey of Selected Bridges in Jefferson County, Alabama	Bizzoco 2001	4063633
A Phase I Cultural-Resource Survey of the Proposed Pratt Highway Black Creek Bridge (BIN 023-37-M002) Replacement Project, Jefferson County, Alabama	McSwain 2007	4072963

A half-mile search radius was also examined for previously recorded archaeological surveys and sites. In addition to the three surveys conducted within the APE, six archaeological surveys have been conducted within a half-mile of the APE (Table 2). While no previously recorded archaeological sites were identified within the APE, seven sites were identified within a half-mile radius (Table 3).

Table 2. Previously Conducted Archaeological Surveys within a Half-Mile of the APE

Report	Citation	Report Number
An Intensive Archaeological and Historical Survey of the Alabama Highway Department Project M-7050(1) in Jefferson County, Alabama	AHC 1977	4051210
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Archaeological and Historic Architectural Survey, Hillcrest Road Relocation, Jefferson County, Alabama	Watts-Edwards 2001	4063973
A Phase I Cultural Resources Assessment of the Proposed Docena Park at Docena, Alabama	Bergstresser 2002	4072664
Archaeological Survey of the Mulberry Water Supply Pipeline	Thatcher 1982	Unknown
Report name unknown – survey of Tutwiler Coal Coke and Iron Company operation	Pratt 1997	Unknown

Of the seven archaeological sites identified in previous surveys within a half-mile of the APE, three sites are eligible, two sites are recommended not eligible, and two sites have not been evaluated for NRHP eligibility. The three eligible sites (sites 1JE532, 1JE533, and 1JE534) are associated with the Tutwiler Coal

Coke and Iron Company's coke oven operation. The AHC's web viewer names this operation the Blossburg Hollow Coke Ovens, though the archaeological site forms refer to them as the Tutwiler Coal Coke and Iron Company ovens. Based on information contained in archaeological site form records for the aforementioned sites, two other surveys were conducted in or near the APE that are not shown in ACROD. A 1982 survey by Nance Archaeological Services was conducted for the Mulberry Water Supply Pipeline that identified sites 1JE120-123. Another survey conducted in 1997 by Panamerican Consultants identified sites 1JE532-534. Although no records of the surveys were available through ACROD, it is assumed that these surveys were conducted within a half-mile of the project area. No archaeological sites or surveys were found in the southernmost segment of the APE along Birmingport Road in McDonald Chapel, Alabama.

Table 3. Previously Recorded Archaeological Sites within a Half-Mile of the APE

Site Number	Type	NRHP	Citation
1JE120	Precontact lithic scatter	Not Eligible	Thatcher 1982
1JE121	Precontact lithic scatter	Unknown	Thatcher 1982
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Background research revealed seven archaeological sites and seven surveys within a half-mile of the APE. No archaeological sites were identified within the APE. Examination of soils within the APE indicates suitable conditions for human habitation. However, most of the APE is located in upland areas away from perennial streams or rivers, and clustered within urban areas. Several small creeks and streams are located within a half-mile and very limited portions of the APE are located near these waterways. Within these portions, modern building and road construction has occurred and portions have also been previously surveyed for archaeological resources (i.e. McSwain 2007). The precontact archaeological sites identified within a half-mile are located along creek floodplains or creek terraces. Many streams adjacent or within the APE appear to be ephemeral or intermittent, and not suitable locations for precontact habitation due to lack of water during significant parts of the year or heavily sloped topography. The historic sites, all pertaining to the coke oven operation, are also located along a perennial stream, a necessary component of the operation.

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Determination of Effect

Based on the aforementioned identification and evaluation, PHMSA has determined that there are no historic properties as defined in 36 CFR 800.16(l) within the APE. Therefore, in accordance with 36 CFR Part 800.4(d)(1), PHMSA proposes a finding that the Undertaking will result in No Historic Properties Affected.

Request for Information and Comments

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Sincerely,

Matt Fuller
Senior Environmental Protection Specialist

MF/ah

cc: Elizabeth Williams, Environmental Protection Specialist, USDOT Volpe Center
Damond Smith, PHMSA Grant Coordinator
Ben Yahola, Tribal Historic Preservation Officer

Enclosures:
Attachment A: Project Location and APE Maps
Attachment B: Project Area Photographs

U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

December 7, 2023

Jonathan Cernek
Chairman
Coushatta Tribe of Louisiana
1940 C.C. Bel Road
Elton, LA 70532

Section 106 Consultation: PHMSA Pipeline Replacement Project in Graysville, Alabama
Grant Recipient: City of Graysville
Project Location: Cities of Graysville and Adamsville and Community of Forestdale in Jefferson County, Alabama

Dear Chairman Cernek:

The Pipeline and Hazardous Materials Safety Administration (PHMSA) provides funds authorized under the Natural Gas Distribution Infrastructure Safety and Modernization Grant Program. PHMSA proposes to provide funds to the City of Graysville (City) for the replacement of pipelines (Undertaking). PHMSA is initiating consultation for the above referenced Undertaking in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and the associated implementing regulations, 36 CFR Part 800 (Section 106). The purpose of this letter is to initiate Section 106 consultation for the Undertaking to determine if there are historic properties of cultural or religious significance to your Tribe that may be affected by the Undertaking, to determine if you want to be a consulting party, and to notify your Tribe of PHMSA's intention to make a finding of No Historic Properties Affected. PHMSA is also available for Government-to-Government consultation on this Program.

Project Description/Background

The City proposes to replace approximately 51,700 linear feet (LF) of cast iron pipeline in Adamsville and Forestdale, Alabama. The pipeline replacements consist of approximately 2,845 LF of 4-inch (in.) polyethylene (PE) pipeline, 47,975 LF of 2-in. PE pipeline, 765 LF of 1-in. PE pipeline, and 115 LF of 2-in. steel pipeline. The existing cast iron gas lines were installed in the 1960s at an average depth of 3 feet (ft). The installation of replacement pipeline will take place within the existing right-of-way (ROW) for Jefferson County, the City of Adamsville, and the Alabama Department of Transportation (DOT); no new ROW or easement will be needed. The replacement pipeline will be installed a minimum of 3 ft. away from the existing pipeline, depending on the locations of the existing utilities and ROW width, using directional boring and cut-and-cover (trenching). The width of the trenches will be between 12 and 18 in. The existing pipeline will be abandoned in place. Existing service lines, which are in easements along the grassy areas between the pipelines and the gas meters located at the front or side of adjacent buildings, will also be replaced by open trenching or plowing. The service lines are 24 in. deep, and any trenches will have a width of between 6 to 12 in.

In addition to the pipeline and service line replacement, six regulation stations with obsolete equipment will be replaced in place with new piping and equipment. Work at the stations will include replacing two 2-in. gas regulator/monitor runs with 4-in. inlet and outlet piping, replacing one 2x3 relief valve, replacing in-service connections (hot-taps) to existing 4-in. high-pressure inlet piping, and replacing 6-in. medium-pressure outlet piping. All work for the regulation station replacements will take place within the existing fenced enclosure for the station.

The maximum depth of disturbance for the project work will be 4 ft. The staging area for the Undertaking will be a fenced property at 648 Crumly Chapel Road in Forestdale, which is owned by the City. Project location maps are enclosed in **Attachment A**. Photographs showing the overall character of the project areas are included in **Attachment B**.

Area of Potential Effects (APE)

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Identification and Evaluation

To identify historic properties in the APE, individuals who meet the Secretary of the Interior's (SOI) Professional Qualification Standards reviewed available information on previously identified historic properties in the APE, including the National Register of Historic Places (NRHP) database, Alabama Historical Commission's (AHC's) Historic Preservation GIS Map, Alabama Online Cultural Resources Database (ACROD), University of Alabama's Cemeteries Web Atlas, historic aerials, and the United States Department of Agriculture's (USDA) Web Soil Survey. SOI-qualified individuals also conducted research to determine if there are any previously unidentified properties within the APE that are 45 years of age or older and may be eligible for the NRHP.

Historic Architecture

There are no NRHP-eligible or NRHP-listed above-ground resources within the APE. Additionally, a search of the AHC Historic Preservation GIS Map found no known potentially significant above-ground resources within the APE. While the service line replacements will take place from the pipeline and leading up to buildings, no alterations to buildings are anticipated. Although the regulating station equipment is housed in small, historic-age, one-room brick sheds at some locations, they are simple, common building types with no distinct style or significant historical associations and do not have the potential to be eligible for the NRHP under Criteria A, B, or C (see Photo 10 in **Attachment B**). Project work at the regulating stations is limited to the replacement of interior equipment and will not directly impact the building.

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Montevallo-Nauvoo association	Well-drained	6-45%	8.8
Nauvoo fine sandy loa	Well-drained	8-15%	1.9
Nauvoo-Urban land complex	Well-drained	2-15%	55.3
Townley-Urban land complex	Well-drained	8-15%	26.1

Historic topographic maps from 1892, 1906 and 1959 and historic aerial photographs from 1947 and 1970 were examined for archaeological resource potential within the APE. The presence of structures on historic maps and aerial photography may indicate the likelihood of historic period archaeological deposits associated with the occupation of these structures. The APE is comprised of the town centers of Adamsville,

Sandusky, and Forestdale and their immediate surroundings. The 1892 topographic map shows buildings in both Adamsville and Sandusky and calls the towns out by name. Forestdale is not shown. The coke oven operation is also noted on the map by two structures and the name "Blossburg," though it is shown just outside the half-mile search radius. In the southeastern portion of the APE at Sandusky, the 1892 map also shows the Pratt Mines, though this mine is not recorded in the archaeological record. The 1906 topographic map shows greater detail of road layout and development in both Adamsville and Sandusky. Several churches, schools, and a drive-in movie theater are shown on the 1959 topographic map, all structures alluding to widespread development in the APE. These historic areas of development indicate a possibility of historic archaeological deposits associated with these locales. Historic aerial photography in Adamsville shows the town was highly developed by 1947, with several roads and neighborhood clusters surrounding the town center. By 1970, US Highway 78 was constructed through Adamsville. Similarly, aerial photography from 1947 shows Sandusky and Forestdale developed with residential neighborhoods. By 1970, the residential streets expand in both Sandusky and Forestdale.

The University of Alabama's Cemeteries Web Atlas was reviewed to identify the presence of historic-age cemeteries in the vicinity of the APE. The closest historic-age cemetery, Midway United Methodist Church, is across Midway Road in Adamsville, outside the APE. While the full extent of the cemetery is unknown and not all burials may be marked, it is assumed that burials from this cemetery do not extend into the APE based on the location across a roadway. However, in the case of an unanticipated discovery, all construction in the area of the discovery will cease until further direction is provided, and PHMSA will continue consultation with the AHC and participating federally recognized tribes as appropriate.

Background research revealed seven archaeological sites and seven surveys within a half-mile of the APE. No archaeological sites were identified within the APE. Examination of soils within the APE indicates suitable conditions for human habitation. However, most of the APE is located in upland areas away from perennial streams or rivers, and clustered within urban areas. Several small creeks and streams are located within a half-mile and very limited portions of the APE are located near these waterways. Within these portions, modern building and road construction has occurred and portions have also been previously surveyed for archaeological resources (i.e. McSwain 2007). The precontact archaeological sites identified within a half-mile are located along creek floodplains or creek terraces. Many streams adjacent or within the APE appear to be ephemeral or intermittent, and not suitable locations for precontact habitation due to lack of water during significant parts of the year or heavily sloped topography. The historic sites, all pertaining to the coke oven operation, are also located along a perennial stream, a necessary component of the operation.

Historic topographic maps and aerials indicate that historic-age archaeological deposits may be present in parts of the APE. However, density of modern buildings and construction of roads, sidewalks, and underground utility corridors have likely disturbed any archaeological deposits. While there is potential for archaeological deposits within the APE, the Undertaking will occur near or within previous road construction and utility installation corridors in the existing right-of-way that lack soil integrity. Due to the limited scope of work and likelihood of disturbed context of the APE, an archaeological survey is not recommended at this time.

Determination of Effect

Based on the aforementioned identification and evaluation, PHMSA has determined that there are no historic properties as defined in 36 CFR 800.16(l) within the APE. Therefore, in accordance with 36 CFR Part 800.4(d)(1), PHMSA proposes a finding that the Undertaking will result in No Historic Properties Affected.

Request for Information and Comments

PHMSA requests that you provide any information you have regarding historic properties of religious or cultural significance to your Tribe that may be present in the APE and affected by the Undertaking. If your Tribe is unaware of any historic properties in the APE, PHMSA is notifying your Tribe of our intention to make a No Historic Properties Affected finding. Please notify us within 30 days from the date of receipt of this letter if you have any concerns about the project's effects to historic properties. Should you need additional information, please contact Amy Hootman, Section 106 specialist, at PHMSASection106@dot.gov or 857-998-9981.

Sincerely,

Matt Fuller
Senior Environmental Protection Specialist

MF/ah

cc: Elizabeth Williams, Environmental Protection Specialist, USDOT Volpe Center
Damond Smith, PHMSA Grant Coordinator
Kristian Poncho, Tribal Historic Preservation Officer

Enclosures:
Attachment A: Project Location and APE Maps
Attachment B: Project Area Photographs

U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

December 7, 2023

David Hill
Principal Chief
Muscogee (Creek) Nation
1007 East Eufaula Street
Okmulgee, OK 74447

Section 106 Consultation: PHMSA Pipeline Replacement Project in Graysville, Alabama
Grant Recipient: City of Graysville
Project Location: Cities of Graysville and Adamsville and Community of Forestdale in Jefferson County, Alabama

Dear Principal Chief Hill:

The Pipeline and Hazardous Materials Safety Administration (PHMSA) provides funds authorized under the Natural Gas Distribution Infrastructure Safety and Modernization Grant Program. PHMSA proposes to provide funds to the City of Graysville (City) for the replacement of pipelines (Undertaking). PHMSA is initiating consultation for the above referenced Undertaking in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and the associated implementing regulations, 36 CFR Part 800 (Section 106). The purpose of this letter is to initiate Section 106 consultation for the Undertaking to determine if there are historic properties of cultural or religious significance to your Nation that may be affected by the Undertaking, to determine if you want to be a consulting party, and to notify your Nation of PHMSA's intention to make a finding of No Historic Properties Affected. PHMSA is also available for Government-to-Government consultation on this Program.

Project Description/Background

The City proposes to replace approximately 51,700 linear feet (LF) of cast iron pipeline in Adamsville and Forestdale, Alabama. The pipeline replacements consist of approximately 2,845 LF of 4-inch (in.) polyethylene (PE) pipeline, 47,975 LF of 2-in. PE pipeline, 765 LF of 1-in. PE pipeline, and 115 LF of 2-in. steel pipeline. The existing cast iron gas lines were installed in the 1960s at an average depth of 3 feet (ft). The installation of replacement pipeline will take place within the existing right-of-way (ROW) for Jefferson County, the City of Adamsville, and the Alabama Department of Transportation (DOT); no new ROW or easement will be needed. The replacement pipeline will be installed a minimum of 3 ft. away from the existing pipeline, depending on the locations of the existing utilities and ROW width, using directional boring and cut-and-cover (trenching). The width of the trenches will be between 12 and 18 in. The existing pipeline will be abandoned in place. Existing service lines, which are in easements along the grassy areas between the pipelines and the gas meters located at the front or side of adjacent buildings, will also be replaced by open trenching or plowing. The service lines are 24 in. deep, and any trenches will have a width of between 6 to 12 in.

In addition to the pipeline and service line replacement, six regulation stations with obsolete equipment will be replaced in place with new piping and equipment. Work at the stations will include replacing two 2-in. gas regulator/monitor runs with 4-in. inlet and outlet piping, replacing one 2x3 relief valve, replacing in-service connections (hot-taps) to existing 4-in. high-pressure inlet piping, and replacing 6-in. medium-pressure outlet piping. All work for the regulation station replacements will take place within the existing fenced enclosure for the station.

The maximum depth of disturbance for the project work will be 4 ft. The staging area for the Undertaking will be a fenced property at 648 Crumly Chapel Road in Forestdale, which is owned by the City. Project location maps are enclosed in **Attachment A**. Photographs showing the overall character of the project areas are included in **Attachment B**.

Area of Potential Effects (APE)

Pursuant to 36 CFR 800.4(a)(1), the Area of Potential Effects (APE) is defined as the geographic area(s) within which the Undertaking may directly or indirectly affect historic resources. Based on the proposed scope of work, PHMSA has delineated the APE for this Undertaking to encompass the existing ROW where the pipeline replacements will take place; adjacent parcels where the service line work will take place; the parcel at 648 Crumly Chapel Road in Forestdale, which will be used for staging; and the fenced enclosures of each regulating station to be replaced. The ROW width varies throughout the project area and includes the roadway, some driveways to residences, mailboxes, trees and shrubs, drainage pipes, and other utilities. The APE extends to the depth of proposed ground disturbance of up to 4 ft. and includes the limits of disturbance. The Undertaking does not have the potential to cause visual or audible effects after the completion of construction. The APE is shown on the map in **Attachment A**.

Identification and Evaluation

To identify historic properties in the APE, individuals who meet the Secretary of the Interior's (SOI) Professional Qualification Standards reviewed available information on previously identified historic properties in the APE, including the National Register of Historic Places (NRHP) database, Alabama Historical Commission's (AHC's) Historic Preservation GIS Map, Alabama Online Cultural Resources Database (ACROD), University of Alabama's Cemeteries Web Atlas, historic aerials, and the United States Department of Agriculture's (USDA) Web Soil Survey. SOI-qualified individuals also conducted research to determine if there are any previously unidentified properties within the APE that are 45 years of age or older and may be eligible for the NRHP.

Historic Architecture

There are no NRHP-eligible or NRHP-listed above-ground resources within the APE. Additionally, a search of the AHC Historic Preservation GIS Map found no known potentially significant above-ground resources within the APE. While the service line replacements will take place from the pipeline and leading up to buildings, no alterations to buildings are anticipated. Although the regulating station equipment is housed in small, historic-age, one-room brick sheds at some locations, they are simple, common building types with no distinct style or significant historical associations and do not have the potential to be eligible for the NRHP under Criteria A, B, or C (see Photo 10 in **Attachment B**). Project work at the regulating stations is limited to the replacement of interior equipment and will not directly impact the building.

Due to the scale and nature of the Undertaking, the identification effort for above-ground resources near the pipeline and service line replacements focused on identifying properties that are susceptible to the effects of this work and could experience diminished integrity as a result of the Undertaking. A review of the APE found no potentially significant above-ground resources that have the potential to be affected by the Undertaking.

Archaeology

Alabama's archaeological site file database, ACROD, was examined to identify the presence of previously recorded archaeological sites and previously conducted archaeological surveys within the APE. As a result, three previous surveys were identified as intersecting the APE, and no previously recorded archaeological sites were identified within the APE (Table 1). In 1997, Houston conducted a cultural resources survey for road improvements across Jefferson County. In 2001, Bizzoco conducted a Phase I cultural resources assessment of roadway bridges in Jefferson County. In 2007, McSwain conducted a Phase I cultural resources survey of a bridge replacement in Jefferson County.

Table 1. Previously Conducted Archaeological Surveys within the APE

Report	Citation	Report Number
A Cultural Resources Survey of Six Proposed Phase VII Highway Improvements in Jefferson County, Alabama	Houston 1997	4058985
A Cultural Resource Assessment (Phase I) Survey of Selected Bridges in Jefferson County, Alabama	Bizzoco 2001	4063633
A Phase I Cultural-Resource Survey of the Proposed Pratt Highway Black Creek Bridge (BIN 023-37-M002) Replacement Project, Jefferson County, Alabama	McSwain 2007	4072963

A half-mile search radius was also examined for previously recorded archaeological surveys and sites. In addition to the three surveys conducted within the APE, six archaeological surveys have been conducted within a half-mile of the APE (Table 2). While no previously recorded archaeological sites were identified within the APE, seven sites were identified within a half-mile radius (Table 3).

Table 2. Previously Conducted Archaeological Surveys within a Half-Mile of the APE

Report	Citation	Report Number
An Intensive Archaeological and Historical Survey of the Alabama Highway Department Project M-7050(1) in Jefferson County, Alabama	AHC 1977	4051210
Proposed Forestdale Cell Phone Tower Site, Jefferson County, Alabama	Cooper and Keith 2001	4063942
Archaeological and Historic Architectural Survey, Hillcrest Road Relocation, Jefferson County, Alabama	Watts-Edwards 2001	4063973
A Phase I Cultural Resources Assessment of the Proposed Docena Park at Docena, Alabama	Bergstresser 2002	4072664
Archaeological Survey of the Mulberry Water Supply Pipeline	Thatcher 1982	Unknown
Report name unknown – survey of Tutwiler Coal Coke and Iron Company operation	Pratt 1997	Unknown

Of the seven archaeological sites identified in previous surveys within a half-mile of the APE, three sites are eligible, two sites are recommended not eligible, and two sites have not been evaluated for NRHP eligibility. The three eligible sites (sites 1JE532, 1JE533, and 1JE534) are associated with the Tutwiler Coal

Coke and Iron Company's coke oven operation. The AHC's web viewer names this operation the Blossburg Hollow Coke Ovens, though the archaeological site forms refer to them as the Tutwiler Coal Coke and Iron Company ovens. Based on information contained in archaeological site form records for the aforementioned sites, two other surveys were conducted in or near the APE that are not shown in ACROD. A 1982 survey by Nance Archaeological Services was conducted for the Mulberry Water Supply Pipeline that identified sites 1JE120-123. Another survey conducted in 1997 by Panamerican Consultants identified sites 1JE532-534. Although no records of the surveys were available through ACROD, it is assumed that these surveys were conducted within a half-mile of the project area. No archaeological sites or surveys were found in the southernmost segment of the APE along Birmingport Road in McDonald Chapel, Alabama.

Table 3. Previously Recorded Archaeological Sites within a Half-Mile of the APE

Site Number	Type	NRHP	Citation
1JE120	Precontact lithic scatter	Not Eligible	Thatcher 1982
1JE121	Precontact lithic scatter	Unknown	Thatcher 1982
1JE122	Precontact lithic scatter	Unknown	Thatcher 1982
1JE123	Precontact lithic scatter	Not Eligible	Thatcher 1982
1JE532	Historic coke ovens	Eligible	Pratt 1997
1JR533	Historic coke oven refuse dump	Eligible	Pratt 1997
1JE534	Historic mine associated with coke ovens	Eligible	Pratt 1997

An examination of Web Soil Survey data within the APE reveals four soil classes including Docena, Montevallo, Nauvoo, and Townley soils (Table 4). Well-drained and moderately well-drained soils can be indicative of human habitation during both the pre-contact and historic periods. All soils within the APE are well-draining or moderately well-draining soil types. Typically slopes greater than 15 percent are not suitable for human occupation, and soil types within the APE vary from 0 to 45 percent slope. The APE is comprised of nearly all well-drained soils indicating suitable conditions for human habitation in both the pre-contact and historic periods.

Table 4. Soil Types within the APE

Map Unit Name	Drainage Class	Slope	Percent of APE
Docena Complex	Moderately well-drained	0-4%	0.4
Montevallo-Nauvoo-Urban land complex	Well-drained	10-40%	7.5
Montevallo-Nauvoo association	Well-drained	6-45%	8.8
Nauvoo fine sandy loa	Well-drained	8-15%	1.9
Nauvoo-Urban land complex	Well-drained	2-15%	55.3
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Historic topographic maps from 1892, 1906 and 1959 and historic aerial photographs from 1947 and 1970 were examined for archaeological resource potential within the APE. The presence of structures on historic maps and aerial photography may indicate the likelihood of historic period archaeological deposits associated with the occupation of these structures. The APE is comprised of the town centers of Adamsville,

Sandusky, and Forestdale and their immediate surroundings. The 1892 topographic map shows buildings in both Adamsville and Sandusky and calls the towns out by name. Forestdale is not shown. The coke oven operation is also noted on the map by two structures and the name "Blossburg," though it is shown just outside the half-mile search radius. In the southeastern portion of the APE at Sandusky, the 1892 map also shows the Pratt Mines, though this mine is not recorded in the archaeological record. The 1906 topographic map shows greater detail of road layout and development in both Adamsville and Sandusky. Several churches, schools, and a drive-in movie theater are shown on the 1959 topographic map, all structures alluding to widespread development in the APE. These historic areas of development indicate a possibility of historic archaeological deposits associated with these locales. Historic aerial photography in Adamsville shows the town was highly developed by 1947, with several roads and neighborhood clusters surrounding the town center. By 1970, US Highway 78 was constructed through Adamsville. Similarly, aerial photography from 1947 shows Sandusky and Forestdale developed with residential neighborhoods. By 1970, the residential streets expand in both Sandusky and Forestdale.

The University of Alabama's Cemeteries Web Atlas was reviewed to identify the presence of historic-age cemeteries in the vicinity of the APE. The closest historic-age cemetery, Midway United Methodist Church, is across Midway Road in Adamsville, outside the APE. While the full extent of the cemetery is unknown and not all burials may be marked, it is assumed that burials from this cemetery do not extend into the APE based on the location across a roadway. However, in the case of an unanticipated discovery, all construction in the area of the discovery will cease until further direction is provided, and PHMSA will continue consultation with the AHC and participating federally recognized tribes as appropriate.

Background research revealed seven archaeological sites and seven surveys within a half-mile of the APE. No archaeological sites were identified within the APE. Examination of soils within the APE indicates suitable conditions for human habitation. However, most of the APE is located in upland areas away from perennial streams or rivers, and clustered within urban areas. Several small creeks and streams are located within a half-mile and very limited portions of the APE are located near these waterways. Within these portions, modern building and road construction has occurred and portions have also been previously surveyed for archaeological resources (i.e. McSwain 2007). The precontact archaeological sites identified within a half-mile are located along creek floodplains or creek terraces. Many streams adjacent or within the APE appear to be ephemeral or intermittent, and not suitable locations for precontact habitation due to lack of water during significant parts of the year or heavily sloped topography. The historic sites, all pertaining to the coke oven operation, are also located along a perennial stream, a necessary component of the operation.

Historic topographic maps and aerials indicate that historic-age archaeological deposits may be present in parts of the APE. However, density of modern buildings and construction of roads, sidewalks, and underground utility corridors have likely disturbed any archaeological deposits. While there is potential for archaeological deposits within the APE, the Undertaking will occur near or within previous road construction and utility installation corridors in the existing right-of-way that lack soil integrity. Due to the limited scope of work and likelihood of disturbed context of the APE, an archaeological survey is not recommended at this time.

Determination of Effect

Based on the aforementioned identification and evaluation, PHMSA has determined that there are no historic properties as defined in 36 CFR 800.16(l) within the APE. Therefore, in accordance with 36 CFR Part 800.4(d)(1), PHMSA proposes a finding that the Undertaking will result in No Historic Properties Affected.

Request for Information and Comments

PHMSA requests that you provide any information you have regarding historic properties of religious or cultural significance to your Nation that may be present in the APE and affected by the Undertaking. If your Nation is unaware of any historic properties in the APE, PHMSA is notifying your Nation of our intention to make a No Historic Properties Affected finding. Please notify us within 30 days from the date of receipt of this letter if you have any concerns about the project's effects to historic properties. Should you need additional information, please contact Amy Hootman, Section 106 specialist, at PHMSASection106@dot.gov or 857-998-9981.

Sincerely,

Matt Fuller
Senior Environmental Protection Specialist

MF/ah

cc: Elizabeth Williams, Environmental Protection Specialist, USDOT Volpe Center
Damond Smith, PHMSA Grant Coordinator
Turner Hunt, Tribal Historic Preservation Officer

Enclosures:
Attachment A: Project Location and APE Maps
Attachment B: Project Area Photographs

Appendix H

Section 4(f)


Spring Street Park - Adamsville
Legend
Spring St
Park Ave
Tilson Rd
Tilson Rd
Park A
Google Earth
Spring Street Park
N
200 ft


Spring Street Park - Adamsville
Legend
Spring St
Google Earth
© 2023 Google
N
6.00 ft

Appendix I

Environmental Justice

EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Jefferson County, AL

County: Jefferson
Population: 672,550
Area in square miles: 1124.14

A3 Landscape

LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	94%
Spanish	3%
Other Indo-European	1%
Total Non-English	6%

COMMUNITY INFORMATION

Low income: 33 percent

People of color: 51 percent

Less than high school education: 9 percent

Limited English households: 2 percent

Unemployment: 6 percent

Persons with disabilities: 16 percent

Male: 47 percent

Female: 53 percent

76 years
Average life expectancy

$34,860
Per capita income

Number of households: 264,105

Owner occupied: 64 percent

BREAKDOWN BY RACE

White: 49%

Black: 43%

American Indian: 0%

Asian: 2%

Hawaiian/Pacific Islander: 0%

Other race: 0%

Two or more races: 2%

Hispanic: 4%

BREAKDOWN BY AGE

From Ages 1 to 4	6%
From Ages 1 to 18	23%
From Ages 18 and up	77%
From Ages 65 and up	16%

LIMITED ENGLISH SPEAKING BREAKDOWN

Speak Spanish	70%
Speak Other Indo-European Languages	9%
Speak Asian-Pacific Island Languages	19%
Speak Other Languages	2%

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2017 -2021. Life expectancy data comes from the Centers for Disease Control.

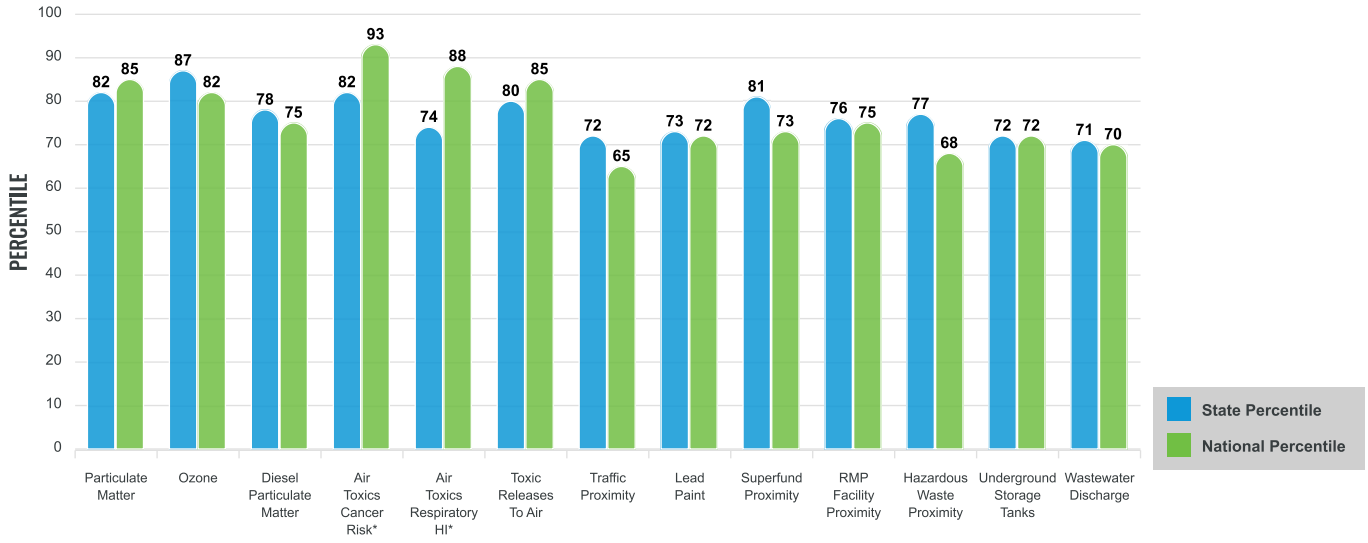
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

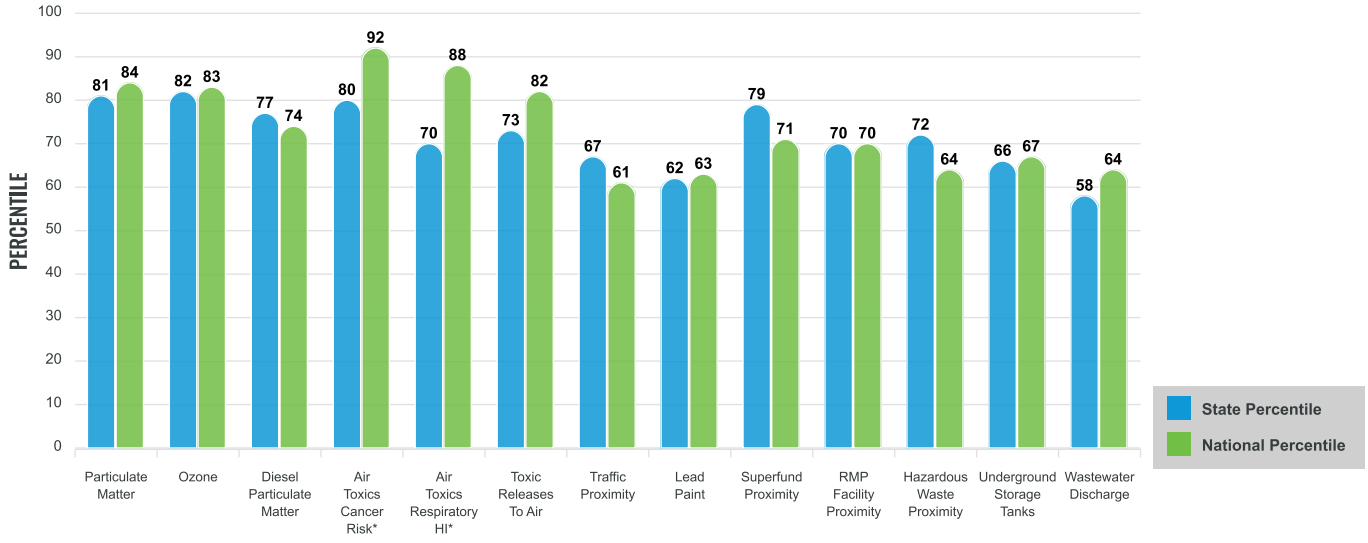
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
POLLUTION AND SOURCES					
Particulate Matter (µg/m^3)	10.1	9.17	88	8.08	92
Ozone (ppb)	66.6	60.8	89	61.6	83
Diesel Particulate Matter (µg/m^3)	0.31	0.189	85	0.261	70
Air Toxics Cancer Risk* (lifetime risk per million)	40	34	64	25	94
Air Toxics Respiratory HI*	0.48	0.44	9	0.31	70
Toxic Releases to Air	7,300	21,000	82	4,600	90
Traffic Proximity (daily traffic count/distance to road)	130	79	83	210	63
Lead Paint (% Pre-1960 Housing)	0.29	0.19	76	0.3	57
Superfund Proximity (site count/km distance)	0.1	0.051	89	0.13	67
RMP Facility Proximity (facility count/km distance)	0.47	0.31	82	0.43	75
Hazardous Waste Proximity (facility count/km distance)	0.89	0.43	85	1.9	59
Underground Storage Tanks (count/km^2)	2.7	1.9	77	3.9	65
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.05	0.3	85	22	78
SOCIOECONOMIC INDICATORS					
Demographic Index	42%	38%	63	35%	66
Supplemental Demographic Index	15%	16%	43	14%	59
People of Color	51%	38%	69	39%	66
Low Income	33%	38%	44	31%	60
Unemployment Rate	6%	6%	64	6%	65
Limited English Speaking Households	2%	1%	84	5%	61
Less Than High School Education	9%	14%	39	12%	54
Under Age 5	6%	6%	63	6%	63
Over Age 64	16%	18%	45	17%	51
Low Life Expectancy	22%	23%	37	20%	75

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

Sites reporting to EPA within defined area:

Superfund	2
Hazardous Waste, Treatment, Storage, and Disposal Facilities	33
Water Dischargers	3715
Air Pollution	485
Brownfields	81
Toxic Release Inventory	190

Other community features within defined area:

Schools	186
Hospitals	36
Places of Worship	703

Other environmental data:

Air Non-attainment	Yes
Impaired Waters	Yes

Selected location contains American Indian Reservation Lands*	No
Selected location contains a "Justice40 (CEJST)" disadvantaged community	Yes
Selected location contains an EPA IRA disadvantaged community	Yes

Report for County: Jefferson

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS

INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	22%	23%	37	20%	75
Heart Disease	6.6	7.4	32	6.1	62
Asthma	9.7	10.2	33	10	43
Cancer	6.2	6.4	36	6.1	48
Persons with Disabilities	15.3%	17%	43	13.4%	67

CLIMATE INDICATORS

INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	13%	13%	66	12%	75
Wildfire Risk	1%	12%	69	14%	79

CRITICAL SERVICE GAPS

INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	15%	20%	43	14%	61
Lack of Health Insurance	9%	10%	46	9%	63
Housing Burden	Yes	N/A	N/A	N/A	N/A
Transportation Access	Yes	N/A	N/A	N/A	N/A
Food Desert	Yes	N/A	N/A	N/A	N/A

Footnotes

Report for County: Jefferson

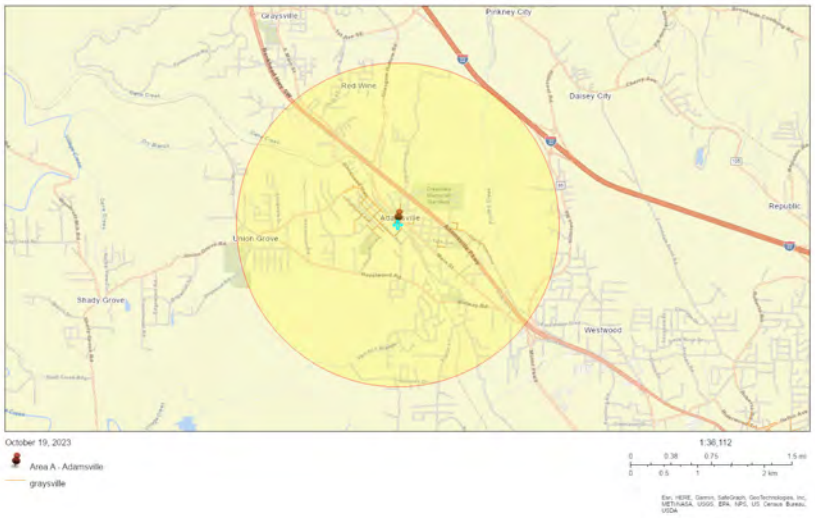
EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Adamsville, AL

1.5 miles Ring Centered at 33.599723,-86.954079
Population: 3,603
Area in square miles: 7.06

A3 Landscape



LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	99%
German or other West Germanic	1%
Total Non-English	1%

COMMUNITY INFORMATION

Low income: 42 percent

People of color: 63 percent

Less than high school education: 21 percent

Limited English households: 0 percent

Unemployment: 10 percent

Persons with disabilities: 27 percent

Male: 45 percent

Female: 55 percent

72 years
Average life expectancy

$22,825
Per capita income

Number of households: 1,302

Owner occupied: 81 percent

BREAKDOWN BY RACE

White: 37%

Black: 59%

American Indian: 0%

Asian: 0%

Hawaiian/Pacific Islander: 0%

Other race: 0%

Two or more races: 3%

Hispanic: 0%

BREAKDOWN BY AGE

From Ages 1 to 4	5%
From Ages 1 to 18	19%
From Ages 18 and up	81%
From Ages 65 and up	22%

LIMITED ENGLISH SPEAKING BREAKDOWN

Speak Spanish	0%
Speak Other Indo-European Languages	0%
Speak Asian-Pacific Island Languages	0%
Speak Other Languages	0%

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2017 -2021. Life expectancy data comes from the Centers for Disease Control.

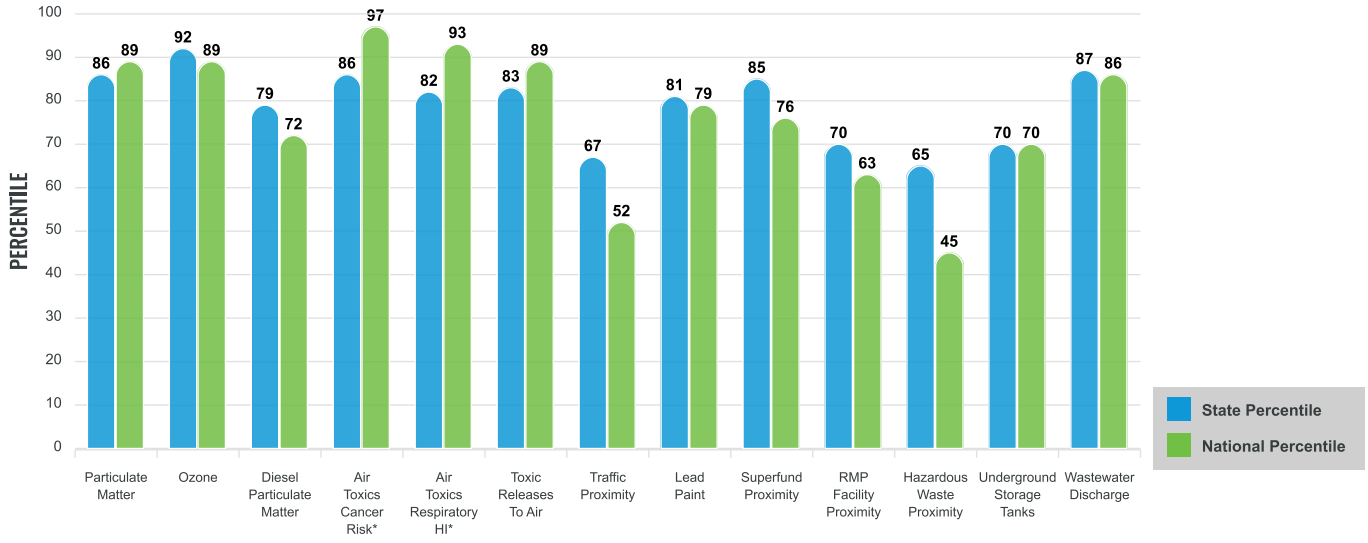
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

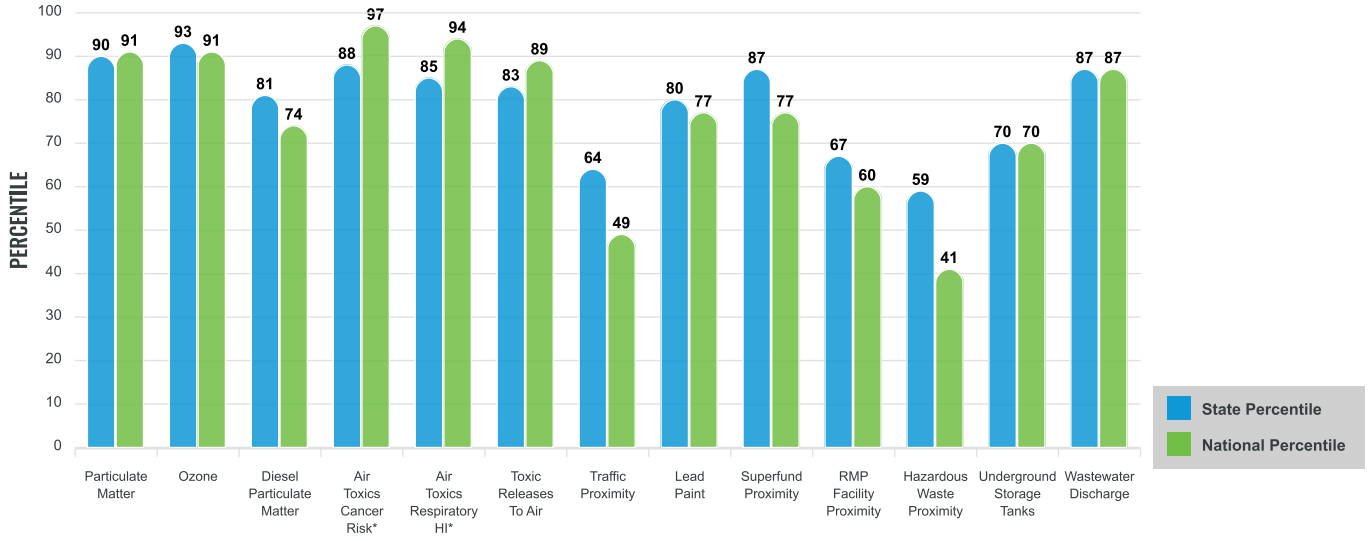
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for 1.5 miles Ring Centered at 33.599723,-86.954079

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
POLLUTION AND SOURCES					
Particulate Matter ($\mu g/m^3$)	9.9	9.17	84	8.08	89
Ozone (ppb)	67.5	60.8	94	61.6	87
Diesel Particulate Matter ($\mu g/m^3$)	0.221	0.189	69	0.261	51
Air Toxics Cancer Risk* (lifetime risk per million)	40	34	64	25	94
Air Toxics Respiratory HI*	0.5	0.44	56	0.31	92
Toxic Releases to Air	3,400	21,000	68	4,600	81
Traffic Proximity (daily traffic count/distance to road)	25	79	46	210	27
Lead Paint (% Pre-1960 Housing)	0.34	0.19	80	0.3	61
Superfund Proximity (site count/km distance)	0.067	0.051	78	0.13	53
RMP Facility Proximity (facility count/km distance)	0.12	0.31	51	0.43	37
Hazardous Waste Proximity (facility count/km distance)	0.11	0.43	40	1.9	21
Underground Storage Tanks (count/km^2)	1.1	1.9	59	3.9	48
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.036	0.3	83	22	76
SOCIOECONOMIC INDICATORS					
Demographic Index	52%	38%	73	35%	76
Supplemental Demographic Index	20%	16%	71	14%	78
People of Color	63%	38%	76	39%	74
Low Income	42%	38%	59	31%	71
Unemployment Rate	10%	6%	79	6%	81
Limited English Speaking Households	0%	1%	0	5%	0
Less Than High School Education	21%	14%	78	12%	82
Under Age 5	5%	6%	51	6%	50
Over Age 64	22%	18%	71	17%	74
Low Life Expectancy	26%	23%	82	20%	94

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

Sites reporting to EPA within defined area:

Superfund	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities	0
Water Dischargers	15
Air Pollution	2
Brownfields	0
Toxic Release Inventory	0

Other community features within defined area:

Schools	2
Hospitals	1
Places of Worship	4

Other environmental data:

Air Non-attainment	Yes
Impaired Waters	No

Selected location contains American Indian Reservation Lands*	No
Selected location contains a "Justice40 (CEJST)" disadvantaged community	Yes
Selected location contains an EPA IRA disadvantaged community	Yes

Report for 1.5 miles Ring Centered at 33.599723,-86.954079

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS

INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	26%	23%	82	20%	94
Heart Disease	8.3	7.4	66	6.1	86
Asthma	10.1	10.2	48	10	55
Cancer	6.9	6.4	61	6.1	64
Persons with Disabilities	23.8%	17%	85	13.4%	93

CLIMATE INDICATORS

INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	10%	13%	50	12%	66
Wildfire Risk	9%	12%	77	14%	81

CRITICAL SERVICE GAPS

INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	38%	20%	86	14%	94
Lack of Health Insurance	10%	10%	52	9%	67
Housing Burden	No	N/A	N/A	N/A	N/A
Transportation Access	Yes	N/A	N/A	N/A	N/A
Food Desert	Yes	N/A	N/A	N/A	N/A

Footnotes

Report for 1.5 miles Ring Centered at 33.599723,-86.954079

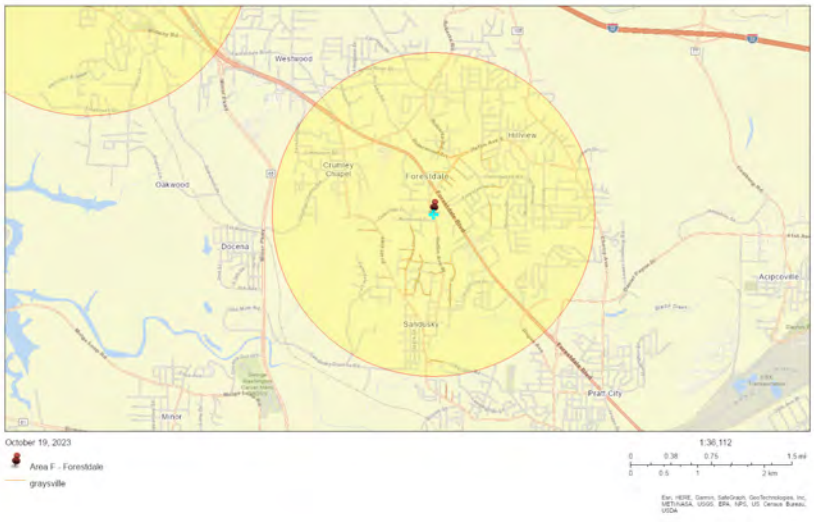
EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Forestdale, AL

1.5 miles Ring Centered at 33.564677,-86.898462
Population: 8,334
Area in square miles: 7.06

A3 Landscape



LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	96%
Spanish	3%
Total Non-English	4%

COMMUNITY INFORMATION

- Low income: 32 percent
- People of color: 84 percent
- Less than high school education: 9 percent
- Limited English households: 0 percent
- Unemployment: 11 percent
- Persons with disabilities: 17 percent
- Male: 43 percent
- Female: 57 percent
- 71 years — Average life expectancy
- $28,579 — Per capita income
- Number of households: 3,484
- Owner occupied: 72 percent

BREAKDOWN BY RACE

- White: 16%
- Black: 78%
- American Indian: 0%
- Asian: 1%
- Hawaiian/Pacific Islander: 0%
- Other race: 1%
- Two or more races: 2%
- Hispanic: 2%

BREAKDOWN BY AGE

From Ages 1 to 4	5%
From Ages 1 to 18	19%
From Ages 18 and up	81%
From Ages 65 and up	20%

LIMITED ENGLISH SPEAKING BREAKDOWN

Speak Spanish	0%
Speak Other Indo-European Languages	0%
Speak Asian-Pacific Island Languages	0%
Speak Other Languages	0%

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2017 -2021. Life expectancy data comes from the Centers for Disease Control.

Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

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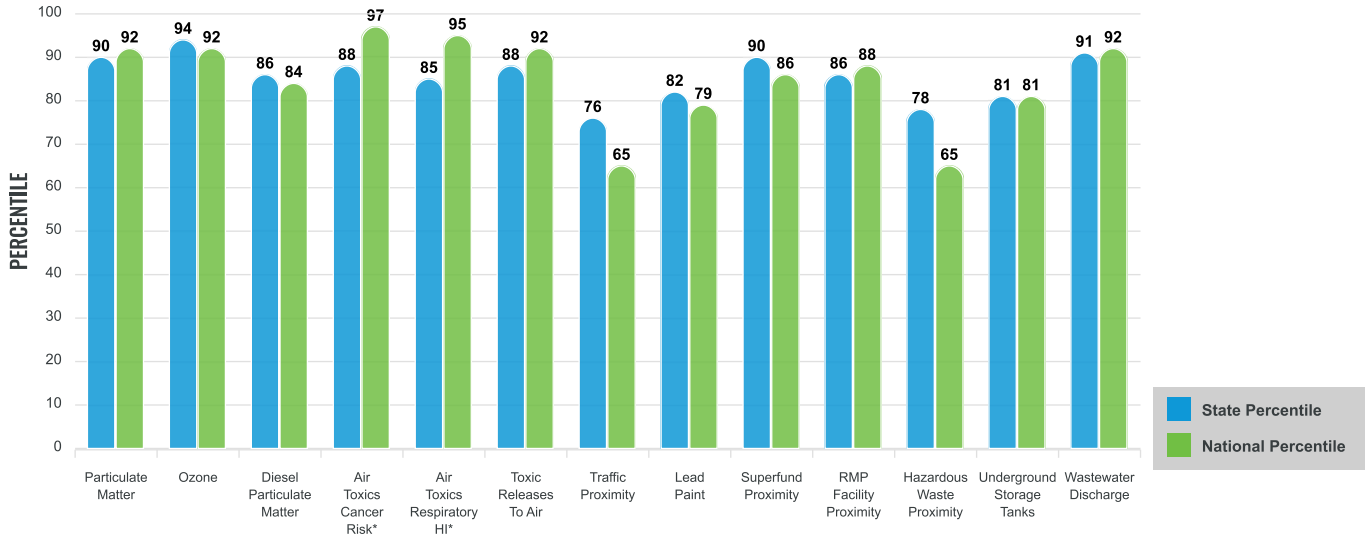

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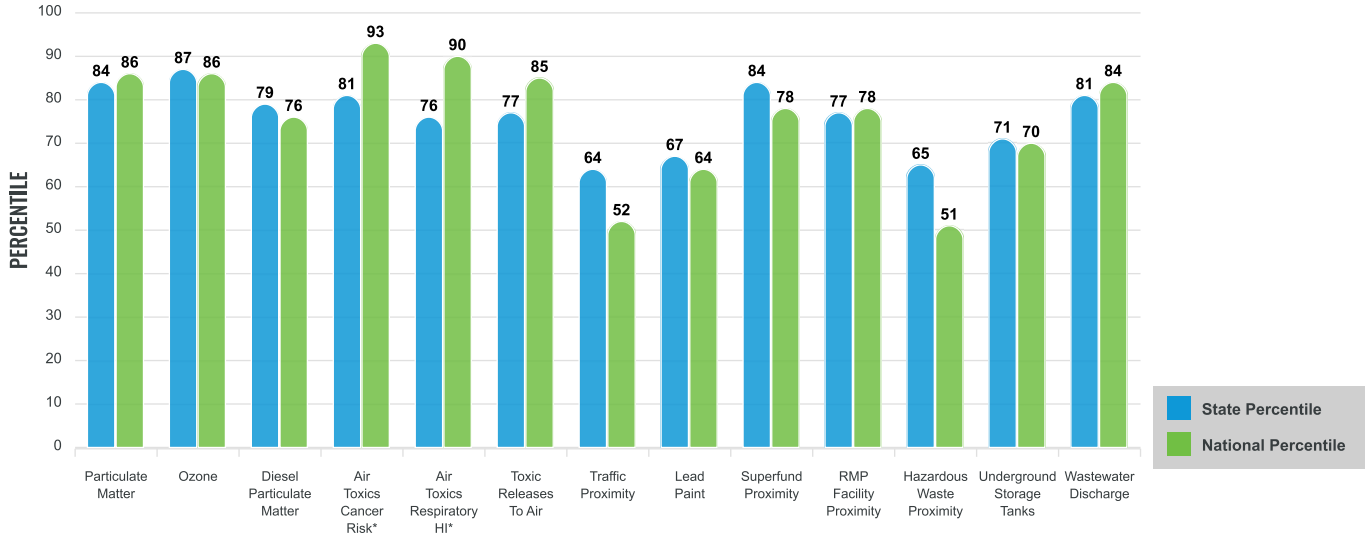

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Report for 1.5 miles Ring Centered at 33.564677,-86.898462

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SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
POLLUTION AND SOURCES					
Particulate Matter ($\mu g/m^3$)	10.2	9.17	90	8.08	93
Ozone (ppb)	67.9	60.8	96	61.6	88
Diesel Particulate Matter ($\mu g/m^3$)	0.304	0.189	84	0.261	69
Air Toxics Cancer Risk* (lifetime risk per million)	40	34	64	25	94
Air Toxics Respiratory HI*	0.5	0.44	56	0.31	92
Toxic Releases to Air	5,400	21,000	76	4,600	87
Traffic Proximity (daily traffic count/distance to road)	50	79	62	210	40
Lead Paint (% Pre-1960 Housing)	0.27	0.19	74	0.3	55
Superfund Proximity (site count/km distance)	0.12	0.051	92	0.13	71
RMP Facility Proximity (facility count/km distance)	0.63	0.31	85	0.43	80
Hazardous Waste Proximity (facility count/km distance)	0.22	0.43	62	1.9	38
Underground Storage Tanks (count/km^2)	2.8	1.9	77	3.9	65
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.56	0.3	95	22	89
SOCIOECONOMIC INDICATORS					
Demographic Index	58%	38%	78	35%	81
Supplemental Demographic Index	15%	16%	48	14%	63
People of Color	84%	38%	86	39%	85
Low Income	32%	38%	41	31%	57
Unemployment Rate	11%	6%	82	6%	84
Limited English Speaking Households	0%	1%	0	5%	0
Less Than High School Education	9%	14%	39	12%	54
Under Age 5	5%	6%	53	6%	52
Over Age 64	20%	18%	62	17%	66
Low Life Expectancy	26%	23%	82	20%	94

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Sites reporting to EPA within defined area:

Superfund	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities	0
Water Dischargers	16
Air Pollution	0
Brownfields	0
Toxic Release Inventory	0

Other community features within defined area:

Schools	1
Hospitals	0
Places of Worship	6

Other environmental data:

Air Non-attainment	Yes
Impaired Waters	No

Selected location contains American Indian Reservation Lands*	No
Selected location contains a "Justice40 (CEJST)" disadvantaged community	Yes
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Heart Disease	6.9	7.4	34	6.1	65
Asthma	9.9	10.2	43	10	52
Cancer	6.4	6.4	45	6.1	54
Persons with Disabilities	15.8%	17%	45	13.4%	70

CLIMATE INDICATORS

INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	9%	13%	43	12%	63
Wildfire Risk	0%	12%	64	14%	78

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Broadband Internet	17%	20%	49	14%	67
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Housing Burden	No	N/A	N/A	N/A	N/A
Transportation Access	Yes	N/A	N/A	N/A	N/A
Food Desert	Yes	N/A	N/A	N/A	N/A

Footnotes

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