

**Project STP-7062 (1)
COLUMBIA COUNTY
P.I. Number 250600**

The proposed four-lane widening of Flowing Wells Road from Wheeler Road/I-20 interchange to Washington Road (SR 104). The total length of the project is approximately 1.6 miles.

ENVIRONMENTAL ASSESSMENT

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
GEORGIA DEPARTMENT OF TRANSPORTATION**

SUBMITTED PURSUANT TO 42 USC 4321 et. seq.

APPROVAL FOR ADVANCEMENT TO AVAILABILITY /PUBLIC HEARING PHASE

DATE

FOR: ROBERT M. CALLAN, P.E.

APPROVAL OF ENVIRONMENTAL ASSESSMENT

DATE

FOR: ROBERT M. CALLAN, P.E.
DIVISION ADMINISTRATOR
FEDERAL HIGHWAY ADMINISTRATION

TABLE OF CONTENTS

Section	Page
I. PURPOSE AND NEED	1
II. Description of Alternatives	5
A. The Preferred Alternative (Proposed Project)	5
B. The No-Build Alternative	9
C. Alternatives No Longer Under Consideration	9
III. ENVIRONMENTAL CONSEQUENCES	11
A. Effects on the Social Environment	11
1. Land Use Changes	11
2. Community Cohesion	11
3. Relocations	12
4. Churches and Institutions	15
5. Community Impacts/Environmental Justice	15
6. Economic Consequences	16
B. Effects on the Cultural Environment	16
1. Cultural Resources	16
a. Historic Resources	17
b. Archaeological Resources	17
c. Cemeteries	18
d. Historic Markers	18
2. Parklands/Recreation Areas/Wildlife Refuges	18
3. Section 4(f) Applicability	18
C. Effects on the Natural Environment	18
1. Water Quality	18
2. Waters of the U.S.	19
a. Wetlands	19
b. Streams	19
c. Open Waters	19
3. Floodplains	19
4. Farmland	19
5. Threatened and Endangered Species	19
6. Invasive Species	21
D. Effects on the Physical Environment	21
1. Noise	22
2. Air	22
3. Energy/Mineral Resources	24
4. Construction/Utilities	24
5. USTs/Hazardous Waste Sites	24
E. Indirect and Cumulative Impacts	25
1. Indirect Impacts	25
2. Cumulative Impacts	26
F. Permits/Variations	26
1. U.S. Coast Guard Permit	26
2. Forest Service/Corps Land	26
3. Section 404	27
4. Tennessee Valley Authority	27
5. Stream Buffer Variance	27
6. Coastal Zone Management Coordination	27
IV. COORDINATION AND COMMENTS	28

APPENDICES

Appendix A – Concept Report

Appendix B – Correspondence and Interagency Coordination

Appendix C – Conceptual Stage Study

Appendix D – Noise Impact Assessment

Appendix E – Air Quality Impact Assessment

Appendix F – Public Meeting Correspondence and Comments

LIST OF FIGURES	Page
Figure 1 – Project Location Map	6
Figure 2A & B – Typical Sections	7 & 8
Figure 3 – Future Land Use	12
Figure 4 – Proposed Project Displacements	14
Figure 5 – Noise Impacted Sites	23

LIST OF TABLES

Table 1. – Intersection Level of Service Summary	3
Table 2. – Accident Information for the 1.6 Miles of Project Corridor	3
Table 3. – Federally Listed Species Potentially Occurring in Columbia County	21

I. PURPOSE AND NEED

Located near the border of Columbia and Richmond Counties, Flowing Wells Road serves as an inter-radial connector to major radial transportation corridors within the Augusta area. In addition, Flowing Wells Road/Wheeler Road corridor directly funnels traffic from southeastern Columbia County to areas of Augusta including downtown. The project base year (2001) traffic projection for the section of Flowing Wells Road from Interstate 20 (I-20) to State Road (SR) 232 (Columbia Road) is approximately 18,000 vehicles per day (VPD) and the design year (2021) traffic projection is approximately 28,400 VPD. Flowing Wells Road from SR 232 (Columbia Road) to SR 104 (Washington Road), the base year (2008) traffic is approximately 9,840 VPD and the design year (2028) traffic projection is approximately 20,000 VPD.

The preferred alternative would widen Flowing Wells Road from two through lanes to four through lanes with a 20-foot raised median extending from I-20 to Columbia Road (SR 232) and a 16-foot flush median extending from Columbia Road (SR 232) to Washington Road (SR 104). Exclusive turn lanes would be added on Flowing Wells at each of the cross streets. Signalization has been added to the intersections of Flowing Wells Road at Pleasant Home Road, Flowing Wells Road at Quail Springs Circle and Flowing Wells Road at Martinez Elementary School South. The preferred alternative would also provide bicycle lanes and sidewalks on both sides of the road. The southern terminus of Flowing Wells Road as well as the southern terminus of the proposed project is the I-20/Wheeler Road interchange. At its southern terminus, Flowing Wells Road connects with Wheeler Road via a free flow lane that directly accesses the Wheeler Road ramps to I-20. The proposed project extends approximately 1.6 miles north and terminates at the northern limit of Flowing Wells Road where it intersects with Washington Road (SR 104). At this T intersection, the Flowing Wells Road approach would consist of dual left turn lanes and an exclusive right turn lane. The project termini connect with two of the primary roadway facilities in Columbia County providing access between rapidly growing areas of Columbia County, employment and shopping within the Augusta area.

Flowing Wells Road is an arterial facility that provides access to Washington Road (SR 104), Columbia Road (SR 232), and the I-20/Wheeler Road interchange. Rapid development of Columbia County has increased travel demand between Columbia County and the greater Augusta area. The recently completed construction of the I-20/Wheeler Road interchange also involved the realignment of Wheeler Road and Flowing Wells Road. The realigned facilities now provide the through movement to the Flowing Wells

Road/Wheeler Road traffic, tying-in the western section of Wheeler Road with a stop condition. This transportation improvement along with area population and employment growth have, over time, increased travel demand along Flowing Wells Road. Current travel conditions on Flowing Wells Road have become congested. All six of the major intersections along the project corridor are capacity constrained due largely to the lack of turning movement storage lanes on Flowing Wells Road. For three of these intersections, the existing method of intersection control is also an issue.

Level of Service (LOS) is a qualitative measure of the effect of speed and travel time, traffic interruptions or restrictions, freedom to maneuver, safety, driving comfort, convenience, and economy. There are six levels of service that are defined for each type of facility in which analysis procedures are available; they are given letter designations from A to F, with LOS A representing the best operating conditions and LOS F representing the worst.

Under existing conditions, the peak period operations of the three main unsignalized intersections along the project corridor (Martinez Elementary School South, Quail Springs Circle and Pleasant Home Road) are at either LOS D or LOS E. Many vehicles experience long delays especially when making left turns. Due to the poor LOS at these three unsignalized intersections, a signal warrant analysis was performed. As a result, signalization along with intersection geometric improvements was recommended as part of this project's capacity increasing features. The three existing signalized intersections along the Flowing Wells Road corridor (Washington Road (SR 104), Columbia Road (SR 232), and Augusta Preparatory School/Old Trail West) operate at acceptable LOS, currently. However, by the design year 2028, all three intersections would have failing LOS without the proposed improvements. Table 1 shows the LOS for the six project intersections.

Table 1
Intersection Level of Service Summary
Intersections

Intersection of Flowing Wells Road at...	AM			PM		
	Existing (2000)	Future* No-Build	Future* with Improvements	Existing (2000)	Future* No-Build	Future* with Improvements
Washington Road	B	F	E	C	F	D
Columbia Road	C	F	C	D	F	C
Martinez Elementary School South ¹ Eastbound Approach	D	E	B	C	D	B
Quail Springs Circle ¹ Eastbound Approach	D	E	B	C	D	B
Augusta Prep/Old Trail West	D	F	C	B	D	B
Pleasant Home Road ¹ Westbound Approach	E	F	B	E	F	B

*2021 Design Traffic volumes for all intersections except Washington Road and Columbia Road which are 2028 volumes provided by GDOT.

Note 1: These intersections are currently Stop Sign Controlled at the side streets.

Accidents along the project corridor are numerous and the accident rates are high. As Table 2 shows, accident rates along the project corridor far exceed the corresponding statewide accident rates.

Table 2
Accident Information for the 1.6 mile project corridor

Year	Number of Accidents	Local Accident Rate	Statewide Accident Rate
2000	65	9,327	443
2001	44	5,160	564
2002	64	4,892	568

Note: Rates are per 100 million vehicle miles of travel

The Augusta Regional Transportation Study (ARTS) identified the Flowing Wells corridor as experiencing existing and future capacity deficiencies. As a result of this need, the proposed project was made a

component of the ARTS Year 2015 Transportation Plan, adopted by the ARTS Policy Committee back on December 8, 1994. The ARTS is a comprehensive, cooperative, and continuing transportation planning process conducted by local governments, the Georgia and South Carolina Departments of Transportation, and the Federal Highway and Federal Transit Administrations. The proposed project is included as STP-7 in the (FY 2004 –FY 2006) ARTS Transportation Improvement Program (TIP) and the State Transportation Improvement Program (STIP).

The proposed widening of Flowing Wells Road has independent utility as a local connector facility and as an arterial facility that improves the efficiency of the regional transportation network. The proposed widening of Flowing Wells Road would improve traffic flow conditions along the corridor and improve the inter-radial connection between Washington Road (SR 104), Columbia Road (SR 232), and the I-20/Wheeler Road interchange. The preferred alternative would also provide safe bicycle and pedestrian access. The proposed project also has independent utility in that it requires no other local roadway improvements to serve a useful transportation function or need.

II. Description of Alternatives

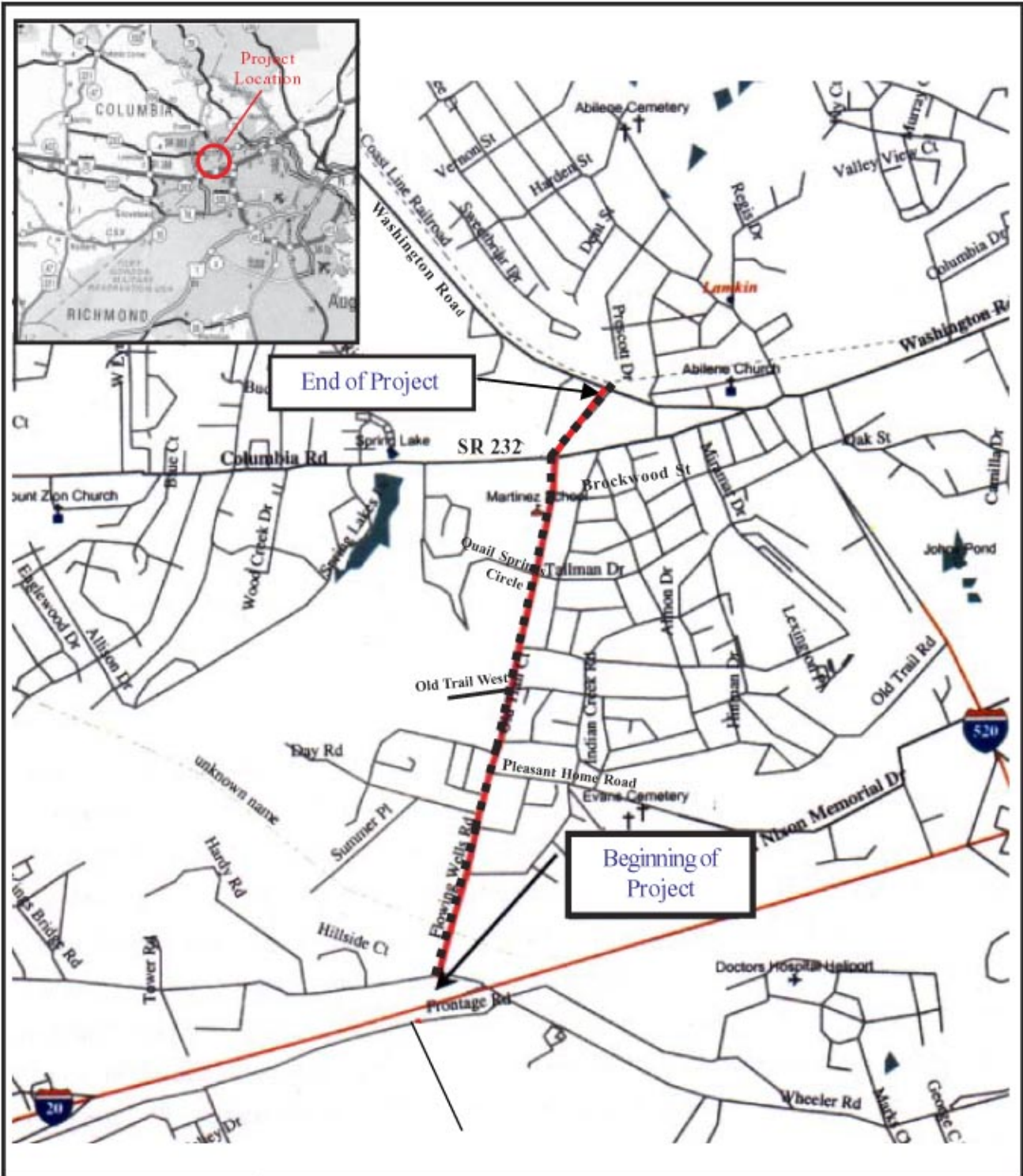
A. The Preferred Alternative (Proposed Project)

The preferred alternative would widen and reconstruct the entire length of Flowing Wells Road, from the I-20/Wheeler Road interchange to Washington Road (SR 104) for a total of approximately 1.6 miles. Please refer to Figure 1, the Project Location Map. At present, Flowing Wells Road is a rural two-lane facility with 12-foot wide travel lanes and variable width graded shoulders. The proposed design speed would remain the same as under the existing condition, 45 miles per hour (mph). The posted speed limit is also 45 mph.

The preferred alternative would widen Flowing Wells Road from a two-lane facility to a four-lane (12-foot wide through lanes) divided facility with a 20-foot raised median and a 4-foot bicycle lane on each side of the roadway from the interchange to SR 232. The typical section also includes a 12-foot shoulder with a 5-foot sidewalk on each side of the roadway. A second typical section would be used for the commercialized section of Flowing Wells Road extending from Columbia Road (SR 232) to Washington Road (SR 104). In order to maintain full access to all businesses along this section of the corridor, the typical section would consist of four 13-foot travel lanes and a 16-foot wide center two-way left turn lane. Exclusive turn lanes would be added on Flowing Wells at each of the cross streets. Signalization has been added to the intersections of Flowing Wells Road at Pleasant Home Road, Flowing Wells Road at Quail Springs Circle and Flowing Wells Road at Martinez Elementary School South. The preferred alternative construction would be phased in order to maintain traffic flow and access at all times. Figures 2a and 2b show the typical sections to be used for the proposed project.

The design of the preferred alternative was considered superior to the various other alternative alignments because the preferred alternative dramatically improves the vertical alignment of the shoulder area and thus maintains acceptable sidewalk and driveway grades all while increasing capacity and improving sight distances. As a result, the efficiency and safety of the roadway would be improved. Other alternative alignments/designs created unacceptable driveway and sidewalk slopes and as a result did not comply with Americans with Disabilities Act (ADA) standards.

The preferred alternative was developed by the Office of Urban Design, which, as a standard procedure, includes environmental parameters as a part of the location investigation prior to laying out a proposed



Legend:

 Proposed Project

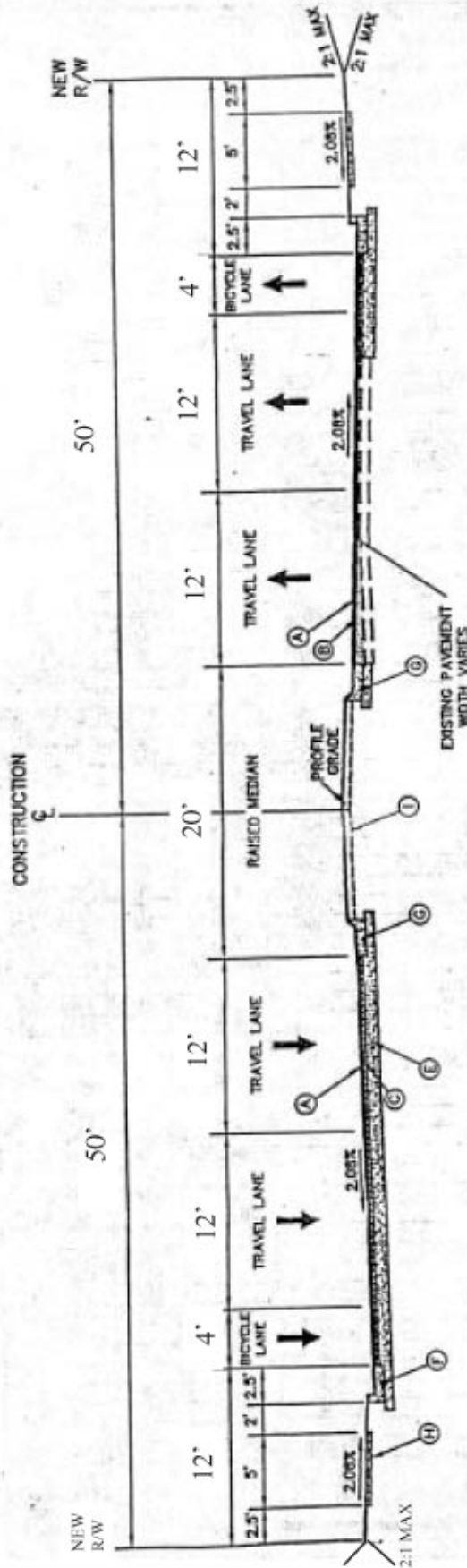
PROJECT LOCATION MAP

GDOT Project STP-7062(1)
 PI# 250600, COLUMBIA COUNTY

Figure 1

NOT TO SCALE

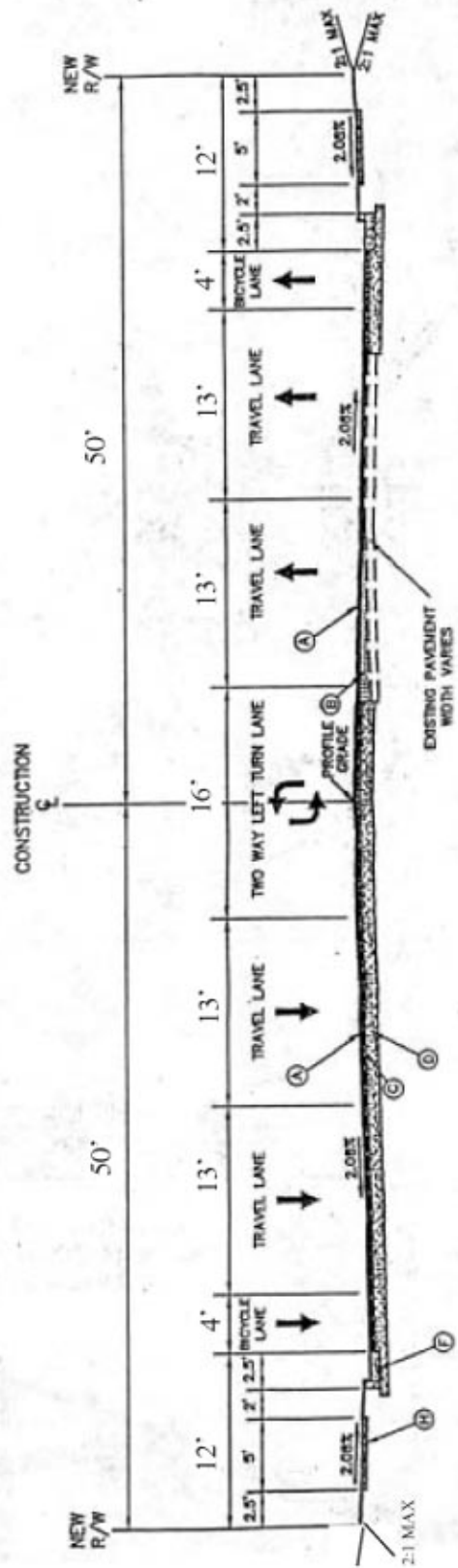




RAISED MEDIAN TYPICAL SECTION
 FROM WHEELER ROAD TO COLUMBIA ROAD (SR 232)

GDOT Project # STP-7062(1)
 PI# 250600, COLUMBIA COUNTY
 PROPOSED WIDENING OF FLOWING WELLS ROAD
 Figure 2a

NOT TO SCALE



FLUSHED MEDIAN TYPICAL SECTION
 FROM COLUMBIA ROAD(SR 232) TO WASHINGTON ROAD(SR 104)

GDOT Project # STP-7062(1)
 PI# 250600, COLUMBIA COUNTY
 PROPOSED WIDENING OF FLOWING WELLS ROAD

Figure 2b

NOT TO SCALE

alignment. Basic data of the corridor is gathered and studied. Data for this project included, at a minimum, aerial photography, topo maps, traffic (existing and projected), previous studies, wetland inventory maps, soil survey maps, floodplain maps, and Georgia Department of Natural Resources historic resource survey maps.

Environmental constraints were delineated on aerial photography prior to laying out a road alignment. These environmental constraints could include wetland or hydric soil boundaries, floodplains, parks and recreational facilities, known or suspected historical and archaeological sites, existing rights-of-way, possible UST/landfill/hazardous waste sites, and areas of possible endangered species habitat. In addition to environmental constraints, other “controls” were also identified on the aerial photography: churches, cemeteries, schools, hospitals, and any other noise sensitive areas.

The proposed alignment was developed with every attempt to avoid sensitive ecological, historic and archaeological areas. In the event that these areas could not be avoided, every attempt was made to minimize harm to such resources.

B. The No-Build Alternative

The no-build alternative would keep the existing facility as a two-lane roadway and allow traffic congestion to grow. This alternative would not improve the efficiency of this north-south corridor which services the greater Augusta Metropolitan area nor would it correct the design inefficiencies associated with the vertical and horizontal alignment of the existing facility. This alternative would not meet the need and purpose for the proposed project since it would not add capacity or improve traffic flow conditions. Increased congestion and delay for traveling motorists would result if the roadway is left in its current condition.

C. Alternatives No Longer Under Consideration

Two other alternative alignments/designs were considered in addition to the preferred alternative. The first alternative used the same alignment as the preferred alternative and differed only in that the design utilized walls in order to reduce shoulder widths and minimize the amount of required right-of-way. This alternative created unacceptable driveway and sidewalk slopes and, as a result, did not comply with Americans with Disabilities Act (ADA) standards.

A second alternative alignment that holds the existing Flowing Wells Road centerline as it approaches Columbia Road was also analyzed. The tangent section for this alternative was held through the

intersection, relocating, to the north, the section of Flowing Wells Road between Columbia Road (SR 232) and Washington Road (SR 104). This alternative would have improved the geometry of the Flowing Wells Road/Columbia Road intersection; however, it would cause impacts to the parking lots of both University Health Services and the shopping center located at the north end of the project corridor. The Columbia Square Shopping Center was the most severely impacted property by this alternative. Due to the elevation difference between the Shopping Center Parking area and Columbia Road, a large retaining wall would have been necessary. Approximately 1/3 to 1/2 of the parking lot would be taken in right-of-way and easements and the required right-of-way would encroach as close as 20 feet to the face of building. If a retaining wall was not constructed, and the shoulders graded down to the parking area, then the backslopes would nearly hit the building structure. There is no rear parking is available for any of the sites.

III. ENVIRONMENTAL CONSEQUENCES

A. Effects on the Social Environment

1. Land Use Changes

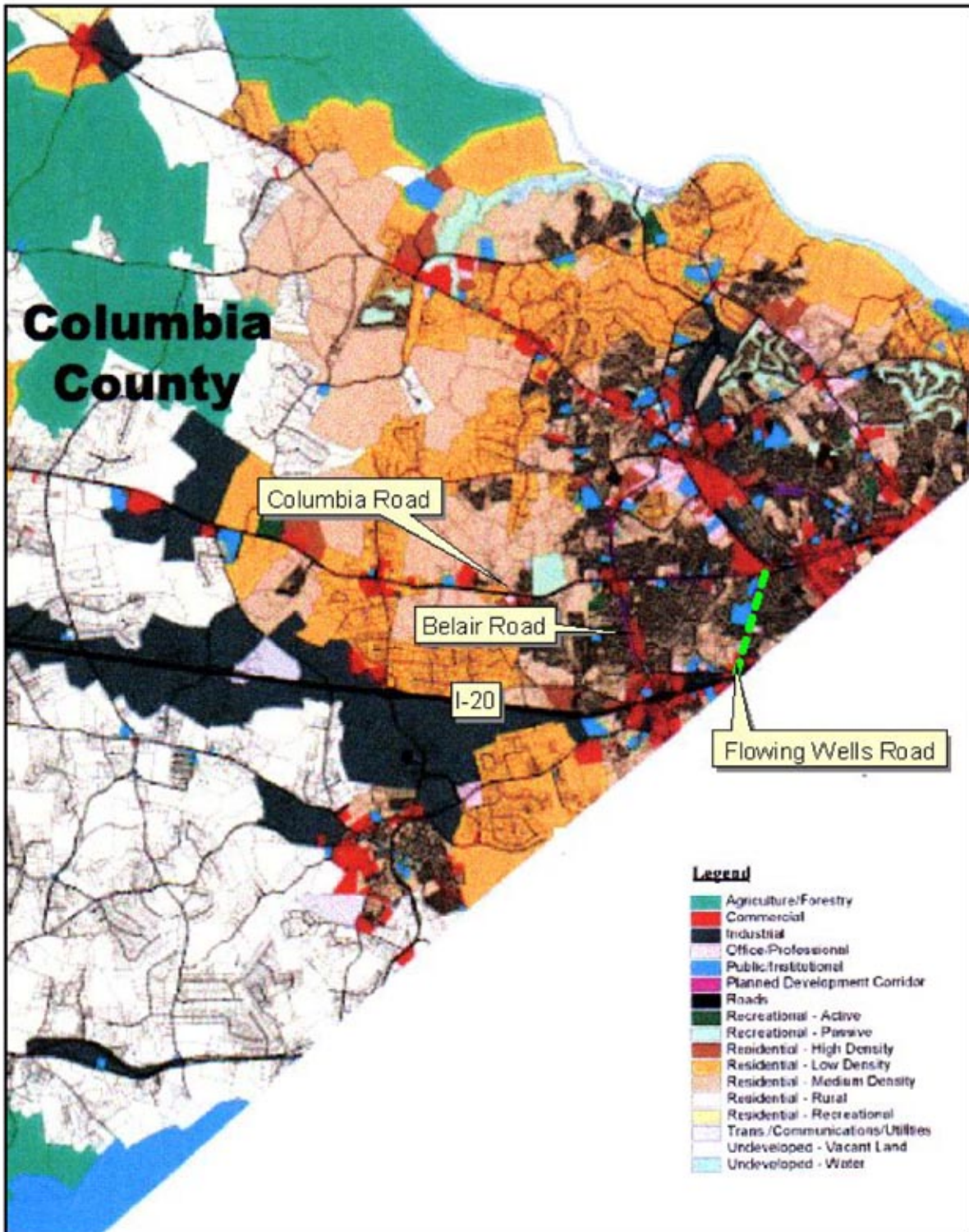
The proposed project corridor is located in Columbia County and is within the northeast quadrant of the Augusta Metropolitan area. Land use within the Flowing Wells Road corridor is composed of single-family residences, two schools, a church, a strip shopping center and stand alone businesses. The proposed project would require approximately 11.84 acres of additional right-of-way, approximately 7.22 acres of construction easement (mainly for shoulder slopes), and approximately 2.49 acres of temporary easement for reconnecting driveways to Flowing Wells Road. The proposed land acquisition would require the conversion of nineteen residential properties and one gas station/convenience store to transportation use.

In addition to the direct land conversion impacts, the project would likely precipitate further land use changes. The presence of the four-lane road with raised median would likely improve access to residential back-out driveways during the near term. However, over time as the level of through traffic increases, the level of difficulty in accessing the residential driveways would likely increase. The increased noise levels associated with the increased volume of traffic on the roadway would also likely detract from the usability and value of the land as residential property. At the same time, the increased traffic volumes would enhance the value of the land for commercial uses. As a result of the proposed project, land use along the project corridor would likely convert from residential to commercial use. In addition to the 19 residential relocations that are a directly impacted by the proposed project, there are approximately 32 residential properties (properties with back-out driveways onto Flowing Wells Road) that will be indirectly impacted. This land use conversion is consistent with the current land use plan. The corridor is shown to have a mix of industrial, commercial and residential development in the Future Land Use Plan. The Future Land Use Plan is shown in Figure 3.

2. Community Cohesion

The proposed widening of Flowing Wells Road would not create a barrier effect or further divide the surrounding community. The proposed project is not anticipated to cause significant changes to the existing circulation patterns within the surrounding neighborhood.

Figure 3



Not To Scale

Figure 3
 Future Land Use Year 2025
 GDOT Project STP-7026(1)
 PI# 250600, Columbia County
 Proposed Widening of Flowing Wells Road

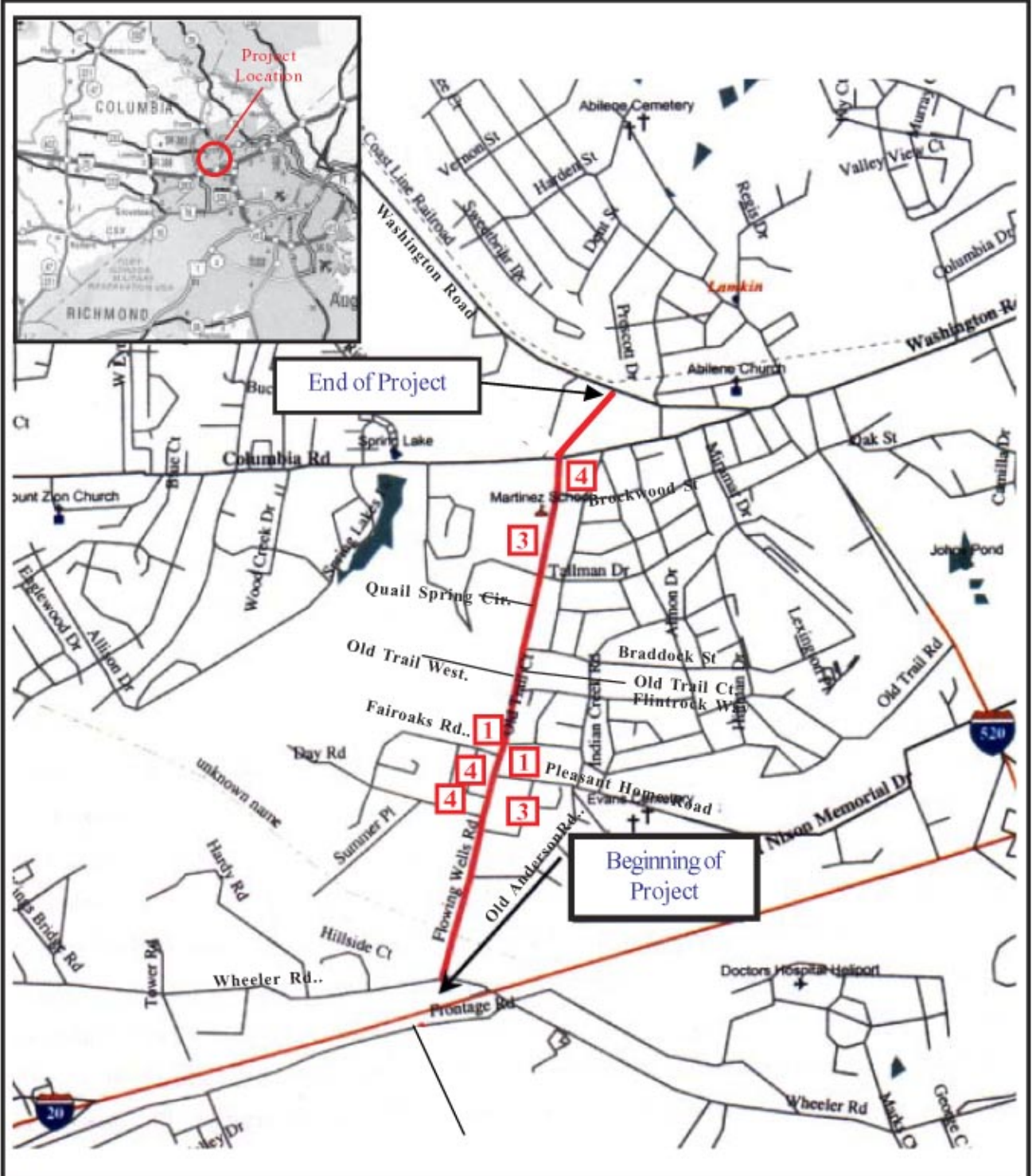
Source: Columbia County, 2004

3. Relocations

The proposed widening of Flowing Wells Road would require the relocation of 16 owner occupied residences, three tenant occupied residences and one tenant occupied business. Figure 4 shows the location of the 20 structures that would be displaced in order to build the preferred alignment. The Conceptual Stage Study indicated that 2 of the residences were occupied by minorities and that the remaining 17 residences were occupied by non-minority persons. The total number of residents that would be displaced by the proposed project is estimated at 46 people. All appear capable of self care. Based on available information, there are no disabled or elderly residents, no large families or other special interest groups; therefore, no special relocation assistance should be required. Furthermore, suitable replacement housing is in abundant supply.

One business would be displaced by the proposed project, a gas station/convenience store located in the southeast quadrant of the intersection of Flowing Wells Road and Columbia Road. This business primarily serves the surrounding neighborhood; however, its products/services are not unique. Other similar businesses are located in the area of the proposed project. Therefore, if this business chooses to relocate out of the area, the neighborhood would not be adversely affected. The gas station/convenience store currently employs six individuals, three of whom are minorities. If this business chooses to relocate out of this area, the six employees may have to seek other employment. Every effort would be made to assist the business in relocating in the same area, rather than other areas or closing entirely. In the event there are no replacement sites available at the time of acquisition, or if relocation is not within their financial means the businesses may qualify for "in lieu of" payments. An "in lieu of" payment is defined as a payment to be made to a business that, (1) cannot be relocated without a substantial loss of its existing patronage, and (2) is not part of a commercial enterprise having at least three (3) other establishments not being acquired, engaged in the same or similar business.

For additional information concerning displacements, please refer to the Conceptual Stage Study contained in Appendix C.



PROPOSED PROJECT DISPLACEMENT LOCATION

GDOT Project STP-7062(1)
 PI# 250600, COLUMBIA COUNTY
 FLOWING WELLS ROAD

= Number of Displacement Sites

Figure 4



4. Churches and Institutions

Two schools and a church are located within the project area. Augusta Preparatory Day School is located on the west side of Flowing Wells Road at the intersection of Flowing Wells Road and Old Trail Road. Martinez Elementary School is also located on the west side of Flowing Wells Road at the intersection of Flowing Wells Road and Brockwood Street. Additional right-of-way and easement for construction of slopes would be required from these schools. However, the land would be taken from landscaped areas of the properties and would not affect buildings or structures. Access to the properties would not be adversely affected by construction activities. Once project implementation is complete, the schools would directly benefit from improved traffic circulation. Currently, the morning drop-off time is a period of congestion along Flowing Wells Road and at the school driveways. Improvements along Flowing Wells Road would directly improve both safety and capacity conditions at the school driveway access points.

Westside Baptist Church is located on the west side of Flowing Wells Road at the southwest corner of Flowing Wells Road and Quail Springs Circle. Additional right-of-way and easement for construction of slopes would be required from the church property. However, the land would be taken from landscaped areas of the property and would not affect buildings, structures or parking. Access to the property would not be adversely affected by construction activities.

5. Community Impacts/Environmental Justice

In accordance with Executive Order 12898, the project has been evaluated to determine if there would be any disproportionate effects to minority and low income populations. The project would not disproportionately impact any minority residents. The year 2000 population for the surrounding area (Evans CCD and Martinez CDP) was 91,986 with a 15.4 % minority component. No low income populations would be impacted by the project. The median family income of residences impacted by the project is estimated at approximately \$50,000 annually. According to the 2000 census, the Evans area subunit of Columbia County has a median family income of approximately \$68,161. None of the residences impacted by the project have incomes that fall below the poverty level, which ranges from \$ 11,214 to \$ 20,380.

The preferred alternative would not disproportionately impact elderly populations. Census data for the year 2000 show that the project area has an elderly population that is approximately 8% of the total population. The year 2000 census data for Columbia County also shows the elderly population at approximately 8% of the total population.

There would be no significant adverse impacts to neighborhoods, services and/or community facilities as a result of project implementation. The proposed improvement would enhance safety for the highway user although accessibility to business and residential driveways would be more controlled.

Since the present roadway has no median, driveways to residences or businesses on Flowing Wells Road may be entered or exited from either direction. Although the 20-foot wide raised median included in the proposed widening would have crossovers at major intersections and where otherwise deemed necessary, movements at some business and most private driveways would be limited to one way entering and exiting. The median would enhance safety for the highway user and ensure that the capacity improvements are not offset in the future by heavy left turning movements.

6. Economic Consequences

The amount of additional right-of-way needed to implement the proposed project would be minimal and would not result in a significant impact on the tax base for Columbia County. One business would be displaced by the proposed project, a gas station/convenience store located at the intersection of Columbia Road and Flowing Wells Road. Sales volumes for some of the other area businesses may temporarily drop during the actual construction of the project; however, following construction, area businesses should benefit from the expected improvement in access and increases in traffic volumes.

B. Effects on the Cultural Environment

1. Cultural Resources

In compliance with Section 106 of the National Historic Preservation Act of 1966 and amendments thereto, the proposed project has been surveyed for historic and archaeological resources, especially those on or eligible for inclusion in the National Register of Historic Places (NRHP). The purpose of the survey was to locate, identify and evaluate the significance of any historic and archaeological resources within the project

corridor. The survey boundary and methodology were established using the GDOT/Federal Highway Administration (FHWA) Cultural Resource Survey Guidelines. These guidelines were established as a result of past interaction with the State Historic Preservation Officer (SHPO) and his staff and were agreed upon by FHWA and the SHPO.

The Department of Natural Resources' Columbia County survey for historic resources (1990) was consulted in preliminary identification of historic resources. Lists of current and pending NRHP properties were checked and aerial photographs along the length of the proposed project were consulted. A field survey for potentially eligible historic resources was also conducted along the project corridor. In addition, the Central Savannah Area Regional Development Center and the Columbia County Historic Preservation Commission were contacted for their assistance in identifying known historic resources.

As a result of these efforts, no historic property and no archeological sites considered eligible NHRP resources were identified within the proposed project's area of potential effect (APE).

a. Historic Resources

No existing or eligible National Register properties were located within the project's APE. Therefore, implementation of the proposed project would not affect existing or eligible National Register properties. This conclusion has been coordinated with the SHPO.

b. Archaeological Resources

An archaeological survey was conducted within the project corridor in accordance with "GDOT Archaeological Survey Guidelines" developed by the GDOT Staff Archaeologists in consultation with DNR Historic Preservation Section Staff and concurred with by the Federal Highway Administration (FHWA) and State Historic Preservation Officer (SHPO). These guidelines provide general survey boundaries and methodological approaches to archaeological surveys based on the type/scope of proposed highway projects and are followed during the initial identification of archaeological resources.

No archaeological resources were located within the proposed project corridor. It is concluded, therefore, that the project would not affect archaeological resources on or eligible for inclusion in the NRHP. This conclusion has been coordinated with the SHPO.

c. Cemeteries

There are no cemeteries located within the project corridor.

d. Historic Markers

There are no Historic Markers located within the project corridor.

2. Parklands/Recreation Areas/Wildlife Refuges

There are no publicly owned parklands/recreation areas/wildlife refuges of state, local or national significance located in the project corridor. Therefore, project implementation would not affect this type of resource.

3. Section 4(f) Applicability

Section 4(f) refers to the temporary and/or permanent use and constructive use of land from a significant publicly owned park, recreation area, or wildlife and waterfowl refuge, or any significant historic site. Investigation of the project corridor has identified no use of such lands or sites; therefore, no Section 4(f) Evaluation is required.

C. Effects on the Natural Environment

1. Water Quality

No water bodies were identified within the project area and therefore, no significant impacts to water quality would occur as a result of the proposed project.

2. Waters of the U.S.

The proposed project corridor has been surveyed with respect to involvement with Waters of the U.S. as required by the provisions of Executive Order 11990 and subsequent federal regulations.

a. Wetlands

No wetlands were observed within the area of the project.

b. Streams

No streams were observed within the area of the project.

c. Open Waters

No open waters were observed within the area of the project.

3. Floodplains

A survey of the project corridor and review of Federal Emergency Management Agency (FEMA) flood plain maps for floodplains as required by the provisions of Executive Order 11988 was conducted. No floodplains were identified within the project area.

4. Farmland

The project would not involve farmland as defined in the Farmland Protection Policy Act, 7 CFR Part 658.

5. Threatened and Endangered Species

Coordination with the U.S. Fish and Wildlife Service regarding potential impacts to threatened and endangered species has been completed. The federal list of species that have distributional ranges that include the project area has been reviewed and are summarized in Table 3. These species are the bald eagle (*Haliaeetus leucocephalus*), mat-forming quillwort (*Isoetes tegetiformans*), Michaux's sumac (*Rhus michauxii*), little amphianthus (*Amphianthus pusillus*), and relict trillium (*Trillium reliquum*). A survey for

these species was conducted along the project corridor. None were found, nor was any appropriate habitat sighted along the project corridor. No critical habitat for the listed species, as defined by the U.S. Fish and Wildlife Service, is designated in the State of Georgia. ("Critical habitat," as defined in the Endangered Species Act, is a term for habitat given special protection for the benefit of a listed species). Therefore, no further coordination with the U.S. Fish and Wildlife Service is necessary.

The bald eagle selects nest locations within the crown of tall well-developed pine and hardwood canopy species that are situated within close proximity to major river systems, expansive wetland systems, and lakes that provide suitable foraging habitat. Historic and current populations are known to occupy the tidal marsh ecosystem, including barrier islands and adjacent mainland uplands of coastal Georgia. The current population trends in the state suggest increased utilization of reservoirs such as Lake Seminole, Walter F. George Reservoir, North Point Lake, Lake Harding, Bartletts Ferry Lake, Goat's Rock Lake, Lake Oliver, and Lake Blackshear. No bald eagles or potentially suitable nesting or foraging habitat was identified during field surveys. The proposed project would have no effect to bald eagle populations.

The little amphianthus and mat-forming quillwort require a restricted habitat of shallow, flat-bottomed depressions on granitic outcrops, where water collects after a rain. These depressions are less than one foot in depth, are entirely rock-rimmed, and usually contain soil at least 2 cm deep. They may be dry much of the summer, except during rainy periods. The depressions, sometimes called vernal pools, solution pits or weather pits, are formed naturally by erosion over millions of years. No such habitat was observed within the proposed project alignment. The proposed project would have no effect to little amphianthus or mat-forming quillwort populations.

Michaux's sumac is a shrub found in sandy or rocky open woods, usually on ridges with a disturbance history (periodic fire, prior agricultural use, maintained right-of-ways); the known population of this species in Columbia County has been extirpated. No Michaux's sumac was observed in the project vicinity. The proposed project would have no effect to Michaux's sumac populations.

Relict trillium is a perennial herb, that can be found in hardwood forests with rich ravines or adjacent alluvial terraces with other spring-flowering herbs. No relict trillium or habitat to support this species

was observed in the project vicinity. The proposed project would have no effect to relict trillium populations.

Table 3

Federally Listed Species Potentially Occuring in Columbia County

Common Name	Scientific Name	Status	Effect Determination
Bald eagle	<i>Haliaeetus leucocephalus</i>	T	No Effect
Mat-forming quillwort	<i>Isoetes tegetiformans</i>	E	No Effect
Michaux's sumac	<i>Rhus michauxii</i>	E	No Effect
Little amphianthus	<i>Amphianthus pusillus</i>	T	No Effect
Relict trillium	<i>Trillium reliquum</i>	E	No Effect

Key: T = Threatened; E = Endangered
 Source: Georgia Department of Natural Resources

6. Invasive Species

In accordance with Executive Order 13112, a survey for populations of invasive species that may be spread during construction was conducted for this project. Japanese honeysuckle (*Lonicera japonica*) was located throughout the project area.

The GDOT would take measures during project construction to prevent or minimize the spread of this species as appropriate for the site conditions and the time of year. These measures would include removal and disposal of vegetative parts in the soil that may reproduce by root raking prior to moving the soil, burning on site any such parts and aboveground parts that bear fruit, controlling or eradicating infestations prior to construction, and cleaning of vehicles and other equipment prior to leaving the infested site. The measures to be used are described in Georgia Standard Specifications Section 201, Clearing and Grubbing of Right-of-Way.

D. Effects on the Physical Environment

1. Noise

The existing L10 noise levels in decibels (dBA) along Flowing Wells Road within the study area range from 67 to 70 dBA, and they are predicted to increase to 69-72 dBA under the design year build condition. There are two methods for determining noise related impacts. The first method uses substantial increases (greater than 10 decibels) in noise. No noise impacts were identified using this method.

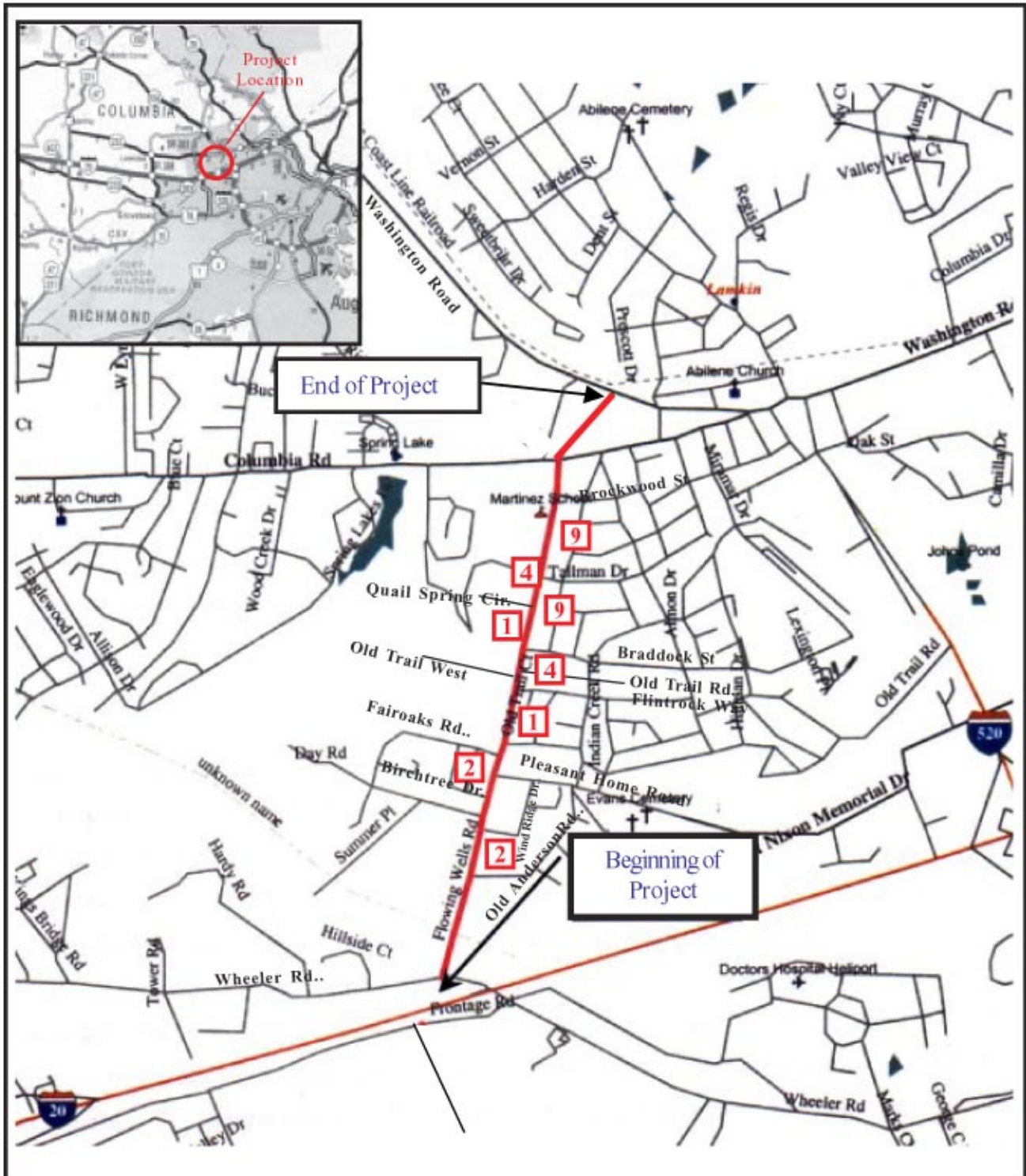
The second method for determining noise related impacts compares the predicted noise levels with the noise abatement criteria established by 23 CFR Part 772. The criterion is 70 dBA L10 for schools, libraries, residences, churches, playgrounds and recreational areas and 75 dBA L10 for commercial activities. Any predicted noise level that approaches (within 1 dBA) or exceeds the applicable noise abatement criterion is considered an impact. Using this method of determining noise impacts, 32 sites are predicted to be impacted by noise associated with the proposed project.

Noise abatement (noise walls, berms, and vegetative buffers) for the impacted sites were considered and analyzed as a part of the noise impact assessment. However, noise barriers along Flowing Wells Road would not be practical based upon the close proximity of residences to the roadway, and driveway access. No feasible and reasonable abatement measures were identified for the impacted sites.

The 32 noise impacted sites are all single-family residences. Figure 5 shows the location of the noise impacted sites. Refer to the Appendix (D) for the complete Noise Impact Assessment.

2. Air

This project was evaluated for its consistency with state and federal air quality goals. Results indicated that the project is consistent with the State Implementation Plan for the attainment of clean air quality in Georgia and is in compliance with both state and federal air quality standards.



NOISE IMPACT LOCATION MAP

GDOT Project STP-7062(1)
 PI# 250600, COLUMBIA COUNTY
 FLOWING WELLS ROAD

= Number of Noise Impact Sites

Figure 5



For this project, the predicted peak one-hour concentration of carbon monoxide, 13.3 ppm, was below state and federal standards for one-hour averaging time which is 35 ppm. Because this concentration was above the eight-hour standard of 9 ppm, an eight-hour concentration was calculated using the EPA recommended persistence factor of 0.6. The eight-hour concentration of carbon monoxide was calculated at 8.0 ppm, less than the 9 ppm standard. Refer to Appendix (E) for the complete Air Quality Impact Assessment.

This project is in an area where the State Implementation Plan does not contain any transportation control measures. Therefore, the conformity procedures of the Final Conformity Guidance do not apply to this project.

3. Energy/Mineral Resources

There are no known energy or mineral resources located within the project corridor.

4. Construction/Utilities

Construction of the preferred alternative would create unavoidable inconveniences to motorists, but the phased construction activities would be conducted in a manner that would maintain access and minimize conflicts with traffic. The safety and convenience of the general public and residents of the area would be provided for at all times.

Any necessary relocation of utilities i.e., water, sewer, telephone, etc. would be accomplished with no long term interruption of services. All other required construction functions would be accomplished in a timely and orderly fashion so as to keep disruptions minimal, for short duration and so as not to compromise safety.

5. USTs/Hazardous Waste Sites

A survey for sites which may contain hazardous materials, including soil and/or water contaminated by leaking underground storage tanks, was conducted for this project. One site that may contain hazardous waste was identified. A dry cleaning business is located in the shopping center located at the southwest corner of Flowing Wells Road and Washington Road. Another site, a gas station/convenience store, that contains underground storage tanks was also identified. This site is located in the southeast quadrant of the

intersection of Flowing Wells Road and Columbia Road. Subsurface testing will be conducted to determine if any contaminants are leaking into the soil from either site. If contaminants are found, avoidance alternates may be considered, or applicable laws and regulations concerning the removal of toxic or hazardous material will be followed and the removal coordinated with the Environmental Protection Division. Implementation of the proposed project will not preclude any necessary site remediation to be performed by others.

E. Indirect and Cumulative Impacts

1. Indirect Impacts

Indirect impacts are effects that are “caused by the action” and occur later in time or farther removed in distance, but are still reasonably foreseeable (40 CFR 1508.8). The purpose of the indirect effects assessment is to identify potential changes in patterns of land use or social activity that may occur as a result of the construction of the Flowing Wells Road widening project. Because of the local, rather than regional scope of the project, indirect effects would be expected to occur only to properties that can be directly accessed from Flowing Wells Road. Patterns of travel in the project area are unlikely to shift as a result of the road expansion. However, the expansion of Flowing Wells Road from a two-lane roadway to a four-lane divided roadway with a 20-foot wide raised concrete median would change the nature of this transportation corridor. At present, development along the corridor is predominantly residential with a scattering of businesses and two schools. The proposed project would increase both capacity and safety along the corridor. It would also increase the ambient noise level.

The increased level of traffic and noise associated with the proposed project would adversely affect the residences adjacent to Flowing Wells Road. In particular, it would affect those residences with driveways that back out directly onto Flowing Wells Road. As stated in the land use section, over time as the level of through traffic increases, the level of difficulty in accessing the residential driveways would likely increase. The increased noise levels associated with the increased volume of traffic on the roadway would also likely detract from the usability and value of the land as residential property.

The increased traffic volume and noise level would indirectly impact residences. Conversely, the increased traffic volume and improved safety would indirectly enhance the business environment and land value

along the corridor by providing both increased passerby traffic and improved safety at driveway access locations.

The indirect effect of project implementation would be that land use along the project corridor would, over time, likely convert from residential to commercial use. In addition to the 19 residential relocations that are directly impacted by the proposed project, there are approximately 32 residential properties (properties with back-out driveways onto Flowing Wells Road) that will be indirectly impacted.

2. Cumulative Impacts

Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions (40 CFR 1508.7).” The purpose of the cumulative impact assessment is to evaluate the incremental contribution of the project to the total effect on a resource from past, present or future activities.

Within growing counties, virtually all capacity increasing transportation improvements, that are not access controlled, contribute cumulatively to urbanization. Land use and transportation are tightly linked. Land uses either generate or draw traffic. However, the presence of transportation infrastructure is required for sustained growth and development. The proposed widening of Flowing Wells Road would provide the transportation infrastructure required for sustained growth and development. Sustainable growth is a stated goal of Columbia County.

F. Permits/Variances

1. U.S. Coast Guard Permit

No waters under Coast Guard jurisdiction are located within the project corridor. No U.S. Coast Guard Permit is required.

2. Forest Service/Corps Land

The proposed project is not located on or within U.S. Forest Service or Army Corps of Engineers jurisdictional land and therefore no U.S. Forest Service or Army Corps of Engineers permits or coordination is required.

3. Section 404

No Waters of the U.S. are located within the project corridor. Therefore, a Section 404 Permit is not required.

4. Tennessee Valley Authority

This project is not located within the jurisdiction of the Tennessee Valley Authority (TVA). No TVA permits are required.

5. Stream Buffer Variance

A stream buffer variance is not required for this project because there are no stream buffers that would be impacted by the preferred alternative.

6. Coastal Zone Management Coordination

The project is not located along the coast. No coastal zone management coordination is required.

IV. COORDINATION AND COMMENTS

During the early project development, a number of agencies, including local planning agencies, were contacted and asked for their comments on the proposed action. Copies of comments received from the responding agencies appear in Appendix B. In addition, a Public Information Meeting for the project was held on December 7, 1998. A total of 97 people attended the meeting, generating 34 comments. An additional 11 comments were received during the ten day comment period. Of the comments received, 27 were in support of the project, 11 opposed the project and seven were uncommitted. Major concerns expressed from respondents included three versus four lanes with a 20 foot median, concern that the corridor would become more commercial as a result of improvements, safety issues relating to backing into the roadway from residences along Flowing Wells Road, and concerns over children playing in yards close to the road and walking along the roadway. Comments from this meeting are included in Appendix F.

The Georgia Department of Transportation will advertise the availability of this environmental assessment and will hold a public hearing. Any comments concerning this environmental assessment should be addressed to the following:

Mr. Harvey D. Keepler
State Environmental/Location Engineer
Georgia Department of Transportation
3993 Aviation Circle
Atlanta, GA 30336

or Mr. Robert M. Callan, P.E.
Division Administrator
Federal Highway Administration
Atlanta Federal Center
61 Forsyth Street, S.W.
Suite 17 T100
Atlanta, GA 30303-3104

After review of comments received during the comment period, a decision will be made by the responsible officials concerning which alternative will be selected.