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Chapter 7 Environmental Considerations

7.1 SAFETEA-LU Requirements for Environmental Consultation

7.1.1 Purpose

The purpose of this chapter is to describe a comprehensive approach for environmental consultation within the metropolitan planning process that promotes consistency between the 2035 Regional Transportation Plan (RTP) and subsequent transportation improvements with State and local planned growth and economic development patterns. The following summary of potential environmental mitigation activities for the RTP provides an overview of the strategies being considered for use in the Birmingham metropolitan planning area. In addition, it describes potential elements to be considered in future environmental discussions and consultations. Federal regulations require that the RTP include:

“A discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. This discussion may focus on policies, programs or strategies, rather than at the project level.” (23 C.F.R. § 450.322(f) (7))

This chapter of the RTP provides the first step in the environmental mitigation and consultation “discussion” and will be revised as the Regional Planning Commission of Greater Birmingham’s (RPCGB) consultation process evolves.

7.1.2 Overview

The National Environmental Policy Act of 1969 (NEPA) was and remains the nation’s basic national charter for environmental protection. In addition to establishing a policy, NEPA sets goals (section 101), and provides means (section 102) for carrying out the policy focused on federal activities and the desire for a sustainable environment balanced with other essential needs of present and future generations. NEPA also established the Council on Environmental Quality (CEQ) which established regulations and provides ongoing guidance regarding the commonly referenced “NEPA process”. Federal agencies including the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have also issued their own NEPA regulations and guidance consistent with CEQ’s.

The intention of NEPA is to assess the social, economic, and environmental impacts of a proposed federal action or project. According to 40 CFR § 1500.1(b) the process is intended to ensure decisions are based on an understanding of environmental consequences, and actions are taken to protect, restore, and enhance natural and built environments. In addition to assessing impacts of a federal action including federally funded transportation projects, NEPA also requires that the mitigation of impacts must be considered regardless of whether or not the impacts are significant. Agencies are required to identify and include all relevant and reasonable mitigation measures that could improve the action.

Under 40 CFR 1500.2(f) “federal agencies shall to the fullest extent possible use all practicable means consistent with the requirements of the Act and other essential considerations of nation policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions on the quality of the human environment.” CEQ regulations [40 CFR 1508.20] broadly define mitigation activities and prescribe a five step ordered approach:

1. Avoiding the impact altogether by not taking a certain action or parts of an action
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation

3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
5. Compensating for the impact by replacing or providing substitute resources or environments

NEPA's ordered approach to mitigation is known as "sequencing": (1) avoid, (2) minimize, (3) repair or restore, (4) reduce over time, (5) and then compensate. This ordered approach involves understanding the affected environment and assessing transportation project effects throughout project development. Effective mitigation starts at the beginning of the NEPA process, not at the end. Mitigation must be included as an integral part of the alternatives development and analysis process. [See 23 CFR 771.105(d)]

As a first step toward future consultations that are more regionally focused, such as on location identification, the information below provides an overview of mitigation strategies and specific activities. Transportation projects can impact the natural and built environment in many ways. Impacts often result from project construction, increased traffic congestion, secondary urban development, stormwater runoff, vehicle emissions, noise, light, etc. The following examples demonstrate where mitigation is often required or needed as the result of transportation project impacts:

1. Neighborhoods and communities (homes and businesses)
2. Cultural resources (i.e. historic properties or archaeological sites)
3. Parks and recreation areas
4. Wetlands and water resources
5. Forested and other natural areas
6. Agricultural land
7. Endangered and threatened species
8. Local and regional air quality

The environmental consultation process for the Birmingham metropolitan planning area will use as a guide a modified version of the eight-step framework for integrated planning that is laid out in the Federal U.S. Department of Transportation's (USDOT) 2006 best practices report titled *Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects*.¹ The modified framework's eight steps are:

1. Build and Strengthen Collaborative Partnerships
2. Identify Resource Agency Management Plans
3. Establish and Prioritize Opportunities
4. Integrate Management Plans with the Metropolitan Transportation Planning Process
5. Assesses Potential/Probable Impacts
6. Identify and Encourage Projects that Avoid Impacts and/or Support Activities that Minimize and Mitigate Impacts
7. Document Agreements and Mitigation Strategy Actions
8. Measure/Monitor Actions

These eight steps described above, in large part, attempts to inform the overall planning process by providing methods for collecting, sharing, analyzing, and presenting data. Therefore, the environmental consultation process for the Birmingham metropolitan planning area is truly an integrated and

¹ Federal Highway Administration. "Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects." Office of Project Development and Environmental Review. April 2006. FHWA-HEP-06-011

collaborative effort, and will help to outline locally appropriate mitigation strategies that might be applied at the project level.



Figure 7.1: USDOT's ecosystem approach to the environmental consultation process

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7.2 Consultation Process

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) requires the Birmingham Metropolitan Planning Organization to engage and consult with affected land use management, natural resources, environmental protection, conservation, and historic preservation state and local agencies regarding the development of the long-range transportation plan, effective July 1, 2007. In compliance with these regulations, this initial consultation established a dialogue with environmental agencies and created a foundation for ongoing consultation and knowledge sharing regarding environment issues on a regional scale. A part of this required consultation is a discussion of potential environmental mitigation activities and possible areas to carry out those activities.

7.2.1 Starting the Consultation Process

The “3-C” planning approach - comprehensive, cooperative, and continuous - greatly improves the transportation planning process and the resulting products. The 3-C approach lends itself to integrated planning, particularly for use in an ecosystem approach for transportation infrastructure development, and is well suited to address the challenges that arise. The integrated planning approach allows for the creation of an open dialogue and identifying mutual objectives by acknowledging not only regional goals, but also the respective missions of individual agencies and stakeholder needs.

7.2.2 Consultation Activities

The environmental consultation process consists of two separate and distinct activities. The first of these is comparing transportation plans with natural, cultural, and environmentally sensitive resource information. For these comparisons, the Birmingham MPO is directed by the federal transportation planning regulations to consult with state and local agencies responsible for land use planning, natural resource management, environmental protection, conservation, and historic preservation. Where applicable, the MPO must also consult with tribal agencies. As appropriate, the consultation process consists of the following:

- Comparison of transportation plans with state conservation plans or maps (if available)
- Comparison of transportation plans to inventories of natural or historic resources (if available)

Additionally, the consultation process will provide a definition of environmentally sensitive resources, as well as determine “potential impacts”. In order to do this, the following types of questions need to be answered:

- What are the Birmingham region’s environmentally sensitive resources?
- Are environmentally sensitive resources based on available data presented at an appropriate scale?
- How broad/specific should the definition of environmental resource be?
- How do you define impacts to environmentally sensitive resources?

Finally, the design of the Birmingham metropolitan planning areas environmental consultation process is based on the premise that:

Predictability – The knowledge that the negotiated commitments made by all participating resource agencies will be honored, and

Transparency – Involving the public and individual project stakeholders in a manner that helps to develop credibility and build trust in the planning process are important to the planning process.

In order to achieve compliance with the federal regulations, the Regional Planning Commission of Greater Birmingham – host agency for the Birmingham MPO - has already assembled a number of maps that illustrated the metropolitan planning area’s natural and historic resources, critical habitats for endangered species, parks, preserves, land conservation areas, and environmental justice populations. These areas are compared against the adopted RTP in order to identify potential conflicts. This information is presented in Appendix A. The development of these maps is a continuous process. As new data becomes available, existing maps will be updated and new maps created.

The second required consultation activity concerns the inclusion of consideration of the potential environmental mitigation strategies and areas to carry out these activities. This would include consideration of activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan. Federal regulations require that this discussion be developed in consultation with federal, state, tribal, wildlife, land management, and regulatory agencies. Figure 7.2 illustrates the linkage between the transportation planning and decision-making process and the environmental process. Planning and environmental linkages in decision-making processes are depicted by the arrows showing the relationship between transportation planning and environment planning, as well as the relationship between systems planning and project level decisions.² The initial introduction of the consultation process to stakeholders will likely focus on the need to:

- Build relationships
- Build awareness of data and tools
- Develop joint activities to foster collaboration

In addition, the consultation process will need to answer the question, “how do we begin the process of integrating the metropolitan transportation planning process, the environmental review process, and conservation efforts?”

² Federal Highway Administration, Federal Transit Administration. “**The Transportation Planning Process: Key Issues, A Briefing Book for Transportation Decision makers, Officials, and Staff.**” Transportation Planning Capacity Building Program. September 2007. FHWA-HEP-07-039

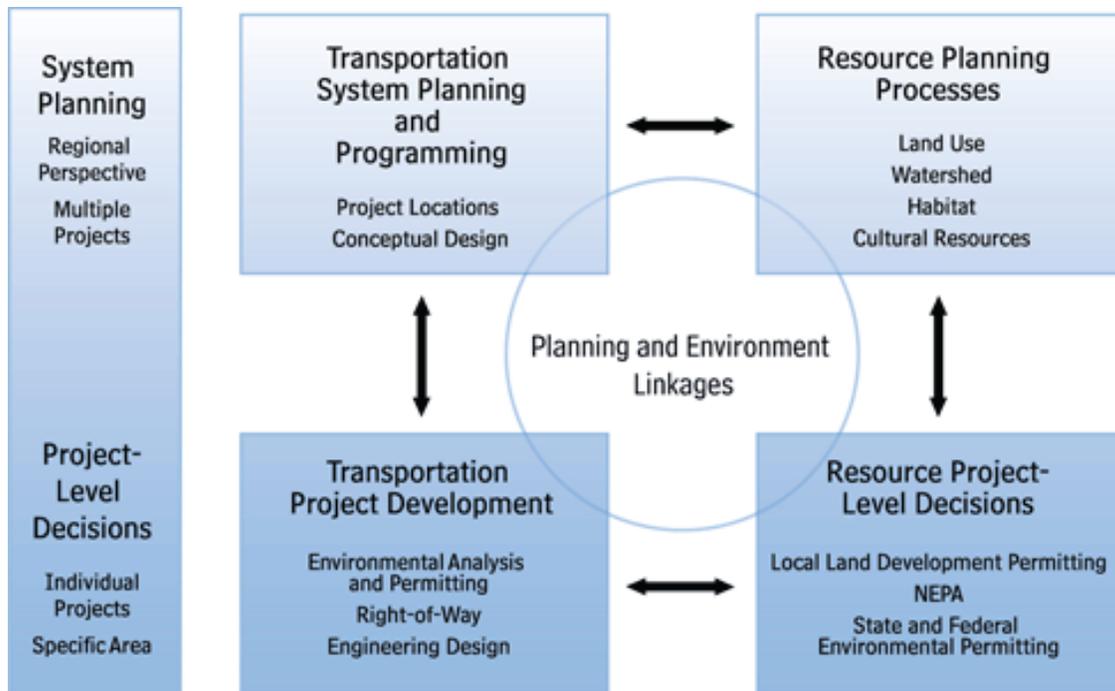


Figure 7.2: Linking the Metropolitan Planning and NEPA

7.2.3 Public Involvement

The U.S. Department of Transportation, in particular the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), has encouraged both area-wide and project specific planning activities to seek out and include strategies to streamline the environmental process in accordance with NEPA. FTA’s guidance for transit providers conducting the alternatives analysis includes recommendations that NEPA scoping activities be employed early in project development. This enables community assets (social, environmental, cultural, and historic resources) to be considered throughout project development and delivery. Following FTA’s lead, the RPCGB has developed a “NEPA-like” scoping process which is included as a public involvement activity for the regional transportation plan.

Scoping, as described here, is the public process in which the RPCGB:

- Explains the regional transportation planning process
- Specifies the range of issues that the regional transportation plan addresses
- Describes the proposed transportation projects being considered for inclusion in the Regional Transportation Plan

In addition to reasons for conducting scoping that are identified above, scoping is also intended to describe:

- The **Rating Criteria** for prioritizing projects by importance
- The **Potential Environmental Impacts**

The scoping process is typically conducted early in the planning process.

7.2.4 Future Environmental Consultations

A key next step of the consultation process is the formalization of the consultation process which will establish an ongoing dialogue with federal, state, and local resource agencies. The consultation process will emphasize the need for better linkages between conservation planning and transportation planning, recognizing that approaching mitigation activity discussions from a broader, systems-level makes sense. The consultation process will also foster knowledge sharing regarding environmental issues on both a regional and system-wide scale. Ultimately, it is the intent that the consultation process provide as an outcome a discussion of potential environmental mitigation activities and possible areas to carry out those activities.

Formalization of the process would need to define the roles of the consultation process's participants, articulation of a mission, and possible revisions to the regional transportation goal relating to the environment. Formalization of the process would also include identifying the planning steps and actions that are needed to accomplish the mission. Potential outcomes of formalizing the consultation process might include:

- Strategies to change business practices and institutionalize and integrate ecosystem planning methods
- Strategies to better coordinate the planning process, opening up the decision-making process to improve collaboration and communication
- Strategies to increase the amount of data available; to improve the quality of the data collected, and; to integrate the data into the planning and the decision-making process
- Strategies to increase awareness of the impacts transportation decisions have on the environment, and
- Strategies to educate decision-makers and the public about the connection between transportation and the environment

7.3 Air Quality Analysis of the Regional Transportation Plan

The Clean Air Act (Title 42 USC 7401 et seq.) requires the U.S. Environmental Protection Agency (USEPA) to set National Ambient Air Quality Standards (NAAQS) for six pollutants that are harmful to public health and the environment. Geographic regions that do not comply with these standards are classified as non-attainment areas and are required to implement pollution reduction strategies.

Jefferson and Shelby Counties are classified as non-attainment with respect to the NAAQS for particulate matter smaller than 2.5 microns in diameter, abbreviated PM_{2.5} since April 5, 2005. The non-attainment area for the annual standard for PM_{2.5} also includes a small portion of Walker County. Jefferson and Shelby Counties are currently in attainment of the ground-level ozone standard and are considered as maintenance areas for the ground-level ozone standard. Jefferson and Shelby Counties also geographically define the Birmingham Metropolitan Planning Area under Metropolitan Planning Organization (MPO). Figure 7.3 illustrates the area boundaries.

The Clean Air Act and federal transportation planning provisions of Title 23 and Title 49 of the U.S. Code require integrated transportation and air quality planning to occur in non-attainment areas and maintenance areas. Collectively these requirements are known as transportation conformity. Transportation plans and programs must demonstrate compliance with conformity requirements. Projects cannot be approved, funded, or advanced through the planning process, or implemented unless those projects are in a fiscally constrained and conformity long range transportation plan and transportation improvement program.

The *2035 Air Quality Conformity Determination Report* demonstrates that both the proposed *2035 Regional Transportation Plan (RTP)* and the proposed Fiscal Year (FY) 2008-2011 Transportation Improvement Program (TIP) meet the interim conformity requirements for PM_{2.5} and the continuing conformity requirements for the ground-level ozone maintenance area. The RTP has a 25 year planning horizon and the TIP is a subset of the RTP and includes a four year list of projects for which federal funds have been programmed. The current FY 2008-2011 TIP is due to the yearly “rebalancing” for the project list and is in the final year before the next full TIP update that will occur during the summer of 2010.

The *2035 Air Quality Conformity Determination Report* and other air quality conformity related information is available online: www.bhammpo.org/longrangeplan/airquality.htm

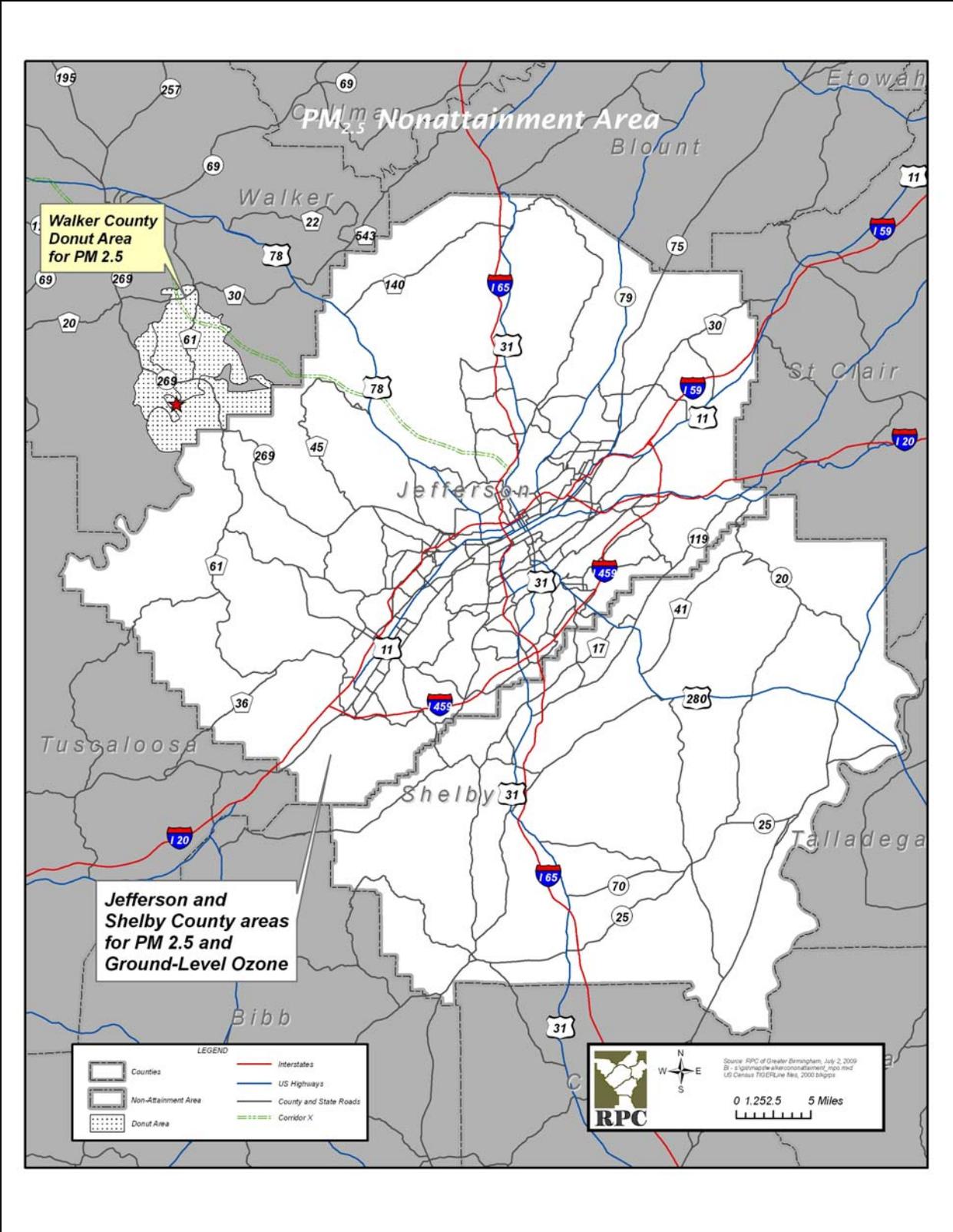


Figure 7.3: PM_{2.5} Non-attainment Areas and Ground-Level Ozone Maintenance Area

7.4 Identification of Potential Environmental Resource Impacts

7.4.1 Defining Environmentally Sensitive Resources

What is considered an “environmentally sensitive resource” (ESR) in the Birmingham metropolitan planning area? In the broadest sense within the context of regional transportation planning, ESRs can be any number of ecological, cultural, historical, recreational, and agricultural resources that are vulnerable to impacts from transportation projects or system improvements. ESRs generally benefit people directly and/or indirectly (e.g. cultural and historic sites that generate tourism dollars, wetlands that recharge groundwater, nature preserves that accommodate passive recreation, prime farmland that supports urban and rural agriculture).

The Birmingham MPO, through this environmental consultation process, has begun identifying and defining the region’s ESRs based on available data that can be presented at an appropriate scale. This includes information that the RPCGB has gathered over time and has assembled. Data from federal, state, and local resource agencies has and will continue to be compiled and whenever possible included in the MPO’s GIS database housed at the Regional Planning Commission of Greater Birmingham (RPCGB). As new data becomes available and other relevant information is assessed, the definition and list of ESRs will be modified and subject to public/stakeholder input during future RTP updates. Appendix A contains maps of the ESRs identified to-date within the Birmingham metropolitan planning area.

7.4.2 Defining Impacts

Working through the consultation process with resource agencies, the MPO will make a determination of the probable adverse impacts of the proposed transportation plan. Resource agencies including but not limited to the Alabama Department of Transportation (ALDOT), the Alabama Department of Environmental Management (ADEM), the Federal Highway Administration (FHWA), Federal Transit Administration (FTA) and the Environmental Protection Agency (EPA), through a consultation process will work with the MPO to define probable potential adverse impacts. Tools available for this exercise will include the map products described previously in this chapter as well as the resources that each of the resource agencies may have at their disposal.

The information generated about potential impacts, however, is useful in helping to identify areas with the greatest environmental sensitivity within the Greater Birmingham region. This information could also be used to assist project sponsors’ future project level consultations with environmental and transportation agencies in order to explore potential mitigation activities and locations. The generalized environmental information will be made available for use by the state, regional, and local agencies involved in project-level mitigation.

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7.5 Project-Level Environmental Analysis

The RTP includes projects expected to be built by 2035. The RTP represents the earliest stages of project development for many projects in the plan. At these early stages, even the most fundamental project-specific details such as exact geometric alignments and dimensions are largely unknown. Detailed environmental review through the National Environmental Policy Act (NEPA) is conducted at the local project level as the improvement approaches the preliminary engineering stage, and is therefore not appropriate or required for application in the broader metropolitan planning process.

Even though offsetting environmental impacts during the long-range planning process is not required at the present time, federal transportation agencies must be able to stand behind the overall accuracy and trustworthiness of the regional transportation planning process's analysis and the resulting decisions. This is especially true if any of the information generated during the planning process are to be incorporated into project specific NEPA documentation either directly, or by reference.

Table 7.1 provides a cursory level (a.k.a. "red flag") snapshot of where potential impacts may be associated with federally funded roadway capacity projects in the metropolitan planning area. This environmental screening matrix was developed with the use of existing data housed within a Geographic Information System (GIS) at the Regional Planning Commission of Greater Birmingham. Buffers of 660 feet on each side of project centerlines were overlaid with the following GIS layers included in the respective maps in Appendix A (pages 7A-1 thru 7A-8):

1. Environmental justice population areas specified in Title VI of the 1964 Civil Rights Act and Presidential Executive Order 12898 of February 11, 1994 ("Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations"). For more information see Section 7.7 below and visit: www.fhwa.dot.gov/environment/ej2.htm and <http://170.97.67.13/offices/fheo/FHLaws/EXO12898.cfm>
2. Protected lands including parks, nature preserves greenways, conservation easements, recreational areas, and other property potentially subject to regulatory provisions under Section 4(f) of the Department of Transportation Act of 1966. For more information visit: www.environment.fhwa.dot.gov/4f/index.asp
3. Impaired streams designated and listed by the Alabama Department of Environmental Management (ADEM) and USEPA under Section 303(d) of the Clean Water Act of 1970. For more information visit: www.adem.state.al.us/WaterDivision/WQuality/TMDL/WQTMDLInfo.htm
4. Wetlands identified in the National Wetlands Inventory (NWI) developed by the U.S. Fish & Wildlife Service and potentially subject to the jurisdiction of the U.S. Army of Engineers under Section 404 of the Clean Water Act of 1970. For more information on the NWI and Section 404 visit: www.fws.gov/wetlands and www.epa.gov/OWOW/wetlands/regs/sec404.html
5. Floodplains for both 1% (100 year) and 0.2% (500 year) annual chance of flooding. These areas are identified in Q3 Flood Data produced by the Federal Emergency Management Agency (FEMA) and provide flood risk information associated with the National Flood Insurance Program (NFIP). For more information on FEMA or the NFIP visit: www.fema.gov/about/programs/nfip/index.shtm
6. Critical habitat designated by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act of 1973. All critical habitats in the Birmingham planning area is associated with

designated stream segments for endangered fish and muscle species. For more information visit: <http://www.fws.gov/endangered>

7. Prime farmland designated by USDA's Natural Resource Conservation Service (NRCS) in accordance with the regulations and programs created as a result of the Farmland Protection Policy Act of 1981 (FPPA). For more information on prime farmland and the FPPA visit: www.nrcs.usda.gov/programs/fppa
8. Historical sites identified in the Geographic Names Information System (GNIS) developed by the U.S. Geological Survey (USGS) in cooperation with the U.S. Board on Geographic Names. For more information on GNIS visit: <http://nhd.usgs.gov/gnis.html>

Table 7.1 Environmental Screening Matrix for Roadway Capacity Projects

Map ID	Sponsor	2035 Regional Transportation Plan Non-Exempt Project Descriptions	1. Environmental Justice	2. Protected Lands	3. Impaired Streams	4. Wetlands	5. Floodplains	6. Critical Habitat	7. Prime Farmland	8. Historical Sites	Notes Re. Proximate Resources
7	ALDOT	SR 79 North Jefferson County From end of current 4-lane section to 1 mile inside of Blount County		✓							Turkey Creek Nature Preserve (Forever Wild Property)
9	ALDOT	SR-70 Central Shelby County From US 31 to SR-25 near Columbiana		✓			✓		✓		Columbiana Sports Complex
22	ALDOT	I-65 Central/South Shelby County From CR 52 (exit 242) to US 31 (exit 238) From US 31 (exit 238) to CR-87 (exit 234)	✓	✓			✓		✓		Oak Mountain State Park
34	ALDOT	State Route 119 – Cahaba Valley From CR-14/Cahaba Valley Trace to 2,000' South of Lake Purdy Bridge		✓	✓	✓	✓		✓		Lee Branch (impaired stream), Lake Purdy (drinking water supply and recreation) & Leeds Scenic Byway (part of Alabama's Stagecoach Route - Montevallo to Springville)
59	ALDOT	US 78 - Birmingham From I-20/59 to Finley Boulevard Bridge Replacements at US 78 and Dugan Ave US 78 and CSX Railroad	✓	✓	✓	✓	✓				East Thomas Park and Village Creek (impaired)

✓ = Potential Impacts [See Respective Maps in Appendix A (pages 7A-1 thru 7A-8)]

Table 7.1 Environmental Screening Matrix for Roadway Capacity Projects

Map ID	Sponsor	2035 Regional Transportation Plan Non-Exempt Project Descriptions	1. Environmental Justice	2. Protected Lands	3. Impaired Streams	4. Wetlands	5. Floodplains	6. Critical Habitat	7. Prime Farmland	8. Historical Sites	Notes Re. Proximate Resources
67	ALDOT	I-20/59 – Birmingham/Ensley From Avenue I to Arkadelphia Road	✓	✓		✓	✓			✓	Ensley Park, Exchange Park, Alma Dennis Park, Ensley HS (historical), and St. Joseph's Catholic Church (historical)
78	ALDOT	Helena Bypass From CR-52 to SR-261		✓	✓						Buck Creek (impaired and drains to a section of the Cahaba River that is impaired and critical habitat), Buck Creek Greenway, and Helena Sports Complex
83	ALDOT	Valleydale Road From Riverchase Pkwy. East to US 31							✓		Mostly developed out although some prime farmland may still exist.
84	Birmingham	Finley Boulevard Extension (Phase 1) From US 31/26 th Street to Fred Shuttlesworth Drive	✓	✓	✓		✓	✓			Maclin Park and Village Creek (impaired)
108	Jefferson County	Caldwell Mill Road From Heatherwood Road to Acton Road		✓	✓	✓	✓	✓		✓	Cahaba River (impaired and critical habitat), Cahaba River Greenway (long range project), and Old Mud Town (historical)
109	Jefferson County	Morgan Road/CR 52 From South Shades Crest Rd to I-459							✓	✓	Morgan School (historical)
112	Jefferson County	*Patton Chapel Road From US 31 to Crayrich Drive				✓					Wetland (pond)
113	Hoover	Hoover TOPICS Phase 3 (Patton Chapel Road) From Crayrich Drive to Chapel Lane			✓		✓				Patton Creek (impaired)

✓ = Potential Impacts [See Respective Maps in Appendix A (pages 7A-1 thru 7A-8)]

Table 7.1 Environmental Screening Matrix for Roadway Capacity Projects

Map ID	Sponsor	2035 Regional Transportation Plan Non-Exempt Project Descriptions	1. Environmental Justice	2. Protected Lands	3. Impaired Streams	4. Wetlands	5. Floodplains	6. Critical Habitat	7. Prime Farmland	8. Historical Sites	Notes Re. Proximate Resources
114	Jefferson County	Lakeshore Parkway Extension From SR-150 to I-459		✓	✓	✓	✓		✓		Freshwater Land Trust property along Shades Creek (stream and wetland restoration project); Shades Creek (impaired); Bessemer Rail-Trail, Shades Creek Greenway, and Bessemer Rail-Trail (long range projects)
120	Shelby County	Shelby County Road -11 From US-11to Henderson Road	✓	✓		✓	✓				Abby Wooley Park
125	Jefferson County	Gardendale Main Street From Tarrant Drive to Redmayne Road									
128	Birmingham	East Lake Blvd. (Phase 2) From SR-79 (Vanderbilt Rd) to 40Th Street North	✓	✓			✓				Flooding problems in this area and proximate to FEMA buyout property along Village Creek and I-59. Area is also a strategic connection point between the Five Mile Creek and Village Creek Greenways (long range projects).
129	Birmingham	Tarrant-Huffman Road From Treadwell Rd. to Briarmont Drive Briarmont Dr. to Roebuck Drive	✓								Entire project is within an EJ area and should include sidewalks as well as drainage design that minimize runoff.
130	Jefferson County	Jefferson County TOPICS Phase 9 Tarrant-Huffman Road	✓	✓							Tarrant's Five Mile Creek Greenway (Aqueduct Trail), and Tarrant Quarry (Vulcan Materials Company)

✓ = Potential Impacts [See Respective Maps in Appendix A (pages 7A-1 thru 7A-8)]

Table 7.1 Environmental Screening Matrix for Roadway Capacity Projects

Map ID	Sponsor	2035 Regional Transportation Plan Non-Exempt Project Descriptions	1. Environmental Justice	2. Protected Lands	3. Impaired Streams	4. Wetlands	5. Floodplains	6. Critical Habitat	7. Prime Farmland	8. Historical Sites	Notes Re. Proximate Resources
141	ALDOT	State Route 261 - Hoover/Pelham From CR-105/Bearden Road to US 31		✓	✓	✓	✓		✓	✓	Helena Sports Complex, Buck Creek Amphitheatre Park, and Buck Creek Greenway (TIP project); Buck Creek (impaired and flows into a section of the Cahaba that is also impaired and critical habitat); Jones School (historical); Helena Quarry (Vulcan Materials Company),
151	ALDOT	Corridor X From Coalburg Road to I-65 From I-65 to US 31 Gardendale	✓	✓	✓	✓	✓		✓		EJ area, Freshwater Land Trust property, Five Mile Creek Greenway (long range project), and CSX Rail-Trail (TIP project)
162	ALDOT	I-65 - South Shelby County From CR-87 to US 31 Calera				✓	✓				

✓ = Potential Impacts [See Respective Maps in Appendix A (pages 7A-1 thru 7A-8)]

Table 7.1 Environmental Screening Matrix for Roadway Capacity Projects

Map ID	Sponsor	2035 Regional Transportation Plan Non-Exempt Project Descriptions	1. Environmental Justice	2. Protected Lands	3. Impaired Streams	4. Wetlands	5. Floodplains	6. Critical Habitat	7. Prime Farmland	8. Historical Sites	Notes Re. Proximate Resources
172	ALDOT	Corridor X-1 (Northern Beltline) From US 78 Adamsville to I-59 Northeast Jefferson From SR-79 to SR-75 From I-65 to US 31 From US 78 to I-65 From US 31 to SR-79 From SR-75 to I-59		✓	✓	✓	✓		✓	✓	Village Creek Greenway, Valley Creek Greenway, and Five Mile Creek Greenway (long range projects); CSX Rail-Trail (TIP project); Newfound Creek (impaired); sensitive areas identified in the "greenprint" of the Upper Cahaba Watershed Study; Smith's Mill (historical)
183	ALDOT	State Route 150 - Ross Bridge From Shades Creek to South Shades Crest Road		✓	✓	✓	✓		✓	✓	Shades Creek Greenway (visionary section); popular section of Shades Creek for paddling; Shades Creek (impaired); Brocks Gap (historical)
226	ALDOT	Calera Northern Bypass From US 31 to SR-25	✓								George W. Roy Recreational Park
263	Hoover	Valleydale Road (CR 17) Inverness From Caldwell Mill Road to Inverness Center Drive		✓		✓	✓				Veterans Park, Inverness Park, and Inverness Community Greenway (TIP project)
265	Birmingham	Coalburg Road From Corridor X to Daniel Payne Drive	✓	✓							Hooper City Park

✓ = Potential Impacts [See Respective Maps in Appendix A (pages 7A-1 thru 7A-8)]

Table 7.1 Environmental Screening Matrix for Roadway Capacity Projects

Map ID	Sponsor	2035 Regional Transportation Plan Non-Exempt Project Descriptions	1. Environmental Justice	2. Protected Lands	3. Impaired Streams	4. Wetlands	5. Floodplains	6. Critical Habitat	7. Prime Farmland	8. Historical Sites	Notes Re. Proximate Resources
273	ALDOT	16th Street Interchange From 16 th Street to I-65 Northbound	✓	✓			✓				Evergreen Park
332	Homewood	Lakeshore Parkway at Wildwood From I-65 to Wildwood North									
342	Birmingham	Daniel Payne Drive From Cherry Avenue to I-65	✓	✓		✓					Hooper City Park
344	Jefferson County	Cherry Avenue/Blossburg Road From Main Street (Graysville) to Brookville School Road				✓			✓		
345	Hoover	Chapel Lane Extension From Chapel Lane to Chapel Lane/Patton Creek		✓	✓		✓				Hoover Sports Park Central; Patton Creek (impaired)
356	ALDOT	US-11 - Clay/Chalkville From Chalkville Road to Cahaba River Bridge		✓	✓		✓				Civitan Park and Cahaba River Greenway (TIP project); Cahaba River (impaired)
357	Jefferson County	Rex Lake Road From Leeds City Limits to US 78	✓	✓							
365	Shelby County	Morgan Road/CR 52 From South Shades Crest Road to State Route 261		✓	✓	✓	✓	✓			Cahaba Lily Park and Buck Creek Greenway (TIP project); Cahaba River (impaired & critical habitat)
411	ALDOT	I-65 - Central Jefferson County From Green Springs Hwy. N to 6 th Ave. South	✓	✓						✓	George Ward Park and Bessie Estell Park; Washington Elementary School (historical)

✓ = Potential Impacts [See Respective Maps in Appendix A (pages 7A-1 thru 7A-8)]

Table 7.1 Environmental Screening Matrix for Roadway Capacity Projects

Map ID	Sponsor	2035 Regional Transportation Plan Non-Exempt Project Descriptions	1. Environmental Justice	2. Protected Lands	3. Impaired Streams	4. Wetlands	5. Floodplains	6. Critical Habitat	7. Prime Farmland	8. Historical Sites	Notes Re. Proximate Resources
420	ALDOT	I-65 S. Jefferson/N. Shelby County From Valleydale Road to I-459 ramps (NB/SB)		✓	✓	✓	✓	✓			Cahaba River Greenway (long range project) and popular section of the Cahaba for paddling; Cahaba River (impaired & critical habitat);
424	Shelby County	CR-17 - Helena From SR-261/CR-52 to CR-12 (Butler Rd.)				✓	✓		✓		
425	Shelby County	CR-26 (Kent Dairy Rd) From CR-17 to SR-119 (Montevallo Rd)				✓	✓		✓		Wetlands, floodplains, and prime farmland
426	Shelby County	CR-11 - Shelby County (Phase 1) From CR-52 to CR-36		✓		✓	✓				Oak Mountain State Park
427	Shelby County	CR-11 - Shelby County (Phase 2) From CR-36 to CR-280		✓			✓				Chelsea HS ballfield
429	Shelby County	CR-52 - Helena From SR-261 east to Johnson St		✓			✓				Joe Tucker Park; Colonial Pipeline tanks
430	Shelby County	CR-26 - Shelby County From US 31 to SR-70		✓		✓	✓		✓		Big Creek Greenway (long range project); La Farge quarry
434	Shelby County	CR-87 From CR-12 north .55 miles				✓					adjacent to Shelby County Airport runway, hangars, and fixed base operator (FBO)
436	Shelby County	CR-22 Montevallo From CR-12 to SR-70 From SR-70 to US 31				✓	✓		✓		Calera Water Works (well)

✓ = Potential Impacts [See Respective Maps in Appendix A (pages 7A-1 thru 7A-8)]

Table 7.1 Environmental Screening Matrix for Roadway Capacity Projects

Map ID	Sponsor	2035 Regional Transportation Plan Non-Exempt Project Descriptions	1. Environmental Justice	2. Protected Lands	3. Impaired Streams	4. Wetlands	5. Floodplains	6. Critical Habitat	7. Prime Farmland	8. Historical Sites	Notes Re. Proximate Resources
535	ALDOT	US 280 Access Mgmt From I-459 to Eagle Point Parkway		✓	✓	✓	✓	✓			Cahaba River Greenway (long range project) and popular area for paddling; BWWB property; spillway dam on Cahaba River
539	ALDOT	Gurley Creek Bridge Replacement SR-79 at Gurley Creek				✓	✓		✓		
541	ALDOT	I-65 Auxiliary Lane - N. Jefferson From Proposed Northern Beltline to Mt. Olive Road					✓		✓		
642	Jefferson County	Galleria Boulevard Extension From SR 150 to South Lorna Road				✓	✓				
657	ALDOT	I-65 Auxiliary Lanes Hoover From US 31 to Alford Avenue (NB)			✓		✓				Patton Creek (impaired);
658	ALDOT	I-65 Auxiliary Lanes Hoover/Homewood From Alford Ave to Lakeshore Pkwy (NB/SB)	✓	✓	✓		✓		✓		Freshwater Land Trust Property; Shades Creek Greenway; Shades Creek (impaired);
659	ALDOT	I-65 Auxiliary Lanes Homewood From Lakeshore Pkwy to Oxmoor Rd (NB/SB)	✓		✓						
660	ALDOT	I-65 Auxiliary Lanes Birmingham From Oxmoor Rd to Greensprings Rd (NB/SB)	✓								
661	ALDOT	I-65 Auxiliary Lanes City Center From Greensprings Rd to University Blvd (NB/SB)	✓	✓							Georg Ward Park; Bessie Estell Park; JD Young Field;

✓ = Potential Impacts [See Respective Maps in Appendix A (pages 7A-1 thru 7A-8)]

7.5.1 Air Quality Hot Spot Analysis

U.S. Department of Transportation regulations require that a project-level conformity determination be made prior to the first action to adopt, accept, approve, or fund the non-exempt phase of FHWA project in a PM 2.5 non-attainment or maintenance area. That is, in order for a project to receive approval and adoption of its environmental documentation -- Categorical Exclusion (CE), Finding of No Significant Impact (FONSI), or Record of Decision (ROD) -- which in turn allows a project to progress towards construction, the hot spot analysis must be completed along with a conformity determination.

Hot spot analysis must be completed during the preliminary engineering phase of a project. A project sponsor might also choose to complete the hot spot analysis as part of an Advanced Planning Report (APR) in order to inform their overall decision-making process. A description of the MPO policies regarding the completion of the APR is included in Chapter 3, Section 3.7 Policy Development.

7.5.2 Project Level Resource Impact

The RTP includes projects expected to be built by 2035 and for many projects represents the earliest stages of project development. At these early stages, even the most fundamental details of a project, such as exact alignments and dimensions are largely unknown. Therefore, detailed environmental review through the National Environmental Policy Act (NEPA) is expressly conducted at the local, project-specific level as the improvement approaches the preliminary engineering (a.k.a. design) stage, and is thus not appropriate or required for this regional transportation plan. Currently, offsetting environmental impacts during the long-range planning process is also not required.

Nevertheless, federal transportation agencies must be able to stand behind the overall accuracy and trustworthiness of the regional transportation planning process and the resulting decisions. This is especially true if any of the information generated during the planning process is to be incorporated into project specific NEPA documentation either directly, or by reference. Project level consultations with environmental and transportation agencies will be required in order to identify mitigation locations and areas with the greatest environmental sensitivity. The information in this report can then be available for use by the state and local agencies involved in project-level mitigation.

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7.6 Potential Mitigation Strategies

In addition to identifying “probable significant adverse impacts”, the consultation process will also define “reasonable” alternatives and identify mitigation measures. This exercise will rely on strategies such as professional experience and “value engineering.” However, the FHWA document *Eco-logical: An Ecosystem Approach to Developing Infrastructure Projects* will also be a primary tool that will be used to identify alternatives and mitigation measures. This report serves as an appropriate guiding document for project sponsors to use as they evaluate mitigation strategies to address the identified potential impacts. Mitigation options sited in the report include the following categories and subcategories:

- Project-specific mitigation is usually selected based on the impact-site location, usually does not address landscape or watershed perspectives, and is generally small in scale.
- Multiple-project mitigation involves using a single, and typically large, off-site mitigation project to serve as compensation for impacts resulting from multiple projects.
 1. Mitigation banking specifically targets aquatic resource mitigation needs in the CWA Section 404 Regulatory Program and wetland conservation provisions of the Food Security Act. They involve the restoration, creation, enhancement, and in exceptional circumstances, preservation of aquatic resources expressly for the purpose of compensating for unavoidable aquatic resource losses.
 2. In-lieu fee mitigation provides required compensatory mitigation off site for impacts to wetlands. Unlike mitigation banks, in-lieu fees do not typically provide compensatory mitigation in advance of project impacts; rather, they are either paid concurrently with a project or after the impacts have occurred.
 3. Conservation banking protects parcels of land containing natural resource values that are conserved and managed in perpetuity for specified listed species and used to offset impacts occurring elsewhere to the same resource values on nonbank lands. Like mitigation banks, conservation banks must remain under active management in perpetuity and can be either privately or publicly owned.
- Ecosystem-based mitigation agreements merge the attributes of existing mitigation options to enable agencies to move closer to achieving multiple goals associated with connectivity, conservation, predictability, and transparency. Ecosystem-based mitigation takes a broad, "landscape-integrity," view of compensating for impacts of infrastructure projects, while still meeting the regulatory mandates of the applicable laws and regulations. The watershed or regional scope of such mitigation would encompass large ecosystems with critical functions in need of protection or augmentation.

A more comprehensive explanation of these mitigation options is available in the full Eco-logical report which can be viewed or downloaded from the FHWA’s website:

www.environment.fhwa.dot.gov/ecological/eco_index.asp

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7.7 Environmental Justice

7.7.1 Environmental Justice Legislation and Guidance

Title VI of the Civil Rights Act of 1964 prohibits discrimination in any program receiving federal assistance and serves as the legal foundation for environmental justice (EJ) considerations within the metropolitan transportation planning process. The 1969 National Environmental Policy Act (NEPA) and 23 USC 109(h) also require that social, economic, and environmental consequences of programs be considered when contemplating any action having federal support.

The FHWA and the FTA have jointly issued policy guidance on how to incorporate EJ concerns into metropolitan transportation planning. This section of the RTP outlines how the MPO addresses EJ concerns in a manner that is consistent with the FHWA and FTA guidance.

7.7.2 Birmingham MPO Approach to Environmental Justice

Over the past few years, the environmental justice movement has linked the plight of low income and minority communities to environmental health hazards and has attempted to demonstrate the ways environmental data access and information sharing can address these problems at the local level.

In response to the environmental justice challenge, the Regional Planning Commission of Greater Birmingham (RPCGB) Transportation Planning Division has developed a process that are continually being enhanced to assess the impacts of its transportation planning process on the target populations. These processes include: developing criteria for identifying potential environmental justice communities and developing analytical tools capable of assessing impact distribution for all communities served by the RPCGB. The RPCGB realizes that it cannot fully meet the needs of communities without the full participation and representation from local citizens and community groups. Effective public involvement techniques not only provide transportation officials with new ideas from local citizens, but it also alerts them to potential environmental justice concerns during the planning stages before the project development stages.

The RPCGB recognizes that effective public involvement procedures must be inclusive, representative, and provide for equal opportunity from all members of the community including those from the target populations.

The RPCGB has identified three areas that will ensure and enhance environmental justice considerations and are being properly integrated into the transportation planning and project development processes. These areas are:

1. Identify residential, employment, and transportation patterns of low-income and minority populations so that their needs can be identified and addressed, so that the benefits and burdens of transportation investments can be fairly distributed.
2. Use of analytical tools to assess whether transportation programs and projects place disproportionately high and adverse impact on low income and minority populations.
3. Continuing evaluation of the public involvement process to ensure that it adequately eliminates any participation barriers for the active involvement of low-income and/or minority populations in regional transportation decision making.

A balanced transportation plan must provide equivalent transportation benefits to all parts of our population, including the transit dependent and minority groups. There are two key ways that the RTP

assesses the impacts of proposed transportation system improvements for environmental justice populations.

First, RTP projects are compared against the population distribution of environmental justice populations. Projects, particularly capacity expansions or other capital intensive projects that have the potential to be extremely disruptive to the community, are flagged for more detailed evaluation if it appears that they will have potential impacts to environmental justice communities. This would include minorities, low income, as well as the elderly and disabled.

Secondly, the RTP assesses the additional mobility and accessibility benefits that are expected to be experienced by environmental justice populations. Mobility is measured by using the same travel time index (TTI) that is used in the congestion management process where the improvement in travel time is considered a benefit only for those environmental justice households that own automobiles. For example, if 20% of the households located within an area with a concentration of environmental justice population own automobiles, then the travel time benefit is only applicable to these households. If the improvement will also improve transit travel times, then the benefit may also be applied for zero car households, provided that public transit services are available.

Accessibility is measured across travel modes. Roadway capacity improvements are assessed by considering the reduction in travel time to reach jobs in the region's major activity centers. Transit system improvements are measured by considering the increase in the number of opportunities (jobs) that transit dependent and minority populations can access within a set time frame because of the modal improvement(s). Non-motorized travel system improvements consider the total number of opportunities (jobs, retail and non-retail services) that can be accessed because of the modal improvement within a set time frame (30 minutes for bikes and 20 minutes for walking). Results of this analysis are presented as part of the overall system measures that are used to report on the changes between the 2035 baseline "No-Build" scenario and the approved RTP.

In addition to assessing transportation equity and access, the RTP also includes a cursory assessment ("red flag" analysis) of potential impacts to EJ qualified areas located within 660 feet (0.125-mile) of non-exempt capacity projects included in the plan. EJ qualified areas are defined as census block groups where the nonwhite population is estimated to be 50% or more of the total population or block groups where the estimated median household income is less than \$25,444. Low income is defined as 120% of poverty. The poverty threshold used is \$21,203 for a family of four (weighted average) as reported by the US Census Bureau 2007. The capacity projects proximate to EJ qualified areas are identified in the Environmental Screening maps are in Appendix A and described in Table 7.1 above.

7.8 Climate Change and Greenhouse Gas Emissions

Climate change refers to unstable weather patterns caused by increases in the average global temperature (a.k.a. “global warming”). There is a growing consensus among climate scientists and policy-makers that these changes result from an increase in atmospheric concentrations of heat-trapping gases including carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). CO₂ represents 84% of the of the GHG emissions in the United States and is a common emission from motor vehicles and the burning of fossil fuels. The accumulation and higher concentrations of GHGs in the atmosphere are causing a rise in average global temperatures. GHGs warm the earth's atmosphere and are so-called because they simulate the effect of a greenhouse, trapping heat within the atmosphere and contributing to an increase in the earth's temperature. Most atmospheric scientists and climatologists agree that GHGs are the fundamental cause of sea level rise and climate instability characterized by severe weather events such as storms, droughts, floods, and heat waves.³

Many states and local government are setting greenhouse gas (GHG) reduction goals through legislation, regulation, and other policies. States and regional coalitions are developing climate action plans to identify and evaluate feasible policies to reduce their GHG emissions through a combination of public and private sector policies and programs. With growing interest in climate change, transportation decision-makers are facing increased public emphasis on the relationship between transportation and climate change. In response, transportation agencies and planning organizations are increasingly integrating climate change impacts into transportation decision making. Nevertheless, most MPOs including the Birmingham MPO have historically not addressed GHG emissions in transportation planning and project evaluation.

Despite the lack of any federal requirements for MPOs to address transportation related GHG emissions, some MPOs have begun to address the topic and its relationship to metropolitan land use and transportation. During 2007 and 2008, the Federal Highway Administration (FHWA), through its Transportation Planning Capacity Building program, conducted a series of peer exchange workshops in partnership with the Association of MPOs (AMPO). Each workshop was focused on a specific topic of current or emerging relevance to MPOs, each of which was identified through a national panel process. The workshops sought to engage participants from MPOs representing a diversity of urban area sizes, MPO structures and expertise/experience in the topic area. Participants in the workshop generally agreed that making fundamental changes in how land use and transportation are planned and integrated are essential to both mitigating and adapting to climate change.⁴

FHWA has determined that climate change should be integrated into transportation planning at the state, regional, and local levels and that consideration of potential long range effects by and to the transportation network be addressed. To that end, FHWA requires the following excerpt be present in the TIP, LRTP, and other selected documents:

“According to the FHWA report *Integrating Climate Change into the Transportation Planning Process*, there is general scientific consensus that the earth is experiencing a long - term warming

³ Ben Rasmussen. Boston Region MPO. “Carbon Dioxide, Climate Change, and the Boston Region MPO A Discussion Paper”. May 2008. www.fhwa.dot.gov/planning/metro/bostmpo.htm

⁴ Federal Highway Administration. “Summary Report - MPO Peer Workshop On Planning For Climate Change” Seattle, Washington. March 6-7, 2008. www.fhwa.dot.gov/planning/metro/mpoclimstlwa.htm#a24

trend and that human - induced increases in atmospheric greenhouse gases (GHGs) may be the predominant cause. The combustion of fossil fuels is by far the biggest source of GHG emissions. In the United States, transportation is the largest source of GHG emissions, after electricity generation. Within the transportation sector, cars and trucks account for a majority of emissions. Opportunities to reduce GHG emissions from transportation include switching to alternative fuels, using more fuel efficient vehicles, and reducing the total number of miles driven. Each of these options requires a mixture of public and private sector involvement. Transportation planning activities, which influence how transportation systems are built and operated, can contribute to these strategies. In addition to contributing to climate change, transportation will likely also be affected by climate change. Transportation infrastructure is vulnerable to predicted changes in sea level and increases in severe weather and extreme high temperatures. Long - term transportation planning will need to respond to these threats.”

*Introduction to Integrating Climate Change into the
Transportation Planning Process-Federal Highway
Administration, Final Report, July 2008*

As previously stated, the Birmingham area is currently designated as a non-attainment area with respect to particulate matter smaller than 2.5 microns in diameter. The Congestion Mitigation and Air Quality Improvement Program (discussed in the following section) will help to address the issue of climate change by funding projects that help reduce emissions.

The Birmingham MPO supports projects and programs to reduce motor vehicle emissions of CO₂ and other GHGs in the region. The MPO’s existing projects and programs designed to improve air quality generally have the added benefit of reducing GHG emissions. For example, CommuteSmart Birmingham (www.commutessmart.org/birmingham/index.html) offers free resources to commuters and employers to promote carpooling, vanpooling, walking, and bicycling. The Alabama Partners for Clean Air also promotes “green” travel behavior and other tailpipe emission reduction strategies. Much of the MPO’s funding is directed toward alternative transportation projects (i.e. transit, pedestrian, and bicycle) and all MPO funded projects are subject to a new complete streets/routine accommodation policy (see Chapter 3 Policy 10). Planning grants from the MPO’s Building Communities provide much needed resources for “smart growth” plans that include coordination between land use and transportation.