Chapter 10 Environmental Resource Evaluation

Walkway at Phar Mill Road Park - Photo from Carolina Thread Trail Master Plan for Cabarrus County Communities

Introduction

A past federal transportation bill, Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, or "SAFETEA-LU", included new planning requirements for MPO consultation with Federal, State, and Tribal land management, wildlife, and regulatory agencies, which was continued in the FAST Act. This consultation was to include a general discussion on possible environmental mitigation activities that could be incorporated into transportation projects identified for this plan.

Since the transportation planning activities of the MPO are regional in scope, the environmental mitigation discussion would not focus on each individual project within the Transportation Plan but would rather offer a summary of environmentally sensitive areas to be aware of, the analyses conducted by the MPO to identify potential conflicts of planned projects, and mitigation strategies that could be considered in an effort to minimize any negative effect that a project may have on an environmentally sensitive area.

Specifically, SAFETEA-LU directed State DOTs and MPOs to include in their long range transportation plans and transportation improvement programs (TIP) *"a discussion of the environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. The discussion shall be developed in consultation with federal, state and tribal land management, wildlife and regulatory agencies."*

In order to meet these requirements, it was essential to know how Federal regulations actually define mitigation.

Mitigation is:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replac and past ing or providing substitute resources or environments. (Source: 40 CFR 1508.20)

Identifying Sensitive Areas

There are numerous environmentally sensitive areas found throughout the CR MPO area. Many areas are too small or too numerous to map at a regional level and can only be clearly identified through a project level analysis. Some areas are yet to be identified and will only become known once a project level analysis is completed, such as caves, sinkholes, and wetlands. When a project is ready to move from the Transportation Plan into the design / engineering phases, the project sponsor will conduct any necessary analysis as required by state and federal regulations to determine the type and location of environmentally sensitive areas within the project study area.

In developing project lists for the MTP, the Cabarrus-Rowan MPO conducted a top level analysis to determine the potential need for future environmental mitigation. Specifically, the Cabarrus-Rowan MPO looked at proposed project locations throughout the region to determine their proximity to natural or socio-cultural resources. That analysis provided early guidance to project sponsors to develop mitigation strategies.

The following maps identify the various sensitive natural and community resources as well as the fiscally constrained projects for the 2045 MTP.
Map 10-1 shows the **Water Resource Conservation** areas and other sensitive natural resources with the transportation projects by horizon year.

Map 10-2 shows the **Land Conservation** areas and other sensitive community resources with the transportation projects by horizon year.

Tables 10-1, 10-2 and 10-3 show impact matrices of sensitive natural and community resources with the transportation projects by horizon year.

Environmental Mitigation Activities

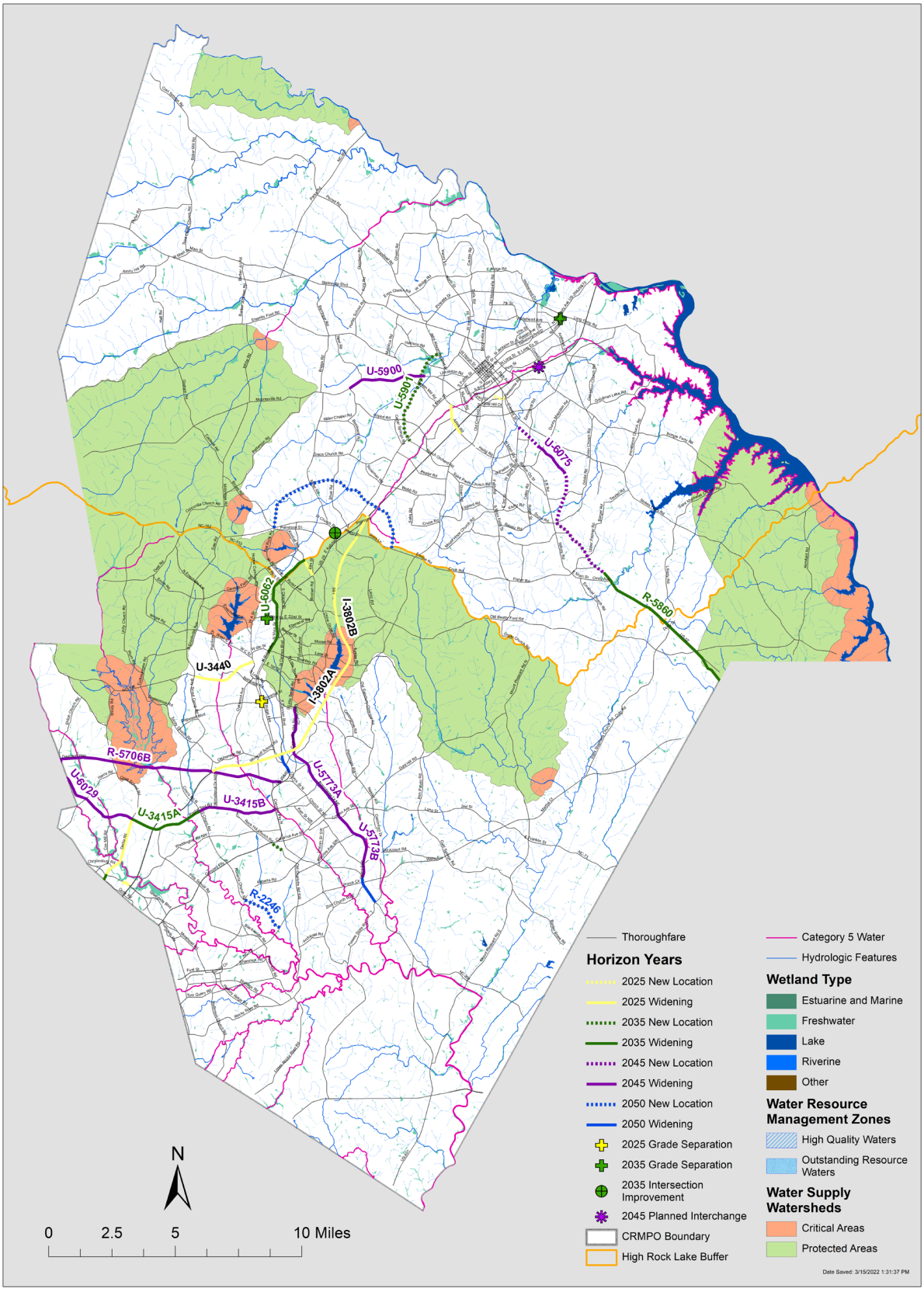
The Cabarrus-Rowan MPO is committed to considering the affects of transportation projects on the natural and built environments in order to preserve the quality of life. In doing so, the MPO recognizes that not every project will require the same type and/ or level of mitigation. Some projects such as new roadways and roadway widenings involve major construction with considerable earth disturbance. Others like intersection improvements, street lighting, and resurfacing projects involve minor construction and might have minimal, if any, earth disturbance.

The mitigation efforts used for a project should be dependent upon how severe the impact on environmentally sensitive areas is expected to be. The following four step process is used to determine the type of mitigation strategy to apply for any given project:

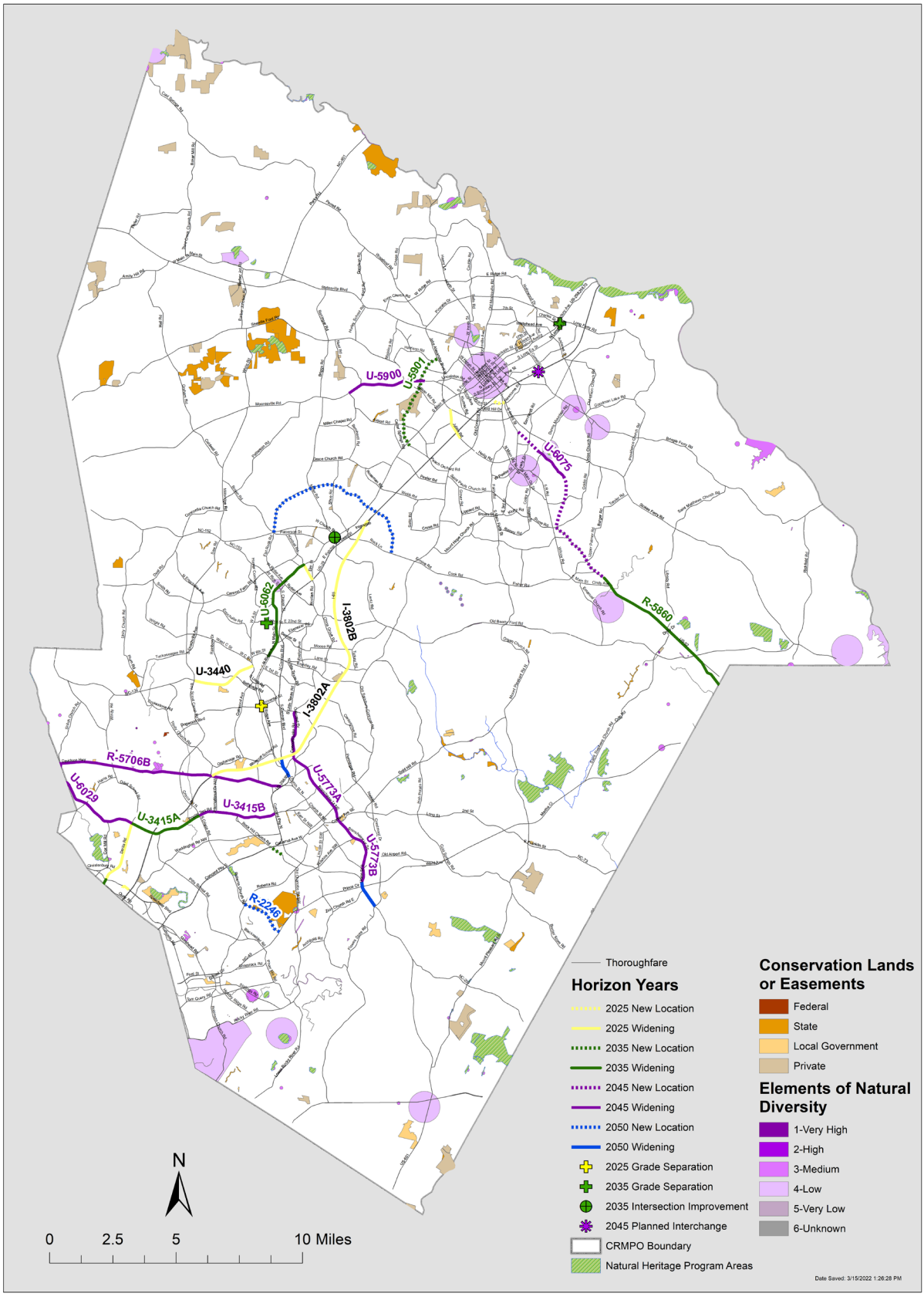
1. Identify environmentally sensitive areas throughout the planning area;
2. Determine how and to what extent projects could impact these environmentally sensitive areas; and
3. Develop toolbox of appropriate mitigation strategies to lessen the impact these projects have on the environmentally sensitive areas.
4. Apply the mitigation strategies, where appropriate, in assessing project alternatives and funding scenarios for plans and programs.

To the extent possible, transportation projects are minimized off-site disturbance in sensitive

Map 10-1 - Water Resource Conservation and Other Sensitive Natural Resources



Map 10-2 - Land Conservation and Other Sensitive Community Resources



areas and develop strategies to preserve air and water quality, limit tree removal, minimize grading and other earth disturbance, provide erosion and sediment control, and limit noise and vibration. Where feasible, alternative designs or alignments are developed that should help lessen the project's impact on environmentally sensitive areas.

The four-step mitigation planning process is designed to solicit public input and offer alternative designs or alignments and mitigation strategies for comment by the environmental review agencies, MPO, and local governments. For major construction projects, such as new roadways, or for projects that may have a region-wide environmental impact, a context sensitive solutions' process is considered in which considerable public participation and alternative design solutions are used to lessen the impact of the project.

The table below details mitigation activities and measures that could be considered and evaluated when avoiding environmental impacts is not completely feasible. Many of the measures are considered by the MPO during the project development phase. Measures considered include construction of sidewalks and bicycle lanes, design modifications to reduce community impacts, and requests for noise barriers and landscaping to reduce audio and visual impacts.

Impacts	Mitigation Measures
Air Quality	Designate Pedestrian/Transit Oriented Development Areas Adopt Local Air Quality Mitigation Fee Program Develop energy efficient incentive Programs Adopt air quality enhancing design guidelines Fund TCM Program
Archaeological	Archaeological Excavation Design Modifications to avoid area Educational Activities
Community Impacts	Bridge Community Sidewalks and Bike Lanes Develop recreational areas Traffic Calming Oral History Project
Farmland	Protect one to one farmland acre for every acre converted Agricultural conservation easement on farmland Compensation
Fragmented Animal Habitats	Construct overpasses with vegetation Construct underpasses, such as culverts and viaducts Other design measures to minimize potential fragmenting of animal habitats
Historic Sites	Relocation of Historical Property Design Modification Landscaping to reduce visual impacts Photo documentation Historic archival recording to present historic information to the public
Light Impacts	Lens Color and Direction of lighting Low Level lighting
Noise	Depressed Roads and/or Construct Tunnels Noise Barriers Planting Trees

Impacts	Mitigation Measures
Park Impacts	Construct bike/pedestrian pathways Dedicate land Compensation for park dedication fees Replace impaired functions
Streams	Stream restoration Vegetative buffer zones Strict erosion and sedimentation control measures Consider best practices for stormwater management
Threatened & Endangered Species	Preservation Enhancement or restoration of degraded habitat Creation of new habitats Establishment of Buffer areas around existing habitats Modifications of land use practices and/or Restrictions on land access Restrictions on land access
Viewshed Impacts	Vegetation and Landscaping Screening, Buffers and Earthen Berms Camouflage Lighting
Wetlands	Compensation Wetland Restoration and/or Creation of new wetlands Strict erosion and sedimentation control measures

Interstate 85 Rest Area with environmental mitigation treatments - Photo from website

In addition to these activities, the Cabarrus-Rowan MPO will use the NCDENR Ecosystem Enhancement Program (EEP) as a resource for protecting and enhancing water quality and any applicable habitat plan. The mission of the EEP is *"to restore, enhance, preserve and protect the functions associated with wetlands, streams, and riparian area including but not limited to those necessary for the restoration, maintenance and protection of water quality and riparian habitats throughout North Carolina".* This mission can be met through such mechanisms as watershed restoration plans, watershed needs assessments, mitigation sites, mitigation plan reporting, and schedules for providing compensatory mitigation.

NCDOT has already begun to delineate mitigation costs for TIP projects from the overall right-of-way cost. For example, the I-85 widening (I-3803) in Cabarrus County had approximately $5 million in funding for mitigation activities. The US EPA also promotes the "Green Highways Partnership" which integrates transportation functionality and ecological sustainability though the use of permeable construction materials that can be recycled and designed with the intent of protecting habitats and ecosystems. The Cabarrus-Rowan MPO will identify opportunities to evaluate this concept in tandem with NCDOT highway planners and designers for the purposes of making future roadway projects more environmentally-friendly.

Moreover, the NC Wildlife Resources Commission (WRC) has released guidance for mitigating cumulative impacts to aquatic and terrestrial wildlife resources, which include 100 foot buffers on perennial streams and 50 foot buffers along intermittent streams and wetlands. In addition, they recommend that local governments prohibit commercial and residential development within the 100 year floodplain and provide sufficient open space to effectively reduce impervious surface. Public lands make up less than 5 percent of the Yadkin-Pee Dee basin, which covers the CR MPO area.

The NC WRC Wildlife Action Plan recommends protection of large tracts (greater than 500 acres) to protect large core areas of forested land. The Cabarrus-Rowan MPO will attempt to avoid these lands as practice in planning future thoroughfares as well as projecting future TAZ level growth for the Travel Model. On-going coordination with local agencies is an evolving process as they become more aware of the MPO plans and programs and we become more aware of their goals and mission. A problem exists in that most local agencies move at a much faster pace than the plans and programs of the MPO, so there is some concern that it may be difficult to retain their interest/participation. We can endeavor to receive up-to-date data layers from these local agencies for the purposes of avoiding any future conflicts.

Resource Agency Consultation and Review

The Cabarrus-Rowan MPO is committed to involving environmental review agencies, local governments, and the public in the transportation project planning process. In doing so, the Cabarrus-Rowan MPO has provided a consensus process for obtaining input from the environmental review agencies to strengthen the development of this MTP. This process is detailed below.

Cabarrus-Rowan MPO Consultation Process

The purpose of this Consultation Process is to plan and develop a transportation system which preserves and enhances the natural and built environment(s) of our community.

The MPO shall consult, as appropriate, with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of the transportation plan. The consultation shall involve, as appropriate, (1) a comparison of transportation plans with State conservation plans or maps, if available; or (2) a comparison of transportation plans to inventories of natural or historic resources, if available 23 CFR 450.322.

The Cabarrus-Rowan MPO will strive to include the participation of the resource agencies throughout the development of the Metropolitan Transportation Plan (MTP). This consultation plan is being developed for the MTP as follows:

- During the development of the MTP, state and federal resource agencies listed in Appendix (A) as well as any relevant local resource agencies will be contacted to provide input prior to the Cabarrus-Rowan MPO board making decisions during the following plan milestones:
  - Development of the goals and objectives
  - Development of evaluation criteria
  - Development of tools and data needed
  - Development of base year data
  - Development of future year data
  - Development of the draft plan
  - Adoption of the final plan

- The Cabarrus-Rowan MPO will compare the current long range transportation plan in development to available maps, inventories, plans, policies and strategies as listed by the agency contacts. The MPO will document in writing the comparison of plans and provide to the resource agencies for review and comment prior to any decision points that might rely upon said data.

- The Cabarrus-Rowan MPO will provide the resource agencies with a schedule for the development of the MTP that details tasks and timeframe for the update including decision points where agencies will be asked for their feedback.

- The Cabarrus-Rowan MPO will use the US Postal Service, e-mail, website, telephone or conference call, private face-to-face and public meetings to ensure that the MTP process is accessible to resource agencies.

- In addition, the Cabarrus-Rowan MPO will provide written notice to the resource agencies of upcoming public review meetings or public comment periods being held on the draft and final MTP and Air Quality Conformity process.
- Amendments to the MTP requiring an air quality conformity determination and/or analysis (additions or deletions of regionally significant projects) will follow the same consultation notification as listed above.

- Resource agency comments, MPO responses, and changes to the MTP as a result of the comments will be posted on the Cabarrus-Rowan MPOs website, made available upon request, and published in an appendix to the MTP.

Additional Agency Consultation

NC State Historic Preservation Office

In addition to working with the NCSHPO, the Cabarrus-Rowan MPO will work with the local Historic Properties Districts and Commissions in Concord and Salisbury to obtain GIS mapping of historical sites and areas. The MPO will ask the local HPDs and HPCs to review and comment on the MTP.

Salisbury Historic Preservation Commission

The Historic Preservation Commission is responsible for receiving and approving certificates of appropriateness for structures within local historic districts as well as recommending to the Salisbury City Council areas to be designated by ordinance as local historic districts. The City of Salisbury has ten historic districts listed on the National Register with five of those areas designated as local districts. The MPO will ask the Salisbury HPC to review and comment on the MTP.

Concord Historic Preservation Commission

The Historic District Commission was established in order to promote, enhance and preserve the character of the district, and to administer the Commission's Ordinance. The City of Concord has three historic districts. The MPO will ask the Concord HPC to review and comment on the MTP.

Appendix 10-1 includes agency contact information, additional documented consultation, coordination, and outreach.

Table 10-1 - Transportation Plan Projects Horizon Years 2018 to 2025

Division #	Index #	Facility	From	To	Dist.	Description	Regionally Significant	Blue Line Streams	National Wet-lands Inventory	Water Supply Watershets	High Quality Resoource Waters	Natural Heritage Areas	Conservation Lands or Easements	Minority > 25%	Below Poverty Level > 17%
9	11	I-85 (I-3802B) incl. I-3610 NC 152 & I-3804 OBF interchanges	North of Lane Street	US Hwy 29/601 connector/Rowan	6.1	Freeway/Expressway	YES			X		X			
9	12	I-85 (I-2304)	North of Exit 81	Davidson Co. line	1.5	Freeway/Expressway	YES	X	X			X			
9	30	Coach Deal Road (U-5608)	N. Chapel Street	Bostian Rd	0.6	US 29 Connector sidewalks/bike lanes	NO			X					X
9	54	Newsome Road	Bendix Dr	US 52	0.6	New Roadway	NO							X	X
9	32	Julian Road	Jake Alexander Blvd	Summit Park Drive	1.3	Widen, median-divided, sidewalks, bike lanes, bus turnouts	NO	X	X						X
10	13	I-85 (I-3803)	Speedway Blvd	NC 73	7.2	Freeway/Expressway	YES	X	X						
10	15	NC 3 (U-3440)	Kannapolis Parkway	Loop Road	2.5	Widen, improve access to downtown Kannapolis	YES								
10	17	Derita Road (U-4910)	Poplar Tent Road	Aviation Blvd	1.5	Widen and improve with entrance to the Concord Padgett Airport	YES								
10	17	Derita Road (U-4910) ($4.1 mil. local part)	Aviation Blvd	Concord Mills Blvd	1.1	Median-divided widened, sidewalks, bike lanes	YES								
10	11	I-85 (I-3802)	NC 73	North of Lane St Interchange	7.5	Freeway/Expressway	YES	X		X				X	X
10	51	Intersection -NC 3 & US 29/601				Intersection Improvement								X	X
10	52	Intersection of Concord Mills Blvd ($1.5 mil. local part)				Construct 2-lane grade separated directional flyover	YES								
10	60	Bill McGee Rd	Wallace Rd	Proposed Industrial Site	0.5	Improve Existing Road and Extend to Industrial Site	NO					X			
10	50	Rogers Lake Road				Railroad Grade Separation									X
10	62	Concord Traffic Mgt. System				Concord Traffic Management System									
10	73	Intersection of Harris Road and Poplar Tent Road			0.75	Intersection Improvement									

Table 10-2 - Transportation Plan Projects Horizon Years 2026 to 2035

Division #	Index #	Facility	From	To	Dist.	Description	Regionally Significant	Blue Line Streams	National Wet-lands Inventory	Water Supply Watersheds	High Quality Resoource Waters	Natural Heritage Areas	Conservation Lands or Easements	Minority > 25%	Below Poverty Level > 17%
9	34	Airport Parkway Extension	Jake Alexander Blvd	US 29/Peach Orchard Road	3.6	Connector road on multi-lane right-of-way	YES	X	X				X		X
9	63	Main Street (US 29A)	Jackson Park Rd/ Loop Rd	Coach Deal Road	4.3	Improve roadway incorporating bike lanes and sidewalks	NO			X				X	X
9	68	US 52 Widening	Rockwell Bypass	Misenheimer Bypass	4.6	Connector road on multi-lane right-of-way	YES			X					
9	72	NC 152 Intersections				Intersection and Ramp Improvement				X					X
10	66	22nd Street	Airport Road	US 29	0.5	22nd St Railroad Grade Separation	NO								
10	59	Odell School Road	Concord Mills Blvd	I-485	0.9	Median-divided widening	YES								
10	36	Poplar Tent Road (U-3415)	Derita Rd	George Liles Pkwy	1.35	Median-divided widened with sidewalks and bike lanes	NO	X	X						
10	61	Intersection US 29, Rock Hill Church Rd, Union Cemetery Rd				Realign Union Cemetery Rd to intersec-tion US 29 at Rock Hill Church Rd	YES							X	X

Table 10-3 - Transportation Plan Projects Horizon Years 2036 to 2045

Division #	Index #	Facility	From	To	Dist.	Description	Regionally Significant	Blue Line Streams	National Wet-lands Inventory	Water Supply Watersheds	High Quality Resoource Waters	Natural Heritage Areas	Conservation Lands or Easements	Minority > 25%	Below Poverty Level > 17%
9	67	US 52 Bypass	South of Granite Quarry	North of Granite Quarry	4.6	Median-divided widening	YES								
9	33	NC150	Airport Road	West of Grants Creek	3	Median-divided widened with sidewalks and bike lanes	NO								X
9	64	Long Ferry Rd Grade Separation			1	Railroad Grade Separation								X	X
9	70	US 52 Bypass	South of Rockwell	North of Rock-well	3.96	Median-divided widening	YES								
9	76	New I-85 Interchange at McCanless Road				New Interchange					X			X	X
10	37	Poplar Tent Road	NC 73	Derita Rd	4.2	Median-divided widened with sidewalks and bike lanes	NO	X	X						
10	71	Poplar Tent Road (U-3415)	George Liles Pkwy	US 29	3.08	Median-divided widened with sidewalks and bike lanes	NO	X	X						
10	46	NC 73	US 29	Poplar Tent Road	8.92	Median-divided widened with sidewalks and bike lanes	YES			X	X	X			X
10	39	NC 3	Dale Earnhardt Blvd.	NC 73	5.09	Median-divided widened with sidewalks and bike lanes	NO	X	X					X	X
10	69	NC 3	NC 73	US 601	2.87	Median-divided widened with sidewalks and bike lanes	NO						X		

Table 10-4 - Transportation Plan Projects Horizon Years 2046 to 2050

Division #	Index #	Facility	From	To	Dist.	Description	Regionally Significant	Blue Line Streams	National Wet-lands Inventory	Water Supply Watersheds	High Quality Resoource Waters	Natural Heritage Areas	Conservation Lands or Easements	Minority > 25%	Below Poverty Level > 17%
9	31	NC 152 Bypass	NC 152 East	NC 152 West	7.5	Urban bypass to facilitate east-west traffic	NO				X			X	
10	38	George Liles Pkwy (R-2246)	NC 49	Roberta Rd	5.21	Widen Roadway, part on new location	NO	X	X			X	X	X	X
10	41	US Highway 29	I-85	Church Street	0.36	Median-divided widened with sidewalks and bike lanes	YES								
10	45	US Highway 601	NC 3 (South Union St)	Flowes Store Rd	1.15	Median-divided widened with sidewalks and bike lanes	YES								
10	38	George Liles Pkwy (R-2246)	NC 49	Roberta Rd	5.21	Median-divided widened with sidewalks and bike lanes	NO	X	X			X	X	X	X