Chapter 5

Transportation

CSX Railroad

In summary, this chapter recognizes the critical factor transportation plays in the lives of all our citizens. The recommendations provide general guidance for decisions that affect the community's transportation system and resources. Evaluation of all transportation decisions by the quality of life they promote is the overarching concept to be followed.

US 64

Train Station

I. Existing Conditions

For many, the concept of a transportation system is merely the road network of a particular area. However, the transportation system is a much broader concept, encompassing all parts of the community that facilitate movement of people from one area to another.

For the Study Area, the following are the major components or modes of the transportation system:

- Highways
- Aviation
- Rail Service
- Public Transportation
- Sidewalks
- Bikeways

Each mode offers a unique contribution to the system, offering individuals many ways to travel throughout the community. Map 5-2, Existing Transportation Systems, located at the end of this chapter, indicates the major components of the local Transportation System.

A. Transportation System

1. Highways

The automobile is the primary means of transportation for residents of the Study Area. The Rocky Mount area is well served by major highways that provide access to and around the City. The roadway system includes an interstate (I-95), national routes (US 64, US 301), state highways (NC 4, NC 43, NC 48, and NC 97), state routes (i.e. Winstead Avenue, SR 1613) and City streets (i.e. Grace Street). There are no roads owned or maintained by Nash or Edgecombe County within the Study Area.

I-95 borders the western edge of the City offering direct access to major metropolitan areas along the east coast and connections to other important east-west highways in North Carolina, such as I-40 and Highway 70. US 301 and US 64 serve as important routes around and through the City. These two major highways help to maintain easy traffic flow and circumvent the central city area. US 64 Bypass is especially valuable because it provides businesses within the City with an interstate quality highway and has also resulted in more efficient travel around the City. US 301 Bypass, like US 64, has developed into a major commercial corridor for the City of Rocky Mount.

In addition to I-95, US 301, and US 64, several state highways also serve the Study Area. NC 43 (Benvenue, Falls, Grand, and Fairview Roads) cuts diagonally through the City from northwest to southeast and provides a connection to Greenville. NC 97 (Atlantic Avenue-Arlington Street-Raleigh Road) runs northeast to southwest and is an alternate route to Raleigh. NC 48 (Gold Rock) runs generally north to south and connects the central city with the Gold Rock community.

When last surveyed in 1998, there were nearly 150 miles of state-maintained roads and 257 miles of city maintained streets within the Rocky Mount Urban Area Metropolitan Planning Organization (MPO). The total highways network offers the City excellent access to major urban and recreational areas within and outside the state.

2. Aviation

Primary commercial air travel is served by Raleigh-Durham International Airport (RDU), located 65 miles west of Rocky Mount.. The major airport boasts 13 airline carriers and additional charter services providing easy access to virtually any desired destination.

Closer to home, a regional airport complements the study area's highway system. The Rocky Mount-Wilson Regional Airport (RWI) is located 6.5 miles southwest of the City on NC 97. The airport is operational for corporate aircraft. It currently has an all-weather primary runway of 6,000 feet with a 1,000 foot overrun, an instrument landing system, a passenger terminal and several hangars. Plans are underway to extend the primary runway to 7,100 feet, which will allow larger aircraft to land at the airport.

Although passenger service was discontinued in March 2001, the airport continues to provide commercial air service as well as corporate and private aircraft operation. This discontinuation of service was primarily due to a lack of available air carriers willing to operate here and due to competition from RDU. In addition to providing corporate and private jet aircraft service, the airport offers general aviation services that include flight instruction, aircraft charter and rental. It also has a very fine fixed base operation, provided by Air Care Inc. This company's services include fueling, airframe and engine repairs, avionics repair and tie-down storage among others.

There are about 50 private airplanes based at RWI, including corporate planes for RBC-Centura, Standard Commercial Tobacco and Guardian Corporations. Three rental car companies, Budget, Hertz, and National, serve the airport with all types of vehicle rentals. No specialized airfreight carriers are currently associated with the airport; however, small amounts of freight may be shipped through US Air Express service.

3. Amtrak and Other Rail Service

In addition to having aviation services, Rocky Mount has a rich railroad tradition. Trains skirted the eastern boundary of the early community, and by 1840 a train depot was in operation. Although the Emerson Shops and the Atlantic

Coastline Railroad are long gone, the depot remains in downtown Rocky Mount and is still in service today. Renovation of this historic train station was completed in 2001.
The newly renovated train station provides passenger rail service to residents of the study area via Amtrak. The station currently services eight trains per day, with 50,000 passengers embarking/disembarking annually. Passengers can travel directly to Raleigh and Charlotte as well as cities north and south along the east coast. Amtrak also provides package services.

Although Amtrak provides package shipping services, CSX transportation is the leading provider of commercial freight rail services in the study area. The CSX "A" Line, which includes two tracks, accommodates both passenger and rail service, and approximately 20 freight trains operated by CSX Transportation use the "A" Line daily. The Nash County Rail line provides service to Spring Hope, west of Rocky Mount. Another line, the CSX "AB" Line, also known as the Plymouth Line, provides freight service between Rocky Mount and Plymouth, North Carolina. Approximately four trains traverse this line six out of seven days per week.

Given the level of rail traffic in the Study Area, rail crossing safety is a significant concern in local transportation activities. There are 55 at-grade railroad crossings within the MPO planning area. Recognizing the potential for collisions at such locations, most of the more heavily traveled crossings are equipped with gates, flashing lights and a warning bell. New technology successfully has been integrated into or is planned for rail crossing safety devices within the City, including installation of four quadrant gates and event monitors in signal cabinets on the main CSX line.

The City and the North Carolina Department of Transportation (NC DOT) have undertaken a comprehensive study of the 34 rail crossings located within the corporate limits of Rocky Mount. If the recommendations of the study are implemented, some existing crossings will be closed to vehicular traffic, and additional improvements will be constructed at the remaining existing crossings. Another unique option that exists within our area is the conversion of abandoned rail spurs to a public walking trail or greenway.

4. Public Transportation

Adjacent to the historic and newly renovated rail depot stands the Bus Station, renovated in 1998 for enhanced operations and passenger amenities. Both Tar River Transit and Greyhound/Trailways bus companies use it as a center for their passenger and ticketing operations.

The transit system in Rocky Mount (TRT) began as a privately owned and operated system. In 1983, the City of Rocky Mount acquired new buses and took over the operation of this service within the corporate limits. The City currently provides management and maintenance functions for the bus system and contracts with a private company for drivers.

Tar River Transit has nine major bus routes, which provides service to most areas of the City. Of the routes, six are area loops, and three are operated in an inbound-outbound pattern. All routes meet at the Transfer Center (bus station) located on Coastline Street. Fixed route service is available Monday through Saturday, excluding major holidays. There are currently nine buses in the fleet, and six of those nine are used during the day. Rocky Mount Transit services approximately 1,000 passengers per day and about 20 passengers per bus hour.

Feeder bus routes were added in FY2000 and FY2001. These routes take passengers to Little Easonburg, the US 301 corridor, Battleboro and Gold Rock. A 2002 survey of bus ridership indicated that over 46% of all passenger trips were work related, and adults between ages 25-54 years represented 90% of the total ridership.

For passengers unable to ride a fixed route system, Tar River Transit provides ADA complementary paratransit service. Rocky Mount Transit and Nash-Edgecombe Transit Services (NETS) merged in the fall of 2001, and together provide public transportation services to major destinations in the City and portions of Edgecombe and Nash Counties.

As for the future of the local bus system, given the recent downturn in the local and national economies, increased ridership is expected. A growing population might also increase ridership. If ridership increases, the location of public transportation lines may become a more important factor in future land use decisions such as rezoning and/or subdivision approvals.

Courtesy of Rocky Mount Telegram

Nearly 14% of all residences in Rocky Mount do not have a single vehicle at their disposal.

Source: U.S. 2000 Census

5. Pedestrians

Walking is the most basic means of transportation. Most trips begin and end as a pedestrian. Sidewalks are one of the fundamental building blocks of a well-integrated transportation network. It is generally more cost-effective to plan for sidewalks and other pedestrian related facilities in advance than to retrofit them into existing systems.

The goal of the MPO is to promote and plan for facilities (either stand-alone or adjacent to the roadway) that provide comfort, convenience, safety, security and economy to the pedestrian. In response to the MPO's interest in planning for and improving pedestrian facilities, a committee of local citizens was formed several years ago. Known as the Transportation Advisory Committee, the group meets on a regular basis to address the need for improved pedestrian access. Their input is considered when evaluating short- and long-term transportation improvements.

Courtesy of Rocky Mount Telegram

In 1999, the City of Rocky Mount developed a five-year plan for sidewalk construction along major thoroughfares. Since that time, a Transportation Enhancement Grant was secured allowing construction of sidewalks included in the first three years of the five-year plan within one year. Additional sidewalk improvements are under construction to connect Sunset Park with the Tar River Greenway.

6. Bicycles

Although the use of bicycles within the Rocky Mount planning area is more or less attributed to recreational users, a local group of enthusiasts have formed a club to further the cause of bicyclists and to promote bicycle use locally. A number of citizens participated in the public workshops and neighborhood meetings held to discuss the local Thoroughfare Plan and Transportation Plan. They expressed an interest in having the MPO evaluate more bicycle related improvements within the planning area.

At present the most significant bicycle related project within the MPO is the Rocky Mount Tar River Trail.. The Trail was completed in 2003 including the construction of pedestrian/bike bridges at Peachtree Street to connect Battle Park and at Atlantic Avenue to connect Stith-Talbert Park to the Tar River Trail system.

7. Other Transportation Facilities And Services

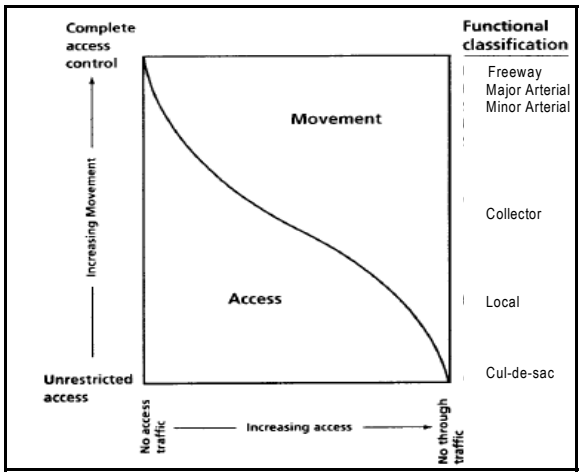
Twenty-seven trucking companies in Rocky Mount provide additional transportation services in the area. Two taxicab companies and one charter bus company also provide additional transportation services in the area.

B. Street Classification And Existing Thoroughfares

In addition to having various modes of transportation, an effective transportation system needs a street and thoroughfare classification system. All streets and highways within any given area should be classified in the early stages of a transportation study. *Jurisdictional* and *functional* classifications are often done in conjunction with a geometric inventory of streets. An *access* classification may be done where access management programs and plans are contemplated.

In a *jurisdictional* classification system, roadways can be grouped by political jurisdiction (or by community or county) and by the agencies that have primary and secondary jurisdictional responsibility for their maintenance and operation (state, county, local). In the functional classifica-

Figure 5-1: Relationship Between Access and Management Functions of Streets and Highways



Source: Adapted from Institute of Traffic Engineers, Transportation Planning Handbook, 2nd Edition, 1999

tion system, transportation facilities in states, planning regions, and individual communities are normally classified according to the basic functions that they perform. The classification of roads and streets requires determining the degree to which land access functions should be (1) emphasized at the cost of the efficiency of movement or (2) discouraged to improve the movement function. Similarly, for transit networks, express routes primarily serve the long-distance trips, while local routes provide more service to adjacent land uses.

The entire road system is traditionally classified by relating the proportion of through-movement to the proportion of access such as that shown in Figure 5-1: Relationship Between Access and Movement Functions of Streets and Highways. In this hierarchy of highway facilities, the freeways, major and minor arterials constitute the major highway system; collector and local streets comprise the local street system. Public transport and pedestrian requirements may influence the roadway classification.

C. Thoroughfare Plans

1. History

The first thoroughfare plan developed for the City of Rocky Mount was adopted in 1963 and revised in 1965. A subsequent plan was developed in 1973 and adopted that same year. In 1979, revisions were made to the 1973 plan to accommodate commercial development taking place within the US 301 Bypass corridor. By 1980, the growth patterns in the Rocky Mount area were shifting, and it appeared that development was rapidly occurring to the northwest and toward I-95. In response, the City requested a re-evaluation of the thoroughfare plan.

In the summer of 1980, the Department of Transportation conducted an external origin and destination survey, gathered employment and housing data, and took comprehensive traffic counts in the Rocky Mount area. This data was then used to develop travel pattern models to test the adequacy of the existing thoroughfare plan. Additional studies and thoroughfare planning after the US 64 Bypass construction resulted in the thoroughfare plan adopted by the City of Rocky Mount on August 12, 1985. This plan was later revised by the North Carolina Department of Transportation and approved in its current form in May 1988. This revision was completed as a result of changes anticipated with the construction of the Golden East Mall area.

In 1992, the Rocky Mount Urban Area became the 17th MPO in North Carolina. The MPO is responsible for carrying out the transportation planning process in the Rocky Mount Urban Area, which includes approximately 36 square miles and accounts for 45% of the population of Edgecombe and Nash Counties. It consists of the representatives of the City of Rocky Mount, Nash and Edgecombe Counties, the North Carolina Department of Transportation, Transportation Advisory Committee, the Technical Coordinating Committee and the various agencies and units of local and State government participating in transportation planning for the area.

The first Rocky Mount Urban Area Transportation Plan was prepared and approved by the Metropolitan Planning Organization of 1998. This document addressed all travel modes in the urban area and had a horizon year of 2020. On September 17, 2001 the Transportation Advisory Committee of the Rocky Mount MPO adopted a revised Transportation Plan 2025. This plan subsequently was accepted and approved by the NC DOT and the Federal highway Administration (FHWA). The Plan includes the following:

- Constructing a 4.3 mile Northern Connector
- Building a bridge over CSX railroad in the Battleboro community
- Widening US 301 Bypass, NC Highway 43, Country Club Road, Hunter Hill Road, and North Winstead Avenue
- Improving the bus systems, railway, pedestrian walkways and bikeways

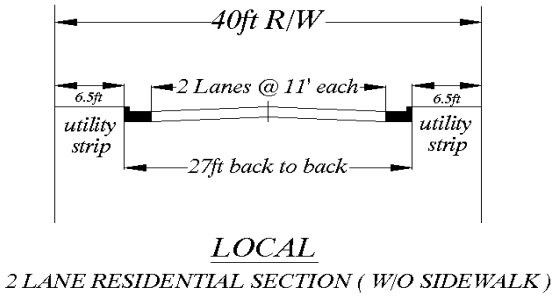
Citizen participation is an important element of the transportation planning process and is achieved by making study documents and information available to the public and by actively seeking citizen participation during the planning processes. Involvement is sought through such techniques as goals and objective surveys, neighborhood forums, drop-in centers, workshops, citizen committees, seminars and public hearings. Elected or appointed city and county representatives and municipal and county plan-

ning boards also serve as primary sources in gaining public understanding and support for transportation planning.

2. Design Standards

Standards for the design and construction of streets are derived from the various functions which these streets must perform, since traffic volumes and flows help to determine, and in turn are determined by, land uses.

Figure 5-2A: Local Street Design with no Sidewalks

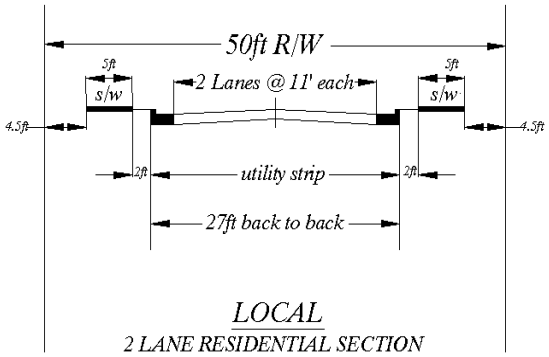


Source: Rocky Mount Traffic Engineering Department

A. Local Streets

Figures 5-2A and 5-2B illustrate the design standards for local streets. The primary purpose of local residential streets is to provide access to abutting residential property and circulation within the immediate neighborhood. Traffic should not exceed 1,000 vehicles per day and 100 vehicles at peak hour. Local streets should intersect with arterials only where absolutely necessary, and they should intersect with each other and with collector streets at 90-degree (tee) intersections wherever possible. Current minimum standards call for a right-of-way of 40 feet, but the requirement must be 50 feet in areas with sidewalks. Roadway width should not be less than 27 feet when measured from back of curb, allowing two moving lanes and one parking lane. Where probable traffic flow will approach or exceed 1,000 vehicles daily, the City shall have the authority to require a wider street in order to facilitate the higher traffic volume.

Figure 5-2B: Local Street Design with Sidewalks

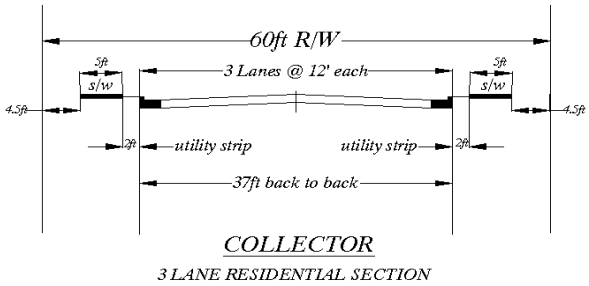


Source: Rocky Mount Traffic Engineering Department

B. Collector Streets

As the name implies, collector streets traverse neighborhoods, collecting local traffic and carrying it at low speeds to major thoroughfares for distribution. The collector should be able to easily carry from 1,000 to 4,000 vehicles per day. Frontage development should be restricted wherever practical along its length, and other streets should meet it at tee intersections no closer than 300 feet apart. Preferably, residential development should be designed to allow dwellings to have their side lot lines adjacent to the collector. The roadway cross-section must provide for a minimum 37-foot width, allowing two driving lanes at all times and parking on both sides where necessary. Extra turning lanes should be provided where a collector intersects a major arterial. A minimum right-of-way of 60 feet is required. Collector street design standards are shown in Figure 5-3.

Figure 5-3: Collector Street Design Standards



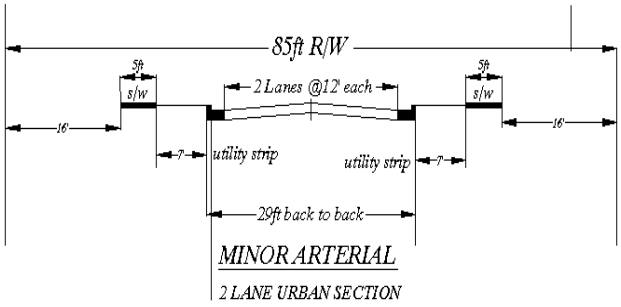
Source: Rocky Mount Traffic Engineering Department

C. Minor Arterial Streets

The arterial street system serves as the principal network for high volume, higher speed traffic flow. Arterial streets should form a reasonably continuous and integrated system. A properly designed and developed arterial street system should help define residential neighborhoods, industrial sites and commercial areas and minimize conflicts with school and park developments.

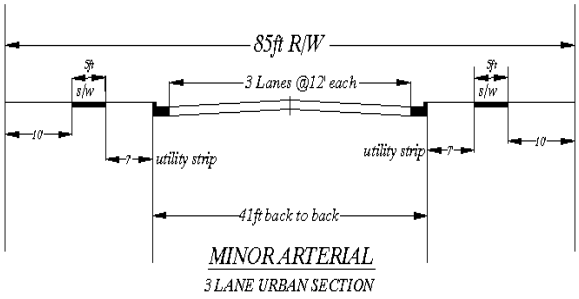
Minor arterials represent one subset of the arterial street system. Minor arterial streets are designed to provide for intra-city through traffic movement and connect with major arterials. Minor arterials also serve to collect and distribute traffic to and from collector streets. Ideally, some form of access control could be considered appropriate for this type facility; the minimum right-of-way for a minor arterial should be 85 feet. The roadway cross-section should range from 29 to 41 feet when measured from the back of the curb. Figures 5-4A and 5-4B show the design standards for minor arterial streets.

Figure 5-4A:
2-Lane Minor Arterial Street Design Standards



Source: Rocky Mount Traffic Engineering Department

Figure 5-4B:
3-Lane Minor Arterial Street Design Standards

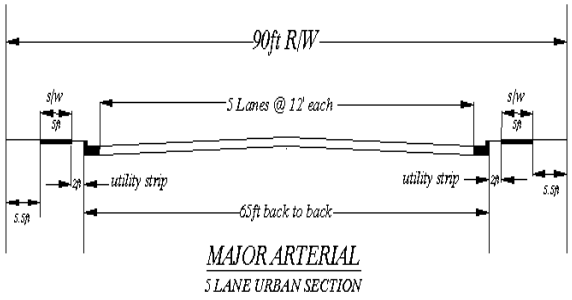


Source: Rocky Mount Traffic Engineering Department

D. Major Arterial Streets

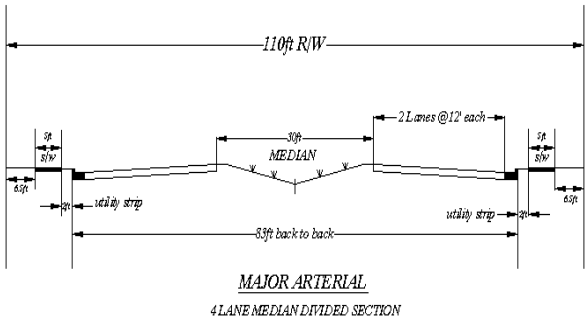
Major arterials are the major traffic carriers in urban areas. The main objective of a major arterial is to carry traffic through the community, from one part to another. Major arterials should be planned so that no lots front them or have direct access to them. Non-residential uses may have access to major arterials but this access should be by means of frontage roads or entrances strictly controlled by stringent standards. The type of commercial uses that have heretofore developed in strips along thoroughfares should preferably be encouraged to locate along frontage or access roads or be grouped in shopping centers or shopping clusters. This will allow the arterials to function in their true capacity as carriers of traffic. Additional lanes for turning bays will be found at the intersections so that through traffic will be interrupted at a minimum. As Figures 5-5A and 5-5B indicate, major arterial right-of-ways should be 90 to 110 feet in width with roadway sections from 65 to 83 feet (where median is included) or more in width. Almost all urban highways other than freeways or expressways will be treated as major arterials.

Figure 5-5A:
5-Lane Major Arterial Street Design Standards



Source: Rocky Mount Traffic Engineering Department

Figure 5-5B:
4-Lane Major Arterial Street Design Standards



Source: Rocky Mount Traffic Engineering Department

Smart Growth Principle #3

Create Transportation Choices

E. Freeways

The general function of the freeway or expressway is the same as that of the major arterial. The major difference between major arterials and freeways is that freeways have a higher degree of access control. Freeway design standards are shown in Figure 5-6.

As Figure 5-6 indicates, the right-of-ways for freeways are 228 feet in width with roadway sections from 102 to 118 feet (where median is included) in width. Frequently, all access rights are acquired under public ownership and access is limited to points generally spaced in excess of more than one-half mile apart. A limited access facility may permit some at-grade access while a controlled access facility has a grade separation interchange.

The standards discussed in this chapter are summarized in Table 5-1. It is noted that the right-of-way widths discussed in the following sections assume the use of curbs and gutters. Should future stormwater and water quality regulations dictate the use of grassed swales, the right-of-way required will be significantly increased.

The location of each of these types of streets within the Study Area is shown on Map 5-2: The Thoroughfare Plan, at the end of this chapter.

3. Continuing Transportation Planning

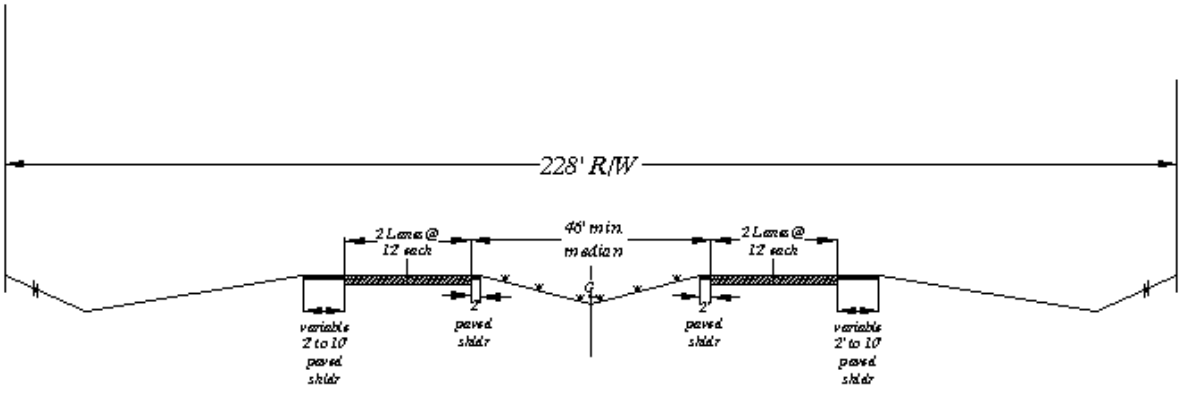
As previously stated, the Rocky Mount MPO is charged with coordination and promulgation of transportation activities for the City of Rocky Mount and the contiguous urban area. The end result of this effort is the local Thoroughfare Plan and Transportation Plan.

The work required to develop these long-range planning documents necessitates that transportation planning activities for the area remain continuous, comprehensive and cooperative. A number of conditions generally need to be continuously surveyed and data collected and compiled annually to determine whether previous projections are still valid or whether plan assumptions need to be changed. Data that need to be collected include the following:

A. Traffic Volume Counts

Annual Average Daily Traffic (AADT) is estimated on a biennial schedule at specified locations on each segment of the major arterial, minor arterial and collector street systems inside the transportation study area. Traffic data is

Figure 5-6: Freeways Design Standards



FREEWAY

4 LANE MEDIAN DIVIDED SECTION

Source: Rocky Mount Traffic Engineering Department

collected on weekdays for a minimum of 48 hours. Axle counts are converted to volume counts using adjustments ratios that account for multiple-axle vehicles. Volume counts are seasonally adjusted and averaged to generate AADT estimates. These estimates are evaluated for temporal and spatial consistency. Factors for seasonal adjustment are based on traffic data from permanent traffic monitoring stations located at typical urban settings throughout the State.

The City Engineering Department is responsible for obtaining counts at specified locations on the Rocky Mount Urban Area Municipal Street System and for furnishing the raw daily traffic counts, count information and location maps to the Statewide Planning Branch the first week of November each scheduled collection year. The Statewide Planning Branch is responsible for obtaining counts at specified locations on other segments of the major street system, updating the count location map biannually to reflect any changes made in the major street system, preparing the

Table 5-1: Functional Roadway Classifications

Classification	Function	Typical % of Surface System Mileage	Continuity	Spacing (miles)	Typical Portion of Surfaces Street System Vehicle—Miles	Direct Land Access	Minimum Roadway Intersection Spacing	Speed Limit (mph)	Parking And Comments
Freeway	Traffic movement	N/A	Continuous	4	N/A	None	1 Mile	45-65	Parking prohibited; Supplements capacity of arterial street system and provides high speed mobility
Major Arterial	Intercommunity intra-metro area. Primary: Traffic Secondary: Land Access	5-10	Continuous	1-2	40-64	Limited: Major generators only	1/2 mile	35-50 in fully developed areas	Parking prohibited
Minor Arterial	Primary: Intercommunity, intra-metro. Primary: Traffic movement Secondary: Land Access	10-20	Continuous	1/2-1	25-40	Restricted: Some movements may be prohibited; number and spacing of driveways controlled	1/4 mile	35-45	Parking generally prohibited; Backbone of vehicular street system
Collector	Primary: Collect/ distribute traffic between local streets and arterial system Secondary: Land Access Tertiary: Inter-neighborhood traffic movement	5-10	Limited-Continuous Vehicular through traffic should be discouraged.	1/2 or less	5-10	Safety controls; limited regulation	300 feet	25-35	Parking limited; Backbone of multimodal street system
Local	Land access and intra-neighborhood traffic movement	60-80	None	As need	10-30	Safety controls only	300 feet	25-35	Parking permitted; Through traffic should be discouraged

N/A= Not applicable

Sources: A Policy on Geometric Designs of Highways and Streets, Review Draft No. 2, American Association of State Highways and Transportation Officials, December 1979. Barton-Aschman Associates

Annual Average Daily Traffic Volume Map and sending this information to the Lead Planning Agency. As part of the Congestion Monitoring Program, the City of Rocky Mount will be responsible for taking traffic counts at a specified number of count stations that will be representative of the street system as a whole. These counts will be at 15-minute intervals and collected for a minimum of 48 hours so they can be used to determine peak hour spreading and will be taken every three years.

Special counts may be taken during travel model updates or validations. These include counts at screen-line stations, external stations, major trip generators and key intersections as needed. Traffic count types may include daily, hourly, vehicle classification or turning movements. The Statewide Planning Branch will coordinate traffic data collection for these special counts.

B. Vehicle Miles of Travel (VMT)

Vehicle miles of travel are computed by multiplying the length of each link times the annual average daily traffic volume on that link. Vehicle miles of travel are tabulated annually by county and functional classification by the Statewide Planning (SWP)-Road Inventory Section. Division of Air Quality (DAQ) uses these VMT estimates for air quality monitoring. The MPO may also choose to estimate VMT for the urban area on a regular basis.

C. Street System Changes

The Division Engineer of the NCDOT maintains records on improvements to the state highway system, whether planned, underway or completed. Each municipality should maintain similar records for its municipal street system. The municipalities participating in the Powell Bill Program must certify city street mileage maintained annually.

An inventory of the geometrics and signalization of the existing major street system for the planning area should be maintained by the MPO. The inventory may be updated periodically as changes or additions to the major street system occur and needs to be current when the travel model is updated.

D. Traffic Accidents

North Carolina law requires that any traffic accident involving personal injury and/or property damage in excess of $1000.00 be reported in detail to the Division of Motor Vehicles (DMV) of the NCDOT. The DMV also receives a detailed report on any accident investigated by a law officer. Copies of all these reports are forwarded to the Traffic Engineering Branch of the Division of Highways, where the information is summarized and stored. Annual analyses will compare each year's high accident locations to the previous years high accident location. The Traffic Engineering Branch of the NCDOT provides the Annual Highway Safety Program Listing Report on request.

E. Transit System Data

Transit system ridership, revenue, expense and operational data are collected daily. A summary of monthly, quarterly and annual statistics will be developed in order to identify positive and negative trends. Identifying trends in data allows the transit system to make changes to optimize ridership and revenues. The Transit System Manager retains operational data on file in order to meet annual State and Federal reporting requirements.

F. Dwelling Unit, Population and Employment Changes

Changes in population and development across the service area will be identified and evaluated to determine changes in transportation services to meet current and forecasted demand. Census data, local parcel, zoning, and tax data records, the Employment Security Commission and private vendors are acceptable sources of information for this purpose. This item may include the development and maintenance of a GIS database.

G. Air Travel

Data may be collected and analyzed to determine influence of local air travel on the area's transportation system and identify needs for additional services. Airport entrance traffic counts would help relate air travel to ground travel in future updates. A ground transportation survey is a good example of this.

H. Vehicle Occupancy Rates (Counts)

Vehicle occupancy counts are collected across the service area to measure effectiveness of transit projects. Information will also be used to comply with the Clean Air Act and is useful in the trip generating process of modeling traffic during the travel modeling phase, as well as other parts of the Long-Range Transportation Plan.

I. Travel Time Studies

Peak and off-peak travel time studies may be conducted for those street segments that are included in the Congestion Management System. The travel time studies may be required during the travel model calibration phase as well.

J. Mapping

Maps of natural land features, land use activities and transportation system networks for the metropolitan urban area shall be maintained for use in the transportation planning process.

Natural land features include geological formations, watersheds, rivers and streams, wetlands, soil classifications, open and wooded areas or similar information, which may be obtained from federal, state, county and local agency sources.

In addition to natural land features, land use maps include housing and employment data, zoning restrictions, utility services and government boundaries. Public and private sources may be used to obtain this type of information.

Transportation system network maps shall include: the major street and highway system, transit routes and stops, rail corridors and crossing data, airport complex, pedestrian facilities (sidewalks, signalized crosswalks, greenway), and bicycle facilities. Inventories of street geometric data, signalized intersections and parking facilities shall be performed to support the mapping program.

Transportation system network maps might also incorporate Traditional Neighborhood Development (TND) Street Design Guidelines. In TND design, the designers' perspectives are broadened to include the diverse needs of pedestrians, cyclists, transit and motor vehicles, as well as the street's relationships to adjacent and future land uses. A variety of factors associated with each of these perspectives are compared and considered to develop the final design solutions.

K. Central Area Parking Inventory

Inventories of both on– and off-street parking supply in the Rocky Mount central business district are maintained by the Rocky Mount Engineering Department. Periodic updates and inventories of other parking facilities in other areas will be performed as determined by the MPO through the development of the Unified Planning Work Program. Data collected should include parking policies, ownership and rates.

L. Bicycle And Pedestrian Facilities Inventory

An inventory of significant municipal, state and federal bicycle and pedestrian transportation facilities shall be maintained. These systems shall be incorporated in the Long-Range Transportation Plan update and analyzed in conjunction with other transportation performance measures.

4. Transportation Funding

In the Study Area, Federal and State funds are allocated to statewide programs, initiatives and responsibilities. A portion of the funds is also allocated to the local governments for the development of long-range transportation planning. The listing below indicates how these funds are being spent within the MPO area:

- Interstate Highway Construction and Improvement (I-95)
- Public Transportation (Rocky Mount Transit, NETS, AMTRAK)
- Street Resurfacing
- Sidewalks
- Bike paths
- Bridge Replacement
- Bride Repair
- Planning and Engineering costs
- Operations and Maintenance of Existing Highways
- Administration

In addition to the funds provided to local governments by the State, local governments also generate funds to be used in road maintenance and street construction. Common sources of these monies include ad valorum taxes and Powell Bill funs. Powell Bill funding is generated by North Carolina gasoline taxes and is returned to eligible cities for maintenance of City streets. It is based upon City population and the number of miles of streets maintained by the City.

In addition to funding the improvements themselves, the city and counties have implemented subdivision regulations that require new streets to be constructed by property developers in accordance with NCDOT or City standards. The City's zoning regulations also require additional setbacks for buildings located on specific thoroughfares throughout the City. This insures that property development will have minimal impact on future roadway improvements.

II. Goal

A transportation system that improves vehicular traffic flow, expands public transportation services, enhances maintenance and appearance of roadways, increases travel ways for pedestrians and bicyclists and promotes traffic safety

III. Objectives And Strategies

The Rocky Mount City staff prepared a long-range transportation plan in September 2001. This plan responds to a federal requirement in the Transportation Equity Act for the 21st Century (TEA-21) for all metropolitan areas with 50,000 or more residents. An update to the long-range transportation plan is appropriate to ensure consistency with the new Comprehensive Plan. Some of the strategies listed below were launched in the prior long-range transportation plan and deserve additional attention in the next update. Also, better integration with the Comprehensive Plan is an objective. The Comprehensive Plan should con-

tinue to develop and integrate all modes of transportation through use of the Rocky Mount MPO's Long Range Transportation Plan.

A. Update And Implement The Metropolitan Planning Organization's (MPO) Transportation Plan To Be Consistent With The Comprehensive Plan

1. Utilize The Transportation Plan To Promote All Travel Modes

A nationwide trend toward building better communities through strategies such as a balanced transportation system deserves consideration in Rocky Mount. A transportation plan that fosters improvements to pedestrian, bicycle, transit and street facilities contributes greatly to the efforts to revitalize traditional neighborhoods. Attention is needed to the provision of sidewalks and bikeways, especially along major thoroughfares where these facilities are not currently provided and in the design of new neighborhoods.

2. Update Transportation Improvement Priorities Based On The Comprehensive Plan And A Revalidated Traffic Model

Transportation projects that are already in design or under construction should remain on schedule. However, projects that are in the long-range transportation plan should be reviewed for consistency with the Comprehensive Plan and consideration given for reprioritizing, if necessary. Projects that are not consistent with the Comprehensive Plan should be removed from the list. In addition to the MPO's Transportation Advisory Committee, the Planning Board should play a role in the update, providing the policy linkage with the Comprehensive Plan.

3. Maintain Or Improve Existing Thoroughfares, And Construct Or Widen Roads In A Strategic Manner, Including Necessary Coordination With NCDOT

The process for seeking approval for State transportation funds requires local persistence, dedication, and considerable public support. Transportation improvements that fit a specific local strategy and are consistent with the Comprehensive Plan will have the greatest chance of garnering public support. Working relationships with NCDOT should be strengthened to insure the City's needs are addressed at the state level.

4. Upgrade Deteriorating Streets, Sidewalks, Culverts and Bridges

Public infrastructure makes one of the most powerful contributions to community design. These structures have a visual as well as functional component within the built landscape. The City should identify streets, sidewalks, culverts, bridges, and other parts of the City's infrastructure that are in need of repair or landscaping. Repairs should be scheduled to minimize burdens on individual blocks and neighborhoods, for example during evening or non-holiday times. Businesses and residents should be given adequate notice of all scheduled repairs.

5. Require Better Integration Of The Transportation Plan With Planning Board Reviews

Designed to serve as a living document, the Transportation Plan should provide sufficient information to staff and elected officials as a basis for strong decision-making. Decisions concerning general roadway alignment, number of lanes, provisions for left-turns, access management, and provisions for other modes of travel within the right-of-way should always be considered when the Planning Board reviews development applications. Strong cases should be made for defending the Transportation Plan. The Transportation Plan should be updated to be consistent with the Comprehensive Plan, and the Planning Board should be consulted during the update.

6. Work With NCDOT To Ensure That Road Projects Recommended In The Transportation Improvement Program (TIP) For Rocky Mount Are Completed In A Timely Manner

The City should support efforts to streamline NCDOT progress on TIP projects, including those in the project development, design, right-of-way acquisition and construction phases.

7. Adopt Design Guidelines That Describe Each Type Of Roadway (Arterial, Collector, Local) In Terms Of Accommodations For Pedestrians, Bicycles, Buses, Cars And Other Users

The Transportation Plan encompasses all modes of travel. Consideration should be given to roadway designations and cross-sections that enhance the community, not just automobile travel. The Transportation Plan is being implemented as required by the FTA and FHWA. In preparing the plan, design standards should be reviewed.

8. Protect Right-of-Ways For Future Corridors As Identified In The Transportation Plan

The Official Highway Act of North Carolina provides for temporary preservation of roadway corridors to restrict development that encroaches on the right-of-way. Once corridor locations are designated and approved by NCDOT and the City, efforts should be made to plan, design and acquire the right-of-way in an expeditious manner for each of the preserved corridors.

B. Improve Vehicular Flow

The crucial strategy for improving traffic flow requires correct analysis of the underlying conditions for proper or improper traffic pattern and speed in any given location. Increased capacity is not always the most desirable goal. Prevailing Land Use in the immediate area should play the decisive role in deciding appropriate speed and street design. Optimum speed and street design allows for access to the abutting properties. Proper design gives logical and understandable street patterns. It provides a physical design which supports the posted speed limit , and encourages compliance and safety by the configuration of the street itself. Most importantly, optimum speed and street design improves the quality of experience in traveling through the City. Generally problems with traffic flow fall into two categories: insufficient flow rates and patterns which result in congestion, or conversely, excessive traffic speed, which either endangers or otherwise impedes intended use. The following strategies deal with the two issues.

Decrease Traffic Congestion

Localized traffic congestion occurs in Rocky Mount along the US 301 Bypass and on Sunset Avenue. Traffic engineering strategies designed to minimize or relieve traffic congestion will improve vehicular flow and enhance traffic safety. The potential to add to congestion should be a factor in all Planning Board decisions concerning new development, and a thorough review by staff should be made. The City should continue to require traffic impact studies for new development anticipated to impact operations on local roadways. The City may also need to investigate the feasibility of impact fee usage to offset the cost of transportation improvements needed to service future developments. In addition, the examination of the total impact of one-way streets on traffic, real estate values, commercial business location desirability and overall quality of life within the community would be an appropriate addition to existing transportation planning. Decisions for traffic flow patterns should take into account all these factors for any future changes in the street system.

1. Improve Access To Job Centers, Retail, Tourist Destinations, Community Facilities And Other Areas By Completing Key Roadway Improvements As Part Of The Transportation Plan Recommendations In Conjunction With NCDOT

Considerable effort is undertaken by City staff to work with the MPO and NCDOT to accelerate the planning, design and construction of needed improvements to the thoroughfare system in Rocky Mount. Additional assistance is needed from elected officials and citizens to raise key transportation issues in Rocky Mount and surrounding jurisdictions with appropriate NCDOT staff and legislators. The City might need to consider investigating the feasibility of cost sharing with NCDOT as a way of facilitating smaller projects. Effort needs to be made to direct additional resources toward maintenance of existing facilities in order to allow maximum use of the existing facilities in this area.

2. Enforce Traffic Regulations, Especially Speed Limits In Residential Areas, Maintain Clear Directional Signage And Coordinate Traffic Signals

As thoroughfares become congested, some motorists avoid traffic jams by using alternate routes through residential neighborhoods. While these streets are designed to accommodate more traffic than they currently carry, the surrounding environment is not prepared to accommodate the side effects that include child and pet safety, noise and air pollution and difficulty backing out of a driveway or crossing the street. A comprehensive approach that involves 3 E's in needed: enforcement, education and engineering. Adequate resources must be provided for law enforcement officials to enforce speed limits. Education efforts must be initiated to create awareness. Resources are also needed to develop engineering solutions that must be considered to maintain mobility and safety. Clear signage, smooth traffic signal coordination and development of a neighborhood traffic safety program are examples of good engineering solutions.

3. Route Truck Traffic To Appropriate Thoroughfares And Away From Residential Areas

Other than local deliveries, truck traffic should not use residential local streets. A truck route plan should be updated to preserve Rocky Mount's neighborhoods from the safety concerns that truck traffic imposes.

4. Increase Transit Ridership

A thorough analysis of who rides transit should precede efforts to increase the number of riders. Most analysis considers two distinct markets for transit riders: transit-dependent and choice riders. Transit-dependent riders likely comprise a large percentage of existing riders; they have less than one vehicle per adult in the household and depend on the bus for travel. The choice rider is someone who has access to a vehicle but chooses to ride the bus instead. There are several possible reasons for choosing a bus, ranging from (in some urban areas) a desire to save time and/or expense, relief from the hassle of driving and interest in healthier alternatives such as walking or cycling. The factors present in Rocky Mount also include having to pay for parking and experiencing severe traffic congestion, but the lack of these other factors significantly affects the ability to attract choice riders. The Short-Range Transit Development Plan is to be prepared in FY2002, and it will identify strategies to increase ridership.

5. Improve The Kingston Avenue/Sutton Road Railroad Tunnel In Conjunction With The Southern Outer Loop.

An environmental study conducted in 1998 concluded that an elevated roadway over the tunnel and railroad yard was the preferred option for improving mobility and safety in this critical corridor between Nash and Edgecombe counties. Together with the northern loop crossing, this improvement would help to create a loop thoroughfare around the Downtown and improve traffic flow between the counties

6. Provide Additional Above-grade Crossings To Link Both Parts Of The City Over Railroad Line

In addition to the grade separation recommended (see Strategy 6 above) in the vicinity of the Sutton Tunnel, an analysis of the entire railroad corridor is recommended in order to work effectively with the railroad and the NCDOT Rail Division. A comprehensive study of safety and mobility improvements at all crossings will create the framework for effective decision-making and consensus among stakeholders. Further study should investigate available sources of revenue to fund such improvements and recommend new funding sources, such as bonds.

Support Neighborhood Traffic Calming Efforts

Growth pressures have outstripped the ability to keep up with roadway widening on the thoroughfare network for many American cities. The results show that traffic congestion and delay increases as some motorist seek alternative roadways in order to save travel time. Some of these alternative roadways include residential neighborhood streets. Efforts to calm the traffic on neighborhood streets take two forms: reducing the traffic volume or reducing the speed of traffic.

7. Establish A Formal Program That Defines The Process To Undertake Neighborhood Traffic Calming Studies, Identify Solutions, And Implement Improvements

Traffic speeding through residential neighborhoods where the 85th percentile speed is greater than 35 mph should be "calmed" or slowed. Similarly, local residential streets that carry more than 1,000 vehicles per day should be "calmed." These are recommended thresholds for considering traffic calming. Another critical benchmark is an overwhelming approval for action by the residents and homeowners living on the affected street. Some municipalities require approval signatures from 70% or more of the affected homeowners. A traffic-calming program should be studied under the direction of the Engineering Department to ensure adequate regard for safety and minimal spin-off impacts to adjacent neighborhoods.

Smart Growth Principle #1

Build Walkable Communities

Adequate planning and study should be conducted to evaluate the need and/or benefit of a neighborhood traffic control program. Should such a program be developed, it will require involvement from the affected residents and motorist, the City's Department of Engineering, the Fire Chief, transit and school bus operators and the Police Chief. Support from affected homeowners should represent a strong majority before the City approves implementing any traffic calming devices. Adequate trial of other solutions should be attempted before initiating traffic calming.

8. Continue To Enforce Traffic Regulations

The City should continue to enforce traffic regulations to discourage speeding, especially on neighborhood streets and near schools and parks.

9. Develop And Implement A Neighborhood Traffic Safety Program

The City should develop and implement a neighborhood traffic safety program in which residents participate in observing auto speeds. The City should continue to make available to neighborhoods an electronic display board hooked to a radar gun.

C. Where Commercially Feasible, Expand Public Transportation (Transit) Services, Especially For Senior Citizens, Disabled And Disadvantaged

Taxpayers subsidize public transit services, and increasing the number of riders on transit is dependent on increasing the public investment in capital and/or operating expenditures for the service. Many civic benefits can also be attributed to increased transit ridership. These include offering citizens a choice in how they travel (more democratic approach rather than being dependent on the private auto) and sustaining the environment by reducing auto air pollutants and surface runoff to streams and rivers while utilizing a more energy conscious form of transportation. Wise use of public resources would suggest conducting a ridership market survey to identify target markets which typically include areas with higher-than-average percentages of households without cars such as elderly, disabled and low-income families.

1. Expand Geographic Coverage Of Routes And Expand Route Schedules (Hours And Frequency) To Provide Better Service Between Residential Areas And Employment Centers (Businesses), Shopping And Medical Facilities

A ridership market survey is recommended in order to prioritize target markets for expanded geographic coverage and expanded route schedules. This is scheduled for FY 2002.

2. Promote And Expand Ridership To Serve Market Segments (Senior Citizens), Include ing Expanding Advertising, Working Through Social Service Organizations And Businesses, And Promoting Rider ship Through Employer/Employee Sub sides

Recent changes in federal tax laws provide financial incentives to employers and individuals to use alternative modes of travel. A new market for expanded transit services is to serve large employment centers, working collaboratively with company representatives and transit officials to tailor the service to the needs of the target employees. The City should ensure that sidewalks are constructed that connect neighborhoods with bus stops. This will provide a safe incentive for riders.

D. Increase Travel ways For Pedestrians And Bicyclists

A resurgence of interest in making communities more pedestrian-friendly is spreading throughout the nation. It begins with building sidewalks and pathways that connect people with destinations. This interconnected network pf walkways and bikeways promotes walking and bicycling and reduces some auto driving and associated parking problems.

1. Prepare A Comprehensive Needs Assessment And Plan To Create A Citywide Network Of Sidewalks

The sidewalk inventory will be updated with an assessment of projected need. The updated inventory and recommendations should be presented to Council for authorization to create an annual program to build sidewalks. Priorities should be given to areas with demonstrated unserved needs.

2. Develop A Policy To Stipulate When And Where Sidewalks Are Built

To catch up with years of not building enough sidewalks, the City should develop a policy to stipulate when and where sidewalks should be located within new subdivisions. Encourage the investment of sidewalks and crosswalks within all new developments to build a more walkable community.

3. Provide Bike Lanes And Wide Outside Lanes For Recreational And Commuting Users

The City should conduct a comprehensive review of existing streets to determine when and where a bikeway network is needed. Standards should be considered that determine when a bike lane (on street) is appropriate as opposed to bikepaths (separated from the traffic). A policy should be considered that requires wide outside lanes for bike access and sidewalks on all new widening projects, especially those undertaken by NCDOT.

4. Coordinate These Bike Paths & Sidewalks With Other Pedestrian & Biking Friendly Improvements

Provide appropriate crosswalks, traffic lights and bridge crossings to minimize the barriers to pedestrian and bike travel within the community. Increase the presence of street lighting to improve safety for evening use. Such improvements will significantly improve the safety and well-being of the public as well as increase satisfaction in the user.

5. Investigate The Feasibility Of Acquiring Abandoned Rail Corridors For Use In Completing A Trail And/or Greenway Network

Some of the country's most popular routes for pedestrians and bicyclists are retrofitted trails built in abandoned railway corridors. The national organization known as Rails-to-Trails has been successful in creating the American Tobacco Trail connecting Durham, North Carolina with surrounding areas. Rocky Mount could consider similar initiatives and enlist the help of the Rails-to-Trails group. The City should investigate the availability of grant funds to accomplish this strategy and link improvements to a Bikeway/ Greenway Master Plan that identifies areas where bikeways/greenways are needed.

6. Maintain Existing Sidewalks

Damage to sidewalks presents a safety issue for pedestrians. A regular assessment of sidewalk facilities in Rocky Mount should note conditions and flag locations that are in need of immediate repair. Funding should be set aside for routine maintenance to keep the backlog of maintenance to a minimum.

E. Promote Traffic Safety Through The Coordination Of Railroad Crossing Improvements As Well As Lighting And Sight Distance Improvements Along Walkways And Streets.

Numerous railway crossings exist in Rocky Mount that present a risk to the community. While much of the rail traffic on the tracks is short line switching type operations that typically involve low speed train maneuvers, this results in drivers of private vehicles taking chances in crossing the tracks to avoid lengthy delays. A nationwide program known as Operation Lifesaver is being promoted by the railroads and various state agencies to increase awareness and funding for improvements.

1. Complete A Study Of Railroad Crossing Improvements To Determine Areas With Deficiencies That Impede Vehicular Safety Or Traffic Flow

The North Carolina Department of Transportation Rail Division has initiated a corridor rail crossing study at the request of the City. The study will consider improvements including consolidation or closure of public and private crossings throughout the City. Recommendations will be developed from the study of new investments in safety equipment and potentially for grade separations at high-volume crossings such as the Sutton Tunnel. The study should address enhancing crossing surfaces to improve safety, grade separations at appropriate locations and investing in technology related to safety crossing devices such as four-quadrant gate arms, traffic enforcement cameras and median barriers.

2. Improve Visibility Along Streets And Sidewalks By Enhancing Lighting And Minimizing Visual Obstructions To Oncoming Cars, Bicycles, Buses And Pedestrian Traffic

Street light luminescence should be inventoried at intersections and crosswalks to ensure the adequate light is provided for safety. Furthermore, sight distances at unsignalized intersections should be measured and accident rates analyzed and compared to identify high-accident locations that warrant improved sight distance measures. Sometimes, a stepped-up effort to trim overhanging branches and trees can be effective at improving the safety at intersections.

F. Minimize The Impact Of Transportation Infrastructure On The Natural Environment

Numerous delays occur when transportation projects that damage the natural and human environment are planned and forwarded for detailed environmental studies. These get delayed for years in the environmental permitting process because of poor planning and/or lack of public support. Needed transportation improvements should be well planned with the foresight to minimize natural and human environmental impacts.

1. Continue To Apply Stormwater Management Practices That Minimize Surface And Ground Water Pollution

The City should continue to apply stormwater best management practices to minimize surface and groundwater pollution to improve water quality. The City should continue to develop and apply policies and procedures that require implementation of stormwater best management practices in new development projects and, where feasible, in existing drainage systems.

2. Maintain Tree Cover Along Roadways Where Feasible Given The Location Of Utility Lines And Easements

A tree canopy over the urban street is a highly desirable amenity, not only for homeowners fronting the street, but the passer-by as well. Tree canopy can be achieved by careful selection of species with placement on private property behind the sidewalk and a long canopy over the sidewalk and portions of the street. Issues regarding maintenance must be properly addressed through adequate budgeting for City crews to clean and sweep the street regularly. Budgets should also be developed for cost sharing with property owners for planting and replacement of dead trees and branches. Plantings between the sidewalk and street have the advantage of buffering pedestrians from street traffic, but on-street parking can have the same effect. Plantings behind the sidewalk leave the strip between the sidewalk and street available for underground utilities. The City should review the subdivision standards, which require right-of-way clearance.

3. Minimize Impacts On Natural Areas During Road Construction And Maintenance

Tree and plant protection ordinances should be adopted that serve to protect mature and healthy plant species from the effects of construction and maintenance equipment and chemicals. Adequate construction staging areas should be identified and avoidance of sensitive areas mandated during construction and maintenance efforts.

4. Mitigate The Impact Of Road Banks On Stormwater Flow

Within City right-of-way roadway shoulders and banks should be established with well-maintained grasses where curb and gutter aren't present. Banks along the roadway should be constructed on flat slopes, preferably no steeper than 4:1 horizontal to vertical. These actions will slow runoff and allow for better infiltration into surrounding soils.

5. Work to Mitigate Impact of Transportation on the Environmental Air Quality

Mitigation efforts include such strategies as promotion in the use of public transportation, and the expansion of routes and operating schedules for public transportation already specifically mentioned in Chapter 5-Transportation. Additional strategies include: Maintain coordinated traffic signal system to minimize wait time at intersections & update the timing plans for the traffic signal system based on traffic volumes by time of day to minimize wait times at intersections. Mutli-modal transportation also helps lower negative impacts of vehicles. Strategies designed to increase pedestrian & bike use such as construction of sidewalks on thoroughfares and collector streets and the provision bike lanes for in a linked systematic plan also help in that endeavor.