

## TRANSPORTATION

Effective road planning cannot occur without considering land use, and efficient patterns of land development will not occur without the careful planning of roads. Haphazard land development can reduce the efficiency and safety of roads, and urban development necessitates the need for an improved road network.

The major land use concept in the plan is the identification of the urban development area. In the proposed urban development area, development will occur at greater densities and intensities than in other areas. Special emphasis needs to be placed on providing roads and transportation services to meet the needs of the urban area.

The plan also contains strong economic development goals. These goals suggest that emphasis should also be placed on intercounty and interstate travel through the County. There is a need to insure that adequate arterials and collectors are provided to insure travel to the County and its industrial and commercial areas.

A large portion of the roads in the rural areas are currently inadequate to meet the needs of those areas. There is a need to insure that a program of improvements to existing rural roads is continued and to insure that new rural roads are adequately provided.

### Existing Road System

Eastern Frederick County provides well-developed north-south routes with Interstate 81 as the main route. There are eight interchanges on Interstate 81 in the County, connecting the interstate with east-west routes. The main east west routes include Routes 7, 50, and 522. These connect the County with the Washington Metropolitan Area, and with other areas in Virginia and surrounding states. Interstate 66, a major route to the Washington area, connects with Interstate 81 just south of Frederick County. There are approximately 100 miles of primary, arterial highways in the County.

The other state-maintained roads in the County are secondary roads. There are approximately 526 miles of secondary roads in Frederick County. With the dedication of new roads in the County, the miles of secondary roads are constantly growing. The Virginia Department of Transportation is responsible for maintenance of primary and secondary roads.

There are also roads in the County that are not state-maintained. These are private roads or access easements that have been dedicated to private property owners in rural subdivisions. The private owners and users are responsible for the maintenance of these roads. The Shawneeland Sanitary District has a program for improving and maintaining roads in Shawneeland.

### **Road Classification**

The Virginia Department of Transportation classifies roads according to their characteristics. These classifications are used to determine the necessary design of roads according to the functions they serve.

Frederick County may have reason to develop its own classification system. In particular, the County may develop its own standards for new roads required for development. The design of the new road may depend on the classification of the planned road according to its planned function and traffic levels.

### **Road Characteristics**

Each road in Frederick County has characteristics which determine how well it carries traffic. The traffic generated by adjoining land uses is particularly significant in determining whether the road use is exceeding its capacity. Also, the capacity of any road is determined by alignment, lane width, number of lanes, the numbers and locations of driveways and intersections, traffic signals, and other factors. Road improvements and intersections should be carefully planned and controlled to provide maximum safety and efficiency.

The Virginia Department of Transportation provides basic minimum standards for the design of new streets. Various local governments in Virginia have adopted additional standards that are more sophisticated or restrictive than the minimum standards. Such standards are frequently used in urban areas with more intensive forms of development.

### **Traffic Volumes**

The primary highways in the County with the greatest traffic include Interstate 81 and other highways in the eastern half of the County. Routes 50, 522, and 7 in the vicinity of Winchester have particularly high levels of traffic.

Primary routes with the most rapidly increasing traffic include interstate 81, all segments of Route 522 north, Route 277, and Route 50 west.

All of the major secondary roads with average traffic volumes exceeding 2,000 trips per day are located in the eastern portions of the County. Most are in areas to be included in the urban development area. Secondary roads with particularly high traffic volumes include Senseny Road and Cedar Creek Grade.

Some of the major secondary roads with the greatest rates of increase in traffic include suburban residential access roads in the Fredericktowne and Lakeside areas, the major access road in Fort Collier Industrial Park, and other roads that serve as collectors for growing residential and industrial areas in the eastern portions of the County. All of the major roads with the most rapidly increasing traffic are located in the urban development area or in the vicinity of the urban development area.

The high levels and rapid growth of traffic in the urban development area is due to the fact that the more intense land development activities are occurring there. The predominant land use in the urban development area continues to be suburban residential housing at an average density of 3 units per acre. When developed for residential use, the urban development area can be expected to generate between 20 and 30 average daily trip ends per acre.

In addition, industrial and business uses are concentrated in the urban area in the interstate interchange areas and in the vicinity of large industrial areas. These areas constitute major traffic generators that will create traffic on a per acre basis above the levels generated by the residential areas. Roads should be planned in coordination with potential traffic levels.

### **Accidents**

Information on accidents is important as a basis for planning road improvements. Specific information is needed to evaluate particular intersections and corridors. General information suggests the the largest number of accidents have occurred on Route 522 North, followed by Route 50 West, 11 North, and 11 South.

### **Critical Intersections and Corridors**

Some of the most heavily travelled segments of roads in the County are portions of the arterial roads in the vicinity of Winchester and the interchanges on Interstate 81 and Route 37. Special care is needed to insure that these intersections and corridors are adequate to accommodate growing traffic. Road improvements in these areas should be carefully planned in conjunction with land use plans for these areas to insure safe and efficient travel. There is a need to develop plans for these intersections and corridors that will address traffic and land use issues.

### **Other Transportation Systems**

The County is served by the greyhound bus lines. It is also served by the Classic, Seaboard, CSX, and Winchester and Western freight rail lines. The City of Winchester transit system provides bus service to the City and to portions of the County, including Sunnyside and Kernstown.

The area is also served by the Winchester Airport. The airport is currently undergoing a substantial capital improvements program.

The Virginia Port Authority is currently developing an inland port facility on Route 522 south of Frederick County. The inland port will allow the transfer of containerized cargo from trucks to trains to be shipped to the Hampton Roads harbors. It will undoubtedly increase truck traffic on certain roads in Frederick County.

### **Future Road Improvements**

As required by the Virginia Code, Frederick County maintains a six year secondary road improvement plan for major secondary road improvements, the hard surfacing of roads, and bridges and other projects. The plan is used by the Virginia Department of Transportation to determine and allocate funding for secondary road improvements in the County. This plan is updated annually. The current plan proposes improvement projects all over the County with some concentration of major improvement projects in the eastern part of the County where traffic levels are the highest. Secondary road improvement funding is supplemented by industrial access, recreational access, and airport access funding.

The County has also prepared recommendations on primary road improvements which the County has submitted to the Virginia Department of Transportation to be used in their consideration of primary road improvement funding. Recommendations for primary roads include improvements to Route 522 North and South which are underway. The recommendations also emphasize the completion of an eastern by-pass loop, connecting the northern and southern ends of Route 37. The recommendations also propose major improvements at critical intersections as follows:

- I-81/11 north/37/661 Intersection (North of Winchester)
- I-81/11 South/37 Intersection (South of Winchester)
- I-81/50 & 17/522 Intersection (East of Winchester)
- I-81/7 East Intersection (East of Winchester)
- 37/522 North Intersection (West of Winchester)
- 37/50 West Intersection (West of Winchester)

The primary and secondary road improvement plans will continue to be reviewed and updated each year. Road plans will be maintained through this process.

Route 522 north has had particularly high rates of increase in traffic in recent years. It is also the highway with the largest number of accidents in recent years. Route 50 east of Winchester has had particularly rapid rates of increase in traffic. Improvements are currently planned for portions of Route 50 east in the urban area. Most of the highways with the highest rates of traffic increase are included in the primary road improvement list.

The Virginia Department of Transportation is in the process of updating the Winchester Thoroughfare Plan. This plan will include the urban areas in the County. It will address major routes and critical corridors and intersections. It is particularly important that the County work with the State and the Thoroughfare Plan consultant to insure that all issues are properly addressed.

This Thoroughfare Plan will provide a plan for major roads in the urban development area in Frederick County. It should clearly designate needed travel routes in the Urban Development Area. The proposed eastern loop will provide the most critical travel route in the urban development area. Other roads should be provided or improved to connect various portions of the urban development area to the eastern loop.

In addition, as development occurs, it will be particularly important to plan for a complete road network. Individual developments should be interconnected and residential collector roads should be provided. Such an approach can be used to avoid unnecessary traffic increases on major routes.

### Issues

The following transportation issues have been identified.

*There is a need to plan road improvements to deal with traffic generated by the development occurring in the urban development area and along the Interstate 81 corridor, as well as with planned and potential traffic in these areas.*

*There is a need to identify methods to plan and reserve road rights of way that will be needed to accommodate growth in the urban development area and in other areas.*

*Attention should be given to the design and construction standards for new roads and the standards should be improved if necessary.*

*There is a need to identify unsafe locations and improve the safety of those locations. Better information is needed on accidents occurring at particular locations.*




*Special attention needs to be given to land use and transportation improvements in the critical urban arterial corridors and intersections.*

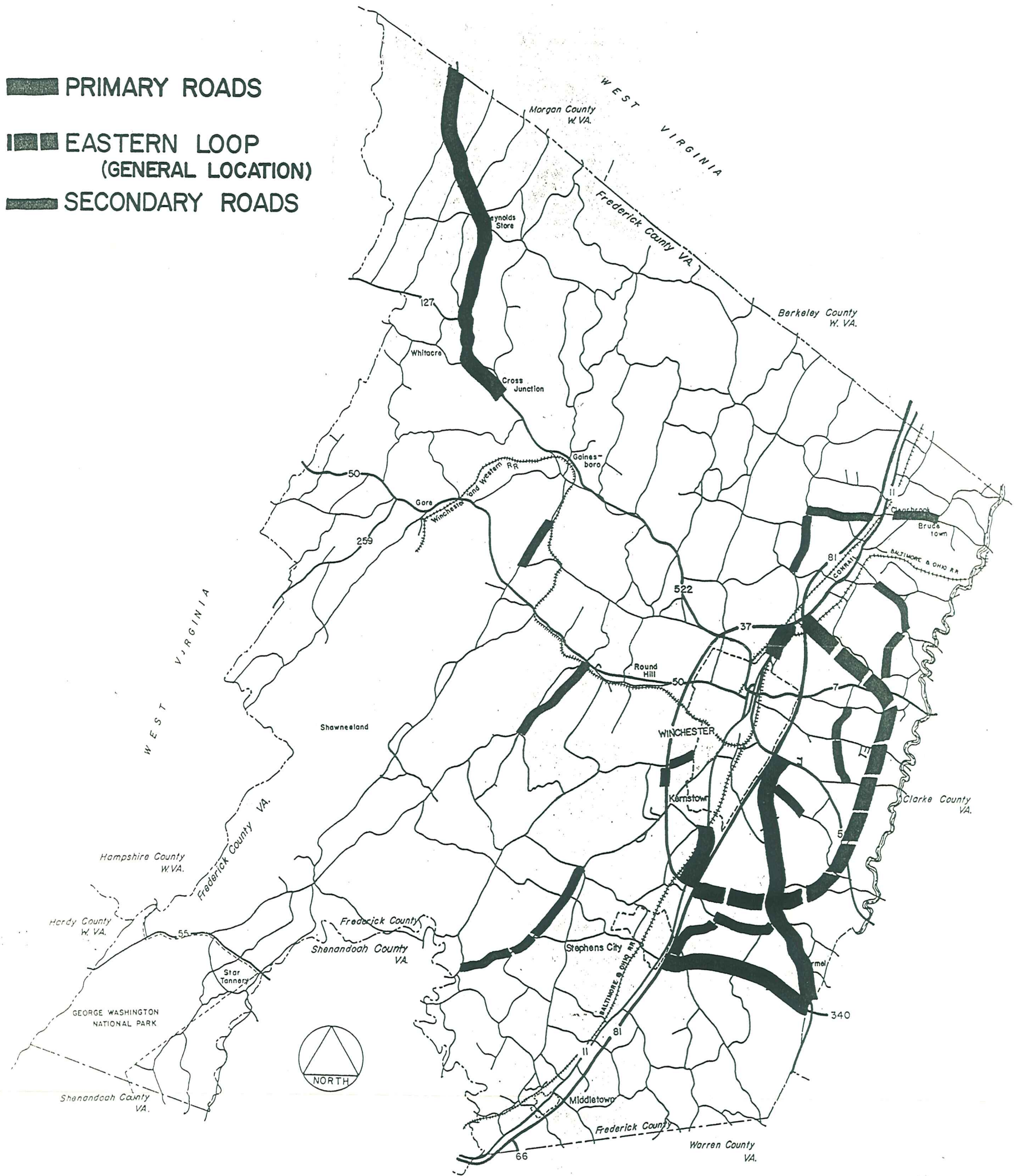
*In urban corridors, special attention should be given to controlling and improving access.*

*Standard methods are needed for evaluating the potential impacts of development proposals on existing roads and intersections.*

*There is a need to develop a local functional classification system to use to plan for the adequate provision of roads and road improvements.*

*Careful planning is needed to insure that special road needs associated with the inland port, the Winchester Airport, and planned commercial and industrial areas are met.*

-  PRIMARY ROADS
-  EASTERN LOOP  
(GENERAL LOCATION)
-  SECONDARY ROADS



FREDERICK COUNTY, VIRGINIA  
DEPARTMENT OF PLANNING AND DEVELOPMENT

# MAJOR ROAD IMPROVEMENT PLAN

*Better guidelines are needed for setting priorities in the road improvement plans. Guidelines are needed which address design, capacity and traffic needs.*

*Standards and guidelines are needed for the improvement of existing rural roads and for the design of new rural roads. In some cases, standards for new rural roads should be less intensive than urban standards.*

*Planning in the County should also address non-road transportation issues including bus service, park and ride needs, rail service, and pedestrian and bicycle needs.*

*In general, there is a need to plan for a complete road network with a total system of interconnected roads of all types.*

## **Transportation Policy**

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***Goal - Provide a safe and efficient road system throughout the County.***

***Goal - Coordinate land use planning and decisions with transportation planning.***

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**Strategy 1** - Continue to maintain and update secondary and primary road improvement plans based on consistent policies and criteria. Such criteria should provide means for establishing priorities. Separate criteria should be developed for urban and rural roads.

**Strategy 2** - Identify major road needs and needed improvements in the updated Winchester Thoroughfare Plan.

**Strategy 3** - Prepare corridor plans for critical sections of arterial highways. Such plans should deal with traffic patterns, land use, and public facilities.

**Strategy 4** - Prepare plans for key interchange areas. Such plans should deal with traffic patterns, land use, and public facilities.

**Strategy 5** - Plan road improvements in accordance with planned development and expected traffic generation. Require that interconnected road networks and collectors be provided.

**Strategy 6** - Identify new collector and arterial roads that are needed and develop means to reserve rights of way for these roads.

**Strategy 7** - Provide adequate and appropriate standards for road design in association with each type and intensity of development. Consider road classification systems and methods for determining which types of road improvements are to be provided.

Strategy 8 - Improve access requirements for entrances to arterial and collector roads.

Strategy 9 - Better information should be developed on accidents and the safety of particular locations.

Strategy 10 - Coordinate road planning with economic development policies.

Implementation Methods:

1. Review procedures and criteria for secondary and primary road plans. Continue to update plans annually.
2. Work closely with the Virginia Department of Transportation and the consultant to insure that all issues are addressed in the Winchester Thoroughfare Plan. Make sure that needed road improvements and new roads are included.
3. Identify needed new collector and arterial roads in the Thoroughfare Plan. Undertake effort to identify new roads and to designate new rights-of-way. Identify planned new roads in the Comprehensive Plan. Require that new subdivisions conform with road plans. Use dedication, conditional zoning, condemnation, road improvement plans or other methods to insure that roads are provided and constructed.
4. Require that collector street systems in new developments be interconnected.
5. Prepare plans for critical interchanges and corridors. Include plans in Thoroughfare Plans and the Comprehensive Plan.
6. Review classification systems to provide methods for classifying roads to determine necessary improvements.
7. Review development ordinances to insure that appropriate road designs are provided according to the types of roads planned.
8. Review development ordinances to insure that appropriate requirements are provided to insure safe access to collector and arterial roads and to limit the placements of entrances to centralized locations.
9. Continue to support industrial access requests.
10. Include all agencies involved in transportation and transportation safety, including the State Police, in the transportation planning process.
11. Explore the desirability of utilizing local funding to facilitate highway construction.



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*Goal - Encourage the provision of a full range of transportation options including air, rail, and bus services.*

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*Goal - Provide for adequate and safe pedestrian and bicycle travel.*

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Strategy 1 - Continue to support air and rail service improvements.

Strategy 2 - Work with the City of Winchester to provide bus service to the Urban areas in the County.

Strategy 3 - Provide park and ride locations.

Strategy 4 - Provide appropriate routes for pedestrian and bicycle travel in urban and suburban areas. Provide safe pedestrian access.

Implementation Methods:

1. Support improvements to the airport and airport access as a central factor in economic development.
2. Study the transit needs of the urban areas in the County.
3. Review park and ride needs and identify possible locations.
4. Review development ordinances to insure that provisions for pedestrian and bicycle travel are made in developments in the urban areas.