

TRANSPORTATION

INTRODUCTION

Transportation in and through Shenandoah County consists of five components: roads and highways, railroads, airports, bus service and taxi service, and transportation provided by local human service agencies and organizations. (See Figure 8-A, Transportation Map on the following page.)

The 1973 plan contained five paragraphs which gave general descriptions of the major transportation components (highways, bus and trucking, railroads, and airports) in Part One, Section Four, and presented major highway proposals in Part Two, Section Four.

ROAD NETWORK

The most visible mode of transportation is the road network and the vehicles which travel on it. As of December 31, 1988 (latest figures available) Shenandoah County contained 772.53 miles of roads, as follow:

TABLE 8-A
SHENANDOAH COUNTY ROAD MILEAGES, 1988

Interstate Highway	34.68 Miles
Primary Highways	94.01
Secondary Roads:	
Hard Surface	371.50
All-Weather Surface	259.48
Light Surface*	12.86
Unsurfaced	<u>0.00</u>
Total Secondary	643.84
TOTAL ROAD MILEAGE	772.53

*(Light surface is at least graded and drained)

Source: VDOT; General Highway Map - Shenandoah County

SHENANDOAH COUNTY

VIRGINIA TRANSPORTATION

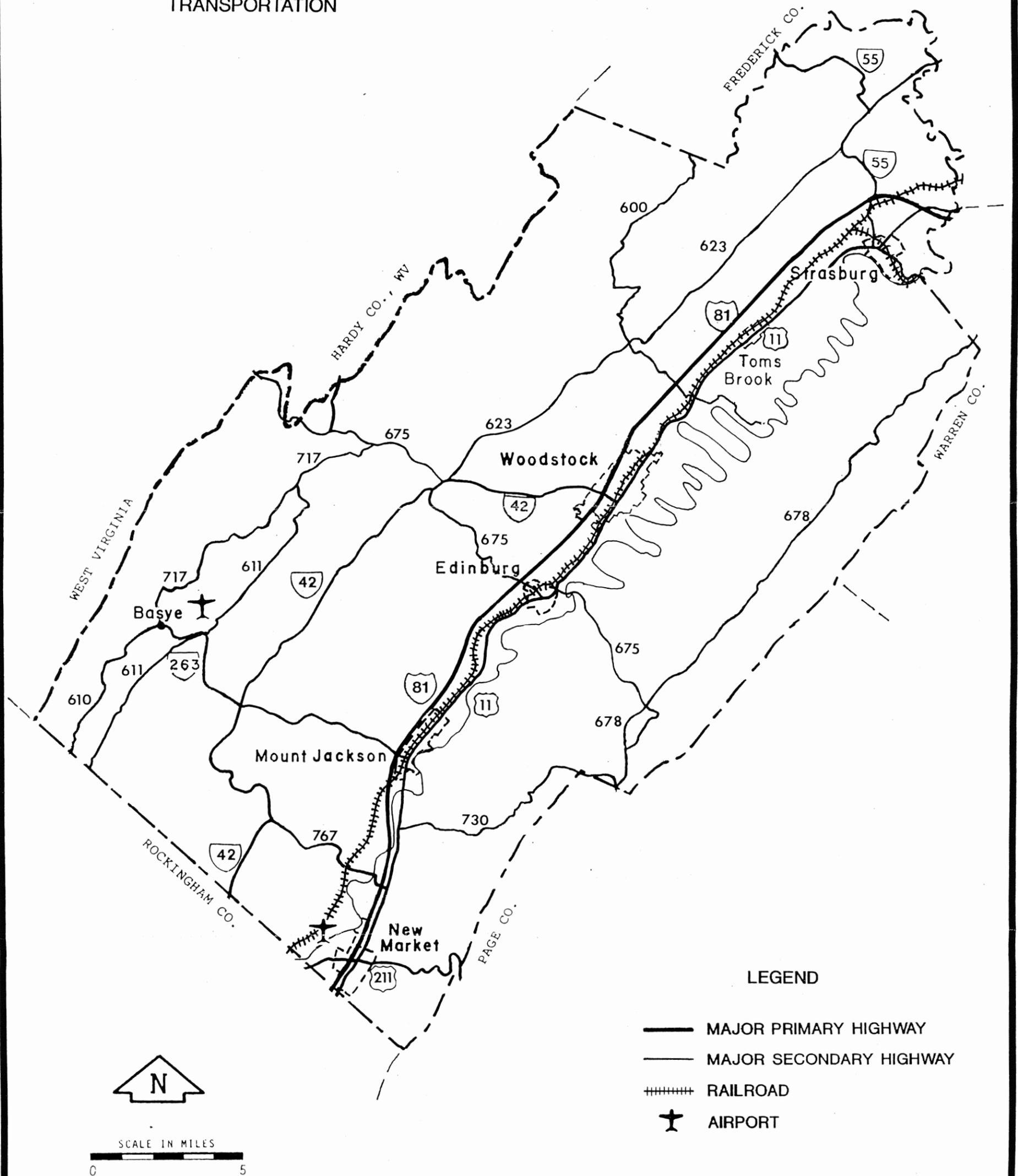


FIGURE 8-A

The total mileage of secondary roads in the County has not grown substantially in the last forty years, from 621.35 miles in 1950 to the current 643.84 miles. However, there has been a gradual upgrading of the surfaces throughout the secondary road network. As of December 1950, only 180.67 miles of secondary roads were hard-surfaced, or 29 percent. This increased to over 240 miles in 1960, over 300 miles in 1970, and over 350 miles by 1980, to the 1988 figure of 371.50, which represents approximately 58 percent of the secondary road mileage.

The extensive system of bridges that are included in the County's road system pose a significant problem in maintaining and upgrading it. Bridges are far costlier to construct than a regular road segment; therefore a far greater proportion of the County's highway allocations goes to bridge maintenance and replacement than in the average county in Virginia and, consequently, less money remains for normal road maintenance.

In addition, while gradual progress has been made over the years to upgrade unsurfaced or gravel roads to hard surfaced roads, there are still a great many existing roads that need to be upgraded. As of December 1988, 272 miles (42.3 percent of the secondary road system) were not hard surfaced.

Under present funding formulas and the statewide secondary road allocation process, there is never enough money for current road needs in Shenandoah County.

Traffic Volumes

Traffic volumes for the County's interstate and primary highways increased significantly during the period of 1980-1988, with traffic on I-81 averaging a 52.6 percent increase. Other segments of primary highways increased from a low of 3.5 percent to a high of 81.7 percent.

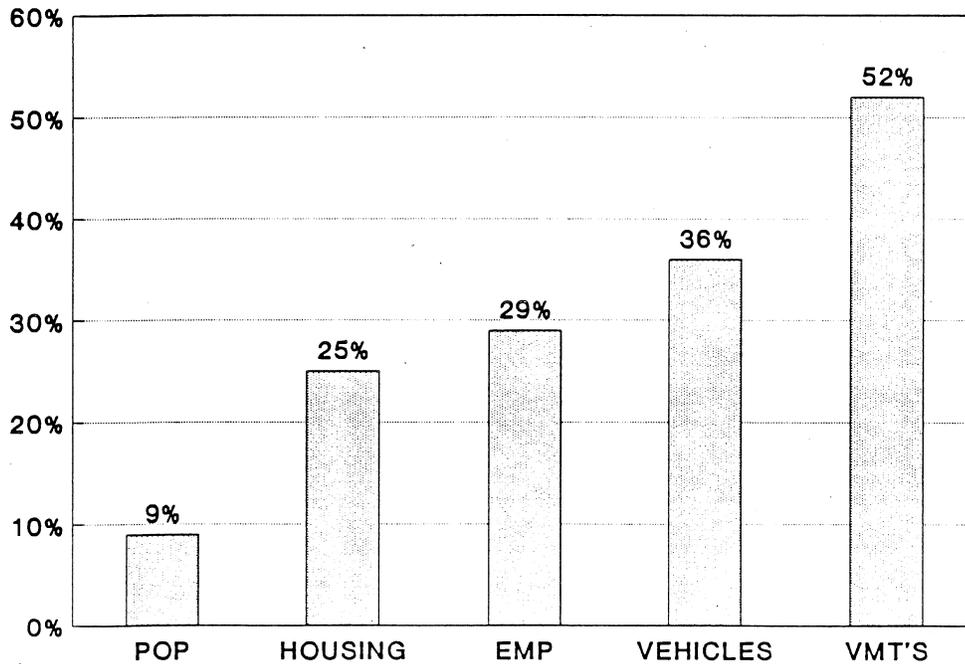
As in many other communities, traffic volumes are increasing in Shenandoah County at a much more rapid pace than are the increases in population, jobs, housing units, or the total number of passenger vehicles. See Table 8-B, Major Change Indicators 1980-1988, and Figure 8-B on page 8-4.

TABLE 8-B
MAJOR CHANGE INDICATORS 1980-1988

<u>Category</u>	<u>1980</u>	<u>1988</u>	<u>Percent Change</u>	<u>Annual Rate</u>
Population	27,559	30,000	9%	1.1%
Total Housing Units	11,770	14,734	25%	2.8%
Employment	12,575	16,209	29%	3.2%
Tl. Passenger Vehicles Registered	18,966	25,857	36%	3.9%
Total Vehicle Miles Traveled (VMT's) on Interstate, Arterial, & Primary Highways	649,159	988,688	52%	4.3%

Source: Lord Fairfax Planning District Commission, 1990

FIGURE 8-B
MAJOR CHANGE INDICATORS 1980-1988



Another factor that is important in the road system in addition to the total volume of traffic is its composition: whether the traffic is mostly passenger cars, the number and size of trucks, amount of buses, and so forth.

In 1980 there were an average of 1,626 single-unit trucks and 3,144 trailer trucks on the segments of I-81 that run through Shenandoah County, with no twin trailer trucks. By 1988, these figures were 881 single-unit trucks, 5,943 trailer trucks, and 507 twin trailer trucks. Both the number of trucks and their size has increased substantially on I-81 during this time period.

The total number of trucks decreased on Route 11, from an average of 1,286 in 1980 to 386 in 1988. This indicates that the growth seen in truck traffic is primarily for through traffic, not that destined for the County.

Traffic volumes on the primary and interstate highway systems in Shenandoah County are shown in Table 8-C on the next two pages.

TABLE 8-C
PRIMARY & INTERSTATE TRAFFIC VOLUMES
1980 AND 1988

<u>Route</u>	<u>From:</u>	<u>To:</u>	<u>1980</u>	<u>1988</u>	<u>% Chg.</u>
11	Rte. 81 N. of Strasburg	Strasburg	4,720	6,600	39.8%
11	Strasburg	Woodstock	5,650	6,390	13.1%
11	Woodstock	Mount Jackson	4,595	5,225	13.7%
11	Mount Jackson	Rte. 767 N. of New Market	2,575	3,335	29.5%
11	Rte. 767 N. of New Market	Rte. 211 N. New Market	2,780	3,515	26.4%
11	Rte. 211 N. New Market	Rte. 211 S. New Market	6,150	6,580	7.0%
42	Rte. 11 Woodstock	Rte. I-81	6,620	8,940	35.0%
42	Rte. I-81	Rte. 605 Calvary	4,230	5,015	18.6%
42	Rte. 605 Calvary	Rte. 675 Columbia Furnace	3,600	4,425	22.9%
42	Rte. 675 Columbia Furnace	Rte. 263 Mill	300	450	50.0%
42	Rte. 263 Mill	Rte. 767 Forestville	405	580	43.2%
42	Rte. 767 Forestville	Timberville	975	1,185	21.5%
55	NWCL Front Royal	Strasburg	2,755	3,150	14.3%
55	Strasburg	Rte. I-81	2,075	3,180	53.3%
55	Rte. I-81	Rte. 628 Lebanon Church	1,410	1,950	38.3%
55	Rte. 628 Lebanon Church	Rte. 600 near Star Tannery	960	1,485	54.7%
55	Rte. 600 near Star Tannery	West Virginia State Line	765	1,390	81.7%
211	Bus. 211 West of Luray	Rte. 11 New Market N. Int.	3,825	5,055	32.2%
211	Rte. 11 New Market N. Int.	Rte. 11 New Market S. Int.	6,550	6,580	0.5%
211	Rte. 11 New Market S. Int.	Rte. I-81 W. of New Market	7,335	7,590	3.5%
211	Rte. I-81 W. of New Market	Rte. 42 S. of Timberville	4,430	5,300	19.6%

TABLE 8-C (Continued)
PRIMARY & INTERSTATE TRAFFIC VOLUMES
1980 AND 1988

<u>Route</u>	<u>From:</u>	<u>To:</u>	<u>1980</u>	<u>1988</u>	<u>% Chg.</u>
I-81	Rte. Mauzy	Rte. 211 New Market	11,655	18,265	56.7%
I-81	Rte. 211 New Market	Rte. 703 N. of Mt. Jackson	11,340	16,985	49.8%
I-81	Rte. 703 N. of Mt. Jackson	Rte. 185 Edinburg	11,640	18,125	55.7%
I-81	Rte. 185 Edinburg	Rte. 42 Woodstock	11,950	18,300	53.1%
I-81	Rte. 42 Woodstock	Rte. 55 W. of Strasburg	12,220	19,065	56.0
I-81	Rte. 55 W. of Strasburg	Rte. 11 N. of Strasburg	12,390	18,145	46.4%
I-81	Rte. 11 N. of Strasburg	Rte. I-66 N. of Strasburg	12,365	18,630	50.7%
I-81	(Average of I-81 through Shenandoah County)		(11,937)	(18,216)	(52.6%)

Traffic counts for secondary roads are only made every other year, and the locations of the counts along a particular route may vary, so it is hard to compare figures from year to year for any particular road segment. The traffic volumes were therefore examined only for certain selected secondary roadways in the County, and were matched as closely as possible for the same road segment.

The latest detailed information available is for the counts which were taken from August through November, 1987. These volumes are compared with the volumes from the period of September through November, 1981 in Table 8-D on the following two pages.

Volumes on the secondary roads are much smaller than those of the primary and interstate roads, so a small change in the amount of traffic can yield a large percentage for a particular route. The percentage changes from 1981 to 1987 range from a 16 percent reduction to a 312 percent increase in traffic (from 8 to 25 vehicles).

The five most heavily-traveled secondary roads (outside of incorporated towns) as of 1987 were Route 604 near Woodstock (1,414 vehicles), Route 614 at Bowman's Crossing (1,087 vehicles), Route 675 at its intersection with Route 678 (1,010 vehicles), Route 623 in the Mt. Olive area (875 vehicles), and Route 678 up and down Fort Valley (704 vehicles) with the heaviest traffic at the northern end. Along with the primary highways, these roads serve as the major travel routes throughout the County.

TABLE 8-D
 SELECTED SECONDARY TRAFFIC VOLUMES
 1981 AND 1987

<u>Route</u>	<u>From:</u>	<u>To:</u>	<u>1981</u>	<u>1987</u>	<u>% Chg.</u>
600	G. W. National Forest	Rte. 746, S. Intersection	108	122	13%
600	Rte. 623	Rte. 652, N. Intersection	206	193	-6%
600	Rte. 11ck	Rte. 661	181	205	13%
600	Rte. 654	Dead End	8	25	312%
604	Rte. 676, S. Intersection	Rte. 676, N. Intersection	1,295	1,414	9%
604	Rte. 652	Rte. 623, W. Intersection	619	718	16%
611	Rte. 726	Rte. 263, W. Intersection	65	110	69%
611	.75 Mi. N. of Rte. 263	Rte. 720	71	208	192%
611	Rte. 835	Rte. 711	43	55	28%
611	Rte. 703	Rte. 701	26	50	92%
611	Rte. 701	Rte. 717	51	74	45%
614	Rte. 738	Rte. 728, N. Intersection	102	156	53%
614	Rte. 42, N. Intersection	Rte. 627	558	624	12%
614	Rte. 263	Rte. 703, S. Intersection	702	935	33%
614	Rte. 708, N. Intersection	Rte. 693	709	753	6%
614	Rte. 1604	Rte. 11	978	1,087	11%

TABLE 8-D (Continued)
 SELECTED SECONDARY TRAFFIC VOLUMES
 1981 AND 1987

<u>Route</u>	<u>From:</u>	<u>To:</u>	<u>1981</u>	<u>1987</u>	<u>% Chg.</u>
623	Rte. 681, S. Intersection	Rte. 680	801	704	-12%
623	Rte. 605	Rte. 679	499	473	-5%
623	Rte. 676, N. Intersection	Rte. 604, S. Intersection	389	463	19%
623	Rte. 600	Rte. 658, S. Intersection	603	623	3%
623	Rte. 651	Rte. 646	601	875	46%
623	Rte. 757	Rte. 55, S. Intersection	559	468	-16%
623	Rte. 714	Rte. 606, S. Intersection	289	325	12%
675	Rte. 608	Rte. 623	899	956	6%
675	Rte. 682	Rte. 808	834	969	16%
675	Rte. 1432	Rte. 678	757	1,010	33%
675	Rte. 730	Page County Line	190	207	9%
678	Rte. 675, W. Intersection	Rte. 776	484	651	35%
678	Rte. 812	Rte. 758, S. Intersection	492	600	22%
678	Rte. 772	Warren County Line	523	704	35%
717	Rte. 702	Rte. 703	203	173	-15%
717	Rte. 691	Rte. 690	376	415	10%
758	Rte. 665	Rte. 845	346	498	44%

Functional Classification

Based on the National Highway Functional Classification Study, the Virginia Department of Transportation (VDOT), in cooperation with the Federal Highway Administration, has classified all of the public roads and highways in Shenandoah County into six categories: interstate, principal arterial, minor arterial, major collector, minor collector, and local access road. They are shown on Figure 8-C on the following page and discussed below:

Interstate highways are designed to carry a large volume of through traffic between large cities. They form a national network of multi-lane, limited-access highways which carry traffic at relatively high speeds. I-81 runs through the entire length of the County and links it to the Middle Atlantic states.

Principal arterials serve substantial traffic of moderate trip length. These routes are generally four lanes in width. Route 211 is the only principal arterial in Shenandoah County.

Minor arterials form a highway network that forms links between towns and other traffic generators. They also connect to principal arterials and/or the interstate system. Route 11 from I-81 to Strasburg, and Route 55 from Strasburg west to the West Virginia line are the only minor arterials in the County.

Major collectors provide service to towns not directly linked to an arterial or interstate highway, to other traffic generators, and serve the important intra-county travel corridors. Several major collectors are shown on the Functional Classification Map.

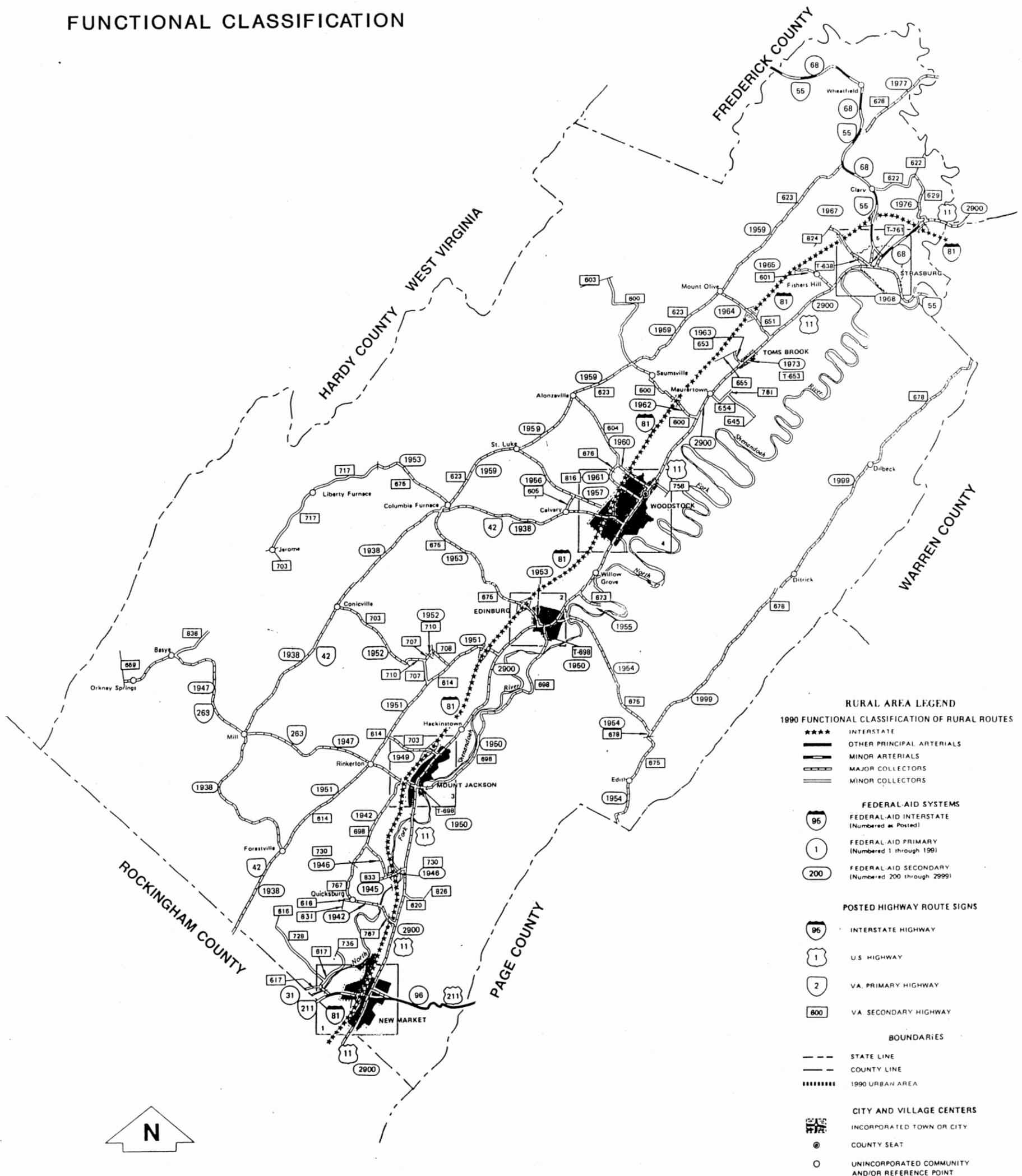
Minor collectors collect traffic from local access roads, rural villages, and locally important traffic generators, and bring all developed areas within a short distance of a major collector.

Local access roads provide direct access to adjacent land uses, and facilitate short distance travel.

VDOT provides design standards which must be met when developing any public roadway, depending upon the proposed road's classification and use.

SHENANDOAH COUNTY VIRGINIA

FUNCTIONAL CLASSIFICATION



- RURAL AREA LEGEND**
- 1990 FUNCTIONAL CLASSIFICATION OF RURAL ROUTES**
- ★★★★ INTERSTATE
 - OTHER PRINCIPAL ARTERIALS
 - MINOR ARTERIALS
 - MAJOR COLLECTORS
 - MINOR COLLECTORS
- FEDERAL AID SYSTEMS**
- 96 FEDERAL AID INTERSTATE (Numbered at Posted)
 - 1 FEDERAL AID PRIMARY (Numbered 1 through 199)
 - 200 FEDERAL AID SECONDARY (Numbered 200 through 2999)
- POSTED HIGHWAY ROUTE SIGNS**
- 96 INTERSTATE HIGHWAY
 - 1 U.S. HIGHWAY
 - 2 VA. PRIMARY HIGHWAY
 - 800 VA. SECONDARY HIGHWAY
- BOUNDARIES**
- STATE LINE
 - COUNTY LINE
 - 1990 URBAN AREA
- CITY AND VILLAGE CENTERS**
- INCORPORATED TOWN OR CITY
 - COUNTY SEAT
 - UNINCORPORATED COMMUNITY AND/OR REFERENCE POINT

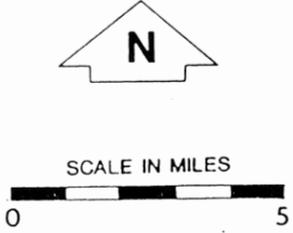


FIGURE 8-C

SOURCE: VDOT MAP OF SHENANDOAH COUNTY FUNCTIONAL CLASSIFICATION & FEDERAL AID HIGHWAY SYSTEMS

Private Roads

In addition to the public road system, there are many private roads in Shenandoah County. Usually the biggest problems associated with them is that they were not constructed to recommended geometric standards (widths, grades, curvatures, roadbeds and paving, etc.), and the lack of provision for their long-term maintenance.

The County has recently changed its development regulations regarding roads to prevent the problems mentioned above, and now no additional private roads are allowed constructed.

Road Improvement Needs

As in most Virginia counties today, there are a great many highway and secondary road improvement needs in Shenandoah County. Some of these have been identified locally as a result of the comprehensive planning process, while others have been included in the Virginia Department of Transportation's Statewide Highway Plan that is updated periodically. The major needs that have been so identified are shown on Figure 8-D on the following page.

With the increases in traffic along the length of I-81, it is felt that this facility will have to be widened to three lanes. This will be a long-term project that will have to be planned and coordinated by VDOT.

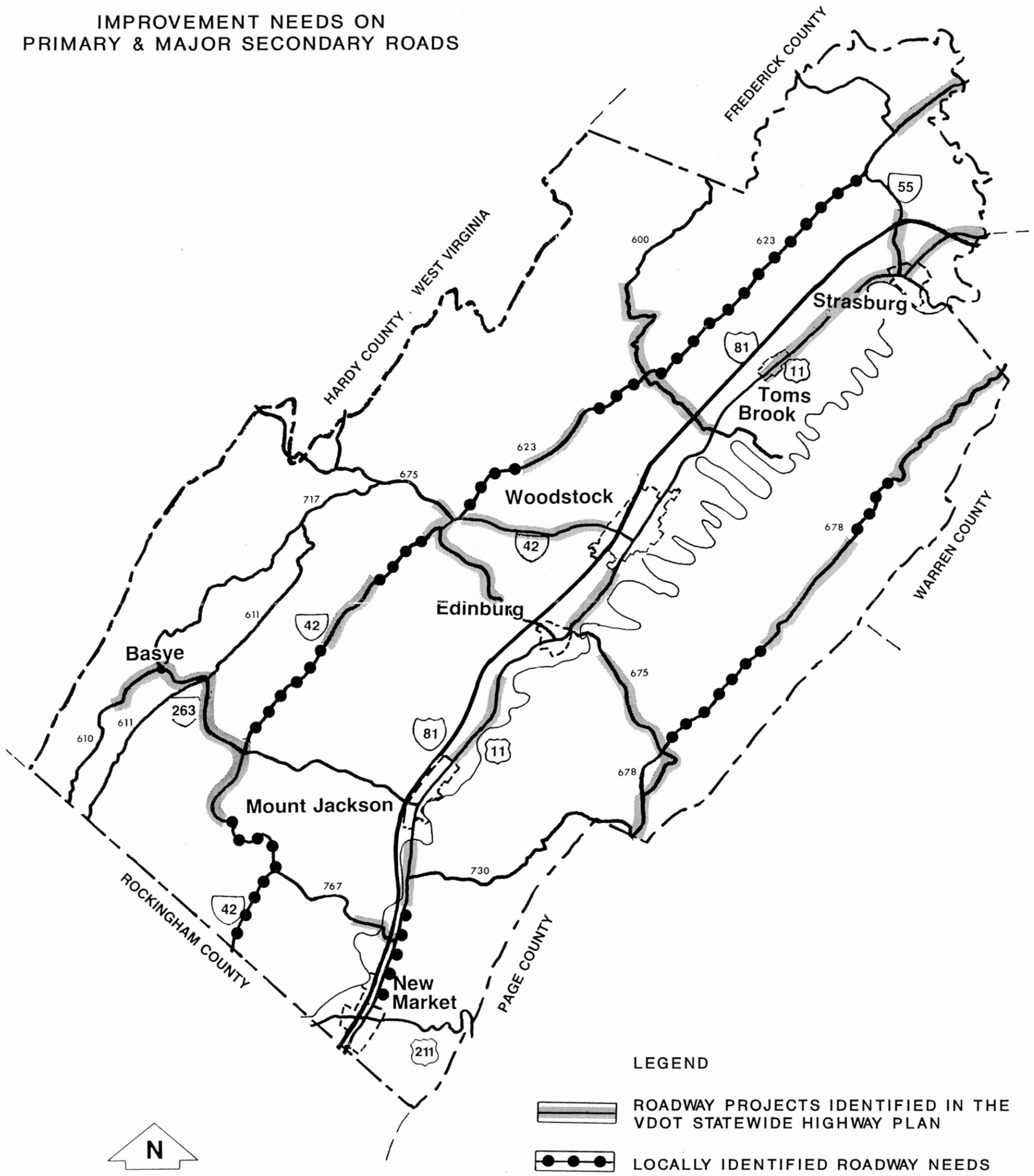
A new interchange at the north end of Woodstock is included in the Town's plan update. The detailed planning, engineering and construction process should be initiated by VDOT. A determination should also be made as to whether the partial interchange at Bowmans Crossing will need to be upgraded.

In the primary highway system, several up-grading needs have been identified. These include construction, reconstruction, or widening projects included in the Statewide Highway Plan for routes 11, 42, 55, 211 and 263. In addition, County officials recommend that the entire Route 42 and Route 263 corridors be planned for major improvements to handle the existing and future traffic flows.

In the areas around Strasburg and Woodstock, new roads are included in local plans which will connect major existing roads to allow for better local access, and also to provide bypasses around the congested central areas of those towns. The County and VDOT need to cooperate closely with the town governments in coordinating improvements in the local road systems.

SHENANDOAH COUNTY VIRGINIA

IMPROVEMENT NEEDS ON
PRIMARY & MAJOR SECONDARY ROADS



LEGEND

-  ROADWAY PROJECTS IDENTIFIED IN THE VDOT STATEWIDE HIGHWAY PLAN
-  LOCALLY IDENTIFIED ROADWAY NEEDS



FIGURE 8-D

Rights-of-way need to be preserved to allow for future improvements to the major secondary roads. Standards for the set-backs for development along such roads need to be reviewed, with the objective of allowing for sufficient room to make improvements in the road alignments as well as their surfaces.

LOCAL PUBLIC TRANSPORTATION

If a citizen of Shenandoah County does not own or have access to a car, there are few options for getting from one place to another.

There is only one taxicab company currently active in Shenandoah County, in the town of New Market. It serves a limited area in and around the Town. Previously, there had been cabs in Strasburg and Woodstock, but they no longer exist.

The Shenandoah Area Agency on Aging (SAAA) sponsors a van which operates in the County on Tuesdays. Driven by a Retired Senior Volunteer, the van will pick up persons who are age 60 or older and have a transportation need, and take them to such destinations as shopping areas, health care facilities, or other business places.

The Senior Center in Edinburg (another SAAA program) also provides transportation to and from the center with its van. It picks up people traveling to the center in the morning and returns them home in late afternoon. The area served is north to Woodstock, and south to New Market, and the countryside in between. Trips with hot meals are also made during the middle of the day to home-bound seniors.

Additional special-purpose transportation is arranged by health associations or societies, such as the Red Cross and the American Lung Association of Virginia.

A committee was established to study the transportation needs of the elderly and handicapped, and to recommend any steps that can be taken to fill the needs. Preliminary findings indicate that no public transportation service is economically feasible at this time. The County supports private solutions to these local transportation needs.

BUS SERVICE

There is no longer any inter-city bus service in Shenandoah County. Greyhound Bus Lines previously had several stops along Route 11 in the County, but now all buses travel on I-81. The closest bus terminals are located in Winchester and Harrisonburg.

Charter bus service is available through Richards Bus Lines in Luray, Quick-Livick, Inc. based in Staunton, and Schrock Sightseeing Service in Winchester.

AIR TRANSPORTATION

There are two general aviation airports located in the County which can serve most small aircraft, one in New Market and one at the Bryce Mountain Resort.

The New Market Airport is a privately-owned public use facility. The runway is 3,000 feet long and 60 feet wide, and has low-intensity lighting that is operated from dusk until 10:00 p.m. (11:00 p.m. summers). Aviation fuel (100 LL) is also available.

Sky Bryce Airport is also a privately-owned public use facility with a 2,240 by 50 foot runway, which is open from sunrise to sunset.

A portion of the County's industrial park is located on the site of the former Mt. Jackson airport (grass landing strip) and adjacent lands. To offset the effects of this loss of an aviation facility, a preliminary site study and environmental assessment for a possible future County airport has been prepared. Although it appears that a new airport could be feasible from an economic viewpoint, there does not seem to be sufficient public support for pursuing the development of one at this time.

The County is a member of the Winchester Regional Airport Authority which operates the Winchester Regional Airport, located 31 miles from Woodstock. The 4,500 foot runway is now being expanded to 5,500 feet, and new runway and taxiway lighting is being installed. Upon completion of the runway improvements, a full instrument landing system (ILS) is scheduled to be installed. Other major improvements have recently been completed, including a new terminal building, additional hangers, and new fueling facilities. Air charter service and flight instruction services are currently available, and it is hoped that the runway extension and ILS system will lead to the establishment of commuter airline service.

The Shenandoah Valley Airport is located between the cities of Harrisonburg and Staunton at Weyers Cave. This regional airport has a 6,000 foot runway, a full instrument landing system, and is served by two commuter airlines providing scheduled flights to BWI and Dulles International airports.

RAIL TRANSPORTATION

The Norfolk Southern Railway System and the CSX Corporation both serve the County, and the two railroads connect at Strasburg. All rail services are freight-only; there is no passenger service available. Both of these lines have been identified as being low-volume lines and are subject to threats of abandonment, but they play important roles for economic development in Shenandoah County. Plans for rail transportation in the Commonwealth need to be monitored, and any attempts at abandonment of the lines in the County should be actively opposed.

A new service is available at the Virginia Inland Port, located north of Front Royal approximately 15 miles from Shenandoah County. This facility provides daily service direct to the international shipping port of Hampton Roads, Virginia. This is a deepwater port with a 45 foot channel. Containers can be transported to the Inland Port where they are loaded onto a special Port Authority train which travels to Hampton Roads daily. The Inland Port offers excellent service to any businesses that wish to import or export materials and products.

SUMMARY AND RECOMMENDATIONS

The activity seen in the Shenandoah County transportation system is directly related to the adjoining region, the state, and the eastern United States. Both internal factors (the multitude of bridges, increasing traffic) and external factors (interstate travel and truck traffic, commuting patterns) have large influences on the County's transportation needs.

The facts and needs outlined above form the basis of a general transportation policy for the County. However, an expanded and improved transportation system will be needed over the 20 year time frame of this Comprehensive Plan. To accomplish this, an in-depth transportation planning effort should be made which will include the identification of key existing roadways, an analysis of highway capacities, the projection of demands, and recommendations for transportation improvements needed to safely accommodate the projected needs.

Certain steps should be undertaken now to ensure an adequate transportation system in the future: the County should support improvements to the interstate and primary highways and access to I-81; the County must work closely with the local town governments in planning for new and improved roads as well as land uses within the urbanized areas; coordination with VDOT is essential in forming the priorities for roadway improvements; development standards for all types of development need to be reviewed to ensure adequate provision of needed transportation facilities.