

TRANSPORTATION

Introduction

The Woodstock transportation system is comprised of several elements including an interstate highway, principal arterial roadways, a local road system, sidewalks, and railroads. Each element of the system is complimentary to the others and serves the community as a network. It is important to note that transportation and land use are linked. Changes in land use can change traffic patterns and affect the demands on transportation resources.

Having a strong transportation system, a network providing for the movement of people and goods through the area, is important to the vitality of the town. Not only is accessibility an important quality of life standard for residents, but for businesses and industries that rely on an adequate transportation network to attract customers and to transport goods. A sound transportation system is vital for the town in that the system forms a framework by which all community activities are served. It also directs the location and intensity of land uses.

This chapter of the plan describes the town's transportation system and its various elements, and makes recommendations for changes to the transportation system over the next 20 years.

Background

The main element of the town's transportation system is its streets, which are classified with designations that correspond to traffic volumes or design criteria. The Virginia Department of Transportation classifies streets as local, collector, or arterial. Local streets provide direct access to individual homes and receive fewer than 1,000 vehicles per day. Collector streets are intended to support moderate to heavy levels of traffic, routing traffic from and sometimes through residential areas to employment centers and shopping areas. Arterials are designed and intended for consistently heavy traffic volumes, and usually connect towns with each other, and provide linkages to interstate systems. Figure 11-1, included at the end of this chapter, shows the current

classifications of the town's streets. The town receives street maintenance funding from VDOT for streets that have been accepted into the system. Accepted streets must meet design criteria put forth by VDOT and the town. Unaccepted or private streets do not receive town services or maintenance.

Urban Development Area

During the process of updating this Comprehensive Plan, the Virginia General Assembly passed legislation that was signed into law requiring every county, city or town that has a population of at least 20,000 and a population growth of at least 5% or; has a population growth rate of at least 15%, and allowing all other counties, cities and towns, to establish an urban development area for the purposes of transportation planning and funding. For purposes of this legislation, *“an urban development area is an area designated by a locality that is appropriate for higher density development due to proximity to transportation facilities, the availability of a public or community water and sewer system, or proximity to a city, town, or other developed area. The comprehensive plan shall provide for commercial and residential densities within urban development areas that are appropriate for reasonably compact development at a density of at least four residential units per gross acre and a minimum floor area ratio of 0.4 per gross acre for commercial development. The comprehensive plan shall designate one or more urban development areas sufficient to meet projected residential and commercial growth in the locality for an ensuing period of at least 10 but not more than 20 years, which may include phasing of development within the urban development areas.”*

This urban development area has been designated and is shown on the town's Future Land Use Plan in the Chapter 8 – Land Use section of this Comprehensive Plan.

VDOT Transportation Planning

VDOT is actively involved in transportation planning with the town through the creation and update of the VDOT Small Urban Area Transportation Study (SUATS). The Woodstock 2030 Transportation Plan is being developed in a joint effort with the Virginia Department of Transportation, the Town of Woodstock and Shenandoah County. The study area for this plan includes the town limits and the urbanizing portions of Shenandoah County immediately surrounding the town. This plan is being developed with extensive involvement from local government officials, as well as input from the general public.

The SUATS is being performed because of the continued growth and development in the Woodstock area that places increased demands on the area's transportation system. The SUATS was initiated to develop a comprehensive set of transportation solutions that will accommodate projected travel demands to the year 2030. The study is examining roadway, transit, bicycle, and pedestrian transportation needs and addressing the interaction of the roadway system with truck, rail, and air travel.

The 2030 SUATS plan update includes the integration of existing and proposed transportation facilities, coordination of and consistency with land use plans adopted by the involved jurisdictions, identification of transportation deficiencies and needs, and recommendations to satisfy these deficiencies and needs. The 2030 SUATS plan update should be completed in 2007.

Street Maintenance and Construction

The Town of Woodstock maintains and constructs streets in cooperation with Virginia Department of Transportation (VDOT) and the development community. The Woodstock Public Works Department maintains all streets in town with the exception of Interstate 81, Route 11, and Route 42, which are maintained by VDOT. Roadway construction in the town is funded by VDOT, the town, and developers. Developers construct streets to state standards necessary to

service traffic generated by their projects. These streets are brought into the town system for maintenance.

Street Design

All new streets constructed in the town are to be constructed to VDOT standards, thereby making the new roadway eligible for VDOT maintenance funding. To ensure that the long term goals of a transportation improvement project are satisfied, planning should carefully consider among other things:

- Street widths, avoiding excess widths
- Accommodations for other modes of travel (pull-offs, sidewalks, bike lanes and paths)
- the need for traffic calming measures

Two of the major new roadways recommended by VDOT in the 2030 SUATS plan update are within or adjacent to property that has yet to develop (Hoover Road relocation and Hisey Avenue extension). If these street projects become necessary prior to development of the property, the town should work with the property owner to accomplish construction of the facility. If the adjacent properties develop prior to the need for a street becoming a priority, the town will expect the developer to accommodate the facility in the developer's plans and to accept responsibility for construction of the street proportional to the impact of the development.

Arterial Roadway Congestion

Route 42 - Route 42, locally known as Reservoir Road, carries the highest traffic volume of any street in the town. Much of this volume is a result of commercial development along the corridor and highway service businesses being patronized by I-81 travelers. As a result of the high volumes of traffic, travel delays have become routine and excessive, and conditions have resulted in a high number of accidents. VDOT predicts that Reservoir Road will carry almost 31,000 vehicles per day in 2030¹.

¹ Virginia Department of Transportation, Woodstock Small Urban Area Transportation Study, 2030 update

The problems on Reservoir Road come from two main sources: an inadequate bridge over I-81 and numerous commercial entrances on both sides of the roadway. Both of these problems are addressed later in this chapter. These problems are also exasperated by the traffic associated with Central Campus of the Shenandoah County Public Schools, consisting of students, staff, and school bus traffic concentrating before and after school.

Interstate 81 - Woodstock is centrally located in the Shenandoah Valley and is bisected by Interstate 81, which serves as the major north-south transportation corridor between New York and Tennessee. Woodstock has access to I-81 at Exit 283 via Reservoir Road (Rte 42). The portion of I-81 located within the town's boundaries carries approximately 40,000 vehicles per day and is forecasted to more than double by the year 2035². The intersections at the ramps and Reservoir Road are forecasted to fail by the year 2035 if no improvements are made to this interchange².

To help alleviate the traffic congestion in and around the Reservoir Road interchange with I-81, the town envisions a new interchange on I-81 to the north of town. This new interchange will redirect some development and redevelopment away from the Reservoir Road area, thereby reducing the rapid growth of traffic on Reservoir Road. The new interchange will also distribute traffic going to and from I-81 more evenly on the town's street network, rather than concentrating it all to a single point. The town will continue to work with VDOT, Shenandoah County, local developers, and the community to develop this second interchange.

Non-Vehicular Transportation

Pedestrian Trails and Sidewalks - The town is responsible for all sidewalks parallel to the streets that are located on the public right-of-way. Crews evaluate the sidewalks on an annual basis and determine levels of priority for improvements and repair. Sidewalk maintenance does not include snow or ice removal, nor does it include mowing, as this responsibility is left to the adjacent

² Virginia Department of Transportation, I-81 Corridor Improvement Study, Transportation Technical Report, Tier 1 Environmental Impact Statement.

property owners. As traffic levels and associated congestion increase within the town, so does the need for a more extensive system of pedestrian walkways and trails. Within the Central Business District, the sidewalk system is fairly comprehensive and provides a pleasant walking environment for residents and visitors. All new residential developments are now required to have sidewalks on at least one side of the street. Better sidewalks or trails placed between high-density residences and points of common destination would help alleviate some of the growing traffic numbers throughout the town. In particular, high use could be expected of trails or sidewalks connecting to the shopping area on the west side of I-81.

Bicycle Lanes and Shared Use Paths - The town currently has no formally dedicated bike lanes or shared use paths. The Town Code does not currently permit bicyclists to operate on the sidewalks, so bicycle riding is restricted to the streets. However, there is a growing need and demand for bicycle lanes and shared use paths in association with growing population and traffic congestion.

Bicycle facilities in the town should be primarily one of the following:

1. Clearly marked Bike Lanes along new or existing streets. The right-of-way assigned to bicyclist and motorist should be clearly marked to provide for more predictable movements of each. The bike lane facility should contain the design characteristics shown in the following figure.

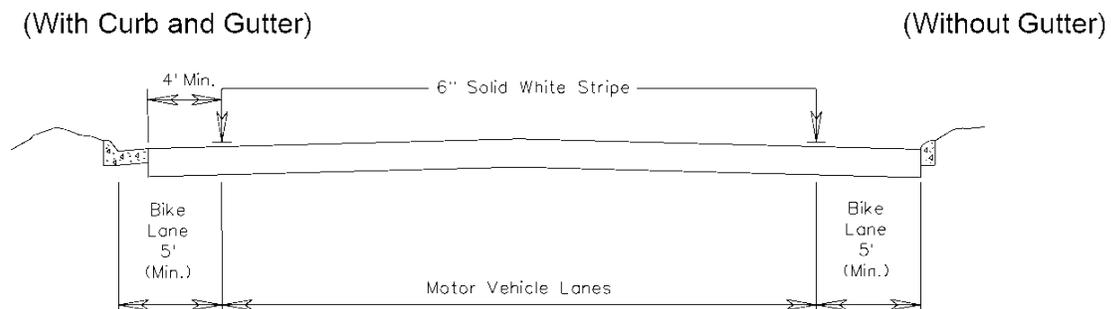


Figure 1 Bike Lane Pavement Markings and Dimensions³

³ Virginia Department of Transportation Road Design Manual, Appendix A

2. Shared-Use Paths are designed for pedestrians, bicyclist, roller bladers, etc. and should be planned and developed where wide utility corridors or former railroad right-of-way exists, permitting these facilities to be constructed away from the influence of parallel streets. Shared-use paths should offer opportunities not provided by the street system. They can provide a recreational opportunity or can serve as a commuting route. The shared-use path should contain the design characteristics shown in the following figure.

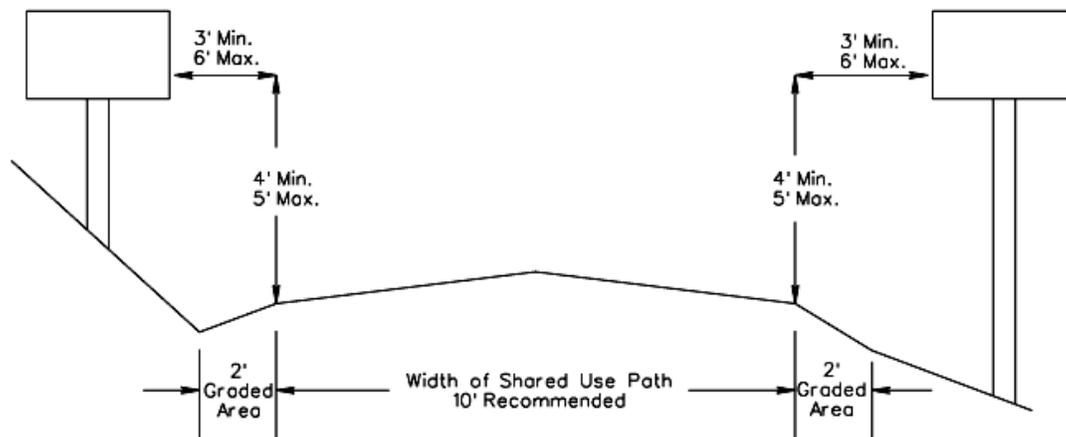


Figure 2 Cross Section of Two-Way Shared-Use Path on Separate Right-of-Way³

The town should develop a Bicycle and Pedestrian Plan to improve bicycle and pedestrian travel within the town. The goal of this plan should be to create and maintain a viable network of safe and convenient facilities. The town recognizes the need to encourage bicycle and pedestrian travel as a tool to reduce traffic congestion, contribute to cleaner air, conserve energy, promote physical fitness, and create a more pleasant atmosphere.

Public Transportation

Air Service - Three small private airfields are located within 20 miles of Woodstock at New Market, Mount Jackson, and Bryce. Public passenger service is offered at Charlottesville Airport (90 miles), Dulles International (75 miles), Reagan National Airport (100 miles), Baltimore International Airport (130 miles) and Shenandoah Valley Regional Airport in Weyers Cave (44

miles). Passenger charter service is available in Winchester (31 miles) and Harrisonburg/Weyers Cave (44 miles).

Bus Service - Inter-city bus service is provided by Greyhound/Trailways in Winchester and Harrisonburg. Bus travel is aided by the fact that it is a low cost mode of transportation, but is hindered due to the extreme amount of travel time experienced by passengers using this system. Charter bus service is available through companies in Luray, Staunton, Winchester and Harrisonburg.

Railroad - The Southern Railroad passes through town, parallel to Route 11, providing local freight service. Passenger rail-service is available in Martinsburg, West Virginia, approximately 53 miles north; and Staunton, Virginia, approximately 65 miles southeast. Passenger stations are also in Culpeper (65miles) southeast, Charlottesville (90 miles) southeast, and Union Station in Washington D.C. (90 miles).

Taxi Service - The town is served by a private taxi company which operates daily.

Public Transit - Woodstock does not have a public transportation system servicing the town.

Parking

In the downtown area, public parking remains scarce. While the town's zoning ordinance requires that off-street parking be provided for residences and businesses, there is limited space in the downtown area for those that have been grandfathered in through the years. There are presently 110 on-street parking spaces in the downtown area with two hour limited parking on Main Street and West Court Street. There are also 20 15-minute parking spaces which permit patrons of downtown businesses to obtain a parking space for brief periods of time. Other off-street parking areas in town are located in Muhlenberg Plaza (13 spaces) and in front of the Municipal Building on North Main Street (19 spaces). Parking areas should be highly defined to facilitate their use by visitors. Free, all-day parking is allowed on East Court Street and at Muhlenberg Plaza.

Since not every building in the Historic Downtown area has its own off-street parking spaces, visitors and employees of many of these buildings must use on-street parking spaces. There are a number of buildings with commercial uses on the ground floor and residential uses on the upper level that create competition for parking space between the two uses. Because of the relatively high density of this area, there is little available space for additional off-street parking to alleviate the parking problem. The zoning ordinance currently allows owners of new uses within a defined area of the Historic Downtown area to request reductions or waivers in the parking requirements from the Town Council. However, area property owners are encouraged to jointly develop privately owned and operated parking areas to serve their mutual needs. Where appropriate, the town should partner with these owners to develop public or shared parking areas. Ideally, this could result in several smaller parking areas distributed along Main and West Court Streets. In addition, as a long-term solution, Woodstock should continue to require that new off-street parking spaces be provided whenever new buildings are built.

When parking areas are designed, appropriate landscape design should be incorporated to break up large expanses of pavement, provide shade, and improve the overall aesthetics of the town.

Access Management

As development continues in the town so will the demand for access to the town's street network. The town has relied upon published standards, such as the VDOT Entrance Standards, to determine if a requested entrance satisfies transportation and safety requirements, but this has resulted in an excessive number of entrances in some areas, such as W. Reservoir Road near I-81. Excessive entrances increase the occurrence of accidents and driver confusion. To mitigate this, it is recommended that the town implement a plan to consolidate and limit new entrances onto heavily traveled roadways, and strongly encourage inter-parcel connectivity between adjacent development projects. The details of such a plan should be developed in the town's Site Plan requirements. Additional study of specific areas should also be carried out to identify specific opportunities to consolidate entrances and create inter-parcel vehicular connections.

Signing

Many of the working group members believe that there is an excess of traffic related signs along the major thoroughfares in the town. This makes it difficult for drivers to quickly identify those signs that provide needed information. The result is that a driver can miss directional signs and end up contributing to local traffic problems. To quantify the extent of this problem, a corridor study should be performed to identify excessive signs that should be eliminated or incorporated with others without endangering the safe flow of pedestrian, bicycle, or vehicular traffic.

Road Improvement Plan

The Streets Committee working on this Comprehensive Plan update identified a number of transportation projects that are needed in the town. Additionally, VDOT created a list of projects in their 2030 SUATS plan update which they believe will mitigate traffic impacts when implemented. Together these lists comprise the Woodstock Road Improvement Plan, which is provided on the following pages.

Road Improvement Plan

Town of Woodstock, Virginia

May 22, 2007

Intersection Improvements

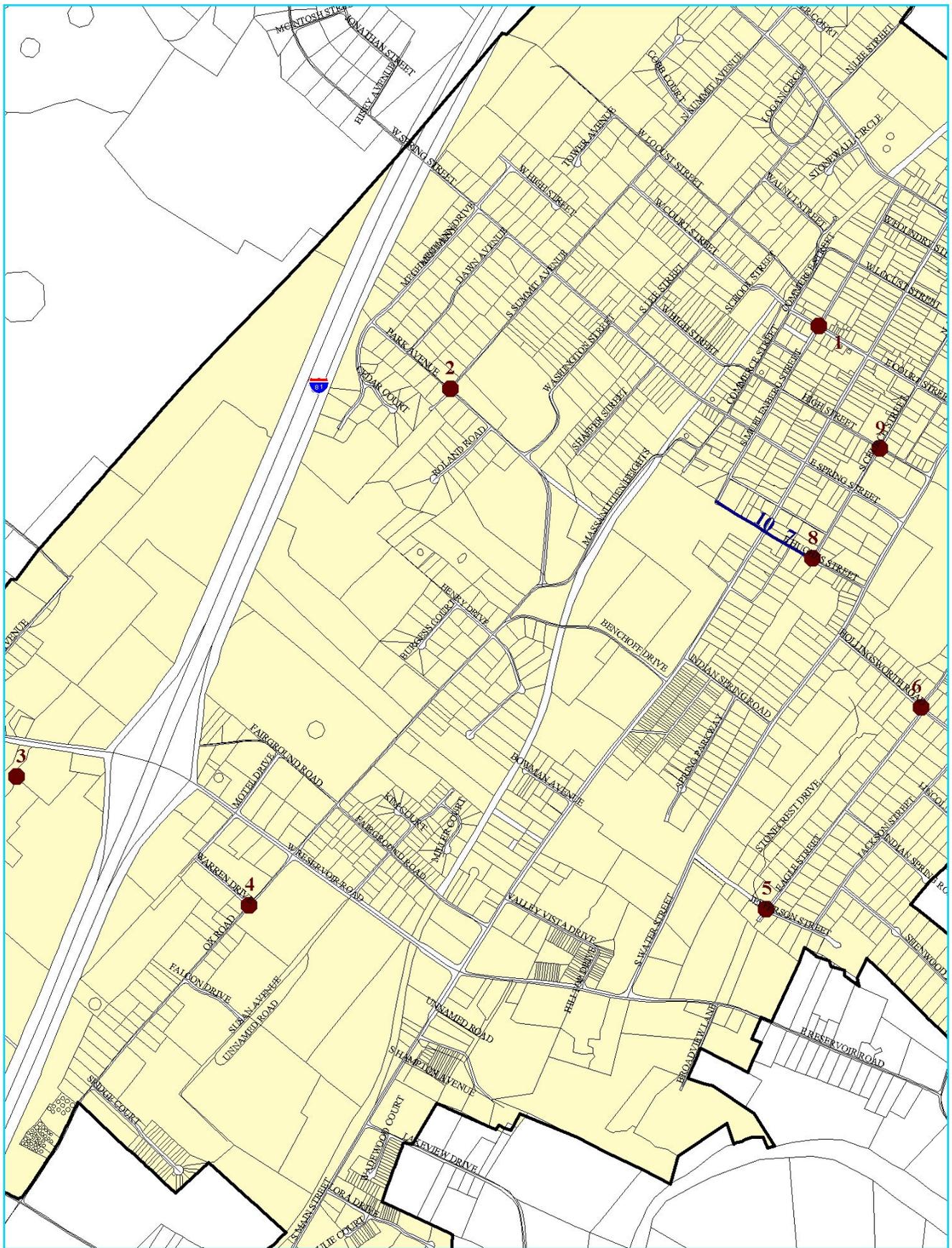
Item	Location	Problem Description	Recommendation
1	Intersection of W. Court St and N. Muhlenberg St.	Impaired sight distance due to parked cars and visual noise	Convert intersection to a 4-way stop.
2	Intersection of Park Ave. and Summit Ave.	Traffic on west side of intersection negotiates steep grade. EB traffic must stop on steep grade. 15mph speed limit on Park Ave east of intersection; 25mph on the west of the intersection. Approx 75 homes west of intersection; 2 homes south of intersection.	Rearrange stop signs to make Park Ave the through movement and make both approaches on Summit Ave. stop. Post speed limit at 15mph through the full length of Park Ave. Install curb bump outs in all quadrants of the intersection to channelize and slow traffic.
3	Intersection of Wal-Mart entrance and Henry Ford Dr.	Possible extensive delays for NB traffic (from Lowes) entering the intersection.	Monitor traffic flow in intersection after Lowes opens, and reevaluate at that time.
4	Intersection of Ox Rd and Warren Dr.	Knoll to the south of intersection on Ox Rd impairs sight distance.	Require developer to document available sight distance to establish extent of work required.

Item	Location	Problem Description	Recommendation
5	Intersection of Jefferson St and Eagle St	Traffic movements and speed	Continue to monitor traffic flows and speed after Eagle Farm development commences.
6	Eagle Street and Hollingsworth Dr.	Impaired sight distance on Eagle Street approaches	Continue to monitor situation after Eagle farm development begins.
7	E. Hughes Street between Main Street and S. Church Street	Narrow pavement section on E. Hughes St between Main St and S. Church St. and poor sight distance at crest	Make E. Hughes St one way EB from Main St to S. Church St.
8	Intersection of S. Church Street and E. Hughes Street	Pavement widths on E. Hughes St cause misaligned lanes. Stop and yield signs do not allow for efficient movements.	All options should be implemented together as a symphony of improvements.
9	Intersection of S. High Street and S. Church Street	Impaired sight distance due to wall, landscaping, and parked cars.	Install 4-way stop control
10	W. Hughes Street from Main St to S. Muhlenberg St.	Impaired sight distance at the Main St intersection due to wall and garage. Narrow pavement section makes two-way traffic unsafe.	Make W. Hughes Street one-way WB from Main St. to S. Muhlenberg St.

Item	Location	Problem Description	Recommendation
11	Intersection of N. Main St and E. Locust St.	Inadequate pavement section makes turns onto W. Locust St difficult. Sight distance in intersection is impaired due to on-street parking.	Make E. Locust St one-way EB. Add connection from back of bank parking lot to Church St.
12	Intersection of N. Main St and W. Locust St.	Inadequate pavement section makes turns onto E. Locust St difficult. Sight distance in intersection is impaired due to on-street parking.	Make W. Locust St. one-way EB.

VDOT 2030 SUATS plan update Recommended Street Improvements

Item	Location	Problem Description	Recommendation
	Reservoir Road	Inadequate capacity	Reconstruct roadway to a 4-lane divided roadway (raised median) and a 5-lane bridge over I-81
	Reservoir Road between Main and W. North Streets	Inadequate turning movement capacity	Add left and right turn lanes
	Main and Hoover Streets	Railroad crossings	Consolidate into a single crossing
	Main Street	Inadequate parking	Develop an off-street parking facility
	Main Street at intersection of Reservoir Road	Inadequate capacity	Add north and south bound through lanes, extend northbound left turn lane
	Ox Road at intersection with Reservoir Road	Inadequate capacity	Add northbound left turn lane
	Hisey Avenue	Future capacity availability	Extend Hisey Avenue to Water Street
	Hoover Road	Intersection capacity and rail crossing	Relocate Hoover Road from Main Street to west of the railroad.



Intersection and Street Improvements

COMPREHENSIVE PLAN

Town of Woodstock, VA

July 1, 2007



0 0.1 Miles



Map Data Provided by the Northern Shenandoah Valley Regional Commission

Legend

-  Intersection Improvement
-  Street Improvement
-  Woodstock Town Boundary
-  Town of Woodstock

Transportation Goals, Objectives and Strategies

This section states the manner and direction in which the Town of Woodstock would like to develop its transportation systems.

Goal Develop a safe and convenient transportation system serving all modes of travel including automobile, pedestrian, and bicycle.

Objective 1 Work closely with representatives from VDOT to update the Woodstock Small Urban Area Transportation Study (SUATS) to ensure that its recommendations accurately reflect local transportation needs and limitations.

Strategy 1 Appoint a Citizens Committee to work with VDOT in the development of the Woodstock SUATS 2030 update, providing local input and knowledge.

Strategy 2 Encourage participation in the public outreach and public meetings to involve as many citizens as possible.

Strategy 3 - Take formal action on the plan upon completion.

Objective 2 Create, adopt, implement, and update regularly a Town Road Improvement Plan of needed road and intersection improvements. This plan will serve existing and future land uses and should be coordinated with road improvement plans of the Virginia Department of Transportation and Shenandoah County.

Strategy 1 Annually review, update, and expand the town's Road Improvement Plan to include additional projects as deemed necessary.

Strategy 2 Expand the plan to include multi-use trail projects that are identified in the Woodstock Trail System Concept Plan.

Objective 3 Actively work with the Virginia Department of Transportation and Shenandoah County to promote the construction of a northern interchange on I-81 to alleviate traffic congestion in the Route 42 interchange area.

Strategy 1 Establish a land-use plan in the vicinity of the proposed interchange to accommodate and facilitate a new interchange.

Strategy 2 As development occurs and as purchase opportunities arise, preserve and acquire the right-of-way necessary for a new interchange.

Strategy 3 Work with developers to have an Interchange Justification Study prepared for the new interchange.

Objective 4 Promote walking and bicycling as an alternative mode of transportation, and develop a town sidewalk and multi-use trail plan and program for existing new development areas.

Strategy 1 Require development projects to implement sidewalk and multi-use trail improvements that are contained in the town's Trail System Concept Plan and directly serve their property.

Strategy 2 Prepare a comprehensive master plan that sets forth the town's sidewalk and multi-use trail policies and standards, and identifies the locations of planned facilities.

Strategy 3 Ensure that all new sidewalks and sidewalk repairs meet ADA accessibility standards.

Strategy 4 Expand the annual allocation of funds for sidewalk and multi-use trail improvements in the capital improvements program.

Objective 5 Assess and seek to mitigate the transportation impacts of development and redevelopment projects.

Strategy 1 Require traffic impact studies with all rezoning and special-use permit applications proposing development that will create a significant traffic impact. Such studies should meet the requirements of the Virginia Department of Transportation for traffic impact analyses and should encourage transit, pedestrian, and bicycle use.

Objective 6 Work with the Virginia Department of Transportation and Shenandoah County to implement a wildflower beautification project along the Route 11 north and south of town, and along Route 42 west of town.

Strategy 1 Request of VDOT that the wildflower program be expanded to include areas at the town's primary entrance points.

Strategy 2 Use town forces to assist VDOT with the creation and maintenance of wild flower areas.

Objective 7 Conduct a review and evaluation of all traffic related signs within the town to determine which are needed and which could be removed.

Strategy 1 Establish a committee to:

- Review existing signing in the town.
- Identify the types of traffic related signs that are necessary and those that are not.
- Recommend removal of the unneeded traffic related signs.

Objective 8 Improve the safety of all modes of travel.

Strategy 1 Incorporate safety considerations into the design of roadways for all travel modes.

Objective 9 Develop an access management plan for properties along the town's main arterial corridors. The plan should provide a balance of good access combined with efficient and effective traffic flow on the arterial street.

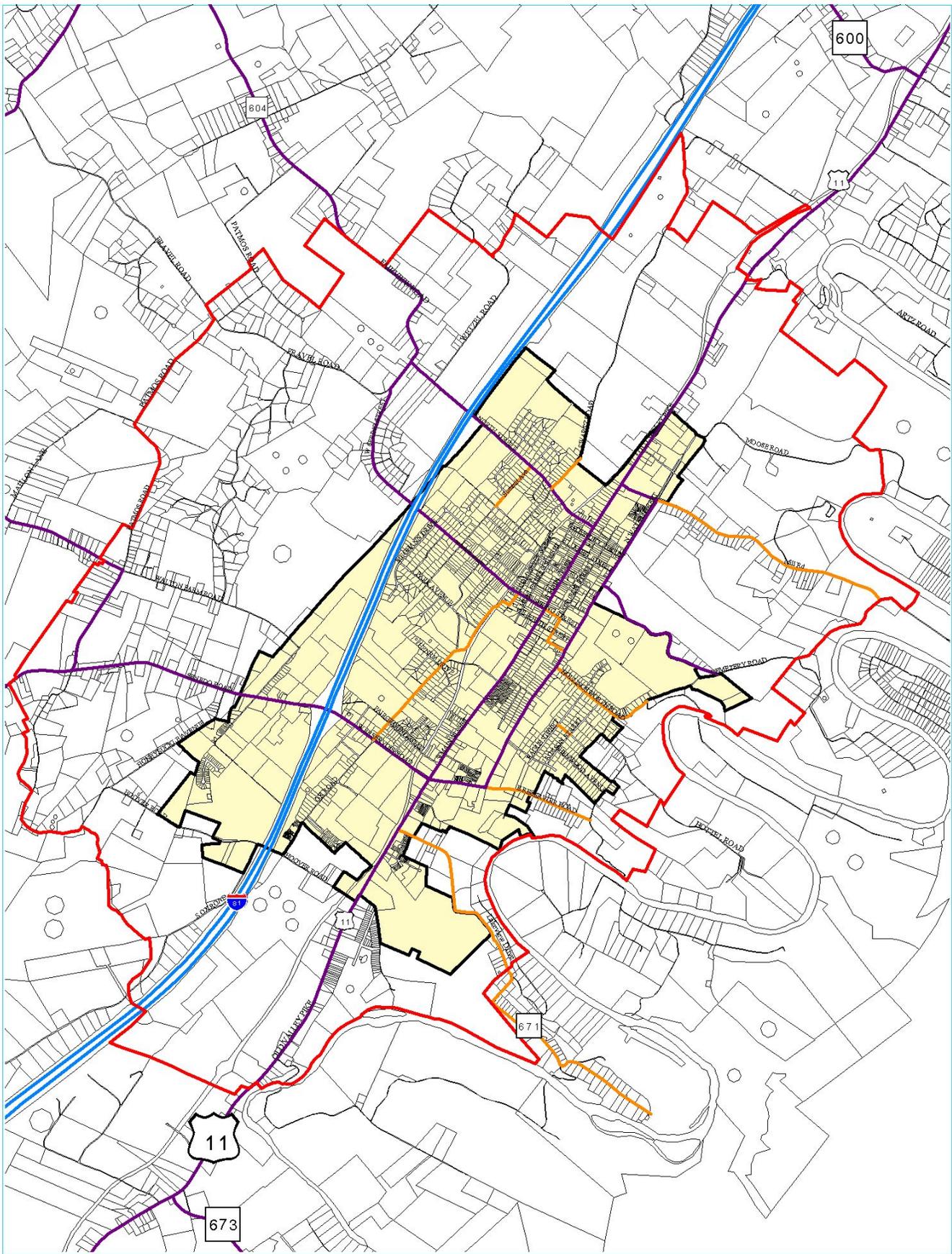
Strategy 1 Perform a detailed corridor study in the Reservoir Road corridor, focusing on access management and inter-parcel connectivity opportunities, traffic patterns, and access needs.

Strategy 2 Strongly encourage inter-parcel connectivity between developments and constraints on the number of access points permitted onto the town's principal arterial roadways.

Strategy 3 Revise the town's zoning ordinance and site plan ordinance to strongly encourage inter-parcel connectivity and limit access points onto the town's principal arterial roadways.

Objective 10 Develop a parking plan for the downtown area that will expand parking.

Strategy 1 Identify where opportunities exist in the downtown area to develop new town owned parking facilities, lease parking spaces from private organizations, or jointly develop parking facilities with property owners.



Functional Road Classification

COMPREHENSIVE PLAN

Town of Woodstock, VA

July 1, 2007



0 0.5 Miles



Map Data Provided by the Northern Shenandoah Valley Regional Commission.

Legend

-  Rural Interstate
-  Rural Major Collector
-  Rural Minor Collector
-  Urban Growth Area
-  Woodstock Town Boundary
-  Town of Woodstock