

Level of Service Standards for Public Facilities & Services

~~December 2006~~ 2009

Introduction

The Board of Supervisors (BOS) as the elected body for the County may adopt Level of Service Standards (LOSS) for public facilities and services. In addition, the BOS is responsible for directing and giving charge to Administration and individual Departments responsible for service provision. Individual Department ownership of the LOSS is a must to ensure necessary improvements are constructed at the appropriate time. LOSS and goals/policies are designed to articulate clearly the BOS expectations of County Departments responsible for service delivery with decisions related to staffing and the construction/improvement of public facilities. The location, size, and timing of needed improvements are directly related to the development patterns identified in the Comprehensive Plan. In several instances, individual Department's planning studies or analyses were used in developing the LOSS referenced in this document. This document does not describe the full range of facilities and services provided to the citizens of Spotsylvania County since this would repeat much of the information contained in the Comprehensive Plan.

Specific areas addressed in this LOSS document include:

- ✓ Establishing and Maintaining Levels of Service
- ✓ Roadway Systems
- ✓ Transit
- ✓ Libraries
- ✓ Storm Water Quantity and Quality
- ✓ Parks and Recreation
- ✓ Solid Waste Collection and Disposal
- ✓ Public Safety
- ✓ Schools
- ✓ Water
- ✓ Sanitary Sewer
- ✓ Administration

AUTHORITY

Pursuant to Section 15-2-2223 of the Code of Virginia, Spotsylvania County may adopt Level of Service Standards to assist in identifying which existing lands, facilities or services should be extended, widened, removed, relocated, vacated, narrowed, abandoned, or changed in use as the case may be.

GOALS & POLICIES

ESTABLISHING AND MAINTAINING LEVELS OF SERVICE

The types of public facilities and services that are provided in a community often affect not only an individual's thoughts about the quality of life that the community offers, but can have a direct impact on economic development efforts. Counties, which maintain higher levels of service and facilities typically, foster a higher civic pride among their residents and a positive impression with those who visit Spotsylvania County's historic battlefields. Maintaining and improving Levels of Service (LOS) is a transparent goal that applies to each and every public facility and service that is identified in this document.

GOAL 1: ACCESS THE RESOURCES REQUIRED TO PROVIDE AN ACCEPTABLE LEVEL OF GOVERNMENT SERVICES

Policies to achieve this goal include:

- 1.1 All new development, including redevelopment, should construct necessary on-site infrastructure to serve the project in accordance with the County's Design Standards Manual.
- 1.2 When reviewing applications for re-zonings that are considered large scale development and which exceed the thresholds provided in Transportation Policy 2.23, the applicant should finance a county-directed independent analysis by a credentialed industry source of the impacts of all affected County's facilities and services, and provide mitigation as appropriate. The provision of local streets, sewer, water, drainage, and other needed infrastructure should be coordinated, in the most cost effective manner, between adjacent developments so as to reduce design, construction, and maintenance costs.
- 1.3 **Public** Infrastructure should be designed and constructed to meet ultimate capacity needs, pursuant to a Department's requirements for facilities and services, to ensure avoidance of costly retrofitting.
- 1.4 Utilize cost reimbursement agreements, where appropriate, and provide a credit to the pro rata share contribution when upgraded or oversized facilities are installed by a development and the cost of the facilities exceeds the development's responsibility.
- 1.5 Direct growth towards the Primary Development Boundary (PDB) areas, which already have infrastructure capacity available by providing incentives for quality infill development..

- 1.6 Clustering of development should be used to maximize the use and efficiency of infrastructure facilities, conserve land consumption, and reduce stormwater runoff..
- 1.7 Ensure that the County’s Proffer Guidelines are commensurate with the full and actual costs of providing facilities and services, ~~to include costs related to bonding.~~ .
- 1.8 Special Districts, Community Development Districts, and Public/Private Partnerships should be an integral growth management technique to pay for needed infrastructure improvements related to growth when financially feasible..
- 1.9 No adopted Level of Service Standards, (LOSS) , **once achieved**, regardless of facility and/or service, should be degraded by development and all existing LOS when below the adopted LOSS should be governed by the “maintain and improve” standard.

TRANSPORTATION

Principal modes of transportation within Spotsylvania County include vehicular, transit, rail, bicycle, and pedestrian. The secondary roadway system is one of the most extensive facilities provided that is directly affected by local land use decisions.

Rail service, which is provided by Virginia Rail Express (VRE), a semi-public agency, provides service to Fredericksburg only but there are a number of Spotsylvania County users of VRE. Transit is provided by Fredericksburg Regional Transportation (FRED) through a purchase of service arrangement with the County. Cost of purchased service was **\$534,644** or **\$4.67** per passenger in **2008**. The table below shows the 2008 ridership totals. Modes designed to accommodate bicycle and pedestrian travel are addressed in the Transportation and Recreation elements of the Comprehensive Plan.

FRED Ridership Totals

Year	S1	S1A	S2	S3	VS1	VS2	Total
2008	31,200	18,508	25,456	3,732	15,572	19,979	114,447

S1 & S1A - Lee Hill Center, Southpoint, Salem Church, Rt 3, Spotsylvania TC, Mon-Fri, 8-8pm

S2 - Lee Hill Center, Southpoint, Lee's Hill, Spotsylvania CH., Mon-Fri, 8-8pm

S3 - Rt 3 Ukrops, Harrison Crossing, Salem Fields, YMCA, Mon-Fri, 8:30-8:30pm

VS1 & VS2 - Gordon Rd Commuter Lot, Ukrops, Train Station, Mon-Fri, 4:45-8:55am; 2:35- 8:35pm

There are 961 miles of roads within Spotsylvania County; 304 miles classified as Minor Collectors or higher and 657 miles classified as local and subdivision roads. As of July 2007, the Primary Road segments including I-95 totaled 64 miles with 79.6% of these miles operating at Level of Service “C” or better; Secondary Road segments within the Primary Settlement District totaled 46 miles with 85.8% operating at Level of Service

“C” or better; and Secondary Road segments outside the Primary Settlement District totaling 194 miles with 92.8% operating at Level of Service “C” or better.

Levels of Service standards have been set higher in the rural area to ensure the rural character of the area is not degraded by development. In the Primary Settlement District, levels of service are lower to encourage development and redevelopment to densities and intensities that maximize use of the existing infrastructure.

Urban roads are defined as those roads that are located within the Primary Development Boundary. Rural roads are defined as those located within Rural Development, Agricultural/Forestral, and Lake Anna Districts.

Transportation Level of Service Standards is defined as follows:

- A= Free flow and unimpeded maneuverability
- B= Free flow and maneuverability is slightly restricted
- C= Stable Flow and maneuverability is noticeably restricted
- D= Unstable Flow and maneuverability is severely restricted
- E= Flow is extremely unstable and maneuverability is extremely poor
- F= Forced stoppages and there is no maneuverability

GOAL 2: MAINTAIN, EXPAND, AND IMPROVE MOBILITY FOR RESIDENTS AND BUSINESSES TO TRAVEL SAFELY AND CONVENIENTLY THROUGHOUT THE COUNTY.

Policies to achieve this goal include:

- 2.1 **Achieve** a “C” Daily Level of Service on all County secondary roads within the Primary Development Boundary..
- 2.2 **Achieve** a “D” Peak Hour Level of Service on all County secondary roads within the Primary Development Boundary..
- 2.3 **Achieve** a “B” Daily Level of Service on all County secondary roads outside of the Primary Development Boundary..
- 2.4 **Achieve** a “C” Peak Hour Level of Service on all County secondary roads outside of the Primary Development Boundary.
- 2.5 **Achieve** a “D” Peak Hour Level of Service on all primary road facilities..
- 2.6 **Achieve** a “C” daily Level of Service on all primary road facilities..

- 2.7 Where Preliminary Design & Engineering plans exist for roadway facilities and the required rights-of-way exceeds the Transportation Element's recommended rights-of-way width, the PD&E recommended rights-of-way should take precedence..
- 2.8 A Traffic Impact Assessments (TIA) should be required for all re-zoning and special use applicants when one of the following events occurs: a) the peak hour trips generated are between 50-99; or b) daily trips generated are between 500-749.
- 2.9 A Traffic Impact Study (TIS) should be required of all re-zoning and special use applicants when one of the following events occur: a) 100 or more peak hour trips are generated; or b) 750 daily trips or greater are generated.
- 2.10 A Regional Traffic Analysis (RTA) should be required of all re-zonings and special use applicants when the proposed development exceeds 500 Peak-Hour trip thresholds.
- 2.11 Design recommendations made in a TIA, TIS, or RTS should be in accordance with the geometric standards contained in the "Spotsylvania County Design Standards Manual" and the American Association of State Highway and Transportation Officials, "Geometric Design of Highways and Streets"
- 2.12 Large scale office and industrial developments requiring an RTA should project the number of Single Occupancy Vehicles (SOV) trips that would be generated by the development and an estimate of trip reductions that could be achieved with Transportation Demand Management (TDM).
- 2.13 The County Traffic Division should maintain and update periodically its current policy regarding Standards for Impact Studies for New Developments.
- 2.14 Only roadway facilities that are fully funded and programmed for implementation within the first 3 years of VDOT's Six Year Program or the County's CIP should be considered built and eligible for inclusion in a traffic analysis..
- 2.15 Rights-of-way dedication and on site related roadway improvements that are **identified in a TIA and/or** permit requirements of VDOT should not be considered as a proffer that should receive credit against the proffer guidelines for transportation..
- 2.16 Road improvements designed to principally improve access to a development site such as signals, turn lanes, acceleration/deceleration lanes, median crossovers, and similar improvements should be considered on-site improvements and therefore should not be considered for credit against the Proffer Guidelines.
- 2.17 Off-site road improvements designed to provide additional capacity or correct a current backlogged condition should be considered as credit against the Proffer Guidelines.

- 2.18 Proffer statements that contain development with phasing schedules that project a 3-year or more build out horizon should file a Transportation System Management (TSM) Monitoring Report every year after the issuance of the first Occupancy Permit. Where the TSM Monitoring Report indicates a deviation of 15% or more trips than the TIA, TIS or RTA, additional mitigation to offset that portion of the trips which exceed 15% deviation should be incorporated into the Proffer Statement.
- 2.19 The County should monitor secondary road links and intersection Levels of Service through a Traffic Count Program to supplement VDOT's existing Traffic Count Program.
- 2.20 Unrestricted median crossovers on four lane divided or greater road facilities which permit turning movements in the opposite direction from the side in which the vehicle is exiting a site should not be permitted when such opening negatively affects the existing level of service on a roadway.
- 2.21 As a general rule, minimum spacing between median openings should be at least 400' with a desired minimum spacing of 800 feet or greater..
- 2.22 Slotted left turn lanes may only be used with median widths that are at a minimum of 24 feet.
- 2.23 As a general rule, the placement of new signals should occur at the intersection of public roads and not at driveway entries into residential and commercial development. An exception to this policy is the development of large scale residential, office, retail, or industrial developments that meet or exceed the following thresholds:

Land Use	Unit of Measurement	Acres
Office	240,000 square feet OR	24 acres
Residential	800 units	N/A
Retail	320,000 square feet OR	32 acres
Industrial	2000 parking spaces OR	256 acres

- 2.24 Large scale developments that exceed the thresholds defined in policy 2.23 requiring a rezoning should prepare and submit a Transportation Demand Management (TDM) Plan that will serve as commitments to an agreed upon list of TDM measures.
- 2.25 Traffic signals shall require a Traffic Signal Warrant Analysis performed in accordance with the procedures in the "Manual On Uniform Traffic Control Devices" before they are accepted as a proffered improvement..

Based on Synchro-Sim Traffic which is used to monitor intersections, level of service is as follows;

AM	A	B	C	D	E	F	Total
Signalized Intersections	2	5	8	2	1	4	22
Non-signalized Intersections	4	0	0	3	1	3	11
PM	A	B	C	D	E	F	Total
Signalized Intersections	2	7	9	5	4	9	36
Non-signalized Intersections	4	0	1	2	0	5	11

- Large scale developments should consider TDM measures that reduce single occupancy vehicle (SOV) trips. Such measures may include but are not limited to: commuter matching service; provisions of vans for vanpooling; use of company vehicles for carpooling, preferential parking for car or van pools which may include close-in parking or covered parking facilities; agreements with FRED to provide regular or express service buses to the work site; subsidized bus fares; construction of specialized loading/unloading facilities for transit or car and van pools; extension of walkway systems beyond the work site to link with existing walkway systems; provision of bicycle racks, lockers and showers for employees who walk or bicycle to and from work; provision of information on alternative modes of travel; establishment of work-at-home program for employees; establishment of adjusted work hours at off-peak times of the day; parking incentives and disincentives; in-house cafeteria; incentives to encourage employees to live closer to work; and measures that reduce commute trips such as on-site day care, guaranteed ride home, or emergency taxi services.
- 2.26 Upon completion of the Transportation Model for Spotsylvania County, the County will perform an analysis with computer time paid for by the applicant. **The development of TIA’s and other traffic assessments and studies necessitated by HB 257 or otherwise needed to properly review the traffic impacts of a rezoning or special use plan remains the sole responsibility of the applicant**
- 2.27 All residential **rezoning applications shall be required and by-right residential applicant encouraged to** shall provide internal pedestrian/bicycle trails and interconnectivity of trails through access easements at the property line to ensure future trail continuity.
- 2.28 VDOT, developers, and the County, when applicable, should view new and expanded roadway improvements with a design philosophy that promotes Context Sensitive Design (CSD). For purposes of this policy CSD means to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic, and environmental resources, while maintaining safety and mobility. CSD is an approach that considers the total context within which a transportation improvement project will exist.

2.29 **Achieve** “B” as a Level of Service Standard for pedestrians based upon extent of sidewalk and pedestrian crosswalk coverage within a ¼ mile of residential development and FRED stops, neighborhood shopping, hotels, and recreational activities.

Sidewalk Coverage	Level of Service					
	A	B	C	D	E	F
0-15%						X
16%-30%					X	
31%-45%				X		
46%-60%			X			
61%-75%		X				
76%+	X					

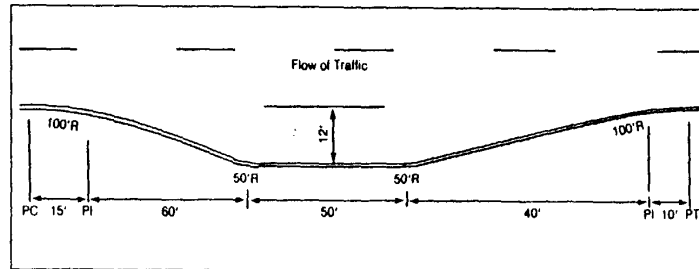
2.31 Where it is determined that the placement of required sidewalks is not appropriate, the County may accept the construction cost as cash in lieu of sidewalk placement. The collection of cash in lieu of constructing sidewalks shall be deposited into a designated account for the benefit of the **Voting** District in which the sidewalk was to be constructed.

Spotsylvania County Sidewalk Fund				
Voting District		FY2006	FY2007	FY2008
Battlefield		\$1,488.75	\$1,488.75	\$4,695.00
Berkeley		\$0.00	\$0.00	\$0.00
Chancellor		\$0.00	\$0.00	\$0.00
Courtland		\$0.00	\$106,827.29	\$0.29
Lee Hill		\$12,000.00	\$12,000.00	\$12,000.00
Livingston		\$0.00	\$0.00	\$0.00
Salem		\$25,467.00	\$28,027.00	\$28,027.00
	Total	\$38,955.75	\$148,343.04	\$44,722.29

GOAL 3: PROVIDE TIMELY AND AFFORDABLE TRANSIT SERVICES TO MEET THE NEEDS OF SPOTSYLVANIA RESIDENTS AND EMPLOYERS.

- 3.1 Connect all transit facilities with adjacent residential developments through the building of sidewalks and bikeways within a quarter mile of established transit stops..
- 3.2 Design and provide sites which permit FRED to pick up riders outside of the through lane on Route 3 through the use of “turn outs.”

- 3.3 Ensure FRED reviews all re-zonings involving uses that generate in excess of 99 peak hour trips, office and industrial buildings involving >50 employees, and residential developments greater than 50 units.
- 3.4 In cooperation with FRED, encourage rezoning applicants to proffer bus “turn-outs” such as the one depicted below when warranted and needed..



Source: VDOT's 2004 ADT Vol. Count Report
Fredericksburg Regional Transit

LIBRARIES

Central Rappahannock Regional Library provides library services within Spotsylvania County. The County provides financial assistance for operations based upon County population usage. Forty-four percent (44%) of the total cardholders within the library system reside in Spotsylvania County. The County also provides maintenance since the branch facilities are County owned. The County is not the sole or direct provider of library services. The Headquarters Library is located in Fredericksburg. There are two branches in Spotsylvania County. Salem Church and Snow Branches are located on Salem Church Road and Courthouse Road respectively. Currently, Spotsylvania County requires approximately 68,400 square feet of public library space. The combined square footage of Salem Church (16,000 square feet plus a 10,000 square foot addition approved through the 2005 Bond Referendum) and Snow (5,000 square feet) added to one third of the Headquarters space (36,000 square feet used equally by the City of Fredericksburg, Stafford, and Spotsylvania) results in a total of 43,000 square feet. The square footage provided has a direct impact on the collections provided.

GOAL 4: PROVIDE ADEQUATE LIBRARY SERVICES TO MEET THE NEEDS OF CURRENT AND FUTURE PATRONS.

Policies to achieve this goal include:

4.1 Provide and maintain .6 square feet of library floor area per capita.

4.2 Provide and maintain a collection of 2 books per capita.

Source: Rappahannock Regional Library 2007 CIP

STORMWATER FACILITIES

There are nine drainage basins identified within Spotsylvania County's Primary Settlement District (PSD) and eleven hydrologic basins along with 102 sub-basins identified within Spotsylvania County. Storm drainage facilities within the PSD are mostly site specific and are operated and maintained by private interests. Existing storm drainage facilities consist of structural and non-structural Best Management Practice (BMP) facilities, conventional drop inlet/storm drainage pipeline collection and surface water conveyance. These drainage system outfalls eventually flow into the Rappahannock River or the York Tributary.

A need exists to supplement site-specific best management practices with a more comprehensive approach thus providing the most effective strategy to accomplishing adequate flood protection within the County while better managing the hundreds of isolated BMP's and surface water management (SWM) ponds on private property.

Levels of Service for water quantity are defined as follows:

LOS A – (Superior) maximum water level below the tops of curbs and all traffic lanes open.

LOS B – (Excellent) partial yard flooding and standing water on the shoulder of traffic lanes.

LOS C – (Standard) yards flooded, first floor of buildings dry, and road flooded except for crown.

LOS D – (Substandard) first floor of buildings flooded, water level up to six inches over the crown of road.

LOS E – (Uncontrolled) essentially no flood protection.

Levels of Service for water quality are defined as follows:

Level 5 – A typically high level of stormwater treatment – no water quality impacts.

Level 4 – A superior level of stormwater treatment comprising a complete system of best management practices which improves the quality of stormwater runoff to exceed Virginia State Water Quality Standards prior to discharge to receiving waters.

Level 3 – A standard of adequate level of stormwater treatment comprising a complement of BMP’s which improves the quality of stormwater runoff to meet or exceed Virginia State Water Quality Standards prior to discharge to receiving waters

Level 2 – A substandard level of stormwater treatment consisting of a substantial system of BMP’s, which improves the quality of stormwater runoff but may not meet Virginia State Water Quality Standards prior to discharge to receiving waters.

Level 1 – An intermediate level of stormwater treatment consisting of a limited system of BMP’s, which improves the quality of stormwater runoff but may not meet Virginia State Water Quality Standards prior to discharge to receiving waters.

Level 0– The lowest level of stormwater treatment comprising a system of few, if any, BMP’s to improve the quality of stormwater runoff prior to discharge to receiving waters.

GOAL 5: AVOID INCREASES IN EXISTING FLOOD LEVELS BY STORM EVENT AND IMPROVE THE OVERALL WATER QUALITY WITHIN THE COUNTY.

Policies to achieve this goal include:

5.1 Site specific facilities with positive outfall, shall require at a minimum a ten (10) year, twenty-four hour storm event design that analyzes pre-and post-development flows.

5.2 The Countywide quantity LOS standard by type of storm is as follows:

LOSS	Type of Storm Event			
	1YR	2YR	10YR	100YR
A				
B	X		X	
C				X
D				
E				

5.3 The quantity LOSS by drainage basin for 1 & 2 Year Storm Events is as follows:

Drainage Basin	Existing LOS	Adopted LOS
Massaponax Creek	C	B
American Central	C	B
Courthouse	C	B
Rappahannock	C	B

Deep Run	C	B
Hazel Run	C	B
Ni River	C	B
Po River	C	B
Matta River	C	B

5.4 The quantity LOSS by drainage basin for a 10 Year Storm Event is as follows:

Drainage Basin	Existing LOS	Adopted LOS
Massaponax River	C	B
American Central	C	B
Couthouse	C	B
Rappahannock	C	B
Deep Run	C	B
Hazel Run	C	B
Ni River	C	B
Po River	C	B
Matta River	C	B

5.5 The quantity LOSS by drainage basin for a 100 Year Storm Event is as follows:

Drainage Basin	Existing LOS	Adopted LOS
Massaponnax	C	C
American Central	C	C
Courthouse	C	C
Rappahannock	C	C
Deep Run	C	C
Hazel Run	C	C
Ni River	C	C
Po River	C	C
Matta River	C	C

5.6 The quality LOSS by hydrologic basins is as follows:

Hydrologic Basin	Existing LOS	Adopted LOS
Lower Rapidan	2	3
Rappahannock	2	3
Massaponnax	2	3
Upper N. Anna	3	4
Lake Anna	3	4

Lower N. Anna	3	4
Ni River	3	4
Po River	3	4
Upper Mattaponi	3	4
Matta River	3	4
South River	3	4

5.7 Master Drainage Plans for individual basins should be funded to perform the following:

- a. Confirm the current existing LOSS currently identified by basin;
- b. Refine the currently adopted LOSS identified by basin;
- c. Identify all drainage facilities which fall below adopted level of service standards;
- d. Costs associated with improving such facilities to meet minimum drainage level of service standards; and
- e. Funding sources for those improvements.

5.8 The County should continue to monitor private developments to ensure that the stormwater facilities are adequately maintained and functioning in compliance with design requirements and the BMP Agreement recorded with the Clerk of the Court's Office.

5.9 Low Impact Development (LID) techniques should be required, to the maximum extent feasible, for all residential and commercial development. .

Sources:

Lake Anna Watershed Land Use Plan, 5/2004	Hazel Run Watershed Planning and LID Retrofit Project
Draft Rappahannock River Tributary Strategy, 5/2004	Massaponax Creek Watershed Assessment
Draft York River Tributary Strategy, 4/2004	2004 DEQ 303(d) Impaired Waters List

PARKS and RECREATION

Recreation facilities consisting of public parks and community centers are essential features that contribute to the overall quality of life in Spotsylvania County. The County has made a significant commitment to providing and enhancing the quality and availability of these facilities to meet the needs of its residents. The County's parks and improved open space areas are one of the most visible and valued public amenities provided. Loriella Park is a good example of visibility and highly valued public amenity. Due to the importance of park and recreation facilities, the County's Comprehensive Plan contains a Recreation/Parks element that specifically addresses those facilities and programs. The Element identifies various types of parks and parkland, as well as suggested sizes for specific park types. In order to minimize

redundancies, maximize efficiencies, and reduce maintenance costs, parks should be collocated with schools whenever possible. Currently, the county has ~~558~~ **614** acres of active and passive recreation/park areas for a population of ~~116,549~~ **120,031**. This represents ~~48~~ **52%** of the need. Consequently, the existing LOS based upon 10 acres of recreation land per 1000 population supports a population of ~~61,300~~ **61,800**. The percent acreage deficiency is ~~52~~ **48%** or ~~607~~ **574** acres. **However, when 297 acres of programmed school sites are included, the total acreage is 911 or 77.2% of standard, exceeding the 75% parks LOS standard adopted by the Board of Supervisors. In addition, the Board of Supervisors adopted a Park and Open Space Plan that includes 841 acres of reservoir acreage that has been incorporated into the Special Use Park category. This reservoir acreage plus the land and facilities provided by the National and State parks provide a compliment to the County park system that meets the remaining 22.3% park standard deficit.**

~~An emerging opportunity for the County is the accommodation of heritage tourism and the accommodation of that opportunity in a sensitive and historic manner.~~

~~**Heritage Tourism**—The County's historic resources are an under utilized economic development opportunity. Planning is needed to identify unique resources, target audiences, develop goals, and craft the means to achieve those goals, including considering the role that a new visitor center at the Chancellorsville 1st Day Battlefield might play.~~

GOAL 6: MAINTAIN AND EXPAND THE SYSTEM OF COUNTY PARKS AND OPEN SPACE SYSTEMS TO MEET THE NEEDS OF SPOTSYLVANIA'S INCREASING POPULATION.

Policies to achieve this goal include:

- 6.1 Establish as a parkland level of service 10 acres of developed County parkland **and active school site** acreage for each 1,000 county residents **with a goal of meeting 75% of the standard with parks and schools.**
- 6.2 Link housing units, population, and the adopted level of service standard in determining the need for parkland dedication and the development of such parkland.
- 6.3 Where dedication of land is inconsistent with the location of public parks as depicted in the ~~Recreation Element~~ or **Parks and** Open Space Element of the Comprehensive Plan, accept cash in lieu of based upon the cost per acre contained in the contract price for the land..
- 6.4 Future development should pay for the development of parkland and facilities which are necessitated by the increased population..
- 6.5 Ensure the Proffer Guidelines include a formula that implements Policy 6.2.

Source: 2002 Comprehensive Plan – Recreation Element

SOLID WASTE

Solid waste generated in Spotsylvania County is disposed of at the Livingston and Chancellor Landfill Facilities located. Under existing state permits, the Livingston landfill has sufficient capacity to accommodate the disposal of solid waste at least to the year 2026. Construction of Cells 4 and 5 are projected in years ~~2006~~ 2007 and ~~2009~~ 2011 respectively.

Spotsylvania has made extensive recycling efforts to reduce the waste stream loads to the landfill. Currently, the State requires a recycling rate of 25% and Spotsylvania recycled or composted ~~37.5%~~ 41% of the residential and nonresidential waste stream in ~~2003~~ 2008.

A required ratio of waste to sludge is 5:1, consequently the County cannot accept all the sludge generated within the County at the landfill. In 2002, the County experimented with the composting of wastewater sludge utilizing mulched yard waste as a bulking agent. In 2003, the County received a Virginia Department of Health permit to expand the facility and is now able to process up to 38.4 wet tons per operating day, or approximately 9,600 tons of sludge per year. The County is currently in the construction phase for another expansion that will enable the processing of up to 112.5 wet tons per day, or approximately 28,125 tons of sludge per year. The compost is marketed as Livingston Blend and is being utilized at a rate that outstrips production.

GOAL 7: PROVIDE FOR EFFICIENT COLLECTION AND DISPOSAL OF SOLID WASTE WHILE MAINTAINING AN ADEQUATE WASTE DISPOSAL CAPACITY.

Policies to achieve this goal include:

7.1 Establish as a LOSS for land-filled waste only the daily generation rate of 2.4 pounds per day per person, which is to be used in designing landfill capacity..

7.2 Establish 35% as a recycling goal for residential and nonresidential waste stream.

Source: Spotsylvania County Solid Waste Management Plan, 4/2004

PUBLIC SAFETY

A. Sheriff's Department

The Spotsylvania County Sheriff's Department operates from the main station located at Spotsylvania Courthouse and a small substation located at the Spotsylvania Towne Center. The Department is organized into ~~four~~ five primary divisions: Administrative, Field Operations, Investigations, ~~and~~ Court Support and Animal Control. In 2005, (2008) there were ~~120~~ (154) authorized sworn positions, of which only ~~69~~ (88) sworn officers are devoted to law enforcement activities. The rest are devoted to court security, processing, and school resource officers. The US Census projected population for 2005 (2008) is ~~116,549~~ (120,031) people. At the one per 1,500 populations, the County has a need to have ~~78~~ (80) officers performing law enforcement duties. The current ratio of sworn deputies devoted to law enforcement activities is 1 sworn deputy per ~~1,689~~ (1,372) people. This ratio is considered ~~below~~ above average and represents a ~~lower~~ higher level of service. Based upon existing Departmental overcrowding conditions and future population increases, a new sheriff facility is projected and planned in the Courthouse Master Plan.

Response Time: Trends indicate that non-emergency calls are taking longer each year while a major focus has been placed on successfully reducing response times for emergency calls from ~~6.5~~ (6.94) minutes in 2002 (2005) to ~~6~~ (6.38) minutes in 2004 (2006). Significant increases in population (4.1% in 2005) combined with location are likely to result in the need for additional officers and/or staffing. Otherwise, degradation of increasingly better response times for emergency calls ~~will almost certainly occur~~ to 8.81 minutes in 2008.

GOAL 8: ENSURE A HIGHER LEVEL OF PUBLIC SAFETY PROTECTION BY THE SHERIFF'S DEPARTMENT FOR THE COUNTY'S RESIDENTS, BUSINESSES, AND TOURISTS.

Policies to achieve this goal include:

8.1 Establish the following Level of Service Standards for public protection services:

- a. Maintain and improve upon a sworn deputy devoted to law enforcement duties to population ratio of 1 deputy per 1,500 people..
- b. Respond to 100% of emergency calls within 5.8 minutes of being dispatched..

B. Fire and Rescue Services

~~Fire and Rescue Services in Spotsylvania County is the responsibility of Fire and Rescue with its main station, Fire Station 1 and administrative branch, located in Spotsylvania Courthouse. A mutual aid agreement is in effect with surrounding counties for those areas that are on the periphery of the County as well as with the City of Fredericksburg. There are four main functions within the Department: administration, Fire Suppression, Emergency Medical Services, Emergency Management, and Fire Prevention.~~

~~Response and ISO Rating: Spotsylvania County is rated by the Insurance Service Organization (ISO) which has a direct impact on insurance premiums established by private insurance companies for residential, commercial, and industrial structures. ISO Ratings range from 1 to 10. A rating of 1 defined as being the highest degree of protection and 10 the lowest degree of protection. Spotsylvania County has two ISO ratings. These ratings include an ISO Rating of 5 for 78% to 80% of the urban and rural area. There are several pockets of development within the County which have an ISO rating of 10. Over time as new fire stations come on line and some are repositioned throughout the county, many of the County's areas which have an ISO rating of 10 will be improved upon because of decreased distance and resultant increased response times. The average response time in the rural and urban district for the past three quarters of fiscal year 2006 is 11.04 and 7.49 minutes respectively.~~

Fire, Rescue, and Emergency Management services are provided in the County through a combination department of career and volunteer staff under the direction of the County's Fire Chief. The Fire and EMS Commission, is an advisory body consisting of career and volunteer organizational leaders and a citizen representative to provide recommendations to the Board of Supervisors on fire and EMS related issues.

County facilities include ten county fire and EMS stations with a minimum of two pumpers and two EMS units at each station. Additional equipment is assigned based upon the special needs of the first response area of each station and the staffing available for that station. County career staff provides daytime coverage Monday through Friday from 4:40 am to 6:00 pm; while volunteer staff provides coverage on nights and weekends using in-station and tone response coverage (volunteers are off-site and respond to calls via paging system.). The County has mutual aid agreements with its adjoining Counties and City. These agreements benefit the citizens and businesses of all localities to ensure the closest station, regardless of jurisdictional boundaries, is a first responder to mitigate or support the call for service.

Level of Service is evaluated through multiple means. The alpha measure of service is response time but response time is driven by several factors. The primary factors are station location, equipment availability and staffing levels and availability. The last two can also be defined as station/unit capacity. The County's target response times are 6 minutes from time of dispatch to first on scene in urban areas and 8 minutes from time of

dispatch to first on scene in the rural areas. These goals align closely with the National Fire Protection Association's response standards which are designed to reduce the chances of clinical brain death in emergency medical situations and/or to ensure timely intervention to extinguish or control a fire before it reaches its flashover capacity.

For long-term planning, the County can be served by utilizing the factors of population and geography. The County currently has 10 stations serving a population of approximately 120,000; or one station for every 12,000 people (1:12,000). Surrounding jurisdictions have lower station to citizen ratios ranging from 1:6,875 to 1:10,144 with an average ratio of 1:9,755. FREM staff is recommending the adoption of a 1:10,000 ratio for the County for long-term planning purposes and for utilization in proffer guidelines. The County has also used and staff recommends, that the County continue to use a geographic goal of having all rural land area in the County be within 5 road miles of a fire and rescue station and all urban land area be within 3 road miles of a station. The Insurance Services Office (ISO) evaluates localities on their geographic coverage of their stations because travel distance from a station to an incident location is a strong contributor to response times. ISO ratings range from a Class 1 to 10 with a Class 1 rating being the highest (best) and a 10 rating being the lowest rating (worst). The County currently has a split ISO rating of 5/10 due to areas of the County being outside the 5 mile radius target. Both of these long-term planning factors indicate additional stations are an immediate need of the County.

To meet more immediate planning needs related to the location of a new or replacement stations or the assignment of additional staff and/or equipment, FREM staff recommends the use of call volume and station/unit capacity. Based on the current minimum equipment assignments and related staffing, a station capacity of 2,500 calls per year is being used by FREM staff. By monitoring call volume against station capacity, FREM can increase its response reliability – the likelihood that a station unit will be available to respond to every call for service in their stations first due area. Currently two of the County's ten stations (Fire and Rescue Stations 4 and 6), are operating above the recommended 2,500 station capacity.

GOAL 9: ENSURE ADEQUATE FIRE PROTECTION RESPONSE AND EMERGENCY MEDICAL SERVICES FOR THE COUNTY'S RESIDENTS, BUSINESSES, AND TOURISTS.

Policies to achieve this goal include:

- 9.1 Establish the following Level of Service Standards for fire and emergency medical services:
 - a. ~~Maintain and improve upon the ISO Rating of 5 in the urban and rural areas of the County.~~

- b. ~~Reduce those pocket areas within the County which have an ISO Rating of 10 through the repositioning of fire stations.~~
- a. Respond to 90% of all fire and emergency medical service incidents within 6 minutes of being dispatched when the incident is located in the urban area.
- b. Respond to 90% of all fire and emergency medical service incidents within 8 minutes of being dispatched when the incident is located within the rural area.
- c. Achieve a 7-minute average countywide response time for 90% of the county's incidents.

9.2 Monitor, assess, and if applicable, recommend new response zones every two years to align call volume with station/unit capacity in order to maximize the response reliability of every station.

Sources: 2005 Spotsylvania County Budget
2006 Fire Commission

SCHOOLS

The Spotsylvania County Public School System is a full service program for grades K-12. In addition, vocation education, programs for gifted students, special education, and alternative education opportunities are provided. The system consists of ~~twenty-eight~~ **thirty-three schools: seventeen elementary schools, seven middle schools, five high schools, one career and technical center, one Autism center, one special needs academy, and the John J. Wright Educational and Cultural Center (for Headstart, Pre-School, and Secondary Alternative Education).** School enrollment for the ~~2005-06~~ **2008-2009** school year was ~~22,955~~ **24,197**, a decrease of 888 **193** students, or 4.0% **-0.79%** over the September ~~2004~~ **2007** enrollment of ~~22,067~~ **24,390** students.

For ~~2005/2006~~ **2008-2009** school year, elementary school enrollment was at 97.9 **82%** of capacity, middle schools were at 99.6 **91%** and high schools are at 94.8 **95.5%**. However, the number of schools at or over capacity by permanent seat includes ~~5~~ **1** elementary school, ~~5~~ **1** middle school, and ~~1~~ **1** high school.

Issues that continue to be of utmost concern are: providing additional capacity at existing schools through additions; and ensuring new school locations maximizes expected build out capacity.

GOAL 10: ENSURE SCHOOL CAPACITY IS IN EQUILIBRIUM WITH THE EXPECTED INCREASE OF STUDENTS FROM RESIDENTIAL DEVELOPMENT.

Policies to achieve this goal include:

10.1 Ensure a timeliness standard that schools are scheduled and fully funded within the first three years of the Capital Improvements Program (CIP)

10.2 Expand permanent seat capacity at existing schools as the first response to student growth rather than construct new schools or realign school attendance zones

10.3 The impacts to school facilities resulting from new residential development should be mitigated through the use of the Proffer System and conditions of approval.

10.4 The County may consider reducing densities, phasing development over longer periods of time, or employing other appropriate strategies permitted by law that increase supply or decrease demand so as to avoid or reduce to acceptable levels the fiscal and physical impacts of the contemplated development on school facilities. .

10.5 Where feasible, elementary and middle schools should be located within or on the periphery of residential neighborhoods.

10.6 Student class sizes by type of school should not exceed the following thresholds:

Type of School	Class Size
Elementary	
Special Ed (self contained)	10 <u>8 VDOE formula</u>
Pre-K <u>Classrooms</u>	18
Kindergarten <u>Classrooms</u>	20 24 VDOE formula
Grades 1-2 <u>Classrooms</u>	22 24 VDOE formula
Grades 3-5 <u>Classrooms</u>	23 25 VDOE formula
Middle	25
Special Ed (self contained)	<u>8</u>
<u>English Classrooms</u>	<u>24 VDOE formula</u>
<u>Academic Classrooms</u>	<u>25 VDOE formula</u>
High School	25
Special Ed (self contained)	<u>8</u>
<u>English/Arts Classrooms</u>	<u>24 VDOE formula</u>
<u>Academic Classrooms</u>	<u>25 VDOE formula</u>

<u>Music, Health, Aux. Gym</u>	<u>30 VDOE formula</u>
<u>Main Gymnasium</u>	<u>60 VDOE formula</u>
<u>Vocational Labs</u>	<u>20 VDOE formula</u>

10.7 The following permanent seat capacity and acreage size requirements by school types should apply:

School Type	Capacity	Acreage
Elementary	735-900 <u>735-936</u>	Not to exceed 35
Middle	800-900 <u>800-948</u>	Not to exceed 80
High School	1,500-2,000	Not to exceed 120

10.9 The LOSS for schools is based upon the 100% enrollment to capacity levels based on permanent seats by type of school: /

Type of School	Capacity
Elementary	100% <u>overall 83%</u>
Middle	100% <u>overall 91%</u>
High School	100% <u>overall 95.5%</u>

10.9 Where possible, seek to cluster schools together to take advantage of benefits derived from economies of scale such as shared facility or athletic field use.

Sources:

2005/06 Spotsylvania County School – District Capital Improvement Plan
 Spotsylvania County Comprehensive Plan, 2002
 2005 Comprehensive Annual Financial Report
 2006 Balanced Scorecard Report to BOS
2010-14 Spotsylvania County Schools Capital Improvement Plan
Spotsylvania County Comprehensive Plan Draft, 2007-08

WATER UTILITIES

Spotsylvania County is the sole provider of water and sewer service within the Primary Settlement District of the County.

The County Water Utility System consists of: the Ni River Water Treatment Plant (WTP) and reservoir; Motts Run WTP and reservoir with an intake on the Rappahannock River; and

Hunting Run Reservoir with an intake on the Rapidan River. The conveyance lines consist of 120 miles of piping involving five individual pressure zones.

The County provides for an average daily flow of 150 gallons of potable water per capita per day of total population served in conjunction with a design flow peaking hour factor of 2.75.

GOAL 11: PROVIDE SAFE AND AFFORDABLE WATER TO THE CITIZENS OF SPOTSYLVANIA COUNTY.

Policies to achieve this goal include:

11.1 Meet on a yearly average basis 100% of the days that the water utility is in full compliance with maximum contaminant levels and treatment techniques mandated by the National Primary Drinking Water Regulations.

11.2 Limit water collection system capacity failures to less than 30 breaks per 100 miles of pipe annually.

11.3 Unplanned disruptions of water service per 1000 customers should be as follows:

Duration (hrs)	Per 1000 customers
0-4 hours	<20
4-12 hours	<15
>12 hours	<2

11.4 In designing the system capacity, **Developers should meet** the following water demand flows.

Zoning District	Unit	Measurement
Residential	200	Gallons per day (gpd) per connection
Commercial 2	625	gpd/acre
Commercial 3	1000	gpd/acre
All other Development		Documented water demand projections

11.5 The design operating pressure range for Spotsylvania County should be between 45 pounds per square inch (psi) and 60 psi

11.6 The Effective Finished Water Storage for the County should equal the Required Storage by the Virginia Department Health

11.7 The following residential fire flow requirements should pertain to One and Two Family Dwellings based upon distance between buildings:

Distance between Buildings	Fire Flow gallons per minute (gpm)	Duration (hours)
Over 100	500	2
31-100	750	2
11-30	1,000	2
>11	1,500	2

11.8 The following nonresidential fire flow requirements should pertain to Zoning Districts:

Zoning Type	Fire Flow (gpm)	Duration (Hours)
I1	2000	3
I2	2,000	3
C1	1,750	2
C2	2,500	2
C3	3,000	3

11.9 Limit on an annual basis the percentage of produced water that fails to reach customers and cannot be accounted for through authorized usages to no more than 15%. %

SANITARY SEWER SYSTEM

The Spotsylvania Sanitary Sewer System consists of three treatment plants: Massaponax Waste Water Treatment Plant (WWTP) with a 14 mgd capacity; FMC WWTP with a 4 mgd capacity; and the Thornburg WWTP with a 345,000 gpd capacity. There are four major interceptors that are defined by the drainage basins they serve: Massaponax Creek, Hazel Run, Deep Run, and Long Branch. The Massaponax WWTP is by far the largest treatment facility with the most advanced tertiary treatment process in the system. The Massaponax WWTP has a Nitrogen and Phosphorous concentration of 4.70 and .47 respectively, which must be reduced to 4.00 and .3 by 2010. The FMC WWTP has a phosphorous concentration of .13 and is within the required .3 concentration.

Current county standards assume an average dry weather demand flow of 200 gallons per capita per day per connection account. To provide for peak flows, this average flow is

multiplied by a peaking factor (a value of 2.5). The total design flow is arrived at by adding to the peak design flow an allowance for Inflow and Infiltration (I / I) into the sewer system. Current County standards assume an I/I allowance of 50%. Consequently, a 300 gpd/connection accounts for variations in residential demands and the I & I additions and is used for sanitary sewer design.

GOAL 12: PROVIDE SAFE AND AFFORDABLE WASTEWATER TREATMENT TO THE CITIZENS OF SPOTSYLVANIA COUNTY WHILE PROTECTING THE ENVIRONMENT.

Policies to achieve this goal include:

12.1 Meet or exceed on a yearly basis 90% of the days that the wastewater treatment utility is in full compliance with the effluent quality standards contained in the Virginia Pollution Discharge Elimination System (VPDES) permits for each individual facility discharge.

12.2 Storm sewer overflow (SSO) occurrences should be limited as follows:

Type of Weather	Per 100 miles of pipe
Dry	<20
Wet	<10

12.3 Limit wastewater collection system capacity failures to less than 15 breaks per 100 miles of pipe annually.

12.4 A figure of 300 gallons per day per connection for residential demand should be used for designing the sanitary sewer system.

Sources: 2002 Water/Sewer Master Plan; Utilities 2008 Scorecard Data

LOSS ADMINISTRATION

Establishing LOSS's is the first step towards defining what the community can afford and ensuring growth mitigates its impacts on deficient facilities and services. The second and most important step is monitoring existing LOS and program planning future facilities and services

to LOS deficiencies in the Capital Improvements Program. Consequently, each Department responsible for a facility and/or service which has existing and adopted LOSS's should file a report annually to the County Administration for submittal to the Board of Supervisors. Each annual report should elaborate on the progress related towards attaining the adopted LOSS and propose a new LOSS if the existing LOS meets or exceeds the adopted LOSS.
