

**TABLE 2-13
Employment-Based Land Demand for Rockingham County
1999 - 2020**

Factor	Combined Rockingham-Harrisonburg Area (2004 Comprehensive Plan Data)				Rockingham County * 2005 Annual Review Data			
	Office	Retail	Warehouse	Manufact'g	Office	Retail	Warehouse	Manufact'g
Employment (No. of jobs)								
1999-2010	4,130	1,980	300	2,120	2,152	486	208	2,291
2010-2020	3,520	1,370	160	1,110	2,561	1,064	248	2,726
Total Added 1999-2020	7,650	3,350	460	3,230	4,713	1,550	456	5,017
Square Feet Per Job	250	400	1,000	600	250	400	1,000	600
Building Demand (square feet added to existing)								
1999-2010	1,032,500	792,000	300,000	1,272,000	538,000	194,400	208,000	1,374,600
2010-2020	880,000	548,000	160,000	666,000	640,220	425,736	247,520	1,635,774
Total Added 1999-2020	1,912,500	1,340,000	460,000	1,938,000	1,178,220	620,136	455,520	3,010,374
Floor Area Ratios**	0.22	0.25	0.30	0.30	0.22	0.25	0.30	0.30
Land Demand (acres)								
1999-2010	108	73	23	97	56	18	161	104
2010-2020	92	50	12	51	66	395	19	124
Total Added 1999-2020	200	123	35	148	122	57	35	228

Source: Herd Planning & Design, Ltd.

Notes:

- * Assumes same proportion as in 1999 (50%).
- ** Floor Area Ratio is the ratio of the number of square feet in building floor area to the number of square feet of land on site.
Land demand rounded up to nearest acre.
Retail equals retail trade sector; warehouse equals wholesale trade sector; manufacturing equals manufacturing sector; and office equals T&U, financial institution & real estate, and service employment sectors.
Data in "Rockingham County" columns adjusted as part of 2005 Annual Review

Insert Fig. 2-17. Existing Zoning Map

Land Use and Urban Design Strategies, Policies and Actions

Goal 6: Achieve a Balance of Compatible Land Uses and Communities in which people can live, work and play.

Strategy 6.1 Achieve efficient and convenient land use patterns within community development areas.

Policies and Implementation Actions:

- 6.1.1. Monitor land consumption rates to determine if the supply of land is adequate.
- 6.1.2. Develop detailed phasing plans for community development areas and adopt them conceptually in the Comprehensive Plan. Any future adjustments to the boundaries of the Urban Growth Area should be phased, based upon land demand and planned infrastructure. Further, development within the Growth Area should be phased in accord with the extension of utility service. Individual development projects can also be phased in accord with a proffered phasing plan established in conjunction with a conditional rezoning approval.
- 6.1.3. Establish a process in the Plan for preparing detailed area plans for community development areas and for coordinating planning efforts with towns.
- 6.1.4. Use the capital improvements plan and zoning to promote compact, efficient development patterns.
- 6.1.5. Consider amending the Zoning Ordinance to allow new urban residential, commercial and mixed use districts to incorporate pedestrian-friendly, human-scale layouts for streets, lots and uses.
- 6.1.6. Implement Development Standards through efforts such as:
 - Highway Corridor Overlay Districts
 - Design Standards for Site Plans
 - Landscaping and Buffering Requirements
 - Road Standards for Residential Streets (to accommodate pedestrians and bicycles)
 - Proffer Guidelines as set forth herein
- 6.1.7. Establish procedures for regular reviews and updates of the Comprehensive Plan.

Strategy 6.2 Achieve coordinated development with adjoining localities.

Policies and Implementation Actions:

- 6.2.1. Work closely with the Rockingham Municipal League to pursue mutual benefits.

- 6.2.2. Develop phased growth areas around Towns.
- 6.2.3. Consult between localities when development plans will have impacts across boundaries.
- 6.2.4. Work with adjoining localities to plan for economic development.
- 6.2.5. Pursue cooperative service agreements with adjoining localities and seek action from the General Assembly for immunity from annexation. (See Strategy 12.4.)

Strategy 6.3 Locate 80% of new housing in compact growth areas served by community facilities as designated in the Comprehensive Plan.

Policies and Implementation Actions:

- 6.3.1. Provide community water and sewer in designated areas.
- 6.3.2. Consider requiring all dwellings in designated areas to connect to available facilities in residential districts, except existing dwellings that have adequate water and sewer service; amend the Zoning Ordinance and public utility policies to the extent allowed by State law.
- 6.3.3. Allow higher residential densities where suitable, as defined in the Comprehensive Plan, in mixed use centers with traditional design elements.
- 6.3.4. Develop cooperative agreements with Towns to provide services in areas mutually designated for development.
- 6.3.5. Monitor patterns of housing development and amend the Zoning and Subdivision Ordinances, if necessary, to restrict further unplanned development.
- 6.3.6. Consider establishing special service districts and/or community development authorities in order to provide higher levels of certain types of public services such as law enforcement, recreation and schools, for a defined geographic area. The higher service level is funded through an additional tax increment on the real property within the district.

Goal 7: Achieve a Range of Housing Types and Values to meet the needs of all income levels.

Strategy 7.1 Provide a variety of affordable housing alternatives.

Policies and Implementation Actions:

- 7.1.1. Promote development of below-median-value-housing through reduced setbacks and narrower lots for single family units and by promoting multi-family and mixed-use developments.
- 7.1.2. Periodically review the Zoning Ordinance to ensure that manufactured home parks have infrastructure equal in quality to other single family development.

- 7.1.3. Explore incentives to developers to include affordable units in their developments, including encouraging a range of densities and unit types within developments.
- 7.1.4. Continue to participate with the Harrisonburg Redevelopment Housing Authority to encourage home ownership by providing affordable housing for County residents.
- 7.1.5. Encourage public and private efforts to provide affordable housing and to rehabilitate substandard housing stock, including housing trust funds, cooperative housing projects, transitional housing, volunteer efforts, self-help groups and apprentice programs.
- 7.1.6. Permit and encourage accessory dwelling units in lower density residential areas. Establish standards to ensure compatibility with neighboring properties, including limits on accessory unit size, impervious surfaces and requirements of owner-occupancy of the main dwelling.

Strategy 7.2 Provide rural housing opportunities that will not conflict with agriculture or threaten groundwater resources.

Policies and Implementation Actions:

- 7.2.1. Distribute information about septic system maintenance.
- 7.2.2. Investigate the feasibility of septic system and well inspections with fees.
- 7.2.3. Amend County regulations, in conjunction with the Health Department, to allow alternative waste disposal for existing lots.
- 7.2.4. Support voluntary community based assistance to complete plumbing in houses without it.
- 7.2.5. Encourage participation in low-cost loans to upgrade plumbing.
- 7.2.6. Evaluate the possibilities for clustered rural development using community package treatment plants; amend the Zoning Ordinance to provide standards.
- 7.2.7. Strengthen site development standards for manufactured homes (“mobile homes”) in order to increase the long term value and quality of such units, including ensuring that the density and lot sizes for manufactured units are the same as for conventional housing units.

Goal 8: Concentrate housing, commerce and public facilities in a mixed-use pattern within designated Urban Development Areas (UDA).

Strategy 8.1. Encourage higher density and alternative housing types that meet the requirements for the UDA mandated in the Code of Virginia (15.2-2223.1).

Policies and Implementation Actions:

- 8.1.1. Designate the UDA within established growth areas as required by the 15.2-2223.1 of the Code of Virginia.

- 8.1.2. Develop one or more new zoning districts for the UDA featuring traditional neighborhood design principles that will allow:
- a. Mixed-use neighborhoods including mixed housing types and values accommodating all residents and workers in the County;
 - b. Integration of residential, retail, office and commercial development with public spaces and open spaces;
 - c. A built environment that encourages and accommodates people living, shopping, visiting, and enjoying time in the UDA;
 - d. Development densities that improve rates of walking, bicycling and transit use;
 - e. Proximity to public infrastructure including utilities, services, parks and similar facilities;
 - f. Bicycle and pedestrian-friendly street and road design;
 - g. Interconnection of new streets with existing local streets and roads in a logical network;
 - h. Design features that accommodate and prepare for an aging population within the County;
 - i. Preservation of environmentally sensitive areas;
 - j. Opportunities to redevelop existing underutilized and previously developed land;
 - k. Satisfaction of requirements for stormwater management through the use of low impact techniques such as bio-retention areas, rain gardens, gravel wetlands, and pervious pavements;
 - l. Vehicular parking accommodated without dominating the streetscape or landscape;
 - m. Reduced front and side yard building setbacks; and,
 - n. Narrowed street widths and shorter turning radii at street intersections, according to VDOT Secondary Street Acceptance Requirements (SSAR).

Strategy 8.2: Encourage a mixture of uses within the UDA in a pedestrian-oriented and pedestrian-friendly manner.

Policies and Implementation Actions:

- 8.2.1. Develop a small area plan for the UDA that focuses on design, arrangement, and infrastructure while maximizing flexibility of uses.
- 8.2.2. Develop a mixed use zoning classification which incorporates flexible land use guidelines, allowing residential densities of 4 dwelling units per acre or greater and commercial floor area ratios of 0.4 per acre or greater, with specific performance standards in the areas of:
- a. Access management
 - b. Shared parking
 - c. Landscaping
 - d. Architecture and Urban Design
 - e. Pedestrian and bicycle access
 - f. Low impact storm water management

- 8.2.3. Ensure the UDA promotes pedestrian activity by:
- a. Making automobile-related uses compatible with pedestrian activity
 - b. Creating on-street parking
 - c. Placing structures such that parking areas are located to the rear of structures
 - d. Providing that the area between buildings and the street be used for outdoor dining and other, similar pedestrian and public oriented uses
- 8.2.4. Within all or along access ways of significance, allow any combination of residential, office, and retail structures and use within the same structure, provided the structure meets design and building code requirements.

Strategy 8.3: Arrange land use designations so that the UDA has distinct and discernable boundaries and creates a sense of place.

Policies and Implementation:

- 8.3.1. Promote infill development, including higher density, mixed-use development, within the UDA.
- 8.3.2. Encourage the reuse of existing structures where appropriate.

6. Transportation

Summary of Background and Analysis

Public Transit

City, JMU and shuttle service into Rockingham County is provided by the City of Harrisonburg's Public Transportation Department. Harrisonburg Transit is owned and operated by the City of Harrisonburg. Funding is provided by James Madison University, VDOT, US Department of Transportation and the City of Harrisonburg. Routes are intended to serve both the citizens of Harrisonburg and JMU.

This cooperative system provides service to JMU commuter students, resident students and citizens of Harrisonburg primarily with the main transfer point being Godwin Hall. The City service operates fifteen routes when JMU is in session, six routes during spring and summer sessions and five routes during August. Effective May 7, 2001, transit trolley service was initiated using two buses.

Rockingham County shuttle/on-demand service is provided on Tuesdays and Thursdays to the Mennonite Community, Dayton and Bridgewater beyond the City limits using one bus three hours a day. Few Bridgewater or Dayton residents use this service. It was initiated in 1982-1983 to eliminate buggies from the City street system and it has achieved this objective.

Currently, approximately 9,000 passengers ride the City, JMU and shuttle service system each day using sixteen to eighteen buses with 8,500 being JMU students. JMU now pays the City \$310,000 annually and students can ride free with proper identification. Only 500 non-JMU riders use the system each day.

Transit Issues

- Without County funding, additional bus service will probably not be extended into the County
- The Dayton shuttle routes into the County were intended to eliminate buggies from the City street system
- Occasionally, requests are received from Broadway and Elkton residents for bus service
- Few Bridgewater/Dayton residents use the special Dayton shuttle service

Bicycles and Pedestrians

As new development occurs in Rockingham County, there will be an increasing need to provide non-automotive travel linkages between County and City of Harrisonburg activity areas. This emerging issue is best illustrated by the current bicycle situation in the County. As recreational and commuter bicyclists more frequently use secondary roadways, which seldom have sufficient shoulder width but are serving increasing

traffic volumes, more hazardous conflicts and accidents will occur between motor vehicles, bicyclists and buggies in the Mennonite Community. Issues and opportunities include the following:

1. Existing two-lane roadways such as Keezletown Road (925) can be extremely dangerous for bicyclists. The combination of no shoulders and fast moving vehicles causes serious conflicts and increasing risk of accidents.
2. A few roads need to serve both bicyclists and buggies since they serve the Mennonite community. This shared use of the roadways complicates the safety situation where the roadways have no shoulders such as VA 257 west of Dayton.
3. As the City adds sidewalks and bicycle lanes to roads like Port Republic Road, it will stimulate JMU and local resident bicycle ridership.
4. New subdivisions built in the County create a need to link such communities with bikeways and/or paths to avoid the use of the secondary roadway system for neighborhood to neighborhood trips. Wide residential streets without sidewalks or bike lanes will not provide long-term safety for pedestrians or bicyclists.
5. New limited access roadway facilities could create barriers to bicyclists by making it difficult if not impossible for bicyclists (and pedestrians) to cross such facilities.
6. A change in land use regulations to allow more mixed-use developments would provide employment opportunities closer to residential areas and reduce the need for using the automobile for home to work trips.
7. Coordination with any future City and County recreation facilities is important to integrate bike and pedestrian activity.

Buggy Access

The Old Order Mennonite Community is located mainly in the area west of Dayton and Bridgewater with the principal concentration of residents located between US 33 and VA 257. The primary buggy access routes are to the Mennonite churches, where as many as 500 buggies use the roadway system to move their families between home and church. Other buggy access routes, via VA 42 and 726, gain access to the Super Wal-Mart store located on VA 42, which has hitching posts for buggies.

There are approximately 250 families and each family has two buggies. On a typical weekday, most families make one buggy trip, but on Sundays, two buggy trips could be made to church and to visit neighbors. Several weeks each year special events are held in the community such as relief center activities (to prepare and send food overseas) and to make soap/apple products which create a higher than normal amount of buggy traffic.

Buggy issues include:

1. The US 33 corridor is the most hazardous, followed by the VA 257 corridor and then the 701 corridor which connects US 33 and VA 42.
2. Buggies do not have sufficient weight to activate roadway traffic signal detectors but instead need motion detectors to activate cycle changes at traffic signals.

3. Current access to Bridgewater is via 738 with the 738/257 intersection being accident-prone. VDOT is considering extending 738 to 257 via a new alignment. Eight-foot (8) shoulders, either paved or treated, are preferred for buggies which travel 8 to 10 mph whereas motor vehicles travel 40 to 50 mph.
4. There was a fatality on US 33 when a teenage motor vehicle driver tried to pass a buggy.
5. Buggy trips occur 2/3 during daylight hours and 1/3 during night time conditions. Amber flashing lights and triangular warning symbols are used to improve buggy visibility.
6. Buggy travel within the Mennonite sector bounded by US 33, 257 and 701 is safe and convenient via the existing secondary roadway system within this sector. Buggy travel outside this sector via 257, 33 and 701 is not as convenient or safe.
7. Buggy drivers consider total trip mileage important because of the impact long trips have on the horses. Shortcuts via rural low volume roads are preferred.
8. Since secondary Route 701 is so important for access to the east of VA 42, perhaps VDOT could extend 701 east to US 11 via a route north of Dayton.
9. Peak buggy travel occurs on Sundays between 9-10 AM, 11:30 AM-12:30 (noon), 7-9 PM and through the evening; on weekdays before 9 AM and after 4 PM for barn work and after 6 PM to Wal-Mart.
10. Buggy access to Wal-Mart could be achieved by having a new buggy access route built between 701 and Wal-Mart. Farmland would be impacted but buggy/vehicle conflicts would be significantly reduced on VA 42 and 701.

Rural Transportation

As suburban and rural growth continues in Rockingham County, there will be increasing pressure to provide some sort of public transportation service to County residents especially for persons with disabilities, senior citizens, disadvantaged persons and others with special needs. Since 1996, a nonprofit organization called CART has provided such a service primarily to Rockingham County residents. Nearly 70% of the trips are ten miles or more. Patron ridership survey results indicate that 69% are elderly, 17% are low income and 14% are disabled. Monthly Community Association for Rural Transportation (CART) patronage has been increasing with ridership in May 1999 of 180 trips versus 337 in May 2000.

The Roadway System

The Harrisonburg Area Transportation Study was developed, under the direction of the Virginia Department of Transportation, in an effort to address short- and long-range traffic concerns of the City of Harrisonburg, and a radius of five miles around the City in Rockingham County. The short-range component identified traffic issues that can be addressed without the need for large-scale design efforts; searching for funding sources; and preparing additional planning, study, or permit-type documents. The long-range component addresses traffic issues, of a larger scale, to the year 2015.

HATS is the result of VDOT's roadway network modeling, coupled with the recommendations of the Rockingham County and City of Harrisonburg Comprehensive Plans.

The City of Harrisonburg endorsed the HATS plan in 1996. On January 8, 2003, the County endorsed HATS as a conceptual plan for VDOT to use in engineering transportation improvements and securing funding. The HATS plan is part of the transportation maps that are included in this Comprehensive Plan.

Technical Study for Southeast Bypass

VDOT is studying the need for a Southeast Bypass based on updated 25-year projections.

Other Issues

I-81 Interchange Design at Exit 243 in Pleasant Valley. Since modification of the existing interchange at exit 243 will incorporate a future extension west to VA 42 in the County and also provide I-81 access for the approved, planned East-West Connector road, the design of this interchange to accommodate both City and County growth traffic is critical.

Sub-area Access Between I-81 Exits 240 and (New) 243 is Important. Potential post 20-year growth for the County's industrial area between the 240 exit and the (new) 243 exit on I-81 causes the need for a detailed sub-area access plan to insure that future roadway enhancements are not blocked by development which will occur in the next 20 years. In the interim period, new development site plans need to be carefully reviewed.

Secondary Roads Being Impacted by New Dispersed Subdivisions. The safety and peak period efficiency of the substandard roadway system is being jeopardized by the frequency of new access points for family and other new subdivisions.

Need to Account for Bicycle/Sidewalk/Buggy Facilities on All New Roadway Facilities. Bicycle, pedestrian and buggy needs must be incorporated into new highway plans by recognizing County, City and Town plans for such facilities and enhancing alternative forms of transportation.

Transportation Strategies, Policies and Actions

1.1.1.1.1 Goal 10. Preserve and Improve Free Flow of Traffic and Improve the Safety of the Road System.

Strategy 10.1 Give transportation safety issues priority in funding decisions.

Policies and Implementation Actions:

10.1.1. Adopt standards for rezonings that include road and bridge capacities as criteria for approval.

Strategy 10.2 In planning and designing the road system, consider public roads to be public spaces, which serve multiple public purposes in addition to carrying motor vehicles.

Strategy 10.3 Protect existing public investments in roads by:

- Coordinating land use commitments with transportation capacity,
- Defining and protecting potential future road corridors for long term needs; and
- Designing a transportation system that serves all modes (motor vehicles, bicycles, buggies and pedestrians) by locating roads, paths, lanes and sidewalks according to need.

Policies and Implementation Actions:

10.3.1. Prepare corridor development plans as elements of the Comprehensive Plan for major roads so as to foster a parallel road network to provide alternative routes to the arterial and primary road system to reduce the number, and control the location, of entrances.

10.3.2. Discourage proposed employment centers not in close proximity to existing or planned major roads.

10.3.3. Require building setbacks that reflect the ultimate right-of-way.

10.3.4. Require minimum separation of entrances in accord with the roadway classification and the adopted corridor plan.

10.3.5. Encourage the design of a road system to meet agricultural needs.

10.3.6. Design local streets to give priority to both vehicles and pedestrians.

10.3.7. Require traffic impact studies for major development proposals. The County will coordinate preparation of guidelines for development applicants in preparing traffic impact studies. Applicants will be required to analyze site access elements and to coordinate such findings with adopted County policy.

Strategy 10.4 Promote alternative modes to reduce loads on roadways.*Policies and Implementation Actions:*

- 10.4.1. Work with adjoining localities to extend bus service where practical
- 10.4.2. Designate community parking areas to facilitate ride-sharing.
- 10.4.3. Encourage the use of rail by industry, and deference to new industries, that use rail instead of solely trucks.
- 10.4.4. Encourage the viability and further development of the Shenandoah Valley regional airport.
- 10.4.5. Encourage the continued and further use of local rail facilities for business, industrial and passenger service, including tourism functions. Encourage the coordination of adjacent land uses to best facilitate the maximum use of the railroads.
- 10.4.6. Encourage initiatives for public transportation and transit alternatives put forth by private sector or community groups, including public/private partnerships.

Strategy 10.5 Bring greater resources to transportation planning and funding.*Policies and Implementation Actions:*

- 10.5.1. Continue to conduct joint annual review between the County and VDOT to evaluate traffic counts and patterns.
- 10.5.2. Conduct a review of six-year plans by the Planning Commission.
- 10.5.3. Continue to participate in the Harrisonburg-Rockingham Metropolitan Planning Organization.
- 10.5.4. Secure statements of intent to donate right-of-way prior to placing road projects on the six-year plan; adopt a policy and procedure as part of the Comprehensive Plan.
- 10.5.5. Maximize, when fiscally possible, the participation in the state revenue sharing program.
- 10.5.6. Share planning and costs with other jurisdictions when County road improvements have mutual benefits.
- 10.5.7. Solicit private financial participation in projects.
- 10.5.8. Require identification of initial and long-term transportation impacts associated with proposed developments; amend the Zoning Ordinance to require traffic studies as part of rezoning applications.
- 10.5.9. Continue to bring state attention to the need to develop a funding formula that recognizes the special needs of the County's agricultural economy.

Goal 11. Preserve/Improve Accessibility of Non-Motorized Traffic (pedestrians, bicycles, horses, buggies).***Strategy 11.1 Promote alternative non-motor vehicle modes to roadways. (Reinforces Strategy 10.4.)***

Policies and Implementation Actions:

- 11.1.1. Encourage the use of bicycles in the design of new roads and developments.
- 11.1.2. Require pedestrian access and circulation in development areas.
- 11.1.3. Develop a greenway plan identifying priority trails, connections, opportunities, and constraints.

7. Public Facilities*Summary of Background and Analysis*

Public facilities are the structures and buildings that local governments provide to house the public activities that are necessary to support community life and to provide the local government services that are required by state and federal governments, as well as those that are desired and/or needed by local citizens. Public facilities are important elements in the County's effort to plan its future, because they have a major influence on the local population in several important ways:

- Pattern and location of development - Public facilities, especially water and sewer facilities, affect patterns of development and the capacity of land to support development.
- Economic development - The quality, design and location of key public facilities can either enhance or undermine efforts to attract and foster job growth, income levels and general economic prosperity.
- Natural environmental and historic resources - The quality, design and location of key public facilities can also either enhance or undermine efforts to preserve important environmental resources.
- Overall quality of life as perceived by residents and businesses - The quality and extent of public facilities is a major factor in how residents perceive their overall quality of life.

Water and Wastewater Systems

Water supply and wastewater treatment services play a major role in shaping the pattern of land use and development in the County. These services are provided to County residents in several ways:

County Public Water. The County owns and operates a water treatment facility in the McGaheysville area, called the Three Springs Water Treatment Plant that is supplied by two wells, each of which produces 2,550 gallons per minute. The water is pumped through a main water distribution line along Routes 33, 686 and 704, to Pleasant Valley and then across I-81, and along Route 11 South to Mt. Crawford. A main

distribution line also extends east along Route 996 through McGaheysville. It serves various residential and commercial developments adjacent to these main lines. The Three Springs plant has a treatment capacity of 3.3 mgd; the system has a storage capacity of 4.5 million gallons per day (mgd) and a current usage of about 1.0 mgd.

North of Harrisonburg, along North Valley Pike, the County has constructed sewer and water lines. Water is purchased from the City. The County and City also have a water purchase agreement in place which provides that either jurisdiction can purchase water from the other in time of need. The County and City water system is also interconnected with the water systems of Dayton and Bridgewater which allows transfers during emergency situations.

County Public Sewer. The County provides wastewater treatment services through two systems that are currently separate. The County wastewater treatment plant south of McGaheysville provides secondary treatment and discharges into the South Fork of the Shenandoah River. It has a current treatment capacity of 0.187 million gallons per day (mgd) and an average use of about 0.61 mgd, with 390 connections. The collection lines from the plant serve the McGaheysville, Montevideo, and Donnagail areas. The County also has a system of sewer lines that serve many of the residential developments south of Route 33 in the Massanetta Springs and Lakewood areas. Several pump stations are used to pump the effluent into the City's collection system which in turn flows to the HRRSA regional treatment plant. Residents and businesses along a portion of Route 11 North, many of whom have had problems with septic drainfields, will be served by sewer lines which, in turn, will flow through the City and on to the Harrisonburg-Rockingham Regional Sewer Authority.

Harrisonburg-Rockingham Regional Sewer Authority (HRRSA). The Authority was formed by the County, the City and the Towns of Dayton, Bridgewater and Mt. Crawford in 1970. The wastewater treatment plant, in operation since 1976, serves the residences and businesses of the Towns and City and portions of the County near Harrisonburg. The plant currently serves about 14,000 customers.

The actual average use of the plant is about 10.5 mgd or about 65% of operational capacity, meaning that approximately 5.5 mgd of capacity is available for additional users. (It should be noted that actual treatment levels fluctuate widely on a seasonal basis due to wet or dry conditions). The Authority has no current plans to expand the treatment plant beyond its current capacity. The plant and its collection lines serve the City of Harrisonburg, the Towns of Dayton, Bridgewater and Mt. Crawford, and portions of the unincorporated area of the County that lie between those four jurisdictions.

Town Public Water and Wastewater Systems. The Towns of Elkton and Grottoes each has its own wastewater system. The Towns of Broadway and Timberville share a wastewater system, located east of Timberville. These four Towns, as well as Dayton and Bridgewater, each owns and operates its own water supply system.

Independent Community Water and Wastewater Systems. Dozens of small, private water and sewerage systems are located in the rural areas of the County which serve private businesses, residential subdivisions, and manufactured home parks, including the Massanutten Public Service Corporation. The Massanutten Public Service Corporation is the largest entity that provides water and sewer services in the County, providing water and wastewater services primarily to Massanutten and Woodstone Meadows.

Individual Wells and Septic Drainfields. . These facilities are not public services, per se, since such facilities are mostly privately owned and maintained by individual property owners. The majority of County residents have these types of water and wastewater facilities. However, the overall trend in recent years is that a greater percentage of new housing is being served by public water and sewer than in the past. Based upon County data for the years 1993-1997, approximately two-thirds of new single family dwellings were approved for sites where public water and sewer were available, as opposed to private wells and septic systems. However, only one-quarter of new placements of manufactured homes were approved for sites where public water and sewer systems were available. The result is that, overall, half of all new dwellings during this period were approved for sites where public water and sewer were available.

Solid Waste and Recycling Management

The County owns and operates a landfill facility on a site of approximately 100 acres at the southeast edge of the City of Harrisonburg. The County estimates that, with the opening of a new phase, the landfill facility itself has a current operational capacity of about 10 years, and future expansion of new cells on the existing site will provide a capacity of about 50 years. Recycling facilities are located at the landfill and the four County Refuse and Transfer Stations. These stations are located on Bergton Road, Mayland Road, Waggys Creek Road, and Old Spotswood Trail. The County takes refuse and recycling only from customers in Rockingham County and Harrisonburg, and does not import trash or recycling from other localities.

Public Schools

The County currently owns and operates a public school system consisting of 14 elementary schools (grades K-5), four middle schools (grades 6-8) and three high schools (grades 9-12).

In addition, the Massanutten Technical Center and the Dayton Learning Center are operated jointly by the County and the City of Harrisonburg. The City also owns and operates its own school system, independent of the County.

During the decade of the 1980's, the County replaced two elementary schools, converted a middle school to an elementary school, converted a high school into a middle school and built a new high school.

During the past decade, the County made several more major facility improvements. The County:

- Built a new Broadway High School in 1997,
- Converted the old Broadway High facility to J. Frank Hillyard Middle School in 1998,
- Converted the former middle school to John C. Meyers Elementary School in 1998, and
- Built three new elementary schools:
 - South River, which replaced Grottoes Elementary School, in 1994,
 - Mountain View, to the west of Harrisonburg, was completed in 2000, and
 - Peak View, in the Penn Laird area, opened in 2001.

Further additions are also planned for Ottobine and Fulks Run Elementary Schools and Turner Ashby High School.

New high schools are generally designed for a student population of 1,000, with expansion capability of up to 1,300. New elementary schools are generally designed for an ultimate student population of 600. The actual capacities and enrollment levels vary due to the enrollment demands that have emerged in different parts of the County at different times.

The Table 2-14 summarizes the physical characteristics of the County’s public schools.

**TABLE 2-14
Rockingham County Public School Structures
2000-2001**

School	Year Constructed	Acres of Site ¹	Size of Building	Number of Classrooms ²	Design Capacity ³	Mobile Units	Gym Capacity	Auditorium Capacity
<u>High Schools</u>								
Broadway	1997	55	184,314	59 (6)	1,110		1,800	648
Spotswood	1979, 97	109	194,740	63 (8)	1,220		3,200	605
Turner Ashby	1989	54	176,945	53 (5)	1,032	8	1,800	640
Average HS		73	185,333	58 (6)	1,121			
<u>Middle Schools</u>								
Elkton	1957, 65	22	68,584	23 (1)	465		350	320
J. Frank Hillyard	1952, 59, 88	28	141,275	45 (4)	940		1,800	600
Montevideo	1950, 65	35	114,068	37 (5)	783		650	550
Wilbur S. Pence	1956, 59, 62, 00	20	144,470	61 (6)	1,189		750	650
Average MS		26	117,100	42 (4)	844			

TABLE 2-14 (Continued)
Rockingham County Public School Structures
2000-2001

School	Year Constructed	Acres of Site ¹	Size of Building	Number of Classrooms ²	Design Capacity ³	Mobile Units	Gym Capacity	Auditorium Capacity
<u>Elementary Schools</u>								
Elkton	1939, 72, 95	5	86,800	35 (9)	633		n/a	n/a
Fulks Run	1961, 76	9	21,139	9 (2)	162	8	n/a	n/a
John C. Meyers	1963, 76, 98	20	81,703	32 (2)	663		n/a	n/a
John Wayland	1966, 69, 85	25	72,004	34 (3)	591		n/a	n/a
Keezletown	1917, 34, 60	7	22,320	12 (3)	217	3 (1)	n/a	n/a
Lacy Spring	1989	20	54,235	22 (6)	400		n/a	n/a
Linville-Edom	1939, 93	6	24,663	13 (2)	230	2	n/a	n/a
McGaheysville	1934, 69, 95	16	62,363	25 (4)	442	3 (2)	n/a	n/a
Mountain View	2000	20	82,841	35 (6)	625		n/a	n/a
Ottobine	1958, 67, 78	7	20,781	11 (2)	196	6	n/a	n/a
Plains	1972	20	71,905	37 (3)	642		n/a	n/a
Pleasant Valley	1963, 67	17	54,559	27 (2)	468	5	n/a	n/a
South River	1994	19	61,775	26 (3)	455	4 (1)	n/a	n/a
Peak View	2001	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Average ES		15	55,161	24 (4)	440			

Sources: Personal interview with Dr. John Kidd, Superintendent of Schools; Herd Planning & Design, Ltd.

¹ Rounded to nearest acre

² Regular (special)

³ Student Cap

Enrollment Trends

During the past decade, the County's overall population increased by 10,243 people, or nearly 18 percent, from 57,482 to 67,725, while the public school enrollments increased by 1,497 students, from 9,206 to 10,703, an increase of 16.3%, closely matching the overall population growth. This reverses the trend of the previous decade which saw enrollments actually decline from about 10,000 in the 1979-80 school year (adjusted for annexation) to 9,096 in 1989-90, an effective decline of about 10 percent.

Enrollment Forecasts

The County forecasts enrollment on an annual basis, from September 30 to September 30 of each year. The Weldon Cooper Center for Public Service forecasts school enrollments for all localities in the state on a five-year basis. Rockingham County has found that these longer term forecasts are relatively good considering the uncertainty

of such time periods, but finds that its own short term forecasts are more accurate for the immediate upcoming year.

TABLE 2-15
Rockingham County Public School Enrollment Forecasts
2001 - 2006

Grade	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	% Increase 2001-2006
K	867	829	776	751	884	852	-1.7%
1	784	884	884	828	801	943	20.3%
2	838	776	857	857	803	777	-7.3%
3	841	830	788	870	870	815	-3.1%
4	863	847	822	780	861	862	-0.1%
5	870	848	854	829	786	868	-0.2%
6	835	878	867	873	847	804	-3.7%
7	842	858	887	876	882	856	1.7%
8	833	839	866	895	884	890	6.8%
9	889	924	926	956	988	976	9.8%
10	862	793	840	842	869	898	4.2%
11	741	824	745	789	791	816	10.1%
12	710	690	766	693	734	736	3.7%
Ungraded	39	29	29	29	29	30	-23.1%
Total Membership	10,813	10,847	10,908	10,868	11,031	11,123	2.9%

Source: *Weldon Cooper Center for Public Service; Herd Planning & Design, Ltd.*

Parks and Recreation

Rockingham County Department of Recreation and Facilities. The County's Recreation Commission was established by the Board of Supervisors in 1970. It consists of 10 members (two from each district), appointed by the Board. The County Department of Recreation and Facilities has a full-time staff of eight and part time help of more than 100. In addition, over 200 volunteers provide program assistance for youth league teams.

The Department manages five major County park facilities and manages programs and activities that use other local and regional facilities. County facilities include:

Albert Long Park. This is a six-acre park located on Route 710 (Reservoir Street) off of Port Republic Road. The land was donated to the County in 1970. The park has a little league baseball field and a picnic shelter.

Bergton Community Recreation Center. This five-acre area was formerly the Bergton Elementary School, and became a Recreation Department facility in 1988. It has playground equipment, basketball, volleyball, a softball field, picnic tables, picnic shelter and horseshoe pits. It also houses an extension of the Rockingham County Public Library.

Singers Glen Community Recreation Center. This facility was once the old Singers Glen Elementary School. Outside facilities include a baseball/softball field, playground, and picnic tables. The building includes a gymnasium.

J. Frank Hillyard Field. This five-acre site is located in the Town of Broadway and used to be the old Broadway High School baseball field. It includes a softball field, horseshoe pits, picnic tables, swings, and a basketball court.

Broadway Neighborhood Park. This is a three-acre federal surplus property given to Rockingham County in 1988, located on Route 803 near Linville Creek Church of the Brethren. The site has a picnic shelter and horseshoe pits and a day care center.

Like many largely rural areas, the demand for parks and recreation facilities has traditionally been modest in Rockingham County, and thus the County has been able to meet the demand by reacting to needs and opportunities as they arise and by making very effective use of volunteer efforts. The County does not have a recreational facilities plan per se, nor does it have formal standards for levels of service.

Rockingham County Public Schools. The County Recreation Department has cooperative arrangements with the County school system and uses the recreational facilities at all of the County schools for parks and recreation programs.

Ruritan Clubs. The County Recreation Department uses a number of Ruritan Club softball and baseball fields for youth and summer leagues.

Town and City Recreation Facilities. Some of the Towns have their own, Town-owned recreation facilities. Elkton has the five-acre Riverside Park with picnic areas and the Stonewall Jackson Memorial Park which has two ballfields, tennis and basketball courts, play area and picnic area. Timberville has a 12.5-acre Town park with a swimming pool, tennis and shuffleboard courts and picnic area. Bridgewater has Cooks Creek Arboretum, Wildwood Park, Oakdale Community Park, Harrison Park and Lawn Party Grounds, and several pocket parks. The City of Harrisonburg has a variety of park facilities, including Purcell and Hillandale Parks that are available to County residents, sometimes on a fee basis. The County and City do not now coordinate or share programs and facilities, per se, but the two departments do work together on the spring parade and other events.

Upper Valley Regional Park Authority. The County participates with neighboring jurisdictions in the Regional Park Authority which owns two facilities near the

southern border of Rockingham: *Natural Chimneys Regional Park*, in northwestern Augusta County, and *Grand Caverns Regional Park*, in Augusta County adjacent to Grottoes.

Paul State Forest. Located on Clover Hill Road near Ottobine, the Forest is used by hikers and science students.

Lake Shenandoah. This site includes a 37-acre lake and 26 acres of surrounding land, owned by the Virginia Department of Game and Inland Fisheries, and provides fishing, a walking trail, and picnic space.

George Washington National Forest. The Forest, managed by the U.S. Department of Agriculture, provides hiking, camping, hunting, fishing and biking opportunities.

Shenandoah National Park. The Park is managed by the U.S. Department of the Interior and offers hiking, camping and scenic driving on the historic Skyline Drive.

Fire and Rescue Services

Fire protection in Rockingham County is provided by ten volunteer fire companies at eleven stations. Rescue service is provided by seven volunteer rescue squads at eight stations. Fire and rescue services are managed and coordinated by the Rockingham County Department of Fire and Rescue, which includes a training division, prevention division, a regional hazardous materials response team, an emergency dive and recovery team, and emergency management, in addition to the volunteer companies.

As of July 2001, there were approximately 400 fire and emergency medical service (EMS) volunteers and 35 career fire/EMS staff in the County. (Career personnel have increased from 23 in 1998). In 2000, the County's fire and rescue personnel responded to approximately 3,931 EMS calls and 2,533 fire calls.

Volunteer Fire Companies

- Bridgewater
- Clover Hill
- Grottoes
- Elkton
- Hose Company #4
- Port Republic Rd. (substation of Hose Co. #4)
- Broadway
- Bergton
- Timberville
- Singers Glen
- McGaheysville

Volunteer Rescue Squads

- Singers Glen
- Bridgewater
- Clover Hill
- Grottoes
- Elkton
- Harrisonburg
- Broadway
- Bergton
(substation of Broadway)

Public Facilities Strategies, Policies and Actions

**Goal 8: Achieve Efficient Delivery of Public Facilities and Services.
(education, administration, utilities)**

Strategy 8.1 Locate public facilities in designated Urban Growth Areas to promote compact development and reduce service costs.

Policies and Implementation Actions:

- 8.1.1. Locate utilities in growth areas to promote infill development and to phase the build-out of new growth areas.
- 8.1.2. Limit utility lines from crossing areas not designated for urban growth; where utilities cross land outside growth areas, limit connections to existing development.
- 8.1.3. Coordinate water and sewer installation with road and other infrastructure to maximize cost-benefit.
- 8.1.4. Prepare and adopt service plans for key public services such as parks / recreation and public safety, in order to establish service standards, delivery policies and funding mechanisms for capital facilities and operations. Service plans can be designed to reinforce the County's Conceptual Land Use and Transportation Plans.
- 8.1.5. Require that proposed major extensions or expansions of public utilities be subject to a Commission permit process, as provided by Section 15.2-2232 of the Virginia Code. This process provides that the Planning Commission determines whether or not a proposed public facility is in conformance with the adopted Comprehensive Plan. The review process may include a public hearing.
- 8.1.6. Investigate the feasibility of providing funding to assist towns with public utility expansion.

Strategy 8.2 Develop a school facilities plan to accommodate fluctuations in enrollments.

Policies and Implementation Actions:

- 8.2.1. Continue to improve the flexibility of facilities to expand and contract in response to changing short-term needs.
- 8.2.2. Implement creative solutions to overcrowding that do not involve capital outlays, such as year-round and/or staggered schedules, etc.
- 8.2.3. Design schools with the capability to serve other functions, both public and private, such as libraries, health clinics, day care centers, or private uses.
- 8.2.4. Design school sites to be conveniently accessible from adjacent neighborhoods by both vehicles and pedestrians.
- 8.2.5. Monitor trends in public and non-public enrollments to anticipate changes in demand for public facilities.

- 8.2.6. Monitor and adjust long-range plans in response to public school enrollment projections and state mandated program requirements.
- 8.2.7. The location of new and expanded school facilities will be coordinated with the land use policies of the County's Comprehensive Plan and with the planning, construction and improvement of other public facilities in order to maximize efficiency and economies of scale.
- 8.2.8. The County will expect contributions from developers through the conditional zoning process to help offset the costs of providing additional school facilities and services for new residential developments. Such contributions may be in the form of land dedications, facility construction or funding for facilities. The County will coordinate with the School Board in establishing and refining the specific guidelines for school facility proffers and in evaluating such proffers during the development review process.

Strategy 8.3 Reduce service costs through collaborative relationships with other jurisdictions and private sector providers.

Policies and Implementation Actions:

- 8.3.1. Continue and improve collaboration through the Rockingham Municipal League, joint meetings of committees, governing bodies and commissions, and agreements of joint decision-making.
- 8.3.2. Review services delivered by the County to determine if joint ventures can increase quality or reduce costs.
- 8.3.3. Evaluate whether specific services could be most cost-effectively provided by private enterprise.

Strategy 8.4 Develop alternative revenue sources besides the property tax.

Policies and Implementation Actions:

- 8.4.1. Investigate the authority and feasibility for new taxes and fees, such as user fees, development impact fees and cash proffer guidelines.
- 8.4.2. Seek enabling legislation from the state for a wider range of taxing powers.
- 8.4.3. Continue to work with the General Assembly to effect change in local government structures to make City annexations unnecessary; expand the collaborative process with the City.
- 8.4.4. Evaluate the revenue implications of Town annexations.
- 8.4.5. Pursue cooperative financial agreements with the Towns.
- 8.4.6. Make legislators aware of the importance of the County's agricultural industry to the state's economy and the danger of greater dependence on the property tax.

Strategy 8.5 Promote the reduction of unfunded state mandates.

**Goal 9: Achieve Efficient and Effective Public Safety Responses.
(fire, rescue, law enforcement)**

Strategy 9.1 Continue to improve the provision of emergency services

Policies and Implementation Actions:

- 9.1.1. Evaluate issues related to response time, service areas and operating standards to ensure high levels of service.
- 9.1.2. Encourage expanded use of dry hydrants and other innovations; amend the Zoning and Subdivision Ordinances to require these.

Strategy 9.2 Continue to promote volunteerism as the principal staffing of fire and rescue services.

Policies and Implementation Actions:

- 9.2.1. Evaluate the cost, level of service and other impacts on the community, if the proportion of volunteers declines.
- 9.2.2. Explore, with volunteer companies, ways to minimize the time required for fundraising.
- 9.2.3. Investigate the feasibility of additional incentives to encourage fire and rescue volunteerism and other types of volunteerism.
- 9.2.4. Explore an incentive program for employers who are willing to grant leave time to volunteers.

8. Community Culture and Identity

Community Culture and Identity Strategies, Policies and Actions

Goal 13. Achieve a Rich and Diverse Community of Arts, Culture and other features of the “life beyond work”.

Strategy 13.1 Promote and support community volunteer and private sector efforts to enhance cultural activities, including recreation.

Goal 14. Achieve Community Identity, Cooperation, Spirit and Solidarity.

Strategy 14.1 Promote traditional, pedestrian-oriented, mixed use development with comfortable public spaces, including streets, greens, squares, and parks.

Strategy 14.2 Provide and support volunteer community organizations and programs.

Strategy 14.3 Promote cooperation and collaboration between the County and Towns and between the County and City.

Strategy 14.4 Encourage reuse of dilapidated, old, or historic structures to enhance community character and identity. (Reinforces Goal 12)

Strategy 14.5 Support the recommendations of the Healthy Community Council Priority Area Work Groups.

Strategy 14.6 Match Public Policies and Investments with Citizen Priorities.

Policies and Implementation Actions:

- 14.6.1. Conduct a statistically valid public opinion survey every five years, in conjunction with the five-year comprehensive plan update process, to determine the perceived quality of life of local citizens, and to identify opportunities to match citizen priorities and needs with public policy.
- 14.6.2. Establish a “Planning Academy” program to train citizen volunteers in comprehensive planning, zoning and land development practices in order to foster understanding and involvement among citizen leaders in the public planning process.
- 14.6.3 Encourage constructive citizen participation in the planning process through:
 - annual review of the Comprehensive Plan to monitor progress in implementation, including formal citizen involvement;
 - creation of detailed Comprehensive Plan elements for major geographic sub-areas of the County, with formal involvement of local citizens; and
 - increasing opportunities for citizen education and awareness of County planning and zoning issues through regular outreach efforts to the public.