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EXECUTIVE SUMMARY

The following solid waste management plan prepared for the Mount Rogers Planning District is submitted in accordance with 9 VAC 20-130-10 et seq. The Mount Rogers Planning District is composed of Bland County, Smyth County, Washington County and Wythe County and the incorporated Towns of Chilhowie, Marion, and Saltville for Smyth County, Abingdon, Damascus, and Glade Spring for Washington County and Rural Retreat and Wytheville in Wythe County. The terms 'planning district' and 'region' will be used interchangeably throughout the document referring to the Mount Rogers Planning District.

The planning district filing this plan is not the same as the region which filed the original plan in 1991. In 1991, the Mount Rogers Planning District Solid Waste Management Plan was prepared by the Mount Rogers Planning District Commission and included the following localities: City of Bristol, Smyth County, Washington County, Town of Abingdon, Town of Chilhowie, Town of Damascus, Town of Glade Spring, Town of Marion and Town of Saltville. Wythe County and its incorporated Towns of Rural Retreat and Wytheville, and Bland County filed a separate plan in 1991. Their plan was prepared by Wythe County with input from the Wythe-Bland Recycling Committee. The City of Bristol has withdrawn from the region and is submitting their own plan. Wythe and Bland Counties have merged with the original Mount Rogers Planning District. Documentation relative to Bristol's withdrawal is included in Appendix 1.

Through the submittal of this plan and the accompanying resolutions, the region requests formal approval and designation as a region under 9 VAC 20-130-180, 9 VAC 20-130-190, and 9 VAC 20-130-200. The region believes that it meets the criteria established in 9 VAC 20-130-200 which identifies the following considerations in the designation of a region:

1. Geographic areas or jurisdictions which have a history of cooperating to solve problems in environmental or other related matters;
2. Existing regional management systems, authorities or similar institutions;
3. The size, configuration and location of the regional areas should have sufficient solid waste contribution and market availability to support the solid waste management system;
4. Solid waste types within areas and mutuality of solid waste management interests;
5. Geologic, hydrologic, soil and groundwater conditions; availability of land and soils; and natural barriers and ecosystems; and
6. Existing planning areas established for purposes other than solid waste management including the existence of informational databases containing data related to that needed for solid waste management planning.

Since 1991, the region has moved from a system of landfill operations within each County and the Town of Wytheville, to transfer operations with disposal outside of the region. There are three primary options for landfills outside of the region. These include the BFI Carter Valley Landfill in Hawkins County, Tennessee, the Waste Management/Johnson City Iris Glen landfill located in Johnson City, Tennessee and the City of Bristol quarry fill. Each County holds independent contracts for hauling and disposal. Each County uses a different landfill and a different hauler. Section 5.0 describes these activities in further detail.

In addition to the daily record keeping, the members of the region document their solid waste activities in several ways:

- Annual reports to the Counties Board of Supervisors by the solid waste directors or county administrators.
- Annual reports to the Wythe-Bland Joint Public Service Authority by the executive director.
- Periodic meetings with the Mount Rogers Planning District Commission of all members of the planning region.
- Annual submittal by April 30 of each year of the Recycling Rate Report (Form 50-30) to DEQ.
- Annual submittal usually by December of each year of the update to the financial assurance forms to DEQ.

All these reports, updates and DEQ submittals as well as all background and permitting information are kept in the central archive (files) of the various members of the region at the locations identified in Section 5.3.2. The Director of DEQ or other DEQ representatives receive copies of appropriate information relative to the Region's solid waste management program from the individual localities through the following sources:

- Direct submittal to DEQ of Form 50-30 on an annual basis
- Permit applications
- Permit amendment applications
- Updates to the solid waste management plan
- General correspondence which may be required from time to time.

Each participating jurisdiction is responsible for plan review, adoption, and implementation. Participating jurisdictions in this plan accept responsibility only for those portions of the plan which specifically affect the decision makers of that particular jurisdiction. The plan does not recommend the investment in nor the creation of any type of regional facility or regional organization to manage or dispose of solid waste generated in the region. The region will file the annual recycling report on a regional basis.

The region recognizes its obligation to provide leadership to oversee implementation of the plan. Initially, the plan will be implemented on a jurisdictional basis with each jurisdiction responsible for only its part of the plan. The region may consider in the future development of an oversight committee which will meet to not only review the plan and its implementation, but which might also oversee the preparation of the regional recycling report and consider regional activities which may be of interest in the future.

The following table summarizes important key elements of the region's existing program:

TABLE 1
KEY ELEMENTS
EXISTING SOLID WASTE PROGRAM

ELEMENT	DESCRIPTION

Collection	• Bland County – Door to door by private contractor
	• Wythe County – Staffed convenience centers serviced by private contractor (Lusk Disposal Services)
	  o Wytheville – Door to door by Town
	  o Rural Retreat – Door to door by Town
	• Smyth County – Staffed convenience centers
	  o Chilhowie – Door to door by private contractor (BFI)
	  o Saltville – Door to door by private contractor (BFI)
	  o Marion – Door to door by Town
	• Washington County – Staffed convenience centers by County
	  o Abingdon – Door to door by Town
	  o Damascus – Door to door by private contractor (BFI)
	  o Glade Spring – Door to door by Town
	• See Table 58 for detailed information on the systems.

Transfer and Disposal	**Smyth County**
	• PBR #041
	• Permitted 1993
	• 9,184 square feet of which 6,740 is actual tipping floor
	• Scales
	• Cost $498,000 exclusive of grading and paving
	• Operated by the County
	• Hauled by W&L
	• Disposal at Bristol Landfill Permit 588 through contract with WMX
	• Tonnage delivered to station in 2003 – 22,079 tons
	• Gate Fees:
	  o Flat rate $45.00 per ton
	  o 50-99 tons per month $43.50 per ton
	  o 100 – 149 tons per month $41.50 per ton
	  o 150+ tons $39.50 per ton

Transfer and Disposal	**Washington County** • PBR #003 • Permit approved October 8, 1993 • Opened October 11, 1993 • 9,500 square feet • Entrance scales and pit scales • Cost - $900,000 including $350,000 additional for grading and rail access • Operated by the County • Hauled by Southwest Disposal • Disposal at BFI Carter Valley Landfill, Hawkins County, Tennessee

ELEMENT	DESCRIPTION

	• Tonnage delivered to station in 2003 – 35,986tons
	• Gate Rates
	  o $32/ton county waste
	  o $35/ton outside county waste
	• Town of Abingdon transports their waste directly to the City of Bristol landfill.

Transfer and Disposal	**Wythe and Bland County (Joint Public Service Authority)**
	• PBR #044
	• Permit approval March 21, 1994
	• Opened January 11, 1994 (Interim measures at old landfill beginning on October 9, 1993)
	• 7,500 square feet
	• Entrance scales and pit scales
	• Total Cost - $1.5 million; building $890,000
	• Operated by Joint Public Service Authority
	• Hauled by Southwest Disposal, Castlewood, VA
	• Disposal at Iris Glen Landfill, operated by Waste Management located in Johnson City, Tennessee
	• Tonnage transferred 2003 – 22,945 tons
	• Gate Rates:
	  o $48/ton Wythe and Bland Counties
	  o $50/ton Wytheville and Rural Retreat
	  o $56/ton Other

Recycling	**Bland County** • Door to door collection is provided one time per week. The same contractor responsible for trash collection, collects the recyclables during the first full week of the month. Paper, cardboard, plastics and aluminum are collected. The citizens are required to place the materials in a clear plastic bag. • Recycling rate 2003: 6.2% as calculated by County and verified by DEQ.
Recycling	**Smyth County** • Drop off program at the 11 convenience sites. • Plastics, newspaper, magazines, phone books, # 1 & 2 plastics, aluminum cans, steel cans and used oil are collected at the convenience centers. • Scrap metal and tires are collected at the transfer station. • County provides their own collection and hauling. • Markets include: Southwest Sanitation, Berrys, and the City of Bristol • Recycling rate 2003: 28% as calculated by County and 10.6% as calculated by DEQ. DEQ excluded 6,175 tons of industrial plastics. • Tracks commercial and industrial recycling.
Recycling	**Marion** • No activity at this time. Once had a drop off program that was dropped because of cost. Citizens encouraged to use Smyth County

ELEMENT	DESCRIPTION
	drop off system. • Does not track commercial or industrial recycling.
Recycling	**Chilhowie** • No program. Citizens encouraged to use Smyth County program.
Recycling	**Saltville** • No program. Citizens encouraged to use Smyth County program
Recycling	**Washington County** • Drop off program at 15 convenience sites. • Collect Newspaper, #1 & 2 plastics, aluminum and steel beverage and food cans at convenience sites. • Collect magazines and glass at landfill site. • Collect used motor oil • Mobile program using a 30 cubic yard bin which is dropped off once a month. Currently only in use in Emory. • Markets include: Southwest Sanitation in Pounding Mill, VA for plastics, cans and newspaper; Cycle Systems in Roanoke for glass, VA; Profile Products in Limestone, TN for magazines. • Recycling rate for 2003: 29.8% as calculated by County and 16.3% as calculated by DEQ. DEQ excluded 6,000 tons of industrial scrap metal. • Budget for program: $8,000 per year • Tracks commercial and industrial recycling.
Recycling	**Abingdon** • Curbside recycling available to those citizens who wish to participate in the program. Residences only. No apartment complexes. • Participation rate is approximately 40% or about 1,080 households. • Program privatized with Waste Management who collects materials and takes them to their Recycle America MRF in Kingsport Tennessee. • Town has been providing access to this service since 1992. • Collected on same day as trash is collected. • Collect: #1 & 2 plastics, mixed metal and aluminum cans, paper of all types, newspaper. Glass and cardboard is not collected. • Revenues are split with Waste Management. • Recycle approximately 225 tons per year through program. • Waste Management responsible for promotion. • Recycling reported with County. • Cost of program: $9,300 per month regardless of how much is collected. The $8.75 per month waste collection fee includes recycling. • Does not track commercial or industrial recycling.
Recycling	**Damascus** • No program. Could use the County's mobile program if interested.
Recycling	**Glade Spring** • No program. Could use the County's mobile program if interested.

ELEMENT	DESCRIPTION
Recycling	**Wythe County** • Drop off at 11 convenience centers. • Collect tires, white goods, brush, leaves, grass, #1 & 2 plastics, clear and brown glass, newspapers, magazines, office paper, metal and aluminum cans. • Compost leaves and brush. • Recycling Market: TRA-COL, Inc., Hillsville, VA • Recycling rate 2003: 26.4% as calculated by County and 16.7% as calculated by DEQ. DEQ eliminated industrial metals, land applied sludge and rebuilt pallets.
Recycling	**Wytheville** • One drop off center next to park by municipal building. • 2 – 30 cy boxes for cardboard • 1 – 30 cy for mixed glass • 1 – 30 cy paper and mixed metals • Site is attended 25 hours per week • Collect #1 & 2 plastics, newspaper and mixed paper, cardboard, glass and mixed metal beverage cans. • Recycling market: TRA-COL, Inc, Hillsville, VA • Pays $25 per load to processor. Does not receive revenue. • Collected 177 tons through program in 2002. • Tracks commercial and industrial recycling. • Recycling reported with County.
Recycling	**Rural Retreat** • No program. Citizens encouraged to use Wythe County program.
Treatment	Treatment is defined in Section 1.6. Based on this definition only Wythe County provides any treatment to their wastes. Wythe County composts its leaves and brush.
Litter Control	**Bland County** • Volunteer cleanup programs by groups such as 4-H and Boy Scouts. • Adopt-a-Highway program. • Litter grant towards County administrative costs and Boy Scouts of America.
Litter Control	**Smyth County** • Adopt-a-Highway program. • Sheriff's department actively engaged in enforcement. • Inmate labor used for cleanup activities. • Appointed member to Upper River Roundtable (Regional task force). • Grant goes to educational materials distributed by County.
Litter Control	**Washington County** • Recycling coordinator heavily involved in schools providing educational materials and assessing educational programs. • Annually contracts with private contractors for the larger roadside cleanups.

ELEMENT	DESCRIPTION
	• Adopt-a-Highway program-most miles in southwest Virginia. • Enforcement by ordinance. Significant junk car program. • Additional volunteer programs supported by County. • Grant goes towards recycling coordinator's salary. • Participate in South Holston lake cleanup. • Participate in Upper River Roundtable.
Litter Control	**Wythe County** • Has litter control officer responsible for education and enforcement. • Some volunteer cleanup activities but these are not coordinated by the County. • Grant goes towards officer's salary. • Household hazardous waste day scheduled annually at the transfer station.

During preparation of the plan, the following goals and objectives were developed for the program. See Section 8.0 for a more detailed description of the activities.

Collection - Goals and Objectives:

- Continue to provide cost effective collection systems for the citizens of the region.
- Continue to provide as comprehensive a service as interest and funding allow.
- Consider regionalizing or privatizing the collection systems of the Towns

Transfer Station System – Goals and Objectives:

- Continue to provide for the adequate hauling from the transfer stations at a cost competitive price.
- Provide for the care and maintenance of the transfer facilities.
- Maintain accurate weigh scales at the facilities.
- Expand services at transfer stations as interest and funding allow.

Disposal - Goals and Objectives:

- Assure that there are adequate disposal facilities available to handle the region's waste.
    - Bristol landfill - estimated closure date of 2029
    - Carter Valley landfill – estimated closure date of 2026; some room for expansion.
    - Iris Glen landfill – estimated closure date of 2022; significant room for expansion.

Recycling - Goals and Objectives:

- Improve the tracking of information on commercial recycling within the region.
- Consider regionalization of the household hazardous waste program.

- Consider regionalization of an electronic waste recycling program.
- Improve and expand public education and outreach.
- Continue to explore expanding recycling programs as interest and funding allow. Work towards moving the region towards 25% goal.

Solid Waste Hierarchy – Goals and Objectives for the Region

- Source reduction – To reduce the volume of solid waste entering the waste stream by curtailing waste generation.
- Reuse – To reduce the volume of solid waste entering the waste stream through the reuse of existing materials.
- Recycling – To divert recyclable quantities from the municipal solid wastestream to reduce the tonnage that must be transferred and to meet the mandated 25% goal.
- Waste to Energy – To remain informed on waste to energy technology so that new initiatives in the field can be evaluated.
- Incineration / Volume reduction – To remain informed on new technology so that new initiatives in the field can be evaluated.
- Landfilling – To continue to provide cost effective disposal for the waste generated in the region.

Treatment – Goals and Objectives

- No specific future plans were identified.

Litter Control – Goals and Objectives

- No specific future plans were identified.

1.0 INTRODUCTION

1.1 Legislation

The following solid waste management plan has been prepared in accordance with the Virginia Waste Management Board's, Regulations for Solid Waste Management Planning, Amendment 1, 9 VAC 20-130-10 et seq., effective date August 1, 2001.

1.2 Authority (9 VAC 20-130-20)

The regulations were promulgated pursuant to Chapter 14 (Sec.10.1-1400 et seq. and specifically Sections 10.1-1402, 10.1-1411 and 10.1-1413 of Title 10.1 of the Code of Virginia which authorized the Virginia Waste Management Board to promulgate and enforce such regulations as may be necessary to carry out its duties and power, and the intent of the Virginia Waste Management Act and the federal acts.

1.3 Purpose (9 VAC 20-130-40)

The purpose of the regulations as generally stated in 9 VAC 20-130-40 and elsewhere in the regulations is to:

1. Establish minimum solid waste management standards and planning requirements for protection of public health, public safety, the environment, and natural resources throughout the Commonwealth;
2. Require the development of a comprehensive and integrated solid waste management plan that addresses all components of the solid waste hierarchy established by the United States Environmental Protection Agency (EPA) as embraced by the Commonwealth as follows:
    - ♦ Source Reduction (most desirable activity)
    - ♦ Reuse
    - ♦ Recycling
    - ♦ Resource Recovery (waste-to-energy)
    - ♦ Incineration
    - ♦ Landfilling (least desirable activity)
3. Promote local and regional planning that provides for environmentally sound and compatible solid waste management with the most effective and efficient use of available resources;
4. Establish procedures and rules for designation of regional boundaries for solid waste management plans;
5. Establish state, local government, or regional responsibility for meeting and maintaining the minimum recycling rates of 25%;
6. Establish the requirement to withhold permits for failure to comply with the regulations;
7. Provide a method to request reasonable variance or exemptions from the regulations;
8. Provide for reporting and assessment of solid waste management in the Commonwealth.

1.4 Planning Area

The region included in this solid waste management plan is composed of Bland County, Smyth County and its incorporated Towns of Chilhowie, Marion, and Saltville, Washington County and its incorporated Towns of Abingdon, Damascus, and Glade Spring, and Wythe County and its incorporated Towns of Rural Retreat and Wytheville. See Figure 1 for a vicinity map indicating the location of the region within Virginia and Figure 2 for the Region Map.

The region is not the same as those regions which filed original plans in 1991. In 1991, the City of Bristol, and the Counties of Smyth and Washington including their incorporated Towns filed as the Mount Roger Planning District. At the same time, Wythe County and its incorporated Towns and Bland County filed as a region. For the 2004 plan, the City of Bristol has dropped from the region and is preparing and submitting its own plan while Wythe and Bland Counties have joined the region. Appendix 1 includes documentation on the withdrawal of Bristol.

1.5 Planning Period

The planning period for this solid waste management plan is 20 years from 2004 – 2024.

1.6 Critical Definitions (9 VAC 20-130-10)

It is important that the reader of this solid waste management plan have a clear understanding of the terms used throughout the report. The following selected definitions are taken directly from the regulations:

Construction, demolition and debris waste (CDD) – Construction and demolition waste means solid waste which is produced or generated during construction, remodeling, repair or destruction of pavements, houses, commercial buildings, or other structures. Construction wastes include, but are not limited to lumber, wire, sheetrock, broken brick, shingles, glass, pipes, concrete, paving materials, and metal and plastics if the metal or plastics are a part of the materials of construction or empty containers for such materials. Paints, coatings, solvents, asbestos, any liquid, compressed gases or semi-liquids and garbage are not construction wastes. Debris waste means wastes resulting from land clearing operations.

Household hazardous waste (HHW) – means any waste material derived from households (including single and multiple residences, hotels and motels, bunk houses, ranger stations, crew quarters, campgrounds, picnic grounds and day-use recreation areas which, except for the fact that it is derived from a household, would otherwise be classified as a hazardous waste in accordance with 9 VAC 20-60.

Integrated Waste Management Plan – means a governmental plan that considers all elements of waste management during generation, collection, transportation, treatment, storage, disposal, and litter control and selects the appropriate methods of providing necessary control and services for effective and efficient management of all wastes. An “integrated waste management plan” must provide for source reduction, reuse, and recycling within the jurisdiction and the proper funding and management of waste management programs.

FIGURE 1

FIGURE 2

Principle recyclable materials – means paper, metal (except automobile bodies), plastic, glass, yard waste, wood, and textiles. It does not include large diameter tree stumps.

Recycling – means the process of separating a given waste material from the waste stream and processing it so that it may be used again as a raw material for a product, which may or may not be similar to the original product. Recycling does not include processes that only involve size reduction.

Reuse – means the process of separating a given solid waste material from the waste stream and using it, without processing or changing its form, other than size reduction, for the same or another end use.

Source reduction – means any action that reduces or eliminates the generation of waste at the source, usually within a process. Source reduction measures include process modifications, feedstock substitutions, improvements in feedstock purity, improvements in housekeeping and management practices, increases in the efficiency of machinery, and recycling within a process.

Supplemental recyclable material – means waste tires, used oil, used oil filters, used antifreeze, automobile bodies, construction waste, demolition waste, debris waste, batteries, ash, sludge, or large diameter tree stumps, or material as may be authorized by the director.

Treatment – means any method, technique or process, including but not limited to incineration, designed to change the physical, chemical or biological character or composition of any waste to render it more stable, safer for transport, or more amenable to use, reuse, reclamation or recovery. Per email from Dan Gwinner, DEQ, this would include tire shredding but not mulching.

Used or reused material - means a material which is either:

1. Employed as an ingredient (including use as an intermediate) in a process to make a product, excepting those materials possessing distinct components that are recovered as separate end products; or
2. Employed in a particular function or application as an effective substitute for a commercial product or natural resource.

1.7 Additional Definitions

The following words and terms when used in this plan shall have the following meaning: (note: the following definitions are taken from the Virginia Solid Waste Management Regulations, 9 VAC 20-80-10 or other appropriate sources)

Agricultural waste - means solid waste produced from farming operations, or related commercial preparation of farm products for marketing.

CDD Waste: - Construction, demolition and debris waste defined generically as a category of waste as reported to DEQ which includes the wastes defined below.

Collector: - person or business who collects and transports solid wastes or recyclables from residences or businesses for a fee.

Commercial waste - means solid waste generated by establishments engaged in business operations other than manufacturing or construction. This category includes, but is not limited to, solid waste resulting from the operation of stores, markets, office buildings, restaurants and shopping centers.

Composting - means the manipulation of the natural aerobic process of decomposition of organic materials to increase the rate of decomposition.

Construction waste - means solid waste that is produced or generated during construction, remodeling, or repair of pavements, houses, commercial buildings, and other structures. Construction wastes include, but are not limited to, lumber, wire, sheetrock, broken brick, shingles, glass, pipes, concrete, paving materials, and metal and plastics if they are part of the construction material or empty containers for such materials. Paints, coatings, solvents, asbestos-containing material, any liquid, compressed gases, or semi-liquids and garbage are not construction wastes.

Contamination - means the degradation in quality of naturally occurring water, air, or soil resulting either directly or indirectly from human activity.

Convenience Center - means a solid waste collection center used by residents of the region to dispose of solid waste materials and recyclables.

DEQ - Virginia Department of Environmental Quality

Debris waste - means waste resulting from land clearing operations. Debris wastes include, but are not limited to, stumps, wood, brush, leaves, soil, and road spoils.

Demolition waste - means solid waste produced by destruction of structures and their foundations and includes the same materials as construction wastes.

Discarded material - means a material that is: (i) abandoned material; (ii) recycled material; or (iii) considered inherently waste-like.

Disposal - means the discharge, deposit, injection, dumping, spilling, leaking or placing of any solid waste into or on any land or water so that such solid waste or any constituent of it may enter the environment or be emitted into the air or discharged into any waters.

Friable asbestos - means any material containing more than 1.0% asbestos by weight that, when dry, may be crumbled, pulverized or reduced to powder by hand pressure and regulated as a special waste.

Garbage - a common term for readily putrescible discarded materials composed of animal, vegetable or other organic matter.

Green box site - means a convenience center that utilizes roll off or front load containers less than 20 cubic yards in capacity for the collection and / or transportation of solid waste.

Groundwater - means any water below the land surface in the zone of saturation.

Hazardous waste - means a "hazardous waste" as defined by the Virginia Hazardous Waste Management Regulation, 9 VAC 20-60-12 et seq. Hazardous wastes are wastes that, if not handled or disposed of properly, could cause injury or death, or damage or pollute land, air or water. Hazardous waste determinations are based on whether the waste is currently "listed" by the EPA or exhibits a "characteristic" of hazardous wastes. Listed wastes are waste that either exhibit one of the characteristics or contain any number of toxic constituents that have been show to be harmful to health and the environment. The EPA list includes over 400 hazardous wastes. Characteristics of hazardous waste are "Ignitable/Flammable", "Corrosive", "Reactive" or "Toxic".

Household waste - means normal waste material, including garbage, trash and refuse, derived from households. Households include single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds and day-use recreation areas. Household wastes do not include sanitary waste in septic tanks (septage).

Incineration - means the controlled combustion of solid waste for disposal.

Incinerator - means a facility or device designed for the treatment for volume reduction of solid waste by combustion.

Industrial waste - means any solid waste generated by manufacturing or industrial process that is not a regulated hazardous waste. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/byproducts; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

Industrial waste landfill - means a solid waste landfill used primarily for the disposal of a specific industrial waste or a waste that is a byproduct of a production process.

Institutional waste - means solid waste emanating from institutions such as, but not limited to, hospitals, nursing homes, orphanages, and public or private schools. It can include regulated medical waste from health care facilities and research facilities that must be managed as a regulated medical waste.

Jurisdiction - means a local governing body; city, county or town; or any independent entity, such as a federal or state agency, which join with local governing bodies to develop a waste management plan.

Landfill - means a sanitary landfill, a construction/demolition/debris landfill, or an industrial waste landfill.

Litter - means waste material that is discarded, blown, or scattered about a facility, road, or public area.

Mulch - means woody waste consisting of stumps, trees, limbs, branches, bark, leaves and other clean wood waste that has undergone size reduction by grinding, shredding, or chipping, and is distributed to the general public for landscaping purposes or other horticultural uses.

Municipal solid waste - means waste that is normally composed of residential, commercial, and institutional solid waste and residues derived from the combustion of these wastes.

Open dump - means a site on which any solid waste is placed, discharged, deposited, injected, dumped or spilled so as to create a nuisance or present a threat of a release of harmful substances into the environment or present a hazard to human health. Such a site is subject to the open dump criteria in 9 VAC20-80-180.

Recycled material - means a material that is derived from recycling.

Refuse - means solid waste products having the character of solids rather than liquids and that are composed wholly or partially of materials such as garbage, trash, rubbish, litter, residues from clean up of spills or contamination, or other discarded materials.

Region – means Bland County, Wythe County including the incorporated towns of Wytheville and Rural Retreat, Smyth County including the incorporated towns of Chilhowie, Marion and Saltville, and Washington County including the incorporated towns of Abingdon, Damascus, and Glade Spring.

Regulated medical waste - means solid wastes so defined by the Regulated Medical Waste Management Regulations (9 VAC 20-120-10 et seq.) as promulgated by the Virginia Waste Management Board.

Residential waste - means household waste.

Resource recovery system - means a solid waste management system that provides for collection, separation, recycling and recovery of energy or solid wastes, including disposal of nonrecoverable waste residues.

Rubbish - means combustible or slowly putrescible discarded materials that include but are not limited to trees, wood, leaves, trimmings from shrubs or trees, printed matter, plastic and paper products, grass, rags and other combustible or slowly putrescible materials not included under the term "garbage."

Sanitary landfill - means an engineered land burial facility for the disposal of solid waste that is so located, designed, constructed and operated to contain and isolate the solid waste so that it does not pose a substantial present or potential hazard to human health or the environment.

Scrap metal - means bits and pieces of metal parts such as bars, rods, wire, or metal pieces that may be combined together with bolts or soldering that are discarded material and can be

recycled. For the purposes of this plan, this definition includes the reclaimable metal parts of white goods.

Site - means land and structures, other appurtenances, and improvements on them used for treating, storing, and disposing of solid waste. This term includes adjacent land within the facility boundary used for the utility systems such as repair, storage, shipping or processing areas, or other areas incident to the management of solid waste. (Note: This term includes sites whether they are planned and managed facilities or open dumps.)

Sludge - means any solid, semisolid or liquid wastes with similar characteristics and effects generated from a public, municipal, commercial or industrial waste water treatment plant, water supply treatment plant, air pollution control facility, or any other waste producing facility.

Solid waste - means any garbage, refuse, sludge and other discarded material, including solid, liquid, semisolid or contained gaseous material, resulting from industrial, commercial, mining and agricultural operations, or community activities but does not include (i) solid or dissolved material in domestic sewage, (ii) solid or dissolved material in irrigation return flows or in industrial discharges that are sources subject to a permit from the State Water Control Board, or (iii) source, special nuclear, or byproduct material as defined by the Federal Atomic Energy Act of 1954, as amended.

Solid waste management facility ("SWMF') - means a site used for planned treating, storing, or disposing of solid waste. A facility may consist of several treatment, storage, or disposal units.

Source separation - means separation of materials from the waste stream by the waste generator of materials that are collected for use, reuse, or recycling.

Special wastes - means solid wastes that are difficult to handle, require special precautions because of hazardous properties or the nature of the waste creates waste management problems in normal operations.

Transfer station - means any solid waste storage or collection facility at which solid waste is transferred from collection vehicles to haulage vehicles for transportation to a central solid waste management facility for disposal, incineration or resource recovery.

Trash - means combustible and noncombustible discarded materials and is used interchangeably with the term rubbish.

Vegetative waste - means decomposable materials generated by yard and lawn care or land-clearing activities and includes, but is not limited to, leaves, grass trimmings, and woody wastes such as shrub and tree prunings, bark, limbs, roots, and stumps.

White goods - means any stoves, washers, hot water heaters or other large appliances. For the purposes of this plan, this definition also includes, but is not limited to, such Freon-containing appliances as refrigerators, freezers, air conditioners, and dehumidifiers.

Yard waste - means decomposable waste materials generated by yard and lawn care and includes leaves, grass trimmings, brush, wood chips, and shrub and tree trimmings. Yard waste shall not include roots or stumps that exceed six inches in diameter.

2.0 BACKGROUND INFORMATION

To provide background to the discussions contained in this solid waste management plan, a discussion of the status of solid waste management nationally and an overview of the key points of the original solid waste management plans are being provided in this Section. The original Mount Rogers Planning District Solid Waste Management Plan was dated July 1, 1991 (first draft) and June 10, 1992 (fourth draft), and the original Wythe-Bland Solid Waste Management Plan was undated but was adopted by the Wythe County Board of Supervisors on July 12, 1991 and by the Bland County Board of Supervisors on July 22, 1991.

2.1 Status of solid waste management nationally

The following information is taken from "Municipal Solid Waste in the United States: 2001 Facts and Figures Executive Summary," produced by the Office of Solid Waste and Emergency Response, United States Environmental Protection Agency (EPA), EPA530-S-03-011, dated October 2003. This report provides data on the national municipal solid waste stream for 1960 through 2001.

It should be noted that as used by the EPA, the term municipal solid waste (MSW) consists of "everyday" items such as product packaging, grass clippings, furniture, clothing, food scraps, newspapers, appliances, and batteries. It does not include materials that may also be landfilled but are not generally considered MSW, such as construction and demolition debris, sludge, and non-hazardous industrial wastes. Virginia's definition is similar defining MSW as waste that is normally composed of residential (household), commercial (businesses other than manufacturing or construction) and institutional solid waste. However, record keeping of localities may not segregate the waste materials in a similar way. Thus, when comparing the information in this section with the data in the solid waste plan, care must be given to the term MSW.

2.1.1 Waste generation

According to the EPA report, the United States generated approximately 88.1 million tons of MSW in 1960 and approximately 229.2 million tons in 2001. This represents a 260% increase in the solid waste generated over the 41-year period. At the same time the United States population increased from 180.0 million persons in 1960 to 284.8 million persons in 2001 or a 158% increase over the 41-year planning period. Clearly, the increase in tonnage is not just a factor of population but is also impacted by other factors including the commercial sector. The following table summarizes the waste generation for 1960 – 2001 on a pounds per person per day basis:

TABLE 2
USA WASTE GENERATION (MSW)
1960 – 2001
POUNDS PER PERSON PER DAY
AS REPORTED BY EPA

YEAR	POUNDS PER PERSON PER DAY
1960	2.7
1970	3.2
1980	3.7
1990	4.5
1995	4.5
1999	4.6
2000	4.5
2001	4.4

The report noted that residential waste is estimated to be 55% - 65% of the total MSW generated, and that commercial waste (including institutional wastes, some industrial sites where packaging is generated and businesses) constitutes between 35% and 45% of the total MSW generated.

2.1.2 What is in the waste?

In evaluating waste generation, the report examined the composition of the waste materials as discarded before recycling and the amount of the material recovered through recycling programs. The following table summarizes the findings from this report:

TABLE 3
USA WASTE COMPOSITION
BY MATERIAL TYPE
AS SUMMARIZED IN EPA REPORT
2001 DATA

MATERIAL	% OF TOTAL WASTE STREAM	RECOVERY AS A PERCENT OF GENERATION
Paper	35.7	44.9
Glass	5.5	19.1
Metals	7.9	34.5
Plastics	11.1	5.5
Rubber, leather, & textiles	7.1	15.3
Wood	5.7	9.5
Yard trimmings	12.2	56.5
Food scraps	11.4	2.8
Other	3.4	20.7

Based on this information a significant portion of the yard waste, paper and metal wastes are being recovered while there remains limited recovery of plastics, wood, and food scraps.

In addition the report evaluated the waste stream by product type. The following table summarizes the findings of the report:

TABLE 4
USA WASTE COMPOSITION
BY PRODUCT TYPE
AS SUMMARIZED IN EPA REPORT
2001 DATA

MATERIAL	% OF TOTAL WASTE STREAM	RECOVERY AS A PERCENT OF GENERATION
Durable goods	16.4	17.5
Nondurable goods	26.4	27.7
Containers and packaging	32.0	38.3
Food scraps	11.4	2.8
Yard trimmings	12.2	56.5
Other wastes	1.5	Neg.

2.1.3 Disposal

The report tracks the ultimate handling of the wastes generated and indicates that 14.7% of the waste generated is combusted, 29.7% of the waste is recovered and that 55.7% of the waste is landfilled. It also noted that the number of landfills has decreased from nearly 8,000 in 1988 to 1,858 in 2001 while the average landfill size increased. It further states that, "At the national level, capacity does not appear to be a problem, although regional dislocation sometimes occur."

2.1.4 Recycling

According to the report, the United States recycled approximately 5.6 million tons of materials in 1960 and approximately 51.4 million tons in 2001. This represents a 900% increase in recycling over the 41-year period. In addition, composting of yard trimmings, food scraps, and other MSW organic material has increased from negligible reported quantities in 1960 to 16.6 million tons in 2001. This does not include back yard composting projects. Thus, in 1960, the recycling rate as calculated as recyclables over total MSW was 6.4%, and in 2001 is 22.4% without composting or 29.7% with composting. The following table summarizes the recycling and composting rates for 1960 – 2001 on a pounds per person per day (PPPD) basis:

TABLE 5
USA RECYCLING AND COMPOSTING RATES
1960 – 2001
AS REPORTED BY EPA

YEAR	RECYCLING (PPPD)	COMPOSTING (PPPD)	TOTAL (PPPD)
1960	0.17	Neg.	0.17
1970	0.22	Neg.	0.22
1980	0.35	Neg.	0.35
1990	0.64	0.09	0.73
1995	0.96	0.20	1.16
1999	1.02	0.30	1.32
2000	1.00	0.32	1.32
2001	0.99	0.32	1.31

2.1.5 Waste reduction and reuse

The following information is taken from the EPA document, "Municipal Solid Waste in the United States: 2001 Facts and Figures," as cited above. When EPA established its waste management hierarchy in 1989, it emphasized the importance of reducing the amount of waste created, reusing whenever possible, and then recycling what is left. When municipal solid waste is reduced and reused, this is called "source reduction", meaning that the material never enters the waste stream. Instead it is managed at the source of generation. Source reduction includes the design, manufacture, purchase or use of materials, such as products and packaging, to reduce their amount or toxicity before they enter the MSW waste stream. Examples of source reduction activities are:

- Designing products or packaging to reduce the quantity or the toxicity of the materials used, or to make them easier to reuse.
- Reusing existing products or packaging; for example, refillable bottles, reusable pallets, and reconditioned barrels and drums.
- Lengthening the lives of products so less material is thrown away over time.
- Using packaging that reduces the amount of damage or spoilage of a product.
- Managing non-product organic wastes through onsite composting or other alternative disposal techniques.

According to the EPA, the United States prevented more than 55 million tons of MSW from entering the waste stream using 1990 as the baseline year. The EPA believes that reducing the amount of yard trimmings is particularly important in reducing the MSW in landfills across the United States. The following table taken from the EPA indicates the source reduction by major material categories:

TABLE 6
USA SOURCE REDUCTION BY MAJOR CATEGORY
2000
AS REPORTED BY EPA

MATERIAL	TONNAGE (million tons)	% OF TOTAL REDUCTION
Durable goods (e.g. appliances, furniture)	5.4	9.8%
Nondurable goods (e.g. newspapers, clothing)	9.3	16.8%
Containers and packaging (e.g. bottles, boxes)	15.5	28.1%
Other MSW (e.g. yard trimmings, food scraps)	25.0	45.3%
Total Source Reduction (1990 baseline year)	55.1	100.0%

Source reduction avoided an increase in the waste stream from 1999 to 2000 of nearly 25 percent. According to EPA, between 2 and 5% of the waste stream is potentially reusable and reflecting the interest in reuse is the establishment of over 6,000 reuse centers throughout the country ranging from specialized programs for building materials, to salvage facilities at landfills, to local/national programs such as Goodwill and Salvation Army.

2.2 Highlights from original solid waste plan (1991)

2.2.1 Mount Rogers Planning District Solid Waste Management Plan

The original solid waste management plan for the Mount Rogers Planning District was prepared by the Mount Rogers Planning District Commission and was dated First Draft – July 1, 1991. The following sections provide highlights from the original plan.

2.2.1.1 Waste generation projections

The following table summarizes the data presented in the original plan. In 1991 scales were placed at the Smyth and Washington County landfills and actual tonnage data was sparse. To project future tonnages in 1991, graphs were developed based on the data obtained from temporary weigh programs and a straight line projection used to estimate the tonnage in 2010. The data was considered as tons per week then converted to tons per day based on a 7 day week. The report indicated that the straight line projection based on the temporary weigh program data may be an over estimation as permanent scale data in 1992 indicated a discrepancy in the data. The actual weigh data from permanent scales was lower than the projections for 1992 by a factor of 7.5% for Smyth County and 25% for Washington County.

TABLE 7
TONNAGE PROJECTIONS FROM ORIGINAL SWMP

COUNTY	DAILY AVERAGE 1979 – 1982 WEIGHING PROGRAM (Tons per day)	DAILY AVERAGE 1988 – 1989 WEIGHING PROGRAM (Tons per day)	PROJECTED TONNAGE 2010 (Based on straight line projection)	USED FOR DEVELOPMENT OF PLAN
Bland County	5 (TPD-5)	NA	NA	NA
Smyth County	52 (TPD-7)	138 (TPD-7)	303 (TPD-7)	138 (TPD-7)
Washington County	61 (TPD-6)	134 (TPD-6)	267 (TPD-7)	115 (TPD-7)
Wythe County	29 (TPD-6)	40 (TPD-6)	NA	NA
Wytheville	30 (TPD 5)	36 (TPD-5)	NA	NA
TOTAL				

Data taken from Page 4-1 of the plan.

In 2003, the average daily tonnage calculated for Smyth County was 60 TPD-7 and 98 TPD-7 for Washington County. These tonnages are significantly lower than those considered in the original report.

2.2.1.2 System components

The solid waste management system in the Mount Rogers Planning District consisted of the following components in 1991:

TABLE 8
1991 SOLID WASTE SYSTEM COMPONENTS

COMPONENT	DESCRIPTION
Smyth County	**Collection:** The County was in the process of changing from a county-wide green box collection system to a convenience center with attendant system. The Towns of Marion, Chilhowie, and Saltville had their own collection operations. Industries either transported their waste directly to the landfill or hired a private hauler.
	Disposal: The County landfill, Permit 381, consisted of approximately 163 acres of land of which approximately 20 acres received waste. The facility was located approximately 2 miles north of Chilhowie. The site was developed in 1982 and had a remaining life expectancy of 20 years. Scales were in place. A brush collection area was available and brush was burned under an open burning permit from the Virginia Air Pollution Control Board.
	Recycling: • Commercial and industrial: For the plan the recycling

COMPONENT	DESCRIPTION
	completed by the commercial and industrial sector was surveyed. Based on the survey results, it was estimated that the commercial sector was recycling approximately 186 tons per month primarily through the recycling of cardboard through the major grocery stores. In addition, it was estimated that the industries in the County recycled 940 tons per month. The recycling rate for the County was calculated as 21%. • By County or private sector: A drop off for recyclables was available at the Walmart in Marion which was provided by Walmart and serviced by Waste Management of the Tri-Cities. Two convenience sites had drop off recycling and were collecting glass, plastics, newpapers, waste oil and office paper. These sites were serviced also by Waste Management of the Tri-Cities. Advance Auto had a battery buy back program as did K-Mart. Salvage yards were undertaking junk car collection. • Volunteer: the Lions Club of Marion, the First United Methodist Church of Marion collected various materials. The Marion Senior High School was collecting old phone books.
	Tipping Fees: By 1991, Smyth County had implemented tipping fees of $10 per ton for commercial and industrial haulers. They were also seeking $10 per ton from the three towns. Private vehicles entering the landfill were to be charged $3 each. There was no charge for residents using the green box system.
	Funding sources: General fund plus tipping fees
Washington County	**Collection:** By 1991, the County had fully implemented the convenience center collection system at eight rural locations and at the landfill entrance. The sites posted regular hours and were staffed during those hours. The incorporated Towns provided their own equipment and personnel for door to door collection, serving both the residential and commercial sectors. There were still a few green boxes located in remote parts of the County which were serviced by the County. Industry transported its own wastes to the landfill directly utilizing its own vehicles or via a contracted service. A small number of County residences were served door to door by private vendors.
	Disposal: The County's landfill was located between Abingdon and Glade Spring off of Route 705. It was approximately 100 acres in size of which approximately 50 acres received waste. In 1991, the County thought that the facility had only 12 months of remaining life. A study to develop an adjacent site was conducted in 1990 and a Part A

COMPONENT	DESCRIPTION
	application had been submitted. The County was also considering utilizing the potential City of Bristol balefill quarry site facility on a charge per ton basis. Scales were in place. There was also a separate area for tire disposal and asbestos disposal.
	Brush: These materials were burned on site at the landfill.
	Recycling: • Commercial and Industrial: For the plan the recycling completed by the commercial and industrial sector was surveyed. Based on the survey results, it was estimated that the commercial sector was recycling approximately 94 tons per month primarily through the recycling of cardboard through the major grocery stores. In addition, it was estimated that the industries in the County recycled 218 tons per month. The recycling rate for the County was calculated as 8%. K-Mart was buying back batteries. • By County or private sector: Nine convenience centers equipped with drop off recycling boxes for the collection of newspaper, bundled office paper, plastics, glass and used oil. Pilot programs for cardboard and magazines were being conducted. Waste Management of Tri Cities was servicing the sites. A mobile unit was regularly rotated to the following places – Abingdon at the Food City, Town of Glade Spring, Meadowview and Emory at the Emory Depot, Damascus from its post office parking lot. White goods were being collected at the landfill for salvage. • By Abingdon: Curbside collection was just being tried for approximately 300 homes. Yard waste was being composted with sludge. Reynolds Metals was operating a collection trailer as part of a voluntary buy back program. • By volunteers: Abingdon Senior Center and Services, Inc. was collecting the same types of recyclables as the County and also used clothing and used household goods. The volunteer groups were staffing the mobile units.
	Tipping Fees: Washington County had implemented the following tipping fee system: • $20 per ton charge for commercial trash, garbage, and refuse; • $12 per bag of asbestos; • $0.50 per tire; • $20 per ton for commercial brush and undergrowth • $20 per ton for non-commercial building materials Fees were charged at the convenience centers or at the entrance facilities available at the landfill.
	Funding sources: General fund and tipping fees.

2.2.1.3 Goals of Original Plan

Under the original plan, the following goals were identified:

TABLE 9
SUMMARY OF GOALS AND ACTION ITEMS
MOUNT ROGERS PLANNING DISTRICT – REGIONAL PLAN
(Smyth and Washington Counties and Incorporated Towns)
Highlights from 1991 Solid Waste Management Plan

A. OVERALL GOALS FOR SOLID WASTE MANAGEMENT

ORIGINAL GOAL	CURRENT STATUS
To meet/exceed the solid waste management regulations authorized by the Virginia General Assembly and promulgated by VR 672-50-01.	Ongoing
To consider the Virginia Department of Waste Management solid waste management hierarchy	Ongoing
To implement recycling strategies that will result in recycling rates of 10% by 1991, 15% by 1993, and 25% by 1995.	2003 recycling rates reported as follows: • Smyth County 28.6% • Washington County 29.8%
To insure that adequate collection/disposal systems area available to area residents and businesses.	Ongoing

B. SOURCE REDUCTION

Goal: To reduce the volume of solid waste entering the waste stream by curtailing waste generation.

ORIGINAL OBJECTIVE	CURRENT STATUS
To educate private citizens about source reduction techniques through two media events a year.	Have moved towards more general education program.
To educate the business community about source reduction techniques through one media event a year.	Have moved towards more general education program.

C. REUSE

Goal: To reduce the volume of solid waste entering the waste stream through reuse of existing materials.

ORIGINAL OBJECTIVE	CURRENT STATUS
To educate private citizens through two media events a year.	Have moved towards more general education program.
To educate the business community through one media event a year.	Have moved towards more general education program.

D. RECYCLING

Goal: To divert recyclable quantities from the municipal solid waste stream so the existing landfills will last longer, thereby delaying the need for new landfill facilities.

ORIGINAL OBJECTIVE	CURRENT STATUS
Make the opportunity to recycle more available to the households of each jurisdiction	Ongoing
Encourage business establishments to recycle	Ongoing
Promote recycling at government locations	No effort at this time.
SPECIFIC ACTIONS RECOMMENDED:	
Smyth County	
Use and promote drop boxes at convenience centers.	Completed
Add scheduled convenience centers as funding is available and at a rate of three new centers each fiscal year.	Completed
Study feasibility of County yard waste composting site by 1993.	Interest has not yet developed in program.
MARION	
Establish drop box(es) served by town at pool parking lot.	
Promote use of Reynolds Aluminum Can Return Center.	
Promote use of Walmart Drop Box and others as available.	
Initiate curbside collection during 1994.	
Initiate yard waste composting by 1995.	
Encourage use of Advance Auto oil collection and battery collection plus K-Mart battery buy back.	
Chilhowie	
Establish drop box served by Town at the Town Shop.	Completed for solid waste collection.
Continue promoting/using existing Smyth County PSA convenience stations for depositing recyclables.	Convenience centers now operated by County. PSA is not involved. Promotion of use by Town.
Saltville	
Establish drop box served by Town at Saltville Center VHCC by 1993.	Not implemented.
Initiate curbside collection during 1995.	Not implemented.
Promote use of Saltville area convenience station established by through Smyth County PSA.	Convenience center now operated by County. Promotion of use by Town.
Initiate yard waste composting by 1994.	Interest has not developed in program.
Washington County	
Continue voluntary drop box locations at the eight convenience centers throughout the County and at	Have installed 14 recycling drop box centers to date.

ORIGINAL OBJECTIVE	CURRENT STATUS
the County landfill location.	
Continue rotating a drop box weekly or bi-weekly to designated areas of the County not served by regular drop box collection.	As Towns request, drop box is provided on monthly basis.
Abingdon	
Establish drop box for voluntary recycling served by the Town or its contractor at ball field on Russell Road or at other appropriate location.	Not implemented.
Continue monthly traveling drop box at Food City location through Washington County Recycling Department.	Was implemented but requested to stop activity by Food City when litter became an issue.
Continue demonstration curbside collection of recyclables at 300 residences.	Expanded program continues operation on a voluntary basis. Using Waste Management Inc. of the Tri Cities.
Expand curbside collection opportunity to all parts of Town during 1994.	Implemented on voluntary basis.
Damascus	
Continue drop box for voluntary recycling placed monthly through Washington County Recycling Department.	Discontinued at request of Town.
Plan to have full-time drop box available by 1993.	Not implemented.
Glade Spring	
Continue monthly drop box at Emory depot location through Washington County Service Authority.	Implemented by County. Service Authority not involved.
Plan to have full-time drop box in Glade Spring available during 1992.	

E. WASTE TO ENERGY

Goal: To remain informed on waste-to-energy technology so that new initiatives in the field can be evaluated.

ORIGINAL OBJECTIVE	CURRENT STATUS
To educate governmental leaders through trade journals and other information sources to that informed decisions involving waste-to-energy can be made.	Region not interested in Waste to Energy.

F. INCINERATION/VOLUME REDUCTION

Goal: To remain informed on Incineration/Volume Reduction technology so that new initiatives in the field can be evaluated.

ORIGINAL OBJECTIVE	CURRENT STATUS
To educate governmental leaders through trade journals and other information sources to that informed decisions involving	Region not interested in Incineration.

Incineration/Volume Reduction can be made.	

G. LANDFILLING

Goal: To continue operations of landfills in the most cost-effective, environmentally sound manner possible while meeting DWM standards.

ORIGINAL OBJECTIVE	CURRENT STATUS
To remain up to date on changes in DWM regulations	Not applicable-all landfills closed.
To reduce the volume of solid waste entering the landfill thereby extending the life of the facility	Landfills closed.
To meet or exceed all environmental standards	Post-closure monitoring of gas and groundwater in place at all landfills closed after 1991.

TABLE 10
TWENTY YEAR MILESTONES
MOUNT ROGERS PLANNING DISTRICT – REGIONAL PLAN

A. YEAR 1 – 2

ORIGINAL OBJECTIVE	CURRENT STATUS
The Mount Rogers Planning District Commission and each locality to revise solid waste plans.	Original plan replaced with 2004 plan.
Each landfill-operating jurisdiction to assess need for and level of contributions for tipping fees.	All landfills closed. Tipping fees at transfer stations.
Each Jurisdiction set up form of central record keeping.	Completed.

B. YEAR 2 – 10

ORIGINAL OBJECTIVE	CURRENT STATUS
Towns and counties meet at least twice a year to share information and discuss strategies and opportunities to undertake jointly	Meet two times per year during PDC meetings. Meet at Southwest Virginia Solid Waste Management Association Meetings.
Each locality report recycling activities and rates to county – reassess	Region will report to DEQ annually.
Localities to apply yearly for allocated litter grant monies and report prior year's activities	Ongoing.
Each jurisdiction to yearly assess the rate of disposal and the projected life of the landfill. Begin to pursue strategy for new landfilling capacity.	All landfills closed.
Each five years localities to provide necessary information to update the solid waste management plan.	Original plan replaced with 2004 plan.

Pursue available technology and economic options for yard waste composting to more fully reduce the landfill of such materials.	Interest in such a program on a regional basis has not been expressed at this time. Abingdon and Chilhowie operate composting programs as part of their sludge handling systems.
Pursue more intense efforts to seek regional collection and marketing of recyclables.	Interest in regionalizing program not expressed at this time.

C. YEAR 10 – 15

ORIGINAL OBJECTIVE	CURRENT STATUS
Pursue any viable changes in technology or economics or public opinion that lead to cooperation in the development of regional solid waste management facilities of any type.	Ongoing.
Localities continue to meet on a yearly basis.	Ongoing.
Collect data and plan for required reporting and revisions to Solid Waste Management Plan in year 10 and 15.	Replaced with 2004 plan.
Pursue viability of purchasing higher quantities of materials made from greater percentages of post-consumer recycled materials for local government and local school system use.	No interest expressed in this program at this time.

D. YEAR 5 – 20

ORIGINAL OBJECTIVE	CURRENT STATUS
Each local government reassess current activities, methodologies, and economic options to plan to meet goals and objectives for the next twenty years as directed by state and federal policies then in effect.	Ongoing.

2.2.2 Wythe – Bland Counties Solid Waste Management Plan

The Wythe County, Bland County, Town of Wytheville and Town of Rural Retreat Solid Waste Management Plan was completed by Wythe County with input from the Wythe-Bland Recycling Committee. The plan was not dated but indicated that it had been approved by the Wythe County Board of Supervisors on July 12, 1991 and by the Bland County Board of Supervisors on July 22, 1991.

2.2.2.1 Waste Generation Projections

The 1991 plan indicated that the Wythe – Bland region generated 2,157.80 tons of solid waste per month. This value was derived from the weighing program conducted for the 1989 update for the Mount Rogers Regional Solid Waste Plan, response to the recycling survey of the Wythe-

Bland Recycling committee, and estimates of Bland County residential waste being disposed of in the Wythe County Landfill. There were no scales in place at any of the disposal facilities. The following break down of the waste generated was provided:

- Wythe County including Rural Retreat – 40 tons per day x 6 days x 4 weeks = 967.2 tons per month (tpm)
- Wytheville – 36 tpd x 5 days x 4 weeks = 720 tpm
- Bland County – 17 tons per week x 4 weeks = 68 tpm
- Commercial and industrial = 402 tons per month of material being recycled.

Based on this data the following annual tonnage was estimated assuming tons per week x 52 weeks:

- Wythe County including Rural Retreat – 40 tpd x 6 days x 52 weeks = 12,480 tons
- Wytheville – 36 tpd x 5 days x 52 weeks = 9,360 tons
- Bland County – 17 tons per week x 52 weeks = 884 tons
- Commercial/industrial – 402 tons per month x 12 months = 4,824
- TOTAL ANNUAL TONNAGE = 27,548 tons = 88 tons per day (6)

No future projections were made for waste tonnage.

The tonnage reported for 2003 as delivered to the transfer station was as follows:

- Wythe County 12,793 tons
- Wytheville 627 tons
- Bland County 2,477 tons
- Commercial/industrial/other 12,520 tons
- TOTAL ANNUAL TONNAGE 28,417 tons = 91 tons per day (6)

This does not include recycling tonnages for the commercial sector as was included in the 1991 values. The tonnage in 2003 is significantly higher than the 1991 estimate.

2.2.2.2 System components

The solid waste management system consisted of the following components in 1991:

TABLE 11
1991 SOLID WASTE SYSTEM COMPONENTS
WYTHE – BLAND REGIONAL PLAN

COMPONENT	DESCRIPTION
Wythe County	**Collection:** In 1991, Wythe County was collecting from its residents using bulk containers. 215 containers were in place at 85 locations. The County used 3 trucks to collect waste from the bulk container sites. These trucks ran set routes Monday through Saturday. The County did not provide collection for its commercial or industrial sectors which relied on private services.
	Disposal: The Wythe County landfill is located near Speedwell in the southwest corner of the County. It was permitted as Permit No. 105 in 1974 and consists of approximately 83 acres. The facility was not lined. In 1991, it was estimated that the facility had 3 – 5 years of remaining life. This landfill was receiving waste from Rural Retreat and residential waste from Bland County.
	Recycling: No residential program. Some recycling by the commercial and industrial sectors.
Town of Rural Retreat	**Collection:** The Town provided weekly curbside collection for all residents and provided collection for commercial establishments. The Town used a 21 cubic yard side load packer truck. The Town did not provide collection for its industrial sector.
	Disposal: Waste disposed of at the Wythe County landfill.
	Recycling: No residential program.
Town of Wytheville	**Collection:** The Town provided weekly curbside collection at no charge to its residents. The Town operated two rear loading packer trucks, which ran weekly collection routes. The Town did not provide collection to its commercial or industrial sectors which relied on private collection services.
	Disposal: The Town owned and operated a sanitary landfill on approximately 17 acres located on State Route 649 adjacent to the corporate limits. The facility was unlined. In 1991, it was estimated to have a remaining useful life of 3 – 5 years.
	Recycling: No residential program.
Bland County	**Collection:** Bland County contracted with a private company for door to door service for its residents. The County did not provide collection for its commercial or industrial sector.
	Disposal: Residential waste was disposed of in the Wythe County landfill.
	Recycling: No residential program

2.2.2.3 Goals of the original plan

The following goals and objectives were developed in the 1991 plan:

TABLE 12
WYTHE – BLAND REGION
GOALS AND OBJECTIVES
FROM THE 1991 SOLID WASTE MANAGEMENT PLAN

GOAL	OBJECTIVE
The development of an integrated solid waste management program.	To establish minimum solid waste management standards and planning requirements for the protection of public health and safety, the environment, and natural resources.
	Promote planning and programs that will provide environmentally sound solid waste management, while making the most effective use of limited local resources.
	Establishment of a programmatic framework for meeting the state mandated recycling rates of 10%, by 1991, 15% by 1993 and 25% by 1995.

TABLE 13
WYTHE – BLAND REGION
SOLID WASTE HIERARCHY
FROM 1991 SOLID WASTE MANAGEMENT PLAN

ELEMENT OF HEIRARCHY	PROPOSED ACTIVITY	CURRENT STATUS
Source Reduction	Develop a program for education and information which could be implemented in all communities.	Education in schools.
Reuse	Develop a program for education and information which could be implemented in all communities.	Education in schools.
Recycling - Wythe County	Develop a drop off system of collection in conjunction with the development of convenience centers	Completed.
Recycling – Bland County	Develop a curbside	Completed-clear bags used.

ELEMENT OF HEIRARCHY	PROPOSED ACTIVITY	CURRENT STATUS
	collection system using different colored bags.	
	Develop a drop off system if the curb side program does not work.	One site implemented at waste water treatment plant.
Recycling - Wytheville	Develop a curbside collection program collecting plastics, glass, mixed metals, mixed paper including newspaper.	Not implemented. Town provides one offsite.
Recycling – Rural Retreat	No program proposed	No program. Citizens encouraged to use County program.
Recycling - General	Develop a marketing effort to identify stable markets	Ongoing.
	Evaluate the possibility of the construction of a small regional materials recovery facility.	Not implemented.
Collections – Wythe County	Move away from the greenbox system to a convenience center system.	Completed.
Disposal	Complete the permitting on the new landfill. (1992)	New landfill not developed. The Counties formed an authority and constructed a transfer station.
	Create a joint Wythe Bland County PSA (8/92)	Completed.
	Construct landfill (July – Dec. 1993)	Not applicable.
	Begin operation (1/1/94)	Not applicable.

3.0 DEMOGRAPHIC DATA

3.1 Bland County

3.1.1 Location

Bland County, Virginia is located in Southwestern Virginia on the border of West Virginia. Interstate 77 runs through the middle of the county and intersects I-81 about 15 miles south at Wytheville in Wythe County. Its strategic position on I-77 gives Bland County ready access to the markets of the Great Lakes Region and the Northeast and the Southeast.

Tazewell and Smyth counties lie to the west of Bland while Giles and Pulaski Counties border it on the east. Roanoke is approximately 84 miles east and Richmond, the state capital, is 255 miles east.

Bland County is situated on the edge of the southwest portion of the Great Valley of Virginia. Formed from parts of Giles, Wythe, and Tazewell Counties in 1861, the county's area is 369 square miles.

3.1.2 Population

As of the 2000 Census, there were 6,844 people, 2,568 households, and families residing in Bland County. This calculates to a population density of 18.5/mi². The racial makeup of the county is 94.8% White, 4.2% Black or African American, and about 1% all other races.

The population of Bland County is "older" than the state as a whole with 14.5% of the population 65 years of age or older (Virginia, 11.2%). The average household size is 2.43 and the median age in year 2000 is 40 years of age.

About 45 percent of the current population is concentrated in Rocky Gap, Bastian, and Bland.

TABLE 14
BLAND COUNTY, VIRGINIA
POPULATION PROJECTIONS BY DECADE

Year	US Census Bureau	VEC Projections	Percent Change by Decade
1990	6,514		
2000	6,871		5.5%
2001*	6,900		
2002*	6,916		
2010		7,600	10.1%
2020		8,300	9.2%
2030		8,800	6.0%

*Estimates U.S. Census Bureau

TABLE 15
BLAND COUNTY
POPULATION ESTIMATES – ANNUAL CHANGE FROM 1990 TO 2000

Year	Population Estimate	% Annual Change
1990	6,514	
1991	6,550	0.55%
1992	6,586	0.55%
1993	6,621	0.53%
1994	6,657	0.54%
1995	6,693	0.54%
1996	6,729	0.54%
1997	6,765	0.53%
1998	6,800	0.52%
1999	6,836	0.53%
2000	6,871	0.51%

U.S Bureau of the Census and Weldon Cooper Center for Public Service

The population of Bland County is proportionately growing faster than some of its neighboring counties but small changes in population can reflect significant growth in a county of less than 7,000 residents. Projections from the Virginia Economic Commission show continued growth at the rate of about 1% annually through 2010. The county is very rural, with an agriculturally based economy. Many of those employed commute to neighboring counties to work. The following table indicates population projections from 1990-2030.

TABLE 16
BLAND COUNTY
POPULATION PROJECTIONS BY YEAR

Year	Bland County
1990	6,514
2000	6,871
2001	6,944
2002	7,017
2003	7,090
2004	7,163
2005	7,236
2006	7,309
2007	7,382
2008	7,455
2009	7,528
2010	7,600
2011	7,670
2012	7,740
2013	7,810
2014	7,880

Year	Bland County
2015	7,950
2016	8,020
2017	8,090
2018	8,160
2019	8,230
2020	8,300
2021	8,350
2022	8,400
2023	8,450
2024	8,500
2025	8,550
2026	8,600
2027	8,650
2028	8,700
2029	8,750
2030	8,800

The community of Bland is the county seat but the Census Bureau does not report population for unincorporated towns. There are no incorporated towns within the county.

3.1.3 Geographic Conditions

Bland County is located in the Ridge and Valley Physiographic Province of Virginia. It lies in the lower portion of the Great Valley of Western Virginia and is characterized by broad valley systems, extending in a northeast-southwest direction. Carbonate rocks are relatively easily eroded and underlie the valleys. The Ridges are held up by sandstones and quartzites, which are relatively resistant to erosion.

Nearly 78 percent of the County's total area is wooded with approximately 32 percent of the mountainous portions in the Jefferson National Forest. Gentle slopes range between Bastian and Rocky Gap and in the valleys around Ceres, Bland, and Mechanicsburg. These areas also contain cultivated portions of the county.

3.1.4 Climate

The area receives about 35-40 inches of rain fall and 26 inches of snow per year. The average maximum temperature is 72 degrees, and the average minimum temperature is 36 degrees.

3.1.5 Transportation

3.1.5.1 Highways

Interstate 77 (I-77) runs the length of the County from north to south, nearly bisecting it. Another major transportation route, I-81 intersects I-77 just 15 miles south of the county border

at Wytheville. U.S. Route 52 is the major highway running north and south while VA 42 and 61 run northeast to southwest.

3.1.5.2 Air

Commercial air service is available at Mercer County Airport in West Virginia, 8.1 miles to the west. Mercer is served by U.S. Airways and U.S. Airways Express. The Raleigh County Memorial Airport is located 41.6 miles north in Beckley, West Virginia and is served by U.S. Airways Express. Roanoke Regional Airport is the nearest larger airport and is located 66.2 miles to the northeast. Roanoke is served by at least five major airlines.

Mountain Empire, a general aviation airport, is located in Smyth County with a mile–long runway.

3.1.5.3 Rail

Freight rail service is not available in Bland County.

3.1.5.4 Water

The nearest shipping port is at Hampton Roads, 320 miles to the east.

3.1.6 Infrastructure

3.1.6.1 Electricity

American Electric Power provides power Bland County.

3.1.6.2 Natural Gas

Natural gas is not available in the county

3.1.6.3 Water

Water is provided by the Bland County Service Authority and from individual wells.

3.1.6.4 Solid Waste Disposal

Waste collection and recycling is provided by the County.

3.1.7 Economic Growth

The population of Bland County is experiencing better job growth and lower unemployment rates than many of the counties of the Southwest Region of Virginia. The poverty rate in Bland County for families was 12.4% in 2000, somewhat higher than the poverty rate of 9.6% in Virginia but less than Smyth County at 16.8%. The per capita personal income for Bland County was $17,744 in 2001 as compared to $23,975, the per capita income for Virginians.

TABLE 17
BLAND COUNTY UNEMPLOYMENT RATE VS. GROWTH RATE

Year	Unemployment Rate	Growth Rate
2000	5.7	1.5
2001	5.7	-1.0
2002	4.5	2.3
2003 (June)	4.1	0.8

The Unemployment Rate is lower in Bland than in the rest of Southwest region. Despite the high number of farms in the county, only 6.7% of those employed report working in agriculture. As in the neighboring counties of Smyth and Wythe, the 21.2% of workers are working in manufacturing and 31.2% in the service industry. Since there are a minimal number of industrial companies located in Bland, a significant percentage of those employed are traveling an average of 33 minutes to work. Of the 2,630 workers commuting to work, 1,191 (45%) are working in the locality and 1,439 (55%) are working elsewhere.

TABLE 18
EMPLOYMENT BY INDUSTRY– CENSUS 2000

Category	Number	Percentage
Agriculture / Mining	180	6.7
Construction	154	5.7
Manufacturing	570	21.2
Transportation, Communications, & Public Utilities	222	8.2
Wholesale and Retail Trade	391	14.5
Finance, Insurance, & Real Estate	60	2.2
Services	840	31.2
Government	276	10.2
Total	2693	100.0

U.S. Census Bureau

TABLE 19
MAJOR EMPLOYERS-BLAND COUNTY

Major Employers-Bland County		
Company	**Product**	**# of Employees**
ABB Power T & D CO, Inc.	Transformers	100-299
East River Metals, Inc.	Fabricated metal	20-49
Bland Correctional Institution	Correctional Institution	100-299
General Injectables & Vaccines, Inc	Drugs - wholesale	100-299

3.1.8 Land Use

The following table summarizes the land use classifications of the County:

TABLE 20
EXISTING LAND USE CLASSIFICATIONS BLAND COUNTY BY ACRE 1998

Classification	**1998 Acres**	**Percent of Total**
Agricultural	44,570	18.87
Commercial	72	0.03
Industrial	72	0.03
Residential	1,558	0.66
Public/Semi-Public	8,700	3.68
Conservation/ Recreation	181,188	76.72
Total	236,160	100

3.1.8.1 Residential

Approximately 3,100 persons live in or near the communities of Bland, Rocky Gap and Bastian. 2208 single family homes and 857 mobile homes or 27% of all housing units. The mobile homes are scattered in a relatively random fashion along almost every road in the county. The dispersion of structures is not limited to manufactured homes. A number of small communities are located along major roads and intersections. There is a tendency for these communities to grow toward one another, creating what are, in effect, linear communities. This trend can be seen along portions of Routes 42, 52, and 21.

This type of uncontrolled development is difficult to serve with public sewage. On the Future Land Use Map, residential growth areas are shown around Bland, Bostic, from Rocky Gap to North Gap and along Wolfe Creek, Dry Fork Creek and Clear Fork Creek

3.1.8.2 Commercial

There are no major commercial centers in Bland County. Residents travel south on I-77 to Wytheville or north to Bluefield or Princeton, West Virginia to find shopping centers. The limited commercial development in the county is located in the communities of Bland and Bostic. Bland County currently does not have the population to support significant commercial activity.

3.1.8.3 Industrial

Bland County has four industrial parks with land available for new businesses to locate. All sites are conveniently located near I-77. Industrial developments is Bland County are small and there is no significant increase expected in industrial development in the near future.

TABLE 21
INDUSTRIAL PARKS - BLAND COUNTY

Site specifications - Industrial Parks - Bland County							
Site Name	**Miles to I-77**	**Total acreage**	**Gas**	**Electric**	**Water**	**Sewer**	*Rail*
I-77 Industrial Park	2	9	no	yes	yes	yes	no
Bastian Industrial Park	0.5	20	no	yes	yes	yes	no
Stowers Site	2	43	no	yes	yes	no	no
J & J Properties Site	0.5	30	no	yes	yes	yes	no

3.1.8.4 Agriculture

Agriculture is the leading industry in Bland County. Livestock consisting of beef cows, dairy cows, and sheep are the main enterprises. Small cow/calf operations and summer feeder calves on mountain pastures comprise the major portion of the livestock, with nine Grade A dairies and a few sheep flocks making up the rest. Interstate-77 greatly enhances the marketing of the livestock and farm and forest products produced in the county.

Native pasture, hay, corn and small grains are the principle crops grown, with the bulk of these used to feed the livestock. Some burley tobacco is grown in the western area of the county. A small settlement of Amish in the eastern part of the county is engaged in vegetable/ produce farming. Much of the land is limestone soil which is very productive grass and crop land.

The 1998 farm census showed about 45,000 acres devoted to crop land and pasture, averaging about 128 acres per farm on the 350 farms. With woodland acreage, the average farm size is about 250 acres. Forest production is important to many county farms. Parts of the county are rated excellent for growing white pines.

3.1.8.5 Open Space/Conservation

Conservation and recreation use land (basically forested land) represents about 76% of the total land in the county with 20% of this on private farms, 40% national forest and 40% commercial forest.

Much of Bland County is devoted to outdoor recreational activity. The beautiful mountains and streams provide ample opportunities for the most avid sportsman and outdoorsmen. Hunting and fishing are popular pursuits and the Appalachian Trail traverses the breadth of the county and there are many campgrounds in the area. The Jefferson National Forest covers much of the county and one can find many camp grounds.

Sources:
Bland County Comprehensive Plan, Chapter VII, Land Use and Developmental Issues, 1999.
U.S. Bureau of the Census, 2000 Census, 1990 Census, Economic Census.
http://www.blandconsulting.com
http://www.bland.org/
Virginia Employment Commission

3.2 Smyth County

3.2.1 Location

Smyth County, Virginia is located in Southwestern Virginia. Interstate 81 runs through the county's central valley, and intersects with Interstate 77 approximately 25 miles northeast of the Town of Marion, the county seat. Other major communities are the Towns of Chilhowie and Saltville.

The County is bordered on the southwest by Washington and Russell Counties, by Tazewell County to the north, Wythe County to the northeast and Grayson County to the southeast. Bristol is 45 miles southwest; Roanoke is 100 miles northeast; and Washington DC is 343 miles northeast of the county.

There are approximately 452 square miles in the County and a large portion of the County's acreage is located within the boundaries of two popular tourist destinations, Mount Rogers National Recreation Area and Hungry Mother State Park.

3.2.2 Population

The population of Smyth County is growing very slowly and projections from the Virginia Economic Commission are for it to continue to do so for the next 25 years at the rate of approximately 0.21% annually. In 2000, the county's population was 33,081, only a 2.2% increase from 1990. The U.S. Census Bureau actually estimated that the population in 2001 and 2002 would decrease by about 0.6%. This was most likely to reflect the loss of a significant number of jobs in the manufacturing sector and the assumption that households would be moving out of the county to relocate with companies or in search of jobs.

TABLE 22
SMYTH COUNTY
POPULATION PROJECTIONS BY DECADE

Year	US Census Bureau	VEC projections	% Increase in Population by Decade	
1990	32,370			
2000	33,081		1990-2000	2.2%
2001	32,888			
2010		33,800	2000-2010	2.2%
2020		34,500	2010-2020	2.1%
2030		35,200	2020-2030	2.0%

Populations of Chilhowie, Saltville and Marion all decreased from 1990-2000 but the population in the county as a whole increased. The future land use map shows expected future growth in the northern outskirts of Chilhowie and Marion and to in the southern section of Saltville.

TABLE 23
SMYTH COUNTY
POPULATION CHANGES BY DECADE – CENSUS DATA
1980-2000

County	Town	1980 Census	1990 Census	2000 Census	% Change 1980-1990	% Change 1990-2000
Smyth County		33,366	32,370	33,081	-3.0%	2.2%
	Chilhowie	1,269	1,971	1,827	*55.3%	-7.3%
	Marion	7,029	6,630	6,349	-5.7%	-4.2%
	Saltville	2,376	2,300	2,204	-3.2%	-4.2%

* Annexation occurred
U.S. Bureau of the Census and Weldon Cooper Center for Public Service

TABLE 24
SMYTH COUNTY
POPULATION ESTIMATES – ANNUAL CHANGE FROM 1990 TO 2000

Population Estimates by Year 1990-2000			
	Year	Smyth	% Annual Change
Census	1990	32,370	
Estimates	1991	32,600	0.71%
	1992	33,000	1.23%
	1993	33,300	0.91%
	1994	33,400	0.30%
	1995	33,400	0.00%
	1996	33,200	-0.60%
	1997	33,200	0.00%
	1998	33,200	0.00%
	1999	33,200	0.00%
Census	2000	33,081	-0.36%

U.S. Bureau of the Census and Weldon Cooper Center for Public Service

The following table summarizes the population projections by year based on the above discussion:

TABLE 25
SMYTH COUNTY
POPULATION PROJECTIONS 1990-2030

Year	Smyth County
1990	32,370
2000	33,081
2001	32,888

Year	Smyth County
2002	33,224
2003	33,297
2004	33,369
2005	33,441
2006	33,512
2007	33,584
2008	33,656
2009	33,728
2010	33,800
2011	33,870
2012	33,940
2013	34,010
2014	34,080
2015	34,150
2016	34,220
2017	34,290
2018	34,360
2019	34,430
2020	34,500
2021	34,570
2022	34,640
2023	34,710
2024	34,780
2025	34,850
2026	34,920
2027	34,990
2028	35,606
2029	35,130
2030	35,200

As of the 2000 Census, there are 33,081 people, 13,493 households, and 9,607 families residing in the county. This calculates to a population density 73/mi². There are 15,111 housing units at an average density of 33/mi². The racial makeup of the county is 96.86% White, 1.87% Black or African American, and a little over 1% all other races.

There are 13,493 households and 12.5% have someone living alone who is 65 years of age or older. The average household size is 2.37 and the average family size is 2.83. In the county, the population is spread out with 21.6% under the age of 18, 8% from 18 to 24, 28.1% from 25 to 44, 26% from 45 to 64, and 16.3% who are 65 years of age or older. The state average is 11.2% of the population 65 years or older. The median age for Smyth County in year 2000 is 40 years of age.

3.2.3 Geographic Conditions

Smyth County is located in the lower portion of the Great Valley of Western Virginia and is characterized by broad valley systems, extending in a northeast-southwest direction. Elevations range from 1,740 to 5,729 feet above sea level at Mount Rogers the state's highest peak. Mount Rogers sits astride the Grayson-Smyth County line and forms the divide between the Tennessee River and the New River drainage.

Smyth County is located primarily in the Ridge and Valley Physiographic Province of Virginia, with the exception of the extreme southern portion of the county, which lies in the Blue Ridge Province. Smyth County lies in the Holston River Basin and contains three major valleys carved by the three forks of the Holston River. Underlain primarily by carbonate rocks, the Valley of Virginia is a region of karst. Solution of the carbonate bedrock has created sinkholes on the surface and many caves and large caverns beneath the surface.

3.2.4 Climate

Smyth County experiences four distinct seasons, with moderate climate as one of its major assets. The county's southern location has relatively mild winters, and its elevation provides natural air conditioning during the summer months. Normal averages are as follows:

Average Temperature, January	31F	-1° C
Average Temperature, July	71°F	22° C
Average Annual Rainfall	41"	104cm
Average Annual Snowfall	20"	51cm

The prevailing winds are from a generally westerly direction, with southerly and northerly winds occurring less frequently. Major weather systems generally approach the area from the southwest, out of the Tennessee Valley. The mountains, along with the westerly winds, protect the county from the severe storms originating in the Atlantic.

3.2.5 Transportation

3.2.5.1 Highways

Interstate 81 (I-81) runs the length of the County, nearly bisecting it, and within the county there are seven interchanges. Another major transportation route, I-77 intersects I-81 just 27 miles north of Marion. U.S. Route 11 is the major highway running north and south. Other major highways in the county are VA 16, VA 42, VA 91, and VA 107.

3.2.5.2 Air

Commercial air service is available at Mercer County Airport in West Virginia, 38.6 miles to the west. Mercer is served by U.S. Airways and U.S. Airways Express. The Tri-Cities Regional Airport (TRI) is located 45 miles from Marion down I-81 in Sullivan County, Tennessee. The Tri-Cities area is served by U.S. Airways, Delta Connection, Northwest Airlink and Atlantic

Southeast Airlines among others. Mountain Empire, a general aviation airport, is located in Smyth County with a mile–long runway.

3.2.5.3 Rail

A Norfolk Southern mainline runs through Smyth County, parallel to I-81. Bulk and mixed freight service, containerized piggyback, and team track service are available from Norfolk Southern.

3.2.5.4 Water

The nearest shipping port is at Hampton Roads, 369 miles to the east.

3.2.6 Infrastructure

3.2.6.1 Electricity

American Electric Power provides power to Smyth County.

3.2.6.2 Natural Gas

Atmos Energy, Virginia Natural Gas and United Cities Gas provide power to Smyth County.

3.2.6.3 Water

Water is provided by one of the following local governments or by individual wells:

- Town of Chilhowie
- Town of Marion
- Town of Saltville

3.2.6.4 Sewage

Wastewater treatment is provided by one of the following entities or by individual septic systems:

- Smyth County/Marion Regional Wastewater Treatment Facility
- Town of Chilhowie
- Town of Marion
- Town of Saltville

3.2.6.5 Solid Waste Disposal

Solid waste is handled at the Smyth County Solid Waste Transfer Station owned and operated by the County.

3.2.7 Economic Growth

The population of Smyth County is considerably less prosperous than the population of Virginia as a whole. The poverty rate in Smyth was 16.8% in 2000, much higher than the poverty rate of 9.6% in Virginia. The per capita income for Smyth County was only 67% of the per capita income for Virginians. Proportionately fewer people in Smyth County are in the labor force and the proportion of those over the age of 25 without a high school diploma is 75% higher than in Virginia.

TABLE 26
SMYTH COUNTY
ECONOMIC INDICATORS

Economic Indicators	Smyth County	Virginia
Population with Medicaid (2002)	11.5%	7.1%
Poverty Rate (2000)	16.8%	9.6%
Per Capita Income (2000)	$16,105	$23,975
Population Aged 16+ in Labor Force (2000)	58.4%	66.8%
Population Aged 25+ w/o High School Diploma (2000)	32.5%	18.5%

The following table summarizes employment by category for 2000:

TABLE 27
SMYTH COUNTY
EMPLOYMENT - THIRD QUARTER-2000

Category	Number	Percentage
Agriculture / Mining	48	0.3
Construction	874	6
Manufacturing	5997	41
Transportation, Communications, & Public Utilities	247	1.7
Wholesale and Retail Trade	2231	15.3
Finance, Insurance, & Real Estate	236	1.6
Services	2109	14.4
Government	2877	19.7
Total	14619	100.0

Unemployment rates are running high, some of the highest in the state. In 2000 the annual rate was 5.8% while in the first quarter of 2003 it had jumped to 10.9%. The region has experienced the loss of thousands of manufacturing jobs over the past decade mainly due to the demise of sewing factories and mining manufacturing companies. Industries expanding or relocating to

Smyth County will find an ample supply of highly trainable employees. At any given time, there are usually 1,500 to 2,000 people actively seeking work.

Approximately 2,587 people commute to Smyth County from nearby counties for work. Most commuters come from Washington County, Smyth County's neighbor to the west, and many others come from Wythe and Grayson Counties, which border Smyth County to the east, and the south.

The median income for a household in the county is $30,083, and the median income for a family is $36,392. This was significantly lower than the state median family income of $49,085. Males have a median income of $26,698 versus $19,712 for females. The per capita income for the county is $16,105

According to the annual statistics for Counties from the Virginia Employment Commission in 2002, Smyth County had a Civilian Labor Force of 15,499 persons. Of that number, 14,004 were employed and 1,445 persons were unemployed for an unemployment rate of 9.4%.

3.2.8 Land Use

The generalized existing land use pattern within the unincorporated areas of Smyth County is predominately agricultural and with scattered low-density residential land uses. Commercial and industrial uses in the county are located along major routes.

The County Zoning Map shows that currently 66.6% of the land is zoned for agriculture/rural use (excluding the towns). Another 33% of the land is zoned Public/Open Space leaving only 0.3% industrial and 0.1% commercial. Most of the residential zoning is in the three incorporated towns. The county has not experienced a great deal of land development over the past decade.

3.2.8.1 Residential

Residential development has been limited in Smyth County with little subdivision activity and the predominance of manufactured homes over single-family conventional home construction. The majority of residential development in Smyth County lies along the central growth corridor in close proximity to Marion, Chilhowie, and Saltville. Most of the small sections of the county zoned residential lie along the I-81 corridor from Chilhowie to Marion. The vast majority of the county is zoned Agricultural/Rural and residents in these areas most often have 5-10 acres in addition to their residence. Saltville lies approximately 10 miles from I-81 along VA 107. The 2000 Census showed Saltville with a population of 2,204, Marion with 6,349 and Chilhowie with 1,827.

Census data from year 2000 shows 15,111 housing units for the county with an average household of 2.37 persons. Building permits for manufactured homes continue to greatly outnumber permits authorized for single-family homes. Building permit request show slow and steady residential growth.

TABLE 28
SMYTH COUNTY
RESIDENTIAL BUILDING PERMITS

Fiscal Year	Single Family	Manufactured
1998	55	249
1999	77	271
2000	74	257
2001	49	184
2002	67	176

Residential development in Smyth County is hindered by hilly and mountainous terrain. Lack of adequate water and sewer services is also a limiting factor.

3.2.8.2 Commercial

Commercial and industrial development in the county is concentrated in and around the three incorporated towns of Chilhowie, Saltville and Marion and along major highways such as U.S. Route 11 in unincorporated areas such as Seven Mile Ford and Atkins. New retail uses are expected to locate principally in the central corridor of the County. Four shopping centers with over a hundred retail outlets serve area residents. Marion is a sub-regional shopping center.

Commercial use is the smallest category of land use, comprising only 0.1% and the zoned unincorporated county land. Residents of the county often travel to regional shopping centers located near Abingdon and Wytheville.

3.2.8.3 Industrial

The general trend of development has been for industrial and heavier types of commercial uses to be attracted to the areas where adequate public utilities and transportation are provided. One of the greatest facilitators to Smyth County's economic growth through the years has been its accessibility and well-organized transportation connections.

Development in Smyth County is occurring along the central corridor of the County anchored by I-81 and U.S. 11 in the vicinity of Marion, Chilhowie and Saltville. The county is home to many manufacturing firms and the following table lists major employers:

TABLE 29
SMYTH COUNTY
MAJOR MANUFACTURING EMPLOYERS

Company	Product	Number of Employees
General Shale Products Corp	Brick	100-299
General Dynamics Armament and Technical Products	High performance armament systems	600-999
Innovat Corporation	Maker of electrical components	
Ladd Furniture Co	Wood Furniture	100-299
Marion Composites	Aircraft parts and shelters	600-999
Marion Mold and Tool	Precision casting	
Marley Mouldings Co	Pre-finished moulding products	600-999
Merillat Industries, Inc	Kitchen cabinets	300-599
Pepsi Cola General Bottlers, Inc	Home of Pepsi products	
Superior Mills, Inc	Socks	100-299
Titan Wheel Corp	Off highway wheels and rims	100-299
TRW, Inc.	Rack and pinion steering gears	100-299
Utility Trailer Manufacturing, Inc.	Refrigerated Trailers	600-999
Virginia House Furniture Co	Household wood furniture	300-599
Visador Company, Inc	Stair parts	300-599

A number of plant closings in Smyth County have meant the loss of jobs in the apparel and furniture industries -- two sectors facing stiff competition overseas. Usually, interstate interchanges are key areas for development, but several exits in Smyth are in zones prone to flooding or near steep terrain.

In 2003, General Dynamics Armament and Technical Products announced an expansion of its Marion facility and the creation of 120 new jobs. Another major employer in the county, Utility Trailer Manufacturing Company, announced in 2004 an expansion that will mean 100 new jobs at the Mountain Empire Industrial Park facility. Both expansions were facilitated through grants from the Governor's Opportunity Fund and Tobacco Region Opportunity Funds in addition to incentives such as tax credits and job training.

Smyth County currently has four Industrial Park Sites and the following table summarizes available information relative to these sites.

TABLE 30
SITE SPECIFICATIONS - INDUSTRIAL PARKS - SMYTH COUNTY

Site Name	Miles to I-81	Total acreage	Gas	Electric	Water	Sewer	Rail
Battleground Industrial Park	10	30	no	yes	yes	yes	no
Deer Valley Industrial Park	1.8	60	no	yes	yes	yes	no
Mountain Empire Industrial Park	0.1	130	yes	yes	yes	yes	no
Middle Fork Site	1.9	114	yes	yes	yes	yes	yes

3.2.8.4 Agricultural

Smyth County is a rural county with a high percentage of farms. The major portion, 66.6%, of the County is zoned Agricultural or Agricultural/Rural. Commercial, industrial and residential development has occurred on good farmland in the county because often the best, low-lying agricultural lands are also the best lands for development. Despite this concern, the Census of Agriculture identified Smyth County as gaining agricultural acreage over the period 1987-1997.

3.2.8.5 Open Space/Conservation

Protection of sensitive lands is an important category. Open space/conservation uses are encouraged to preserve agricultural, forest, steep slopes (over 20% relief), flood plains, and karst topographic areas. Thirty percent of the county is zoned Public/Open Space.

3.2.8.6 Community Facilities and Attractions

The Smyth County Community Hospital in Marion is a 170-bed acute, not for profit community based hospital located in Marion, Virginia. In addition to the hospital there is a 109 bed intermediate care nursing care facility on the campus -Francis Marion Manor.

Hungry Mother State Park is the county's most popular attraction and offers a variety of outdoor activities. The park contains a 108-acre lake and year-round accommodations.

Mount Rogers National Recreation Area is another popular outdoor destination located on the east side of I-81. The area is popular with campers, hikers, hunters and climbers.

The nationally known Appalachian Trail crosses southern Smyth County near Sugar Grove and Groseclose.

Sources:
Smyth county GIS Zoning Map and Land Use Map; Maps on the website; http://www.smythcounty.org
Smyth County Department of Inspections
Bureau of the Census, 2000 Census
Virginia Employment Commission
Virginia Department of Transportation
Virginia Economic Development Partnership
Smyth County 2003: A Comprehensive Plan, updated December, 1999

3.3 Washington County

3.3.1 Location

The County of Washington, Virginia is located in the southwestern part of Virginia. The County is in the Great Valley of Virginia in the Ridge and Valley province, situated between the Blue Ridge and the Appalachian Mountain systems. The County is a part of the Johnson City-Kingsport-Bristol Metropolitan Statistical Area. It is bordered on the south by Tennessee and in Virginia by Scott County to the west, Russell County to the north and Smyth County to the east. There are 365,440 acres, or approximately 571 square miles, in the County. It contains three incorporated towns, Abingdon, which is the County seat, Glade Spring, and Damascus.

3.3.2 Population

Washington County's population has grown steadily over the last forty years with the exception of the decade of 1980 to 1990. This anomaly may be accounted for by the generally recognized undercount in the 1990 U.S. Census. Washington County presented a challenge to the U. S. Census Bureau regarding the 1990 Census count. The challenge was subsequently denied.

During the last decade of the 20th century, the County's population has grown from 45,887 (1990) to 51,103 (2000). This increase represents an 11.4% growth in ten years, or a 1.1% general population growth per year during that decade.

TABLE 31
WASHINGTON COUNTY
POPULATION ESTIMATES BY YEAR
1990-2000

	Year	Washington	% Annual Change
Census	1990	45,887	
Estimates	1991	46,600	1.55%
	1992	47,200	1.29%
	1993	48,000	1.69%
	1994	48,500	1.04%
	1995	49,000	1.03%
	1996	49,600	1.22%
	1997	49,400	-0.40%
	1998	50,100	1.42%
	1999	50,700	1.20%
Census	2000	51,103	0.79%

U.S. Bureau of the Census and Weldon Cooper Center for Public Service

According to projections, the current growth trends for Washington County will continue. Statistical projections were developed to determine the growth for Washington County. The County's projections are derived from the regression/least squares, exponential fit methods of population projection and take into consideration the projections presented in the Town of

Abingdon, Virginia, Comprehensive Plan, December, 2000. These projections are structured to apply to Washington County from the present year through 2020. Taking an average of the three projections using the three different methods, the Comprehensive Plan forecasts the population of Washington County at 54,984 persons in the year 2010 and 59,165 persons in the year 2020.

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As can be seen in the following chart, the projections from the Virginia Employment Commission show a much slower growth of about 2% over the period from 2000-2030. According to the VEC, by 2030 the population of Washington County will only reach 54,400.

TABLE 32
WASHINGTON COUNTY
POPULATION PROJECTIONS BY DECADE

Year	Average of three methods from Comp. Plan	Virginia Employment Commission projections
1980	46,587	46,587
1990	45,887	45,887
2000	51,103	51,103
Projections		
2010	54,984	52,400
2020	59,165	53,400
2030		54,400

U. S. Bureau of the Census and Virginia Employment Commission

The following table projects the population for Washington County using the VEC projections:

TABLE 33
WASHINGTON COUNTY
POPULATION PROJECTIONS BY YEAR

Year	Washington County
1990	45,887
2000	51,103
2001	51,233
2002	51,362
2003	51,492
2004	51,622
2005	51,752
2006	51,881
2007	52,011
2008	52,141
2009	52,270
2010	52,400
2011	52,500
2012	52,600
2013	52,700
2014	52,800

Year	Washington County
2015	52,900
2016	53,000
2017	53,100
2018	53,200
2019	53,000
2020	53,400
2021	53,500
2022	53,600
2023	53,700
2024	53,800
2025	53,900
2026	54,000
2027	54,100
2028	54,200
2029	54,300
2030	54,400

The vast majority of the population growth Washington County has experienced has been through migration. According to the U.S. Census Bureau, the total change in population in Washington County from 1990 to 2000 was an increase of 5,216 persons. There were 4,944 births during this time period and 4,719 deaths resulting in a natural growth of population in Washington County of 225 persons. Therefore, the remaining growth during the last decade was 4,991 persons through migration.

Most of the county population is concentrated along the I-81 corridor especially around Abingdon, Glade Spring and Emory. Damascus, located on U.S. 58, is another population center with a population density of 500-1000 person per square mile.

3.3.3 Geographic Conditions

Washington County consists of broad valley systems, extending in a northeast-southwest direction, bordered on the northwest by Clinch Mountain and on the southeast by Iron Mountain. Elevations range from 1,330 feet above sea level near Mendota to 5,525 feet above sea level at the summit of Whitetop Mountain.

The Ridge and Valley province makes up about 95 percent of the County. It consists of fairly well defined valleys and intervening ridges. The predominant ridges are Clinch and Iron Mountains. Secondary ridges are Little and Walker Mountains, the Great Knobs, and River Knobs. Limestone sinks have formed throughout the valleys.

According to the Soil Survey of Washington County the County is underlain almost entirely by sedimentary rocks, consisting of limestone, shale, and sandstone. Limestone is the predominant rock underlying the main valley; sandstone and shale form the ridges. Rocks in the Whitetop Mountain area are dominantly metamorphosed rocks of igneous origin.

Washington County lies within the Tennessee River drainage basin or watershed. The County is

drained by the North, Middle, and South Forks of the Holston River, a tributary of the Tennessee River. All the rivers in the County flow approximately parallel to the main valley, but their tributaries flow transversely to their course and break through the intervening ridges and knobs. Walker Mountain is the drainage divide between the North Fork of the Holston River and the Middle and South Forks of the Holston River.

3.3.4 Climate

The area is characterized by four distinct seasons with spring and fall typically cool and moist. Normal averages are as follows:

Average Temperature, January	30.5°F	-1° C
Average Temperature, July	73°F	23° C
Average Annual Rainfall	45”	114.3cm
Average Annual Snowfall	15”	38.1cm

3.3.5 Transportation

3.3.5.1 Highways

Interstate 81 (I-81) runs the length of the County and intersects U.S. Routes 11, 19 and 58. Other major highways in the County include State Routes 75, 80, and 91.

3.3.5.2 Air

Commercial air service is available at Tri-Cities Regional Airport (TRI), located 34 miles southwest of Abingdon near I-81 in Sullivan County, Tennessee. The Tri-Cities area is served by U.S. Airways, Delta Connection, and Northwest Airlink. Virginia Highlands Airport, a general aviation facility, is located one mile west of Abingdon.

3.3.5.3 Rail

A Norfolk Southern mainline runs through Washington County. Bulk and mixed freight service, containerized piggy-back, and team service are available.

3.3.5.4 Water

The nearest shipping port is at Hampton Roads, 397 miles to the east. An inland container port is located at Front Royal, VA, 275 miles east.

3.3.6 Infrastructure

In the 2002 Washington County Comprehensive Plan, citizens expressed the need to provide public water service to all areas of the County, and to extend public sewer service to existing developed areas.

3.3.6.1 Electricity

American Electric Power serves most of Washington County. The Bristol Virginia Utilities Board serves portions of Washington County adjacent to the City of Bristol, Virginia with electricity.

3.3.6.2 Natural Gas

United Cities Gas Company provides natural gas in Washington County.

3.3.6.3 Water

The following table summarizes public water supplies. There are also many individual wells in the County.

TABLE 34
WATER SYSTEMS

Water System	Current Capacity	Average Usage
Bristol Virginia Utilities Board	10 MGPD	3.5 MGD
Washington County Service Authority	7.6 MGPD	6.5 MGD

3.3.6.4 Sewage

The following table summarizes the public wastewater treatment facilities. There are also many private septic systems.

TABLE 35
SEPTIC SYSTEMS

Sewer System	Current Capacity	Average Usage
Washington County Service Authority	400 KGPD	230 KGPD
Abingdon	2.75 MGPD	1.8 MGPD
Damascus	250 KGPD	279 KGPD
Bristol Virginia Utilities Board	15 MGPD	9 MGPD

3.3.6.5 Solid Waste Disposal

Washington County exports solid waste via a transfer station that accepts most forms of non-hazardous industrial waste for transportation to a non-County disposal facility. Private pickup of industrial waste is available. Private contractors transport hazardous waste to sites in West Virginia or South Carolina.

3.3.7 Economic Growth

3.3.7.1 Employment

In the County Comprehensive Plan 2002, citizens cited the need for more and better paying jobs to keep the young people in the County. It was also noted that the County needs a diversified employment base that provides job opportunities for all.

The loss of thousands of manufacturing jobs in Southwest Virginia over the past decade has been mainly due to the demise of sewing factories and mining manufacturing companies. Mining and manufacturing jobs were some of the better paying jobs in the area so it has been difficult to replace the purchase power of these jobs with low paying service jobs. The region is lagging behind the rest of the Commonwealth in growth, but the Counties along interstate highways tend to have more opportunities for growth and development than do coalfield localities. Most of the growth has been in the service sector but there is an emphasis at the regional level to develop business incubators and industrial parks that encourage small technology-oriented businesses. Quality of life and the natural environment are two incentives that Washington County has to offer in addition to the convenient system of transportation

Employment opportunities generated within Washington County will present different transportation and infrastructure investment demands than those based upon increased out migration to jobs. Washington County's growth is dependent on employment expansion beyond the County's borders, and has direct consequences on the County's present transportation and infrastructure needs. Encouraging future economic development within the County will require transportation system improvements, and increase the availability of capacity to provide sewer and/or water service in key areas. Tax revenues from commercial and industrial properties are needed to supplement residential tax dollars in order to provide adequate community services and facilities for all the County residents.

Median family income in 1999 for Washington County was $40,162 while the median household income was $32,742. This was significantly lower than the state median family income of $49,085. Per capita money income for the County in 1999 was $18,350.

According to the Virginia Employment Commission in February 2002, Washington County had a Civilian Labor Force of 25,802 persons. Of that number, 24,210 were employed and 1,592 persons were unemployed for an unemployment rate of 6.2%. The unemployment rates in Southwest Virginia are significantly higher than other parts of the state but Washington County's is lower than several of its neighboring counties.

3.3.7.2 Constraints to Development

The three physical constraints to development are flooding, slope, and soil conditions. Environmentally sensitive areas are lands whose destruction or disturbance will immediately affect the quality of life of a community

A. Slope

The slope of land plays an important role in determining the suitable use and development of property. Moderate slopes (10% - 20%) and areas of extreme slope (20% or more) may limit higher density development from occurring. These limitations include a risk of erosion and the difficulty in installing private septic sewer systems. Valley and Ridge physiographic Province of Virginia present some challenging features with mountain ranges to the east and west, and numerous ridges, knobs, and hillsides. These features serve as constraints to development

B. Hydrology

Both groundwater and surface are vital natural resources in Washington County. The waterways are important scenic and recreation resources. Equally important are the groundwater resources, as a significant number of County residents rely on individual wells for drinking water. Therefore, it is essential that all water resources be protected and managed in a manner, which will ensure the highest quality possible.

Surface Water – The County is home to the three tributaries of the Holston River, North Fork, Middle Fork, and South Fork. All three flow in a southwesterly direction into Tennessee to form the Holston River. South Holston Lake is a 7,850-acre reservoir developed and managed by The Tennessee Valley Authority to provide flood control, hydroelectric power, and recreational activities.

Groundwater – Important factors in the evaluation of groundwater are the quantity and quality of the water present. The hydrologic features of the County provide residents with sufficient water quantities. The groundwater is considered of good quality and moderately hard. Sinkholes and thin soils present a pollution situation from surface sources.

C. Floodplains

The Federal Emergency Management Agency has published the Flood Insurance Study, Washington County, Virginia, And Unincorporated Areas in March 1988. This study in conjunction with the Flood Insurance Panel Maps identifies the Floodplains of Washington County. Floodplains are defined as areas, which have a 100 percent probability of being flooded over a 100-year time span, or in other words a 1 percent chance of flooding at any given time.

D. Soils

Washington County's soils have a direct impact on the development potential. Areas that are predominately shale, sandstone, and shaley limestone bedrock with a likely soil cover of less than 5 feet present high grading costs. Limestone and dolostone bedrock with a likely soil cover from 5 to 25 feet have moderate grading costs, and lower grading costs are associated with limestone and dolostone bedrock with a likely soil cover greater than 25 feet.

3.3.8 Land Use

The Existing Land Use Map, Figure 4, illustrates the location and distribution of generalized land

uses with the County based on the tax roles. The generalized existing land use pattern within the unincorporated areas of Washington County is predominately agricultural and with scattered low-density residential land uses. Commercial and industrial uses in the county are located along major routes.

3.3.8.1 Residential

The majority of residential development in Washington County lies along the central growth corridor in close proximity to Bristol, Abingdon, and Glade Spring. The residential category includes residential developments of a variety of densities in areas where public water service is available, planned, or can be economically extended. This includes Traditional Neighborhood Developments, PUDs, and Planned Villages/Hamlets, and traditional single family detached housing. There are areas of intense residential development occurring along Old Jonesboro Road, U.S. Route 11, and Interstate 81, and in proximity to the City of Bristol and the Town of Abingdon. The areas having greatest potential for expansion are those, which have relatively easy access to surface transportation, public utilities and suburban support services. Census data from year 2000 shows 22,985 housing units for the county with an average household of 2.36 persons.

3.3.8.2 Commercial

New retail uses are expected to locate principally in the central corridor of the County. The growth and development trends reflect a steady growth in population and housing, as well as continued development of commercial enterprises. Development has been scattered over time throughout the County but the commercial development is clustered around interstate exits from Abingdon south to Bristol City. Major developments have included office buildings, shopping centers, big box retailers, and truck stops such as the new commercial center at the Glade Spring exit.

Opportunities for the development of commercial properties exist at or near the following I-81 exits in Washington County: 5,7,10, 13, 22 (near Hillman Highway), 24 (Meadow View) and 26 (Emory and Henry). Other areas expected to see increase in commercial activity are Rt.11 from Exit 7 to Abingdon and the upgraded Rt. 58 from Abingdon to Damascus. Henard Meadows, west of I-81 on the Tennessee/Virginia border, is a 300+ acre site suited for commercial/industrial/office/residential use.

3.3.8.3 Industrial

The general trend of development has been for industrial and heavier types of commercial uses to be attracted to the areas where adequate public utilities and transportation are provided. One of the greatest facilitators to Washington County's economic growth through the years has been its accessibility and well-organized transportation connections.

Development areas in Washington County over the past ten to twenty years has occurred along the central corridor of the County anchored by I-81 and U.S. 11 in the vicinity of Abingdon and Bristol, and in the valleys leading to I-81 and U.S. 11. Development of industrial parks and at or near the interstate intersections has been critical to the County’s financial strength. There is

potential for industrial development to occur along the upgraded Rt. 1717 and near I-81 Exits 29 and 36.

TABLE 36
WASHINGTON COUNTY
MAJOR MANUFACTURING FIRMS

Company	Product	Number of Employees
Abingdon Cold Storage/Mountain Harbor Seafood	Express Freight/Seafood Distribution	6
Abingdon Steel, Inc.	Structural Steel	18
American Limestone Co.	Crushed Stone & Sand	14
Andis Pallet Co.	Wood Pallets	20
Appalachian Cast Products	Die Cast	60
Appalachian Plastics, Inc.	Mining Industry Composite Duct	50
Bristol Compressors	Hermetic Compressors	2450
Brookmade, Inc.	Cotton Hosiery	6
Carolina Steel Corp.	Steel Plate Fab.	81
Central Machine Shop	Machine Shop/Plate Metal Fab.	19
Columbus McKinnon Corp.	Chain Hoists	300
CNC Tool Corp.	Machine Shop	3
Damascus Corp.	Battery & Diesel Powered Transporters, HydraulicRock Dusters & Mine Renewal Parts	12
Dutt & Wagner of VA	Whole Poultry & Egg Proc	101
General Engineering Co.	Mining Equipment	101
Glade Machine Co.	Machine Shop	14
HAPCO/American Flagpole	Flag & Lighting Poles	147
HBA Cast Products Co.	Aluminum Castings	110
Highlands Indus Millwright	Millwright	30
Home Pride	Mobile Home Supplies	56
Joy Mining Machinery	Mining Machinery	144
K-VA-T Foods	Grocery Distribution	UNK
Kwik Kafe of Tri-Cities	Food Distribution	20
Lynchburg Steel	Structural Steel	40
Meadowview Mills	Livestock Feed	1
Meadowview Mining wheels	Industrial Wheels	29
Metal Castings Co.	Custom Molded Aluminum Alloy Castings	40
Morgan McClure Motorsports	Racing/NASCAR	57
Mid-Mountain Foods, Inc.	Grocery Distributor	600
Mink & Co.	Promotional Sales/Distribution	8-10
Mountain Forest Prod. Inc.	Hardwood Lumber	12
MXI Environmental	Environmental Waste	10
Ntelos	Internet Service	35

Company	Product	Number of Employees
Paramont/21st Century	Molded Truck Components	52
Phase II Truck Body	Truck Bodies & Components	36
Production Machine Co.	Industrial Machine Shop	6
RX Services	Home Infusion Services/Long Term Care	70
Sandvik Rock Tools, Inc.	Mining Machinery	180
Steel Fab, Inc.	Air Tanks	100
Sterling Casket Hardware Co.	Casket Hardware	55
Strongwell	Highlands Division Fiberglass	45
Thin-Optx, Inc.	Optical Lenses	6
Tri-Tube, Inc.	Coil Tubing	95
Universal Fibers, Inc.	Man Made Fiber	325
Universal Companies, Inc.	Spa Equip & Supplies	104
Utility Trailer	Truck Trailer Mfg.	72
V&S Bristol Galvanizing	Hot Dip Galvanizing	9
Virginia Glove Mfg. Co.	Work Gloves	45
Virginia Highlands Machining, Inc.	Industrial Machine Shop	8
Virginia Insulated Products	Magnet Wire	13
Virginia Metals, Inc.	Metal Fab. & Stamping	9
Wolf Hills Energy	Electricity Generation Plant	4
Zenith Fuel Systems, Inc.	Carburetors	65

Industrial Development Authority has been responsible for the development of five industrial parks. The newest industrial park to come on line is the Glade Highlands Regional Industrial Park, a join venture of Washington and Smyth Counties for an investment in the future

TABLE 37
WASHINGTON COUNTY
INDUSTRIAL PARKS

	Number of Industries	Number of Employees
Washington County Industrial Park	17	1,433
Bristol-Washington County Industrial Park	10	3,320
Oak Park Center for Business & Industry	3	226
Wm. A. Cole Industrial Park	2	20
Glade-Highlands Regional Industrial Park	Under Development	
Abingdon Technology Park	Under Development	

AFG Industries, one of the largest glass manufacturers in North America, announced in 2003 its intention to locate a new glass coating operation in Washington County, creating 80 new jobs. The company is to build a 150,000-square-foot facility in the Oak Park Center for Business and Industry located in Abingdon.

3.3.8.4 Agricultural

The Agricultural category generally includes land with prime agricultural soils, working farms, agricultural accessory uses, or currently zoned agricultural properties. Agricultural land is valuable both as a commodity and as a natural resource, and this category is intended to help maintain and strengthen the agricultural economy as well as a way of life. Agriculture should remain the predominant use in these areas.

However, non-farm uses may be considered acceptable if such areas are designed to conform to the rural atmosphere found in the surrounding area. It is recommended that the agricultural lands in the County continue to be divided into two zoning classifications: Agricultural, Limited (A-1) and Agricultural, General (A-2). The purpose of this recommendation is to acknowledge that certain farmlands in the County will be transitioning to non-farm uses over the next ten plus years. These areas will provide some housing opportunities for the County as well as provide a buffering area for active farming operations. Industrial uses should not be encouraged.

3.3.8.5 Open Space/Conservation

Protection of sensitive lands is an important category. Open space/conservation uses are encouraged to preserve agricultural, forest, steep slopes (over 20% relief), flood plains, and karst topographic areas.

3.3.8.6 Community Facilities

The Johnston Memorial Hospital located in the Town of Abingdon is a 135- bed independent non-profit general health care facility. Wellmont-Bristol Regional Medical Center, a 422-bed facility located in Bristol, Tennessee also provides medical services to the residents of Washington County.

Washington County Public Schools provides all K through 12 public education in the County. There are seven Elementary Schools with an enrollment of 3,150 students. The County School Board maintains four Middle Schools and four High Schools. There is one four-year College, and one Community College located within Washington County.

Emory & Henry College, a private Methodist liberal arts college, has an enrollment of 955 full time students. Emory & Henry is located in Emory, a hamlet in northeast Washington County. Virginia Highlands. Community College located in Abingdon, has a full–time equivalent enrollment of 1,581 students. The Southwest Virginia Higher Education Center is located in Abingdon, and provides a comprehensive program curriculum to the public. The Southwest Virginia Higher Education Center has a full-time equivalent enrollment of 317 students.

The county is rich in cultural and recreational amenities including the Barter Theater, the William King Regional Arts Center, Mount Rogers National Recreation Area, Virginia Highlands Festival, the Virginia Creeper Trail and the Appalachian Trail Days.

3.3.8.7 Housing

The supply of housing in Washington County has increased at a steady rate over the past half century. The vacancy rates in Washington County have remained consistent over the last decade. According to the U. S. Census Bureau, 8.8% of the 19,183 housing units in Washington County were vacant in 1990. This compares to 8.4% vacant units in 2000. The 2000 housing vacancy rate in Washington County is in line with the rates found nationally and to Sullivan County, Tennessee. A 1.4% vacancy rate for homeownership is considered very low, and indicates a need for additional housing supply.

Choice of housing types depends largely on income, and with rising housing costs, fewer households are able to choose new "stick built" or site built houses. As the purchase price of houses increase, some of the population is frozen out of the market for standard housing and opt for other types of housing such as manufactured homes (i.e. mobile homes, trailers). In 2000, the annual household median income in Washington County was $41,800.

According to the Virginia Statistical Abstract, 2000 Edition, there was an average of 209 manufactured homes added to the Washington County housing inventory each year from 1993 through 1997. Manufactured homes accounted for 26% of the total housing units in Washington County in 2000, as compared to 9.3% in Virginia. The local building permit records show that Washington County had 428 new housing units authorized in 2000, of these 167 were for manufactured homes. Manufactured homes accounted for 39% of the new housing in 2000, and site built homes accounted to 61% of the new housing in Washington County during 2000.

Washington County will require an additional 3,416 new residential units by the year 2020 to house the projected population of 59,165.

Sources:
Washington County, Comprehensive Plan 2002
Bureau of the Census, 2000 Census
Virginia Employment Commission
Virginia Department of Transportation
Virginia Economic Development Partnership

3.4 Wythe County

3.4.1 Location

Wythe County is strategically situated in southwestern Virginia at the intersection of major interstate highways, I-81, I-77, and future I-74. Much of the county's 460 miles of land area lies in a broad picturesque valley bordered by the Blue Ridge and Allegheny mountain ranges. Wythe is bordered by Bland, Grayson, Carroll, Smyth and Pulaski Counties. The county seat, Wytheville, is located 77 miles southwest of Roanoke, Virginia, and 35 miles south of Bluefield, West Virginia.

There are approximately 463 square miles in the County and a large portion of those miles are located within the boundaries of the Mount Rogers National Recreation Area and Jefferson National Forest.

3.4.2 Population

The population centers of the county are the towns of Rural Retreat and Wytheville. Other communities in the county include Fort Chiswell, Max Meadows, Ivanhoe, Austinville, Speedwell, and Crockett. Wytheville and Rural Retreat have both completed annexations over the past twenty years so it is difficult to judge the population increases. Wytheville actually lost population from 1990-2000 but Wythe County's population increased by 8.4%.

TABLE 38
WYTHE COUNTY
POPULATION CHANGES BY DECADE – CENSUS DATA

County	Town	1980 Census	1990 Census	2000 Census	% Change 1980-1990	% Change 1990-2000
Wythe County		25,522	25,466	27,599	-0.2%	8.4%
	Rural Retreat	1,083	972	1,350	-10.2%	*38.9%
	Wytheville	7,135	8,038	7,804	*12.7%	-2.9%

* Annexation occurred
Source: U.S. Census Bureau

As of the 2000 Census, there were 27,599 people, 11,511 households, and 8,103 families residing in Wythe County. This calculates to a population density 59.6/mi². There are 12,962 housing units at an average density of /mi². The racial makeup of the county is 95.8% White, 2.9% Black or African American, and a little over 1.3% all other races.

The average household size is 2.36 and the average family size is 2.83. In the year 2000, 5.5 % of the population was under age 5; 21.8% under the age of 18, and 15.8% over 65 years of age. The state average is 11.2% of the population 65 years or older. The median age for Wythe County in year 2000 is 39.4 years of age.

The Virginia Employment Commission projects that Wythe County will see population growth over the next twenty-five years but at rates considerably less than the 8.4% the county saw over the past decade.

TABLE 39
WYTHE COUNTY
POPULATION DATA AND PROJECTIONS
BY DECADE

Year	US Census Bureau	VEC Projections	% Increase in Population by Decade	
1990	25,466			
2000	27,599		1990-2000	8.4%
2010		28,600	2000-2010	2.8%
2020		29,600	2010-2020	3.5%
2030		30,600	2020-2030	3.4%

VEC Virginia Employment Commission
* Population Estimate U.S. Census Bureau

The following table provides the population projections by year based on the VEC projections.

TABLE 40
WYTHE COUNTY
POPULATION PROJECTIONS
1990-2030

Year	Bland County
1990	25,466
2000	27,599
2001	27,700
2002	27,800
2003	27,900
2004	28,000
2005	28,100
2006	28,200
2007	28,300
2008	28,400
2009	28,500
2010	28,600
2011	28,700
2012	28,800
2013	28,900
2014	29,000
2015	29,100
2016	29,200
2017	29,300
2018	29,400
2019	29,500
2020	29,600
2021	29,700
2022	29,800
2023	29,900
2024	30,000
2025	30,100
2026	30,200
2027	30,300
2028	30,400
2029	30,500
2030	30,600

3.4.3 Geographic Conditions

Wythe County lies in the New River Basin. New River flows across the County's eastern tip. This major river and two of its major tributaries, Reed and Cripple Creeks, are the source of large supplies of water. Many rural areas are supplied by springs and wells.

Wythe County contains approximately 148,700 acres of woodland. Much of the woodland is oak/hickory, oak/yellow poplar, or white pine stands and they vary in size from seedlings to mature saw timber.

Minerals available include limestone, dolomite, sandstone, quartzite, manganese, iron ore, shale, clay, and barite. Soils in Wythe County are divided into two major groups, the agriculturally important soils in the valley and the dominantly wooded mountain soils. The valley soils are divided into two subgroups -- soils formed from limestone and soils formed from shale. The wooded mountain soils are formed from sandstone and shale. There are no development restrictions due to soil characteristics.

Average elevations range from 2,000 to 3,000 feet above sea level. The highest point (4,080 feet above sea level) is on the Iron Mountain chain at Comers Rock in southwestern Wythe County along the Grayson/Wythe County line, a few miles southwest of Speedwell. The lowest county point is approximately 1,860 feet above sea level in the bed of the New River as it crosses the Wythe/Pulaski County line. Forty-nine percent of the county area has slopes of less than twenty percent. County relief (the difference between highest and lowest points) is approximately 2,000 feet.

3.4.4 Climate

The area has a temperate climate with cold, but not severe, winters and moderately warm summers. The average growing season is 177 days; the spring frost date is April 30 and the fall frost date is October 9.

Average Temperature, January	34°F	1° C
Average Temperature, July	71°F	22° C
Average Annual Rainfall	36.9”	93.7cm
Average Annual Snowfall	18.3”	46.5cm

3.4.5 Transportation

3.4.5.1 Highways

Interstate 81 (I-81) runs the length of the County (northeast and southwest) while I-77 runs northwest and southeast through the width. The two interstate freeways intersect at Wytheville. Other major county roads include U.S. 11(north-south), U.S. 52 (north-south) and U.S. 21 (north-south). Trucking service to the area is excellent.

3.4.5.2 Air

General aviation services are provided locally by the Mountain Empire Airport, 16 miles southwest along I-81. Its lighted asphalt runway provides a convenient landing area for corporate jets. Charter and air freight services are available.

Commercial air service is available at Mercer County Airport in West Virginia, 27.8 miles to the northwest. Mercer is served by U.S. Airways and U.S. Airways Express. The Roanoke Regional Airport is located 61 miles northeast on I-81 and is served by at least five airlines. Commercial service is also available in Bristol, TN, Greensboro, NC and Bluefield, WV.

3.4.5.3 Rail

Bulk and mixed freight service, containerized piggyback, and team track service are available from Norfolk Southern.

3.4.5.4 Water

The nearest shipping port is at Norfolk, 318 miles to the east.

3.4.6 Infrastructure

3.4.6.1 Electricity

American Electric Power provides power Wythe County.

3.4.6.2 Natural Gas

Atmos Energy Corporation provides natural gas to Wythe County.

3.4.6.3 Water

Water is provided by the following local governments or by individual wells:

- Wythe County
- Town of Wytheville
- Town of Rural Retreat

3.4.6.4 Sewage

Wastewater treatment is provided by the following local governments or by private septic systems:

- Town of Wytheville
- Town of Rural Retreat
- Wythe County

3.4.6.5 Solid Waste Disposal

The Wythe-Bland County Public Authority operates a transfer station that accepts non-hazardous industrial waste. Private on-site pickup is available. Waste is transported out of the county. Contractors haul hazardous waste to sites in West Virginia or South Carolina.

3.4.7 Economic Growth

Wythe County and surrounding areas support a manufacturing base with a range of skilled and semiskilled workers. In 2000, Wythe County had a workforce of approximately 13,222 of which over 600 or 4.3% were unemployed. Wage levels vary significantly based on skills required, ranging from around $7.00/hour for some entry-level positions to $12.00/hour and above for skilled workers.

Various workforce training resources exist in the community to support industrial needs. A countywide vocational school trains high school students for direct entry into the workforce or for continuation of their education at technical school. Wytheville Community College has a longstanding reputation for providing assistance to area businesses in both pre-employment and post-employment training and certification. Specific programs designed to meet the needs of employers can be custom designed.

TABLE 41
WYTHE COUNTY
ECONOMIC INDICATORS

Economic Indicators	Wythe County	Virginia
Mean travel time to work (2002)	24.2 min	27 min
Poverty Rate (2000)	11%	9.6%
Per Capita Income (2000)	$17,639	$23,975
Population Aged 16+ in Labor Force (2000)	48%	66.8%
Population Aged 25+ w/o High School Diploma (2000)	29.8%	18.5%

Unemployment rates are high, but not as high as other counties in the Southwest region of Virginia. In 2000, the annual rate was 5.8% while in 2001 it had jumped to 9.5% and fell back again to 6.7% in 2002. The region has experienced the loss of thousands of manufacturing jobs over the past decade mainly due to the demise of sewing factories and mining manufacturing companies.

Of the workers living in this locality, 9,084 work in the county, 3,954 travel outside the county to work and 2,772 people commute to Wythe County from nearby counties for work. The 2000 Census of Housing and Population report shows that the worker retention rate for Wythe was 69.7% and the net workflow was (–) 1,182.

As of the 2000 Census, the median income for a household in the county was $32,235, and the median income for a family, $40,188. This was significantly lower than the state median family income of $49,085. Males had a median income of $29,053 versus $20,550 for females. The per capita income for the county was $17,639.

According to the annual statistics for Counties from the Virginia Employment Commission in 2002, Smyth County had a Civilian Labor Force of 14,656 persons. Of that number, 13,670 were employed and 986 persons were unemployed for an unemployment rate of 6.7%.

TABLE 42
WYTHE COUNTY
EMPLOYMENT - THIRD QUARTER-2000

Category	Number	Percentage
Agriculture / Mining	48	0.3
Construction	874	6
Manufacturing	5,997	41
Transportation, Communications, & Public Utilities	247	1.7
Wholesale and Retail Trade	2,231	15.3
Finance, Insurance, & Real Estate	236	1.6
Services	2,109	14.4
Government	2877	19.7
Total	14619	100.0

Taxable Sales for Wythe County have been increasing annually with a 13% increase from 2001-2002 and an 8% increase from 2002-2003. Most of the commercial growth over the past decade has been from Wytheville to Fort Chiswell along the I-81 corridor. Retail establishments serve both automobile and truck traffic as well as tourists.

3.4.8 Land Use

The generalized existing land use pattern within the unincorporated areas of County is predominately agricultural and with scattered low-density residential land uses. Commercial and industrial uses in the county are located along major routes.

3.4.8.1 Residential

The majority of residential development in Wythe County lies along the central growth corridor in close proximity to Wytheville, Rural Retreat, Fort Chiswell and Max Meadows . Most of the small sections of the county zoned residential lie along the I-81 corridor. The vast majority of the county is zoned Agricultural/Rural and residents in these areas most often have 5-10 acres in

addition to their residence. The 2000 Census showed Wytheville with a population of 7,804 and Rural Retreat with 1,350. Within the Wytheville town limits, there are several developed subdivisions as well as variety of quiet, established neighborhoods. Outside the town limits many of the homes are secluded in woods that back up the national forest.

Census data from year 2000 shows 12,744 housing units for the county with an average household of 2.36 persons. Building permits for manufactured homes continue to greatly outnumber permits authorized for single-family homes. Manufactured homes make up 23.5 % of the county's housing units in 2000. Building permit requests indicate slow and steady residential growth. The Future Land Use Map shows expected residential growth to occur between I-81 and Rural Retreat, around Wytheville, especially to the north of I-81 and at Fort Chiswell between the two interstate highways.

3.4.8.2 Commercial

Primary commercial trade areas are located in and around the towns of Rural Retreat and Wytheville. Wytheville's downtown center has remained a strong viable trade area. The growth of factory outlet stores has become a significant trend in Wythe County. Other retail and specialty stores are located in trade areas throughout the county. The majority of the commercial development has occurred adjacent to I-81 and around Wytheville and Fort Chiswell. Future growth is expected at I-81 interchanges on either side of Wytheville and along the I-81 corridor between Wytheville and Fort Chiswell.

3.4.8.3 Industrial

The Joint Industrial Development Authority of Wythe County, the Town of Wytheville and the Town of Rural Retreat (Joint IDA) was established in November 1989 when an ordinance authorizing the creation of the new joint authority was adopted by the three governing bodies. Prior to that time, Wythe County maintained its own industrial authority as did the Town of Wytheville. The Joint IDA is a separate political subdivision of the Commonwealth of Virginia.

The general trend of development has been for industrial and heavier types of commercial uses to be attracted to the areas where adequate public utilities and transportation are provided. One of the greatest facilitators to Wythe County's economic growth through the years has been its accessibility and well-organized transportation connections.

TABLE 43
WYTHE COUNTY
MANUFACTURING EMPLOYERS

Company	Product	Number of Employees
Dalton Enterprises	Horse Trailers	50-99
Klockner-Pentaplast of America, Inc.	Rigid plastic film	100-299
Longwood Elastomers, Inc.	Fabric reinforced diaphragms	100-299
Morton International, Inc.	Powder coatings	100-299
Musser Lumber Sales	Process lumber	50-99

Company	Product	Number of Employees
Textron, Inc.	Screws machine tapping thread	100-299
Wytheville Technologies	Auto steering parts	100-299

Manufacturing in Wythe County is experiencing job loss related to the apparel and furniture plant closings. But nearly 32 % of the employment in 2000 was in the service sector, which is growing. New retail shopping centers in the Wytheville area have increased the need for service related jobs and unemployment for most of 2003 was around 6%.

In 2003, Musser Lumber Sales and Wytheville Technologies both announced expansions of their Wythe County facilities and the creation of new jobs. Planned expansions will be facilitated through grants from the Governor's Opportunity Fund, Tobacco Region Opportunity Funds, and Community Development Block Grants in addition to incentives such as tax credits and job training.

The Joint Industrial Development Authority of Wythe County Virginia currently has three industrial parks.

TABLE 44
SITE SPECIFICATIONS - INDUSTRIAL PARKS – WYTHE COUNTY

Site Name	Miles to I-81	Total acreage	Gas	Electric	Water	Sewer	Solid Waste
Fairview Park	I-82, 0.2mi I-77, 1.0 mi	195	yes	yes	yes	yes	yes
Ivanhoe Industrial Park	I-77/I-81 11mi	175	no	yes	yes	yes	yes
Progress Park	At the inter-section of I-8 and I-77	1210	yes	yes	yes	yes	no

3.4.8.4 Agricultural

Wythe County is framed on the north by scenic Jefferson National Forest and on the south by Mount Rogers National Recreation Area. In between, along the green fertile valleys, agriculture is a major resource for the region.

The county's 734 full- and part-time farming operations here raise primarily beef and dairy cattle. More than 46,000 beef cows graze on nearly 600 Wythe County farms, while 4,000 dairy cows are milked on 58 farms, making Wythe one of the state's largest dairy-producing counties. Because of the county's elevation and rolling terrain, corn, pastureland and hay crops do well here, affording farmers the necessary food source for their animals.

3.4.8.5 Open Space/Conservation

Thirty percent of the county is zoned Public/Open Space. The U.S. Forest Service owns a significant amount of land in Wythe County including the State Fish Hatchery, Rural Retreat Lake, the Wytheville Watershed, and the Mount Rogers National Recreation Area.

3.4.8.6 Community Facilities and Attractions

The Wythe County Community Hospital is a progressive 106-bed non-profit facility. Three nursing/convalescent centers are located in Wytheville and can accommodate 211 patients in addition to 166 assisted-living residents.

Wythe County has 6 elementary schools, three middle and 3 high schools. Wytheville Community College is the county's higher education facility and Wythe County Technical Center provides vocational training.

Mount Rogers National Recreation Area is located in the southeast corner of the county. The Jefferson National Forest covers much of the western half of the county and the Appalachian Trail, the Virginia Highlands Horse Trail and the New River Trail State Park pass through the county.

Sources:
Bureau of the Census, 2000 Census
Virginia Employment Commission
Virginia Department of Transportation
Virginia Economic Development Partnership
Comprehensive Plan, 1992 Update, Wythe County, Virginia

3.5 Population Summary

The following table summarizes the population by year for the four Counties and the Town of Abingdon which are used in this report to project growth and to calculate pounds per person per day. Abingdon is broken out because it handles disposal of its waste directly.

TABLE 45
POPULATION SUMMARY
2004-2024

YEAR	BLAND COUNTY	SMYTH COUNTY	WASHINGTON COUNTY	TOWN OF ABINGDON	WYTHE COUNTY
1990	6,514	32,370	45,887	7,191	25,466
2000	6,871	33,081	51,103	7,333	27,599
2001	6,944	60,881	51,233	7,510	27,700
2002	7,017	33,224	51,362	7,645	27,800
2003	7,090	33,297	51,492	7,695	27,900
2004	7,163	33,369	51,622	7,840	28,000

YEAR	BLAND COUNTY	SMYTH COUNTY	WASHINGTON COUNTY	TOWN OF ABINGDON	WYTHE COUNTY
2005	7,236	33,441	51,752	7,919	28,100
2006	7,309	33,512	51,881	7,906	28,200
2007	7,382	33,584	52,011	7,921	28,300
2008	7,455	33,656	52,141	7,920	28,400
2009	7,528	33,728	52,270	7,780	28,500
2010	7,600	33,800	52,400	7,897	28,600
2011	7,670	33,870	52,500	8,017	28,700
2012	7,740	33,940	52,600	8,137	28,800
2013	7,810	34,010	52,700	8,257	28,900
2014	7,880	34,080	52,800	8,377	29,000
2015	7,950	34,150	52,900	8,497	29,100
2016	8,020	34,220	53,000	8,617	29,200
2017	8,090	34,290	53,100	8,737	29,300
2018	8,160	34,360	53,200	8,857	29,400
2019	8,230	34,430	53,300	8,977	29,500
2020	8,300	34,500	53,400	9,097	29,600
2021	8,350	34,570	53,500	10,277	29,700
2022	8,400	34,640	53,600	10,380	29,800
2023	8,450	34,710	53,700	10,483	29,900
2024	8,500	34,780	53,800	10,588	30,000
2025	8,550	34,850	53,900	10,694	30,100
2026	8,600	34,920	54,000	10,801	30,200
2027	8,650	34,990	54,100	10,909	30,300
2028	8,700	35,060	54,200	11,018	30,400
2029	8,750	35,130	54,300	11,128	30,500
2030	8,800	35,200	54,400	11,240	30,600

4.0 WASTE GENERATION AND COMPOSITION

Waste tonnages are tracked at the individual transfer stations in the Counties and by the Town of Abingdon. The tonnages and waste composition is reported below by locality.

4.1 Historical tonnages by category where identified

Waste category is tracked differently at each of the transfer stations relative to the operator's billing system and administrative needs. The following summary outlines the tracking activities in the region:

- Bland County does not track its waste by category.
- Smyth County uses the following categories:
  - Commercial
  - Construction/Debris
  - Household
  - Industrial trash
  - Metal
  - Rubber
  - Rubber dust
  - Wood
- Washington County uses the following categories:
  - Municipal
  - Construction Demolition
  - Outside (the County)
  - Industrial
  - Tires
  - White goods
- The Joint Public Service Authority which handles Bland and Wythe County waste uses the following categories:
  - Household garbage – Wythe County
  - Household garbage – Bland County
  - Household garbage – Rural Retreat
  - Household garbage – Wytheville
  - Commercial
  - Industrial
  - Construction waste

The Counties also track the following materials under their recycling programs. These materials are listed under 9 VAC 20-130-150.3 as special wastes.

Waste Tires
Used Oil
Used Oil Filters
Used Antifreeze
Abandoned Automobiles Removed

Batteries

The transfer stations do not receive any agricultural waste nor do they accept stumps or large land clearing debris at the transfer stations. Septage is not accepted at the transfer stations and is not tracked by the Region under the solid waste programs. Hence data is not available. Spill residues, if meeting the allowable limits of the regulations, would be recorded as "Other" on their tracking forms but would most likely be routed directly to the landfill. Only minimum amounts of yard waste are handled at the transfer stations.

It should be noted that the tracking systems of each transfer station are tied to the billing systems of the Counties and the Authority. It would be impractical and of little benefit for these Counties to track their waste in additional categories. Tonnage projections outlined in Section 4 include all categories totaled together and then projected forward. The use of these projections is illustrated in the data included in Appendix 2.

The following section provides information on the historical tonnages for waste generated within the various jurisdictions. Not all jurisdictions track their waste by material type.

4.1.1 Bland County

The following tonnages were recorded for Bland County at the transfer station owned and operated by the Joint Service Authority of Wythe and Bland Counties (JPSA):

TABLE 46
BLAND COUNTY
WASTE TONNAGES
1994 – 2003

CALENDAR YEAR	TONNAGE	% CHANGE	TONS PER DAY (5 day week)
1994	1,975.9		6.3
1995	1,686.1	-14.7%	5.4
1996	1,689.5	0.2%	5.4
1997	1,852.8	9.7%	5.9
1998	2,050.3	10.7%	6.6
1999	2,217.8	8.2%	7.1
2000	1,938.1	-12.6%	6.2
2001	2,335.7	20.5%	7.5
2002	2,424.6	3.8%	7.8
2003	2,680.7	10.6%	8.6
Average	2,085.2	3.6%	6.7

The County has experienced an average rate of change of 3.6 % over the past 10 years.

In 2003, 2,680 tons were reported to be delivered to the transfer station from Bland County or almost 10.3 tons per day (5 days per week).

4.1.2 Smyth County

Smyth County provided the following data for fiscal years 2000 – 2003 for waste tonnage as delivered to their transfer station. The County tracks the waste delivered in the categories as indicated. Approximately 54% of the waste received is categorized as household with 31.2% of the waste identified as commercial or industrial.

TABLE 47
SMYTH COUNTY
WASTE TONNAGES
Fiscal years 2000 - 2003

CATEGORY	FY 2000	FY 2001	FY 2002	FY 2003	AVERAGE FOR FY 2000 - 2002	% OF AVERAGE TOTAL
Commercial	1,840.9	2,184.3	2,924.6	2,712.7	2316.6	10.1%
Construction / Debris	1,206.5	2,004.0	1,372.2	1,064.5	1,527.6	6.7%
Household	12,509.7	12,104.1	12,362.4	12,756.3	12,325.4	53.8%
Industrial Trash	5,256.8	5,008.8	4,229.6	4,059.1	4,831.7	21.1%
Metal	613.0	649.5	734.8	719.3	665.8	2.9%
Rubber	126.2	295.2	208.3	151.6	209.9	0.9%
Rubber Dust	22.7	43.4	49.2	47.4	38.4	0.2%
Wood	1,020.8	961.0	974.5	568.7	985.4	4.3%
TOTAL	**22,596.6**	**23,250.3**	**22,855.6**	**22,079.5**	**22,900.8**	100.0%
% Annual Change - total		2.9%	-1.7%	-3.4%		
% Annual Change - Household		-3.2%	2.1%	3.2%		
% Annual Change - Industrial		-4.7%	-15.6%	-4.0%		

In FY 2003 the total tonnage delivered to the transfer station was reported as 22,079 or 71 tons per day (6 days per week).

4.1.3 Washington County

Washington County provided the following data for the years 1999 – 2003 for waste tonnage as delivered to their transfer station. The County tracks the waste delivered in the categories as indicated. Approximately 54% of their waste is identified as municipal, 29% as being generated from outside the County and 7% as industrial.

TABLE 48
WASHINGTON COUNTY
WASTE TONNAGES
1999 - 2003

CATEGORY	1999	2000	2001	2002	2003	Average	% of total
Municipal	18,216	18,198	18,825	20,014	21,523	19,355	54.2%

CATEGORY	1999	2000	2001	2002	2003	Average	% of total
Construction Demolition	3,767	3,232	2,656	2,843	2,095	2,919	8.2%
Outside	9,925	9,936	12,848	10,374	9,304	10,477	29.4%
Industrial	2,580	2,374	1,989	2,472	2,516	2,386	6.7%
Tires	340	432	316	312	361	352	1.0%
White Goods	210	199	180	190	187	193	0.5%
TOTAL	**35,038**	**34,371**	**36,814**	**36,205**	**35,986**	**35,683**	**100.0%**
% Annual Change - total		-1.9%	7.1%	-1.7%	-0.6%		
% Annual Change - Municipal		-0.1%	3.4%	6.3%	7.5%		
% Annual Change - Outside		0.1%	29.3%	-19.3%	-10.3%		

Over the five year period, the County's waste tonnage has decreased three times and increased one year for an average change in tonnage of 0.72%. The tonnage reported as "Outside" fluctuates the most.

In 2003 the total tonnage delivered to the transfer station was 35,986 tons or 115 tons per day (6 days per week).

4.1.4 Town of Abingdon

The Town of Abingdon does not use the Washington County transfer station. Instead it transports its waste directly to the Bristol landfill. The Town provided the following data for the years 1999 – 2003 for waste tonnage as delivered to their transfer station. The year 1999 is only a partial year. The Town does not track their waste by category.

TABLE 49
TOWN OF ABINGDON
TOTAL WASTE TONNAGES
Calendar Years 1999 - 2003

CALENDAR YEAR	TONNAGE DELIVERED TO BRISTOL LANDFILL	ANNUAL CHANGE AS %
1999	958	
2000	2,740	
2001	2,785	1.6%
2002	3,063	10.0%
2003	3,156	3.0%

Over the five year period, the Town's tonnage has increased each year with a 3% increase noted for 2002 to 2003.

The following table also provides tonnage information by fiscal year by month. The waste stream is relatively constant throughout the year. Tonnages in Table 50 will not match Table 49 due to the different calendar and fiscal years.

TABLE 50
TOWN OF ABINGDON
WASTE TONNAGES
FISCAL YEAR AND MONTH

	FY 2000	FY 2001	FY 2002	FY 2003		
MONTH	**TOTAL TONS**	**TOTAL TONS**	**TOTAL TONS**	**TOTAL TONS**	**AVERAGE**	**% TOTAL**
July	158.95	245.24	256.15	256.15	229.12	8.4%
August	116.90	281.16	293.62	275.27	241.74	8.9%
September	12.06	230.70	222.52	218.83	171.03	6.3%
October	24.57	215.31	224.73	383.28	211.97	7.8%
November	191.30	213.81	233.48	313.31	237.98	8.8%
December	227.18	198.68	206.20	276.47	227.13	8.4%
January	184.06	213.92	233.42	263.36	223.69	8.2%
February	193.83	178.81	177.25	206.52	189.10	7.0%
March	226.38	210.64	201.81	234.81	218.41	8.0%
April	211.26	225.12	228.97	301.85	241.80	8.9%
May	257.22	270.64	273.80	283.12	271.20	10.0%
June	282.02	248.74	224.75	254.89	252.60	9.3%
TOTAL	**2,085.73**	**2,732.77**	**2,776.70**	**3,267.86**	**2,715.77**	**100.0%**
	AVERAGE DAILY TONS	**AVERAGE DAILY TONS**	**AVERAGE DAILY TONS**	**AVERAGE DAILY TONS**	**AVERAGE**	
July	19.87	15.33	15.07	15.07	16.34	
August	11.69	14.06	15.45	15.29	14.12	
September	2.01	13.57	13.91	13.68	10.79	
October	2.73	11.96	12.49	20.17	11.84	
November	13.37	11.88	12.97	14.92	13.29	
December	11.96	10.46	13.75	16.26	13.11	
January	10.23	11.88	12.97	13.86	12.24	
February	10.20	11.18	11.08	12.91	11.34	
March	10.78	11.70	11.87	14.68	12.26	
April	12.43	14.07	13.47	16.77	14.19	
May	15.13	14.24	14.41	15.73	14.88	
June	15.67	14.63	14.05	15.93	15.07	

4.1.4 Wythe County/JPSA

Wythe County delivers their waste to the JPSA transfer station. The following tables summarize tonnage data reported by the JPSA for calendar years 1994 through 2003 and for fiscal years FY01 through FY03. The data is presented in several categories as indicated with Wythe County being one of the categories.

TABLE 50
JOINT PUBLIC SERVICE AUTHORITY
ANNUAL TONNAGE ESTIMATES BY HAULER
Calendar Year 1994 - 2003

HAULER	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	% Using 2003 data
Interstate Contractors							65.4	65.3	337.5	487.0	1.7%
Bland Correctional Center	50.4	480.7	583.9	636.2	604.5						0.0%
Waste Industries	9,873.2	6,916.2	7,935.8	8,315.1	5,367.0	7,916.2	8,020.7	7,565.2	8,889.8	8,445.6	29.7%
Lusk Disposal Services									196.9	1,715.9	6.0%
Subtotal Private Haulers	**9,923.6**	**7,396.9**	**8,519.8**	**8,951.3**	**5,971.5**	**7,916.2**	**8,086.0**	**7,630.5**	**9,424.2**	**10,648.5**	**37.5%**
% Total	39.3%	32.2%	35.3%	35.4%	25.5%	33.0%	33.5%	31.8%	36.3%	37.5%	
% Annual change		-25.5%	15.2%	5.1%	-33.3%	32.6%	2.1%	-5.6%	23.5%	13.0%	
Wythe County - Greenboxes	9,461.6	7,538.3	6,514.3	5,786.9	4,879.7	4,530.1	4,138.4	4,664.3	4,269.9	0.0	0.0%
Wythe County - Convenience Centers	234.0	2,514.0	4,929.6	5,845.7	6,370.9	6,592.1	6,708.3	7,145.8	7,703.6	12,455.8	43.8%
Subtotal Wythe County	**9,695.7**	**10,052.3**	**11,443.9**	**11,632.5**	**11,250.6**	**11,122.2**	**10,846.7**	**11,810.1**	**11,973.5**	**12,455.8**	**43.8%**
% Total	38.4%	43.8%	47.5%	46.0%	48.1%	46.4%	44.9%	49.3%	46.1%	43.8%	
% Annual change		3.7%	13.8%	1.6%	-3.3%	-1.1%	-2.5%	8.9%	1.4%	4.0%	
Wytheville	2,290.1	2,254.7	878.5	751.2	692.1	754.8	704.1	669.6	635.2	622.4	2.2%
Rural Retreat	363.2	376.0	367.6	378.4	385.9	312.1	328.3	316.7	312.8	325.0	1.1%
Bland County	1,975.9	1,686.1	1,689.5	1,852.8	2,050.3	2,217.8	1,938.1	2,335.7	2,424.6	2,680.7	9.4%
Subtotal Other Local Governements	**4,629.1**	**4,316.8**	**2,935.6**	**2,982.5**	**3,128.3**	**3,284.7**	**2,970.5**	**3,322.1**	**3,372.5**	**3,628.1**	**12.8%**
% Total	18.3%	18.8%	12.2%	11.8%	13.4%	13.7%	12.3%	13.9%	13.0%	12.8%	
% Annual change		-6.7%	-32.0%	1.6%	4.9%	5.0%	-9.6%	11.8%	1.5%	7.6%	
TOTAL TONNAGE BY CATEGORY	***24,248.4***	***21,765.9***	***22,899.2***	***23,566.3***	***20,350.4***	***22,323.1***	***21,903.2***	***22,762.6***	***24,770.2***	***26,732.3***	
From other sources not recorded	978.6	1,205.1	1,210.8	1,731.8	3,045.6	1,653.9	2,246.8	1,215.4	1,204.8	1,684.7	**5.9%**
% Total	3.9%	5.2%	5.0%	6.8%	13.0%	6.9%	9.3%	5.1%	4.6%	5.9%	
% Annual change		23.1%	0.5%	43.0%	75.9%	-45.7%	35.8%	-45.9%	-0.9%	39.8%	
TOTAL FROM SUMMARY	**25,227.0**	**22,971.0**	**24,110.0**	**25,298.0**	**23,396.0**	**23,977.0**	**24,150.0**	**23,978.0**	**25,975.0**	**28,417.0**	**100.0%**

TABLE 52
JOINT PUBLIC SERVICE AUTHORITY
ANNUAL TONNAGE – TOTAL % CHANGE
Calendar Year 1994-2003

YEAR	TONNAGE	% CHANGE	TONS PER DAY (6 day week)
1994	25,227.0		81
1995	22,971.0	-8.9%	74
1996	24,110.0	5.0%	77
1997	25,298.0	4.9%	81
1998	23,396.0	-7.5%	75
1999	23,977.0	2.5%	77
2000	24,150.0	0.7%	77
2001	23,978.0	-0.7%	77
2002	25,975.0	8.3%	83
2003	28,417.0	9.4%	91
AVERAGE	24,749.9	1.5%	79

TABLE 53
JOINT PUBLIC SERVICE AUTHORITY
ANNUAL TONNAGE BY CATEGORY
FY2001-FY2003

CATEGORY	FY 2001	FY 2002	FY 2003	Average	% of total
HOUSEHOLD GARBAGE					
Household Garbage	94	88	202	128	0.5%
House hold Garbage - Wythe County	11,212	12,056	12,255	11,841	47.1%
Household Garbage - Bland County	2,311	2,397	2,477	2,395	9.5%
Household Garbage - Rural Retreat	322	312	336	323	1.3%
Household Garbage - Wytheville	677	660	627	655	2.6%
Subtotal	**14,617**	**15,513**	**15,896**	**15,342**	
% of Total	**62.5%**	**63.4%**	**57.7%**	**61.0%**	
OTHER					
Commercial	7,138	7,319	9,267	7,908	31.5%
Industrial			6	2	0.0%
Construction Waste	1,648	1,640	2,371	1,887	7.5%
Subtotal	**8,787**	**8,959**	**11,644**	**9,797**	
% of Total	**37.5%**	**36.6%**	**42.3%**	**39.0%**	
TOTAL	**23,403**	**24,472**	**27,540**	**25,138**	**100.0%**
% Annual Change - total		4.6%	12.5%		
% Annual Change - Household		6.1%	2.5%		
% Annual Change - Other		2.0%	30.0%		

Based on this data several conclusions can be drawn:

- Based on averages for FY01-FY03, household garbage comprises 61% of the waste delivered to the transfer station. The other 39% is commercial (31.5%), industrial (<0.1%) and construction waste (7.5%).
- For calendar year 2003, Wythe County waste as collected by the County comprised 43.8% of the tonnage delivered to the transfer station. Bland County contributed 9.4%, Wytheville 2.2% and Rural Retreat 1.1% of the waste as delivered by the local governments.
- For calendar year 2003, private collection services delivered 37.5% of the waste to the transfer station.
- For FY2003, the commercial tonnage increased significantly from 7,319 tons in FY2002 to 9,267 in FY2003 (26.6%). Construction waste also increased by 44%. Household waste only increased by 2.5% for the same period. It was unclear as to the cause of the large increase in the commercial sector and construction waste.
- On average over the 10 year period, tonnage has increased by 1.5%.

4.2 Projected Waste Generation Rates Relative to Disposal Needs

There is no one methodology for evaluating future waste generation rates as the rates can be impacted by many different factors including population changes, recycling participation and markets, the commercial or industrial sector, natural disasters etc. For rural areas, changes in the waste will track closely with the population trends. For urban or developing areas, changes in the waste are more difficult to predict. Certainly the population factor is one aspect, however the commercial waste must also be considered. The following section will consider various factors.

The following table summarizes the annual changes in tonnages and population for the time periods indicated.

TABLE 54
SUMMARY OF ANNUAL CHANGES
IN TONNAGES AND POPULATIONS

COUNTY/TYPE	YEARS	RANGE OF ANNUAL CHANGES	AVERAGE RATE OF CHANGE (Where applicable)
BLAND COUNTY			
Waste stream	1994 - 2003	-14.7% to 20.5%	3.6%
Population	2001 - 2002		1.1%
	2003 - 2010		1.0%
	2011 - 2020		0.9%
	2021 - 2024		0.6%
SMYTH COUNTY			
Waste stream	FY 00 – FY 03	-29.1% to 2.9%	-9.3%
Population	2000 - 2001		-0.6%
	2001 - 2002		1.0%
	2003 - 2024		0.2%
WASHINGTON			

COUNTY/TYPE	YEARS	RANGE OF ANNUAL CHANGES	AVERAGE RATE OF CHANGE (Where applicable)
COUNTY			
Waste stream	1999 - 2003	-1.9% to 7.1%	0.7%
Population	2000 - 2006		0.3%
	2007 - 2024		0.2%
ABINGDON			
Waste Stream	1999 - 2003	1.6% to 10%	4.9%
Population			
WYTHE COUNTY/ JPSA			
Waste Stream	1994 - 2003	-8.9% to 9.4%	1.5%
Population	2000 - 2010		0.4%
	2011 - 2024		0.3%

As indicated by this table, the waste tonnage has fluctuated significantly over the periods indicated. The population is projected to increase at a rate of 1% or less. After considering the historical annual changes in the waste tonnages and the population projections, it was determined that using the national average annual rate of change of 1.0% would be suitable for a region where significant economic and population growth is not expected. This rate was developed by EPA in their document entitled "Municipal Solid Waste in the United States: 2001 Facts and Figures Executive Summary," dated October 2003. However, projections were also developed at an average annual rate of change of 2.0%. The actual growth rate will probably be somewhere in between. Systems if designed should use the higher growth rate to assure adequate capacity. The projections are provided in Appendix 2.

The following table summarizes this data. Note tons per day were calculated on a 6 days per week basis:

TABLE 55
PROJECTED TONNAGES AND POUNDS
PER PERSON PER DAY
2004-2024

LOCALITY	2004		2024	
1% Growth	**Tons Per Day**	**Pounds Per Person Per Day**	**Tons Per Day**	**Pounds Per Person Per Day**
Bland County	9	2.1	11	2.1
JPSA	92	4.5	112	5.0
Wythe County	84	5.1	102	5.8
Smyth County	71	3.7	87	4.3
Washington County	116	3.8	141	4.5
Abingdon	10	2.1	12	2.0
2% Growth				
Bland County	9	2.1	13	2.6
JPSA	93	4.5	138	6.1

LOCALITY	2004		2024	
Wythe County	84	5.1	125	7.1
Smyth County	72	3.7	107	5.3
Washington County	117	3.9	174	5.5
Abingdon	10	2.1	15	2.5

4.3 Waste Composition

The region does not receive significant quantities of unusual or special wastes or industrial wastes. Therefore its composition would be assumed to be similar to the national estimates discussed in Section 2.1.2. The following tables summarize the expected waste compositions by material type and by product type utilizing the percentages developed by EPA from the 2001 data for the region only:

TABLE 56
WASTE COMPOSITION BY COUNTY
BY MATERIAL TYPE
AS SUMMARIZED IN EPA REPORT - 2001 DATA

MATERIAL	% OF TOTAL WASTE STREAM (MSW)	BLAND COUNTY	JPSA	SMYTH COUNTY	WASHINGTON COUNTY
Total tonnage as reported for 2003		2,681	28,417	22,079	35,745
Paper	35.7	957	10,145	7,882	12,761
Glass	5.5	147	1,563	1,214	1,966
Metals	7.9	212	2,245	1,744	2,824
Plastics	11.1	298	3,154	2,451	3,968
Rubber, leather, & textiles	7.1	190	2,018	1,568	2,538
Wood	5.7	153	1,620	1,258	2,037
Yard trimmings	12.2	327	3,467	2,694	4,361
Food scraps	11.4	306	3,240	2,517	4,075
Other	3.4	91	965	751	1,215
TOTAL	100.0				

*Tonnage from Tables in Appendix 2.

TABLE 57
REGIONAL WASTE COMPOSITION
BY PRODUCT TYPE
AS SUMMARIZED IN EPA REPORT – 2001 DATA

MATERIAL	% OF TOTAL WASTE STREAM (MSW)	BLAND COUNTY	WYTHE COUNTY	SMYTH COUNTY	WASHINGTON COUNTY
Total tonnage as reported for 2003		2,681	28,417	22,079	35,745
Durable goods	16.4	440	4,660	3,621	5,862
Nondurable goods	26.4	708	7,502	5,829	9,437
Containers and packaging	32.0	858	9,093	7,065	11,438
Food scraps	11.4	306	3,240	2,517	4,075
Yard trimmings	12.2	327	3,240	2,694	4,361
Other wastes	1.6	42	455	353	572
TOTAL	100.0				

*Tonnage from Tables in Appendix 2.

5.0 EXISTING SOLID WASTE MANAGEMENT SYSTEM

The following section describes the major components of the region's current solid waste management system in existence in 2003.

5.1 Collection

5.1.1 Overview

The following table summarizes the information relative to collection as provided by the various localities:

TABLE 58
SUMMARY OF INFORMATION ON COLLECTIONS

LOCALITY	DESCRIPTION
Bland County	**Equipment:** None – contracted with Melvin Enterprises, Bland VA **Personnel:** None – contracted with Melvin Enterprises **Collection:** Door to door service for approximately 2,556 residential customers. No commercial collection under County contract. **Residential:** 1 time per week **Commercial:** None **Other collections:** None **Fees:** Charge citizens $30 per quarter **Annual budget (FY 04):** $123,000 (Expenditures) $194,000 (Revenues)
Smyth County	**Equipment:** Compactor unit and 3-4 open-top roll offs at convenience center, 3 roll off trucks to collect. Recycling boxes at convenience center. **Personnel:** 3 drivers, staff at site. **Collection:** 11 convenience centers staffed with 22 part time employees. Sites are operated from 7:00 AM – 6:00 PM Monday through Saturday. **Residential:** At convenience centers **Commercial:** None provided by County **Other collections:** None. Citizens can bring brush to transfer station and bulky items to convenience centers. **Fees:** None. Program funded from general fund and utility taxes. **Annual budget (FY 04):** $1,380,725 (Expenditures) including hauling and disposal costs of $680,000. Total collection cost is $700,725.
Marion	**Equipment:** 1 rear loading truck **Personnel:** 1 driver and 2 workers **Collection:** Door to door collection for approximately 3,500

LOCALITY	DESCRIPTION
	residences and 20 businesses. **Residential:** 1 time per week **Commercial:** 1 time per week **Other collections:** Yard waste collected 1 time per month **Fees:** $6.00 per month **Annual budget (FY04):** $160.000 (Expenditures) $175,500 (Revenues)
Chilhowie	**Equipment:** None – Privatized with BFI **Personnel:** None – Privatized with BFI **Collection:** Door to door by BFI **Residential:** 1 time per week **Commercial:** None provided by Town **Other collections:** None **Fees:** $10/month in-Town customers; $12/month out-of-Town customers. **Annual budget (FY04):** $105,000
Saltville	**Equipment:** None – Privatization with BFI **Personnel:** None – Privatization with BFI **Collection:** Door to door with BFI. Approximately 986 households. **Residential:** 1 time per week. **Commercial:** None – private contracts with BFI. **Other collections:** None. **Fees:** $9.95 per household per month. Annual revenues $100,528.92. **Annual budget:** $119,513
Washington County	**Equipment:** 1 compactor; open top roll off for bulky items; 3 roll off trucks. **Personnel:** 5 drivers **Collection:** 14 convenience sites open a total of 40 hours per week. Monday 12:00 – 7:00 PM; Tuesday – Friday 11:00 AM – 5:00 PM; Saturday 8:00 AM – 5:00 PM. Landfill site open additional hours. Staffed. Accepts used motor oil, large items, scrap metal, appliances, tires. **Residential:** At convenience site or citizens can contract with a private company for door to door service. BFI, Waste Management and Southwest Sanitation provide services in County. **Commercial:** None by County **Other collections:** See **Appendix ___** for further details. **Fees:** Household waste not charged. Appliances requiring freon removal, building materials, and tires are charged a special fee at the stations. **Annual Budget:** $1,789,157 (Expenditure) • Collection $250,000 • Transfer station operation $275,000

LOCALITY	DESCRIPTION
	• Hauling/disposal $850,000 - $875,000 • Other/Misc. $400,000 $ 400,000 (Revenues)
Abingdon	**Equipment:** 1 automated truck with robotic arm handles approximately 85% of customers; 1 rear loader handles other 15% in alleys, inaccessible areas. **Personnel:** 3 **Collection:** Door to door service for 1,775 residents and 75 businesses. Automated collection. **Residential:** 1 time per week; Use 96 gallon roll out carts **Commercial:** Light commercial only that can use 96 gallon cart (1-2 carts) **Other collections:** Collects brush, leaves, bulky rubbish and white goods except refrigeration units. **Fees:** $8.75 per month for residents. **Annual Budget:** $ 295,831 (Expenditures) $259,000 (Revenues)
Damascus	**Equipment:** None – franchised with BFI **Personnel:** None – franchised with BFI **Collection:** Door to door by BFI. Also collects from 68 businesses. **Residential**: 1 time per week **Commercial:** None by Town Other collections: **No special material collections. BFI provides additional collection for special events.** **Fees:** $12 per month per household **Annual Budget:** NA
Glade Spring	**Equipment:** 1 rear loader compactor truck **Personnel:** 2 people **Collection:** Door to door collection for approximately 247 residents and 13 businesses. **Residential:** 1 time per week **Commercial:** 1 time per week **Other collections:** Brush – chipped **Fees:** Residential: $6/month; Commercial: $6/week **Annual budget:** $42,818
Wythe County	**Equipment**: At site: 1 compactor, 1-40 cy roll off for bulky items, recycling bins. **Personnel:** Hauled by private contractor, Lusk Disposal Services, West Virginia **Collection:** 11 convenience centers staffed with 2 workers at each site. Sites are opened 60 hours per week, 7:00 AM – 12:00 Pm, 1:00 PM – 6:00 PM on Monday, Tuesday, Wednesday, and Friday, 8:00 AM – 6:00 PM on Saturday and 1:00 PM – 6:00 PM on Thursday and Sunday. **Residential:** Delivered to convenience sites.

LOCALITY	DESCRIPTION
	Commercial: None **Other collections:** Accept white goods, tires, brush, leaves and grass at sites. **Fees:** Funded through general fund. No fees assesses citizens. **Annual budget:** $1,595,733 including approximately $600,000 in disposal fees.
Rural Retreat	**Equipment:** One rear loader; wood chipper **Personnel:** 2-3 people on truck **Collection:** Curbside for approximately 600 residents **Residential:** 1 time per week **Commercial:** None **Other collections:** Takes wood chipper around and grinds brush at curb. **Fees:** None; Use General Fund **Annual budget:** $26,000 including $17,500 in transfer station fees.
Wytheville	**Equipment:** 2 Rear loading trucks; 1 in operation at a time; dump trucks for yard waste. **Personnel:** 3 people per truck **Collection:** Door to door service provided to about 2,000 residents (out of 3,000 households) and approximately 100 businesses. **Residential:** 1 time per week **Commercial:** The few businesses that the Town collects from are treated like residential. Do not collect from boxes or roll offs. **Other collections:** No bulk waste collection. Yard waste collected once per month. Leaves and grass collected seasonally at no charge. **Fees:** Pay as you throw system $50.00 per year for one 32 gallon container $1.00 for one 32 gallon sticker $0.50 for one 13 gallon sticker **Annual budget**: $117,470 (Expenditures) $ 42,000 (Revenues)

5.1.2 Smyth County Collection Sites

The following table summarizes the tonnages from the Smyth County collection system from FY2000 to FY 2003. The table also indicates by % of average the usage of the various facilities. Figure 2 indicates the location of these sites.

TABLE 59
SMYTH COUNTY
ANNUAL TONNAGE BY COLLECTION SITE

SITE	FY 2000	FY 2001	FY 2002	FY 2003	Average	%
Atkins	997	1,045	1,090	1,187	1,080	12.2%
Camp	331	183	194	204	228	2.6%
Fish Hatchery	1,011	1,055	1,175	1,161	1,101	12.4%
Hungry Mother	899	945	1,011	1,083	984	11.1%
Locust Cove	141	129	141	147	139	1.6%
McCready	768	739	803	785	774	8.7%
McMullin	1,860	1,608	1,700	1,971	1,785	20.1%
Old Quarry	746	796	853	1,195	897	10.1%
Sugar Grove	444	466	508	529	487	5.5%
Wilkinson Mill	1,368	1,377	1,391	1,437	1,393	15.7%
TOTAL	8,565	8,342	8,867	9,700	8,868	100.0%
% Annual change		-2.6%	6.3%	9.4%	-8.6%	

The following table indicates the proportion of tonnage collected by the County to the total tonnage delivered to the transfer station.

TABLE 60
SMYTH COUNTY
TONNAGE COLLECTED VERSUS TONNAGE
DELIVERED TO TRANSFER STATION

Fiscal Year	Tonnage Collected By County	Total Tonnage Delivered to Transfer Station	% Collected to Total
2000	8,565	22,597	37.9
2001	8,342	23,250	35.9
2002	8,867	22,856	38.8
2003	9,700	22,079	43.9
AVERAGE	8,869	22,695	39.1

On average the County delivers 39% of the tonnage. The remaining waste is delivered to the transfer station by the Towns, private haulers, business, or citizens.

5.1.3 Washington County Collection

The following table summarizes the tonnages collected from the drop off sites versus the total tonnage delivered to the transfer station. Figure 2 indicates the location of these sites.

TABLE 61
WASHINGTON COUNTY
TONNAGE COLLECTED VERSUS TONNAGE
DELIVERED TO TRANSFER STATION

YEAR	TONNAGE FROM DROP OFF SITES	TOTAL TONNAGE DELIVERED TO TRANSFER STATION	% COLLECTION TONNAGE OF TOTAL TONNAGE
1999	16,572	35,038	47.3%
2000	16,763	34,371	48.8%
2001	16,436	36,710	44.8%
2002	17,410	36,018	48.3%
2003	18,203	35,745	50.9%
Average	17,077	35,576	48.0%

On average the County delivers 48% of the tonnage. The remaining waste is delivered to the transfer station by the Towns, private haulers, business or citizens.

5.1.4 Wythe County Collection

Wythe County does not track the tonnages by convenience center.

5.2 Transfer Operations

5.2.1 Summary of transfer station information

The following table summarizes the information on the transfer stations. Figures 8 through 10 contained in Appendix 3 indicate the location of the stations. Most of the waste generated within the four County region is delivered to one of the three transfer stations. The exception is Abingdon which direct hauls their waste to the Bristol landfill. In addition, some commercial and industrial waste may be taken directly to one of the private landfills, but this waste is not tracked. Smyth and Washington Counties own and operate their own transfer stations. The transfer station operated in Wythe County is owned and operated by the Joint Public Service Authority of Wythe and Bland Counties.

TABLE 62
SUMMARY OF INFORMATION ON TRANSFER STATIONS

LOCATION	DESCRIPTION
Smyth County	• PBR #041 • Permitted 1993 • 9,184 square feet of which 6,740 is actual tipping floor • Scales • Cost $498,000 exclusive of grading and paving • Operated by the County • Hauled by W&L

LOCATION	DESCRIPTION
	• Disposal at Bristol Landfill Permit 588 • Tonnage delivered to station in 2003 – 22,079 tons • Gate Fees: o Flat rate $45.00 per ton o 50-99 tons per month $43.50 per ton o 100 – 149 tons per month $41.50 per ton o 150+ tons $39.50 per ton
Washington County	• PBR #003 • Permit approved October 8, 1993 • Opened October 11, 1993 • 9,500 square feet • Entrance scales and pit scales • Cost - $900,000 including $350,000 for additional grading for rail access • Operated by the County • Hauled by Southwest Disposal • Disposal at BFI Carter Valley Landfill, Hawkins County, Tennessee • Tonnage delivered to station in 2003 – 35,986tons • Gate Rates o $32/ton county waste o $35/ton outside county waste
Wythe – Bland County (Joint Public Service Authority)	• PBR #044 • Permit approval March 21, 1994 • Opened January 11, 1994 (Interim measures at old landfill beginning on October 9, 1993) • 7,500 square feet • Entrance scales and pit scales • Total Cost - $1.5 million; building $890,000 • Operated by Joint Public Service Authority • Hauled by Southwest Disposal, Castlewood, VA • Disposal at Iris Glen Landfill, operated by Waste Management located in Johnson City, Tennessee • Tonnage transferred 2003 – 22,945 tons • Gate Rates: o $48/ton Wythe and Bland Counties o $50/ton Wytheville and Rural Retreat o $56/ton Other

5.2.2 Contractual Relationships

There are no contractual relationships between the localities in the region. The owner of each transfer station contracts directly for their hauling and disposal activities.

5.2.3 Tipping Charges and Fees at transfer stations

Table 62 above summarized the current fees at each of the transfer stations.

5.2.4 Materials permitted for acceptance at transfer stations

In accordance with the Virginia Solid Waste Management Regulations, the following materials may be accepted at the transfer stations subject to permit specific limitations:

a. Agricultural waste
b. Ashes and air pollution control residues that are not classified as hazardous waste. Incinerator and air pollution control residues should be incorporated into the working face and covered at such intervals as necessary to prevent them from becoming airborne.
c. Commercial waste
d. Compost
e. Construction waste
f. Debris
g. Demolition waste
h. Discarded material
i. Garbage
j. Household waste
k. Industrial waste meeting all criteria contained in DEQ Regulations
l. Inert waste
m. Institutional waste except anatomical waste from health care facilities or infectious waste as specified in Waste Management Board's Infectious Wastes Regulations.
n. Municipal solid waste
o. Putrescible waste. Occasional animal carcasses may be disposed of within a sanitary landfill. Large number of animal carcasses shall be placed in a separate area within the disposal unit and provided with a cover of compacted soil or other suitable material.
p. Refuse
q. Residential waste
r. Rubbish
s. Scrap metal
t. Sludge
u. Trash
v. White goods
w. Non-regulated hazardous wastes by specific approval only
x. Specific wastes as approved by the Director

5.2.5 Materials not accepted at the transfer stations

The following wastes **are prohibited** at the transfer stations:

1. Under the DEQ regulations (taken from 9VAC 20-80-250.C.16):

a. Free liquids

b. Regulated hazardous wastes

c. Solid wastes, residues, or soils containing more than 1.0 ppb (parts per billion) of Dioxins

d. Solid wastes, residues, or soils containing more than 50.0 ppm (parts per million) of PCB's

e. Unstabilized sewage sludge or sludges that have not been dewatered

f. Pesticide containers that have not been triple rinsed and crushed

g. Drums that are not empty, properly cleaned, and opened

h. Waste oil that has not been adequately adsorbed in the course of a site cleanup

i. Contaminated soil unless approved by the Director

5.3 Disposal

5.3.1 Landfills

5.3.1.1 Bristol Landfill (Smyth County and the Town of Abingdon)

Currently Smyth County and the Town of Abingdon are under contract with the City of Bristol, Virginia for disposal at the Bristol Quarry landfill located approximately 4 miles from Exit 7 off of I-81. One way distance from Chilhowie where the Smyth County transfer station is located to Bristol, Virginia is 34 miles. One way distance from Abingdon to Bristol, Virginia is 16 miles. The landfill was developed in an old abandoned quarry. Waste entering the facility is weighed then discharged onto a tipping floor where it is inspected then baled. It is important that only acceptable waste capable of being baled be delivered to the site and hence quality control is important at the transfer station and on the Town's collection routes.

The following list summarizes important information on the landfill:

- Virginia Department of Environmental Quality Permit No. 588
- Permit approved 2/14/96
- Facility opened 3/2/98
- Essentially Subtitle D liner and cap system modified for the special conditions
- Remaining life expectancy: 26 years from December, 2003 with an anticipated closure date of 2029 at 700 tons per day.

5.3.1.2 Carter Valley Landfill (Used by Washington County)

Currently Washington County is under contract with BFI Waste Systems, Inc. for disposal at the Carter Valley Landfill located in Hawkins County Tennessee. The landfill is located approximately 13 miles west of Kingsport. Distances from the transfer station to the landfill is approximately 40+ miles one way.

The following list summarizes information on the landfill:

- Permitted by Tennessee Department of Environment and Conservation (TDEC)
- Permit number SNL 37-104-1845
- Subtitle D liner and cap system
- Total acreage – 347 acres as defined in permit
- Disposal acreage – 200 acres (not all permitted at this time)
- Remaining life expectancy – 22.5 years @ 1,500 tpd from 1/1/04. Estimated closure date 2026.

5.3.1.3 Iris Glen Landfill (Used by Wythe County)

Currently Wythe County is under contract with Waste Management Inc. for disposal at the Iris Glen Landfill located in Johnson City, Tennessee. The landfill is located in downtown Johnson City and covers approximately 264 acres. The distance from Wythe County transfer station to Johnson City is approximately 100+ miles.

The following list summarizes information on the landfill:

- Permitted by Tennessee Department of Environment and Conservation (TDEC)
- Permit number SNL 90-104-0262
- Date permitted: October 1993
- Began operation: October 1994
- Liner and cap system: Liner exceeds Subtitle D with 5' of 1 x 10^{-6} cm/sec material; 2' of 1 x 10^{-7} cm/sec clay, geosynthetic and leachate system. Cap meets Subtitle D.
- Total acreage – 264 acres
- Disposal acreage – 62 acres are currently permitted
- Remaining life expectancy – 18 years in existing footprint. Have additional acreage with estimated life of 70 years. (Based on current tonnage of 330,000 tons.)

5.3.2 Previously operated landfills

Appendix 4 includes a table summarizing the status of previously operated landfills in the region and location maps for the most recently closed landfills. The information was provided by the Southwest Regional Office of the Department of Environmental Quality. All landfills owned and operated by the Counties and the Town of Wytheville have been closed and are operating in post closure care.

Records of all closed and active solid waste disposal sites within the region and records of the transfer stations are maintained at the offices of the County Administrators or Solid Waste Directors within the Region. The Counties retain responsibility for all closure and post closure activities at the landfills and for documenting and addressing any open dumps. The Counties or

Wythe-Bland Joint Public Service Authority maintain information on the transfer stations and recycling. The addresses for these archives are listed below:

Bland County
654 Main Street
Bland, VA 24315
276-688-4622

Smyth County
121 Bagley Circle, Suite 100
Marion, VA 24345
276-783-3298

Washington County
205 Academy Drive
Abingdon, VA 24210
276-676-6202

Wythe County
345 S. Fourth Street
Administration Building, Suite A
Wytheville, VA 24382-2598
276-223-6119

Wythe Bland Joint Public Service Authority
169 Kents Lane
Wytheville, VA 24382
276-228-4907

The files kept in these locations constitute the central archive and operating record for all permitted landfills and transfer stations within the Counties as well as the recycling efforts. New landfills, closure and post closure care documentation is also kept at the Counties. All correspondence to and all correspondence from DEQ is kept in the files of the appropriate entity.

In addition, the Solid Waste Management Plan prepared by the Mount Rogers Planning District for the Region will serve as a central archive and summary of solid waste collection, disposal, recycling and treatment activities within the Region. The plan will be revised as appropriate as activities change and the revised plan will be submitted to DEQ for review and approval.

5.3.3 Household hazardous waste collection

Wythe and Bland Counties working with the Joint Public Service Authority host a household hazardous waste collection day once a year in the fall. The next event is scheduled for the last Saturday in September.

Smyth County does not provide household hazardous waste collection.

Washington County does not provide household hazardous waste collection.

5.4 Recycling

Recycling programs in the region are implemented on an individual basis by locality. The data is reported regionally.

5.4.1 Description of programs

The following table summarizes the existing programs within each County or Town.

TABLE 63
SUMMARY OF RECYCLING PROGRAMS IN THE REGION

LOCALITY	DESCRIPTION
Bland County	• Door to door collection is provided one time per month. The same contractor responsible for trash collection, collects the recyclables during the first full week of the month. Paper, cardboard, plastics and aluminum are collected. The citizens are required to place the materials in a clear plastic bag. • Recycling rate 2003: 6.2% as calculated by County and verified by DEQ.
Smyth County	• Drop off program at the 11 convenience sites. • Plastics, newspaper, magazines, phone books, # 1 & 2 plastics, aluminum cans, steel cans and used oil are collected at the convenience centers. • Scrap metal and tires are collected at the transfer station. • County provides their own collection and hauling. • Markets include: Southwest Sanitation, Berrys, and the City of Bristol • Recycling rate 2003: 28% as calculated by County and 10.6% as calculated by DEQ. DEQ excluded 6,175 tons of industrial plastics. • Tracks commercial and industrial recycling.
Marion	• No activity at this time. Once had a drop off program that was dropped because of cost. Citizens encouraged to use Smyth County drop off system. • Does not track commercial or industrial recycling.
Chilhowie	• No program. Citizens encouraged to use Smyth County program.
Saltville	• No program. Citizens encouraged to use Smyth County program
Washington County	• Drop off program at 15 convenience sites. • Collect Newspaper, #1 & 2 plastics, aluminum and steel beverage and food cans at convenience sites. • Collect magazines and glass at landfill site. • Collect used motor oil

LOCALITY	DESCRIPTION
	• Mobile program using a 30 cubic yard bin which is dropped off once a month. Currently only in use in Emory. • Markets include: Southwest Sanitation in Pounding Mill, VA for plastics, cans and newspaper; Cycle Systems in Roanoke for glass, VA; Profile Products in Limestone, TN for magazines. • Recycling rate for 2003: 29.8% as calculated by County and 16.3% as calculated by DEQ. DEQ excluded 6,000 tons of industrial scrap metal. • Budget for program: $8,000 per year • Tracks commercial and industrial recycling.
Abingdon	• Curbside recycling available to those citizens who wish to sign up for the program. Residences only. No duplexes or apartment complexes. • Participation rate is approximately 40% or about 1,080 households. • Program privatized with Waste Management who collects materials and takes them to their Recycle America MRF in Kingsport Tennessee. • Town has been providing access to this service since 1992. • Collected on same day as trash is collected. • Collect: #1 & 2 plastics, mixed metal beverage cans, paper of all types, newspaper. Glass and cardboard is not collected. • Revenues are split with Waste Management. • Recycle approximately 225 tons per year through program. • Waste Management responsible for promotion. • Recycling reported with County. • Cost of program: $9,300 per month regardless of how much is collected. The $8.75 per month waste collection fee includes recycling. • Does not track commercial or industrial recycling.
Damascus	• No program. Could use the County's mobile program if interested.
Glade Spring	• No program. Could use the County's mobile program if interested.
Wythe County	• Drop off at 11 convenience centers. • Collect tires, white goods, brush, leaves, grass, #1 & 2 plastics, clear and brown glass, newspapers, magazines, office paper, metal and aluminum cans. • Compost leaves and brush. • Recycling Market: TRA-COL, Inc., Hillsville, VA • Recycling rate 2003: 26.4% as calculated by County and 16.7% as calculated by DEQ. DEQ eliminated industrial metals, land applied sludge and rebuilt pallets.
Wytheville	• One drop off center next to park by municipal building.

LOCALITY	DESCRIPTION
	• 2 – 30 cy boxes for cardboard • 1 – 30 cy for mixed glass • 1 – 30 cy paper and mixed metals • Site is attended 25 hours per week • Collect #1 & 2 plastics, newspaper and mixed paper, cardboard, glass and mixed metal beverage cans. • Recycling market: TRA-COL, Inc, Hillsville, VA • Pays $25 per load to processor. Does not receive revenue. • Collected 177 tons through program in 2002. • Tracks commercial and industrial recycling. A copy of the form is included in Appendix 5. • Recycling reported with County.
Rural Retreat	• No program. Citizens encouraged to use Wythe County program.

5.4.2 Recycling rates

The following tables provide the summary information relative to the reported rates for 2002 and 2003 and projects a regional recycling rate for these years. In 2002, had the region filed as a single entity the recycling rate would have been 26.9%. In 2003 it would have been 14.5%. Appendix 6 contains the summary tables for each County relative to recycling for 2002 and 2003 and the DEQ comment letters for 2003. In addition, summary tables are included for the Town of Abingdon which has tracked their tonnage for many years because of their curbside collection program.

TABLE 64
SUMMARY 2002 ANNUAL RECYCLING TONNAGES

	BLAND COUNTY		SMYTH CO.		WASHINGTON CO.		WYTHE CO.		TOTAL	
	2002	% TOTAL	2002	% TOTAL	2002	% TOTAL	2002	% TOTAL	2002	% TOTAL
Total Principal RM										
Paper	4	3.9%	125	1.5%	3,500	33.4%	2,417	24.0%	6,046	20.8%
Metal	2	2.1%	1,529	18.2%	6,500	62.1%	4,579	45.5%	12,610	43.5%
Plastic	3	3.4%	6,075	72.4%	150	1.4%	45	0.4%	6,273	21.6%
Glass		0.0%		0.0%	10	0.1%	91	0.9%	101	0.3%
Commingled		0.0%		0.0%	100	1.0%		0.0%	100	0.3%
Yard Waste (composted or mulched)		0.0%		0.0%		0.0%	151	1.5%	151	0.5%
Waste Wood (chipped or mulched)		0.0%		0.0%		0.0%	47	0.5%	47	0.2%
Textiles		0.0%		0.0%		0.0%		0.0%	0	0.0%
SUBTOTAL	**9**	9.5%	**7,729**	92.1%	**10,260**	98.0%	**7,330**	72.9%	**25,328**	87.3%
Total Supplemental RM										
Waste Tires		0.0%	491	5.9%		0.0%	696	6.9%	1,187	4.1%
Used Oil		0.0%	169	2.0%	200	1.9%	604	6.0%	973	3.4%
Used Oil Filters		0.0%		0.0%		0.0%		0.0%	0	0.0%
Used Antifreeze		0.0%		0.0%		0.0%	16	0.2%	16	0.1%
Auto Bodies		0.0%		0.0%	10	0.1%		0.0%	10	0.0%
Batteries		0.0%		0.0%		0.0%	40	0.4%	40	0.1%
Sludge (composted)		0.0%		0.0%		0.0%	211	2.1%	211	0.7%
Electronics		0.0%		0.0%		0.0%		0.0%	0	0.0%
Other	86	90.5%		0.0%		0.0%	1,157	11.5%	1,243	4.3%
Ash		0.0%		0.0%		0.0%		0.0%	0	0.0%
SUBTOTAL	**86**	90.5%	**660**	7.9%	**210**	2.0%	**2,724**	27.1%	**3,680**	12.7%
Total PRM and SRM	**95**		**8,389**		**10,470**		**10,054**		**29,008**	
Total waste disposed	2,400		21,546		25,831		29,150		78,927	
Recycling rate	3.81%		28.02%		28.84%		25.65%		26.88%	

TABLE 65A
SUMMARY 2003 ANNUAL RECYCLING TONNAGES

	BLAND COUNTY		SMYTH CO.		WASHINGTON CO.		WYTHE CO.		TOTAL	
	2003	% TOTAL	2003	% TOTAL	2003	% TOTAL	2003	% TOTAL	2003	% TOTAL
Total Principal RM										
Paper	6	3.4%	182	2.1%	3,600	32.5%	2,882	31.9%	6,670	23.0%
Metal	3	1.5%	1,632	18.6%	6,550	59.2%	3,076	34.0%	11,261	38.8%
Plastic	5	2.7%	6,175	70.4%	160	1.4%	295	3.3%	6,634	22.8%
Glass		0.0%		0.0%	12	0.1%	80	0.9%	92	0.3%
Commingled		0.0%		0.0%	110	1.0%		0.0%	110	0.4%
Yard Waste (composted or mulched)		0.0%		0.0%		0.0%	143	1.6%	143	0.5%
Waste Wood (chipped or mulched)		0.0%		0.0%		0.0%	39	0.4%	39	0.1%
Textiles		0.0%		0.0%		0.0%		0.0%	0	0.0%
SUBTOTAL	**13**	7.6%	**7,989**	91.1%	**10,432**	94.3%	**6,516**	72.1%	**24,949**	85.9%
Total Supplemental RM										
Waste Tires	60	35.5%	546	6.2%	361	3.3%	895	9.9%	1,862	6.4%
Used Oil		0.0%	238	2.7%	250	2.3%	429	4.7%	917	3.2%
Used Oil Filters		0.0%		0.0%		0.0%		0.0%	0	0.0%
Used Antifreeze		0.0%		0.0%		0.0%	16	0.2%	16	0.1%
Auto Bodies		0.0%		0.0%	20	0.2%		0.0%	20	0.1%
Batteries		0.0%		0.0%		0.0%	49	0.5%	49	0.2%
Sludge (composted)		0.0%		0.0%		0.0%	488	5.4%	488	1.7%
Electronics		0.0%		0.0%		0.0%		0.0%	0	0.0%
Other	96	56.9%		0.0%		0.0%	648	7.2%	744	2.6%
Ash		0.0%		0.0%		0.0%		0.0%	0	0.0%
SUBTOTAL	**156**	92.4%	**784**	8.9%	**631**	5.7%	**2,525**	27.9%	**4,096**	14.1%
Total PRM and SRM	**169**		**8,773**		**11,063**		**9,041**		**29,046**	
Total waste disposed	2,556		21,929		26,080		25,145		75,710	
Recycling rate	6.20%		28.57%		29.78%		26.45%		27.73%	

TABLE 65B
SUMMARY 2003 ANNUAL RECYCLING TONNAGES
AS ADJUSTED BY DEQ

	BLAND COUNTY		SMYTH CO.		WASHINGTON CO.		WYTHE CO.		TOTAL	
	2003 - DEQ	% TOTAL	2003	% TOTAL	2003 - DEQ	% TOTAL	2003 - DEQ	% TOTAL	2003 - DEQ	% TOTAL
Total Principle RM										
Paper	6	3.4%	182	7.0%	3,600	71.1%	2,882	57.1%	6,670	51.8%
Metal	99	58.5%	1,632	62.8%	550	10.9%	139	2.8%	2,420	18.8%
Plastic	5	2.7%		0.0%	160	3.2%	295	5.8%	459	3.6%
Glass		0.0%		0.0%	12	0.2%	80	1.6%	92	0.7%
Commingled		0.0%		0.0%	110	2.2%		0.0%	110	0.9%
Yard Waste (composted		0.0%		0.0%		0.0%	143	2.8%	143	1.1%

	BLAND COUNTY		SMYTH CO.		WASHINGTON CO.		WYTHE CO.		TOTAL	
	2003 - DEQ	% TOTAL	2003	% TOTAL	2003 - DEQ	% TOTAL	2003 - DEQ	% TOTAL	2003 - DEQ	% TOTAL
or mulched)										
Waste Wood (chipped or mulched)		0.0%		0.0%		0.0%	39	0.8%	39	0.3%
Textiles		0.0%		0.0%		0.0%		0.0%	0	0.0%
SUBTOTAL	**109**	64.6%	**1,814**	69.8%	**4,432**	87.5%	**3,578**	70.9%	**9,933**	77.2%
Total Supplemental RM										
Waste Tires	60	35.4%	546	21.0%	361	7.1%	895	17.7%	1,862	14.5%
Used Oil		0.0%	238	9.2%	250	4.9%	429	8.5%	917	7.1%
Used Oil Filters		0.0%		0.0%		0.0%		0.0%	0	0.0%
Used Antifreeze		0.0%		0.0%		0.0%	16	0.3%	16	0.1%
Auto Bodies		0.0%		0.0%	20	0.4%		0.0%	20	0.2%
Batteries		0.0%		0.0%		0.0%	49	1.0%	49	0.4%
Sludge (composted)		0.0%		0.0%		0.0%		0.0%	0	0.0%
Electronics		0.0%		0.0%		0.0%		0.0%	0	0.0%
Other		0.0%		0.0%		0.0%	78	1.5%	78	0.6%
Ash		0.0%		0.0%		0.0%		0.0%	0	0.0%
SUBTOTAL	**60**	35.4%	**784**	30.2%	**631**	12.5%	**1,467**	29.1%	**2,942**	22.8%
Total PRM and SRM	**169**		**2,598**		**5,063**		**5,045**		**12,875**	
Total waste disposed	2,556		21,929		26,080		25,145		75,710	
Recycling rate	6.21%		10.59%		16.26%		16.71%		14.53%	

5.4.3 Composition of materials recycled

Based on the information provided in Tables 65A and 65B, for 2002 and 2003, the composition of recycled materials was as follows:

TABLE 66
COMPOSITION OF RECYCLED MATERIALS
REGIONAL SUMMARY
2002 AND 2003

MATERIAL	2002 (%)	2003 (%)	2003 (%) (DEQ Adjustment)
Paper	20.8	23.0	51.8
Metal	43.5	38.8	18.8
Plastic	21.6	22.8	3.6
Glass	0.3	0.3	0.7
Yard Waste/Wood Waste	0.7	0.6	1.1
Waste Tires	4.1	6.4	14.5
Used Oil	3.4	3.2	7.1
Other	5.6	4.9	2.4
TOTAL	100.0	100.0	100.0

5.4.4 Volunteer Programs

Volunteer programs are not tracked by the localities.

5.4.5 Recycling Markets

Recycling markets are identified in Table 63 with additional potential markets outlined in a table included in Appendix 10.

5.4.6 Projected recycling rates

The following tables project the recycling rate over the 20 year planning period using projected tonnages as adjusted and assuming no increase in recycled tonnage from 2003 reported values. Adjustment in the total tonnage was needed because the transfer stations, in particular the Washington County transfer station, receive out of County waste or materials which are not included in the recycling calculations. The adjustment was made based on dividing the reported MSW tonnage for recycling for 2002/2003 by the total tonnage as delivered to transfer stations for the same period. The recycling MSW tonnages reported were 87% of the total tonnage delivered for 2002 and 2003.. A 1% Growth Rate and a 2% Growth Rate in waste tonnage were considered. Based on the information in these tables using the 2003 tonnages as adjusted by DEQ, the recycling rate fails to meet the mandated 25% recycling rate from the beginning of the planning period. Because 2003 was the first year that industrial recycling was eliminated from the calculations, the region is assessing its options to improve its rate.

TABLE 67
PROJECTED ANNUAL RECYCLING RATES
FOR REGION
1% GROWTH RATE IN WASTE TONNAGE

YEAR	TOTAL TONNAGE AS ESTIMATED FROM TABLE _____	TOTAL ADJUSTED PER RECYCLING REPORTS	TOTAL RECYCLED TONNAGE (Using DEQ adjustments)	% RECYCLING
2002	88,098	78,927	29,008	26.9%
2003	89,639	75,710	12,875	14.5%
2004	90,535	78,765	12,875	14.0%
2005	91,440	79,553	12,875	13.9%
2006	92,355	80,349	12,875	13.8%
2007	93,278	81,152	12,875	13.7%
2008	94,211	81,964	12,875	13.6%
2009	95,153	82,783	12,875	13.5%
2010	96,105	83,611	12,875	13.3%
2011	97,066	84,447	12,875	13.2%
2012	98,036	85,292	12,875	13.1%
2013	99,017	86,145	12,875	13.0%
2014	100,007	87,006	12,875	12.9%
2015	101,007	87,876	12,875	12.8%
2016	102,017	88,755	12,875	12.7%
2017	103,037	89,642	12,875	12.6%
2018	104,068	90,539	12,875	12.4%
2019	105,108	91,444	12,875	12.3%
2020	106,159	92,359	12,875	12.2%
2021	107,221	93,282	12,875	12.1%
2022	108,293	94,215	12,875	12.0%
2023	109,376	95,157	12,875	11.9%
2024	110,470	96,109	12,875	11.8%

TABLE 68
PROJECTED ANNUAL RECYCLING RATES
FOR REGION
2% GROWTH RATE IN WASTE TONNAGE

YEAR	TOTAL TONNAGE AS ESTIMATED FROM TABLE _____	TOTAL ADJUSTED PER RECYCLING REPORTS	TOTAL RECYCLED TONNAGE (DEQ adjustment)	% RECYCLING
2002	88,098	78,927	29,008	26.9%
2003	89,639	75,710	12,875	14.5%
2004	91,431	74,974	12,875	14.7%
2005	93,260	76,473	12,875	14.4%
2006	95,125	78,003	12,875	14.2%
2007	97,028	79,563	12,875	13.9%
2008	98,968	81,154	12,875	13.7%
2009	100,948	82,777	12,875	13.5%
2010	102,967	84,433	12,875	13.2%
2011	105,026	86,121	12,875	13.0%
2012	107,126	87,844	12,875	12.8%
2013	109,269	89,601	12,875	12.6%
2014	111,454	91,393	12,875	12.3%
2015	113,683	93,220	12,875	12.1%
2016	115,957	95,085	12,875	11.9%
2017	118,276	96,986	12,875	11.7%
2018	120,642	98,926	12,875	11.5%
2019	123,055	100,905	12,875	11.3%
2020	125,516	102,923	12,875	11.1%
2021	128,026	104,981	12,875	10.9%
2022	130,586	107,081	12,875	10.7%
2023	133,198	109,223	12,875	10.5%
2024	135,862	111,407	12,875	10.4%

5.4.7 Methodology to Determine Recycling Rates

The methodology used to calculate the recycling rate will be as follows.

1. The following formula will be used:

Recycling Rate = [PRM + SRM]/[PRM + SRM + M] X 100

where:

PRM = Principal Recyclable Materials
SRM = Supplemental Recyclable Materials
M = Total Municipal Solid Waste Disposed within the region

2. The amounts will be expressed in one of the following units:
    a. The actual weight of each component.
    b. The volume of each component.
    c. The estimated weight of each component based on the most accurate survey or estimated per capita weight.

3. PRMs include paper, metal (except automobile bodies), plastic, glass, commingled, yard waste, waste wood, and textiles.

4. SRMs include recycled and reused materials. Recycled SRMs included waste tires, used oil, used oil filters, used antifreeze, abandoned automobiles removed, batteries, composted sludge, electronics, and large diameter tree stumps (>6 inches in diameter). Reused SRMs are materials that are separated from the waste stream and used without processing or change its form for an end use. Reused SRMs include construction waste, demolition waste, debris waste, ash, and sawdust.

5. The total municipal solid waste disposed will be the amount of MSW generated within t he planning region.

6. If the region participates in the used tire management program sponsored by the DEQ, the amount of those tires may be added to the "SRM" amount in the recycling rate calculation.

7. Mulched or composted yard waste can be included in the "PRM" amount if it can be demonstrated that the finished mulch will be marketed or otherwise used productively.

8. Used oil, used oil filters, and used antifreeze can be included in the "SRM" amount if it can be demonstrated that the materials will be marketed or used productively.

9. Where a source reduction of any municipal solid waste material or reuse of a principal recyclable material is documented to have occurred, is accurately quantified and is requested as a petition for a variance in accordance with 9 VAC 20-130-230, the DEQ may issue a credit for the amount to be added into the "PRM" or "SRM" amounts in each calculation method.

5.5 Public Education

Public education relative to recycling occurs primarily in the school as implemented by individual schools or teachers. Washington County is the only County to have a full-time recycling coordinator who provides additional public outreach to the community. Waste Management is responsible for promoting recycling in Abingdon where they provide curbside collection service.

5.6 Public/Private Partnership

The Town of Abingdon works in partnership with Waste Management relative to their curbside recycling program.

6.0 BUDGET

The following tables summarize the operating budgets and revenues for the localities of the region:

TABLE 69
BLAND COUNTY
TOTAL COUNTY AND SOLID WASTE BUDGET
FY2000 – FY2004

ITEM	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Total County Budget	$17,260,331	$18,876,811	$21,765,864	$18,488,190	$14,047,315
Expenditures	$115,000	$116,000	$112,000	$123,000	$123,000
Revenues	$194,000	$175,000	$176,500	$194,000	$194,000
Balance		$59,000	$64,500	$71,000	$71,000
CHANGE IN BUDGET					
% Refuse budget / Total Budget	0.7%	0.6%	0.5%	0.7%	0.9%
% Change in total County Budget		9.4%	15.3%	-15.1%	-24.0%
% Change in refuse budget		0.9%	-3.4%	9.8%	0.0%
% Change in refuse revenues			0.9%	9.9%	0.0%

TABLE 70
WYTHE COUNTY
TOTAL COUNTY AND SOLID WASTE BUDGET
FY1999 – FY2003

ITEM	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003
Total County Budget	NA	$56,258,231	$71,031,040	$84,039,329	$70,639,843
Refuse Collection and Disposal Revenues from refuse system	$1,462,549	$1,427,806	$1,182,816	$1,380,828	$1,595,733
Funding required from General Fund	$1,462,549	$1,427,806	$1,182,816	$1,380,828	$1,595,733
CHANGE IN BUDGET					
% Refuse budget / Total Budget		2.5%	1.7%	1.6%	2.3%
% Change in total County Budget			26.3%	18.3%	-15.9%
% Change in refuse budget		-2.4%	-17.2%	16.7%	15.6%

TABLE 71
JOINT PUBLIC SERVICE AUTHORITY
SOLID WASTE BUDGET
FY2001 – FY2004

ITEM	FY 2001	FY 2002	FY 2003	FY 2004
Operations	$1,917,946	$1,234,747	$1,469,068	$2,152,966
Revenues	$1,277,357	$1,283,764	$1,467,676	$2,151,563
Funding balance	$640,589	-$49,017	$1,392	$1,403

ITEM	FY 2001	FY 2002	FY 2003	FY 2004
CHANGE IN BUDGET				
% Change in refuse budget		-35.6%	19.0%	46.6%
% Change in refuse revenues		0.5%	14.3%	46.6%
OPERATIONS BY CATEGORY	**FY 2001**	**FY 2002**	**FY 2003**	**FY 2004**
Personnel	$117,603	$120,759	$128,924	$134,345
Purchase of Service - Non Govt	$820,224	$854,077	$968,222	$890,000
Utilities	$16,286	$8,069	$17,159	$9,900
Insurance	$4,236	$4,303	$5,209	$5,643
Equipment Fuel, Maintenance, Repairs	$26,839	$28,173	$40,602	$29,500
Floor repair	$0	$0	$66,743	$2,000
Bond Payment	$121,430	$118,732	$120,938	$967,423
Other	$11,028	$39,606	$40,683	$77,215
Reserves	$800,000	$61,028	$80,588	$36,940
TOTAL	**$1,917,646**	**$1,234,747**	**$1,469,068**	**$2,152,966**
TOTAL (Without Bond Payment)	$1,796,216	$1,116,015	$1,348,130	$1,185,543

TABLE 72
SMYTH COUNTY
TOTAL COUNTY BUDGET AND SOLID WASTE BUDGET
FY2000 – FY2003

ITEM	FY 2000	FY 2001	FY 2002	FY 2003
Total County Budget	$98,293,002	$52,864,475	$56,949,048	$62,509,165
Refuse Collection and Disposal	$2,121,646	$1,207,630	$1,063,275	$999,812
Revenues from refuse system	NA	$584,411	$579,818	$570,232
Funding required from General Fund		$623,219	$483,457	$429,580
CHANGE IN BUDGET				
% Refuse budget / Total Budget	2.2%	2.3%	1.9%	1.6%
% Change in total County Budget		-46.2%	7.7%	9.8%
% Change in refuse budget		-43.1%	-12.0%	-6.0%
% Change in refuse revenues			-0.8%	-1.7%

TABLE 73
WASHINGTON COUNTY
TOTAL COUNTY BUDGET AND SOLID WASTE BUDGET
FY2000 – FY2004

ITEM	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Total County Budget	$82,391,179	$92,006,121	$91,975,350	$84,917,870	$86,702,694
Refuse Collection and Disposal	$1,464,253	$1,492,900	$1,498,127	$1,665,687	$1,789,157
Revenues from refuse system	$310,421	$260,890	$259,460	$355,525	$400,000

ITEM	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Funding required from General Fund	$1,153,832	$1,232,010	$1,238,667	$1,310,162	$1,389,157
CHANGES IN BUDGETS					
% Refuse budget / Total Budget	1.8%	1.6%	1.6%	2.0%	2.1%
% Change in total County budget		11.7%	-0.03%	-7.7%	2.1%
% Change in refuse budget		2.0%	0.4%	11.2%	7.4%
% Change in refuse revenues		-16.0%	-0.5%	37.0%	12.5%

TABLE 74
TOWN OF ABINGDON (WASHINGTON COUNTY)
TOTAL TOWN BUDGET AND SOLID WASTE BUDGET
FY2001 – FY2004

ITEM	FY 2001	FY 2002	FY 2003	FY 2004
Total Town Budget - General Fund	$7,264,743	$7,527,009	$7,533,552	$7,944,925
Refuse Collection and Disposal	$257,383	$244,718	$277,012	$295,012
Revenues from refuse system	$240,000	$250,000	$252,000	$259,000
Funding required from General Fund	$17,383	-$5,282	$25,012	$36,012
CHANGES IN BUDGETS				
% Refuse budget / Total Budget	3.5%	3.3%	3.7%	3.7%
% Change in total County budget		3.6%	0.1%	5.5%
% Change in refuse budget		-4.9%	13.2%	6.5%
% Change in refuse revenues		4.2%	0.8%	2.8%

7.0 WASTE MANAGEMENT HEIRARACHY

Under 9 VAC 20-130-30, the following policy is set forth:

"It is the policy of the Virginia Waste Management Board to require each region designated pursuant to 9 VAC 20-130-180 through 9 VAC 20-130-220, as well as each city, county and town not part of such a region, to develop comprehensive and integrated solid waste management plans that, at a minimum, consider and address all components of the following hierarchy:

1. *Source reduction*
2. *Reuse*
3. *Recycling*
4. *Resource recovery (waste to energy)*
5. *Incineration*
6. *Landfilling"*

Section 9 VAC 20-130-150.6, also addresses this requirement by stating:

"The local government or regional solid waste management plan shall include data and analyses of the following type for each jurisdiction. Each item below shall be in a separate section and labeled as to content:

> *6. A description of programs for solid waste reduction, reuse, recycling, resource recovery, incineration, storage, treatment, disposal and litter control."*

The following section provides the information as available as required by the regulations.

7.1 Source reduction

Source reduction refers to any change in the design, manufacture, purchase, or use of materials or products (including packaging) to reduce their amount or toxicity before they become municipal solid waste. Source reduction can help reduce waste disposal and handling costs, conserve resources, and reduce pollution. Section 2.1.5 previously discussed the trends in source reduction nationally noting that the reduction of yard waste in landfills is the most significant source reduction activity at the moment as localities and states ban yard waste from landfills.

While individuals can attempt to reduce their volume of waste, source reduction policies will be aimed primarily at businesses and industries. Many source reduction policies are not feasible at the local level but are best handled at the state or federal level. An example of this is the banning of yard waste from landfills, or requiring minimum packaging standards. Financial incentives and disincentives, broad regulations concerning source reduction and changes to manufacturing processes are difficult to implement on a local basis. As waste tipping fees increase at the region's transfer stations and the outside facilities, the commercial sector will become more sensitive to the expenses involved in their disposal programs, and will begin to consider source reduction more closely.

The most effective source reduction activity that can occur at the local level is public education.

It should be noted that most of the localities within the region seek information annually from their commercial sector relative to recycling activities. This exercise in and of itself can serve as an educational tool as the businesses and industries compile the data and consider the expense of their disposal programs. It is also an opportunity for the businesses or industries to report any major changes in their waste disposal programs, including source reduction.

Some localities within the region are currently engaged in the following source reduction efforts:

- Yard waste handling (chipping, burning)
- White good recycling

The following activities are proposed under this plan as interest and funding are available:

- Enhanced educational programs for the commercial and industrial sector as implemented by individual localities.

7.2 Reuse

Reuse is similar to source reduction as it prevents materials from entering the waste stream, but involves separating a given solid waste material from the waste stream and using it, without processing or changing its form, other than size reduction, for the same or another end use. Examples of reuse include such activities as swap shops or thrift stores, clothing collection centers, pallet reuse, use of refillable bottles, reconditioning of drums or barrels

As with source reduction, private citizens can make an effort to reuse or encourage reuse of many items that would normally be discarded to the landfill. However, the focus of the program would be better aimed at the commercial sector including the region's businesses and industries. The region does not currently focus its educational programs on the commercial sector and does not currently collect specific information on reuse by the commercial sector.

The following activities are proposed under this plan relative to reuse, to be implemented by individual localities as interest and funding are available:

- Educate public relative to the need for reuse
- Educate commercial and industrial sectors to address reuse
- Develop a master list of reuse centers.

7.3 Recycling

Recycling is the process of separating a given waste material from the waste stream and processing it so that it may be used again as a raw material for a product, which may or may not be similar to the original product. Section 5.4 outlined the recycling activities in the region.

The following activities are proposed under this plan as interest is expressed and as funding becomes available:

- Implement or improve tracking of commercial and industrial recycling efforts.
- Expansion of programs as new markets become available.
- Consider cooperative regional efforts to expand or enhance programs.

7.4 Resource recovery and incineration

Resource recovery refers to a system that provides for collection, separation, recycling and recovery of energy from solid wastes, including disposal of non-recoverable waste residues. Incineration means the controlled combustion of solid waste for disposal. According to the EPA burning MSW can generate energy while reducing the amount of waste by up to 90 percent in volume and 75% in weight. The two activities are similar and are therefore combined for this discussion.

At this time, the region does not generate enough waste to make resource recovery or incineration feasible.

7.5 Landfilling

Landfilling at an out of region facility is the primary disposal mechanism for the region. Sections 5.2 and 5.3 outlined the region's transfer and disposal activities in detail.

8.0 GOALS AND OBJECTIVES OF PROGRAM

The following section outlines the goals and objectives for the region's solid waste management program. The program activities will remain under the supervision of the individual local governments. Future program activities may become regional and if so will be under the oversight of a regional committee established for implementation.

8.1 Evaluation of interest in alternative programs

To assess the interest in the region's members in alternative programs, a questionnaire was developed and provided to each of the local governments in the region. A copy of the questionnaire is included in Appendix 7. Of the eleven potential responses, seven were received. This section summarizes the findings.

8.1.1 Citizen interest

The questionnaire asked the local government to check those services that they believed their citizens might have some interest in, in the future. The following table summarizes the responses to this question.

TABLE 75
SUMMARY OF SERVICES THAT CITIZENS MAY BE INTERESTED IN

SERVICE	BLAND COUNTY	SMYTH COUNTY	CHILHOWIE	WYTHE COUNTY	RURAL RETREAT	WYTHEVILLE	WASHINGTON COUNTY	ABINGDON	DAMASCUS	GLADE SPRING	SALTVILLE	TOTAL RESPONSES	% OF POTENTI (7)
VASTE COLLECTION													
oor to door		X	X		X	X			X			5	45%
reen boxes	X		X						X	X		4	36%
taffed collection ites		X	X		X	X			X	X		6	55%
VASTE ISPOSAL													
lew landfill		X	X	X		X			X			5	45%
rivate landfill in ounty													
ARD WASTE													
ollection		X	X			X	X		X			5	45%
isposal		X	X	X		X			X			5	45%
ulching			X	X			X		X	X		5	45%
omposting			X				X	X	X	X		5	45%
ECYCLING													
lewspaper	X	X	X	X		X			X	X		7	64%
ardboard	X					X	X	X	X	X		6	55%
hite paper	X			X		X	X		X	X	X	7	64%
lass	X			X		X			X	X		5	45%
everage/Food ans	X	X	X	X		X			X	X		7	64%
lastics	X	X	X	X		X			X	X		7	64%
hite Goods	X	X	X	X					X			5	45%
il	X	X	X			X			X			5	45%
ntifreeze							X	X	X	X		4	36%
THER													
itter prevention	X	X	X	X		X			X	X	X	7	64%
aste reduction	X								X	X	X	3	27%
omputer isposal	X						X	X	X		X	4	36%
HW	X			X			X	X	X		X	5	45%

Of note is the strong interest expressed by the local governments in cardboard recycling, white paper recycling, computer disposal (e-waste), and household hazardous waste collection. This interest will continue to be discussed as the plan is implemented. The harsh reality for these local governments is that while interest may be expressed, implementing new programs in a cost effective manner may prove to be very difficult. As will most local governments in Virginia, particularly southwest Virginia, limited resources are available to invest in new programs.

8.1.2 Changing programs

When asked what they would change in their current solid waste programs, if only one thing could be changed, only four of the seven respondents replied. The following changes were noted:

- Implementation of curbside recycling. (2 responses)
- Initiate an annual household hazardous waste collection day.
- Increase recycling levels through improved recycling markets.

All respondents qualified their response indicating that any new program would need to be cost effective.

8.1.3 Consideration of potential goals

The local governments were also provided with a list of potential goals for their solid waste programs and asked to comment. The following table summarizes their choices and comments.

TABLE 76
SUMMARY OF RESPONSES
POTENTIAL GOALS OF SOLID WASTE PROGRAMS

Potential Goal: Collection

POTENTIAL GOAL	BLAND COUNTY	SMYTH COUNTY	CHILHOWIE	WYTHE COUNTY	RURAL RETREAT	WYTHEVILLE	WASHINGTON COUNTY	ABINGDON	DAMASCUS	GLADE SPRING	SALTVILLE	TOTAL RESPONSES	% OF POTENTIAL (7)
COLLECTION													
Maintain cost effective services for citizens	X	X	X (Regional)	X (Regional)	X (Regional)	X	X	X Continue with existing program	X (Regional)	X Continue with existing program	X (Regional)	11	100%
Offer as comprehensive service as interest and funding allow	X			X (Regional)	X	X	X	X Continue with existing program		X Continue with existing program		7	64%
Provide collection of bulky items.	X Continue with existing program			X (Regional)		N	Continue at convenience centers	X Continue with existing program		X Continue with existing program		5	45%
Provide collection of yard waste	N			X	X	X	N	X Continue with existing program	X (At local landfill)	X Continue with existing program		6	55%
Charge Citizens directly for collection services	X Continue with existing program			N		X	N	X Continue with existing program		X Continue with existing program		4	36%

Potential Goals: Transfer and Disposal

POTENTIAL GOAL	BLAND COUNTY	SMYTH COUNTY	CHILHOWIE	WYTHE COUNTY	RURAL RETREAT	WYTHEVILLE	WASHINGTON COUNTY	ABINGDON	DAMASCUS	GLADE SPRING	SALTVILLE	TOTAL RESPONSES	% OF POTENTIAL (7)
TRANSFER Maintain existing system				X	X	X	X		X	X Continue with existing program	X Continue with existing program	7	100%
Expand operations	X	X	X (Regional)		N	X	N			N		4	36%
Maintain infrastructure	X	X	X	X	X	X	X			X Continue with existing program		8	73%
Renew haul contract	X	X		X			X			N		4	36%
Initiate rail transfer					X (Regional)		X If cheaper			N		2	18%
Regionalize all transfer stations				X								1	9%
DISPOSAL Continue as is	X	X	X (Regional)			X	X		X	X Continue with existing program	X Continue with existing program	8	73%
Renew disposal contract	X	X					X	X Review Contract				4	36%
Consider regional CDD landfill			X (Regional)	X			X		X			4	36%

Potential Goal: Recycling

POTENTIAL GOAL	BLAND COUNTY	SMYTH COUNTY	CHILHOWIE	WYTHE COUNTY	RURAL RETREAT	WYTHEVILLE	WASHINGTON COUNTY	ABINGDON	DAMASCUS	GLADE SPRING	SALTVILLE	TOTAL RESPONSES	% OF POTENTIAL (7)
ECYCLING ontinue as is	X						X	X Review Contract		X Continue with existing program		4	36%
xpand rogram	X Drop off center		X All recyclables	X Cardboard							X Implement curbside program when money available	4	36%
evelop egional HHW rogram	X Continue with existing program			X	X (Regional)		X	X		N		5	45%
evelop egional E-aste program	X	X		X			X					3	27%
evelop ndividual E-aste program							X			X		2	18%
rovide urbside ollection	X Continue with existing program			N			N			X Develop program		2	18%
evelop acking system or commercial nd industrial ecycling				X (Regional)	X (Regional)		N			X		3	27%
rovision of hite office aper collection t dministration uildings			X	X (Regional)	X (Regional)		X			X		5	45%
evelopment of omprehensive ublic education rogram				X (Regional)	X (Regional)		X Continue with existing program	X	X	X		6	55%

Based on these responses it appears that the individual local governments believe that their systems are basically working well and that limited change is needed. However, some interest was expressed in the following items:

- Regionalization of collection programs. (3 responses)
- Regionalization of the transfer stations. (1 response)
- Development of a regional CDD landfill. (3 responses)
- Expand recycling programs to include cardboard. (1 response)
- Expand recycling to curbside collection (1 response)
- Develop a regional HHW program. (4 responses)
- Develop a regional or individual e-waste recycling programs. (5 responses)
- Develop a tracking system for commercial and industrial recycling. (2 responses)
- Develop a white office paper recycling market. (3 responses with one suggesting a regional program.)
- Develop a comprehensive public education program. (4 responses)

It appears from review of the responses that there is a greater awareness of the need for e-waste recycling and for comprehensive public education programs. As the plan is implemented, the region can explore interest in these areas and may chose to study them in greater detail. As stated above however, this is a difficult time for local governments to consider the implementation of new programs unless it would save them significant money. Resources including money and staff are stretched at this time.

8.2 Collections

Relative to waste collection in the region, no modifications to the programs are proposed at this time. Collection will remain in the hands of the local governments who will plan and budget according to their needs. During the planning period, some of the public programs may be privatized if doing so becomes cost competitive. Likewise there may be interest in privatizing several programs under one contract. However, no specific activity has been identified at this time relative to privatization.

TABLE 77
COLLECTION SYSTEM
GOALS AND ACTION ITEMS

ITEM NUMBER	GOAL	ACTION ITEM	SCHEDULE	ESTIMATED COST (2004 dollars)
C-1	Continue to provide cost effective collection systems for the citizens of the region	Bland County to continue with curb side collection.	No change proposed.	Not applicable.
		Wythe County to continue with staffed	No change proposed.	Not applicable.

ITEM NUMBER	GOAL	ACTION ITEM	SCHEDULE	ESTIMATED COST (2004 dollars)
		convenience centers. No new centers planned.		
		Smyth County to continue with staffed convenience centers. No new centers planned.	No change proposed.	Not applicable.
		Washington County to continue with staffed convenience centers. No new centers planned.	No change proposed.	Not applicable.
C-2	Continue to provide as comprehensive a service as interest and funding allow.	Counties to continue accepting wide variety of wastes at convenience centers and at transfer stations.	No change proposed.	Not applicable.
C-3	Consider regionalizing or privatizing the collection systems of the Towns.	Towns are not considering any changes at this time. However, it may be feasible to privatize the collection of several towns under one contract and to potentially realize some savings.	Towns will need to initiate this conversation among themselves to determine feasibility. PDC could act as a facilitator as necessary.	Not applicable.

8.3 Transfer

During the planning period, the Counties will continue to transfer their waste to a disposal facilities outside of the region. Smyth County, Washington County and the Joint Public Service Authority will continue to operate and maintain their individual transfer stations. They will continue to hold the contracts for hauling and disposal and to negotiate contracts as is necessary during the planning period. Towards the end of the planning period, the transfer stations will be approximately 30 years old. The owners of the facilities should periodically assess the condition of the buildings to assure proper planning for maintenance and repairs. Reserve funds should be considered for funding these expenses. As noted in previous sections, the waste stream is not anticipated to increase significantly over the planning period and hence the facilities should continue to be appropriately sized for the anticipated waste stream.

TABLE 78
TRANSFER STATION SYSTEM
GOALS AND ACTION ITEMS

ITEM NUMBER	GOAL	ACTION ITEM	SCHEDULE	ESTIMATED COST (2004 dollars)
T-1	Continue to provide for adequate hauling from the transfer stations at a cost competitive price.	Each owner will assess their contracts as appropriate.	Periodically per contract requirements.	No cost associated with this action.
T-2	Provide for the care and maintenance of the transfer facilities.	Each owner will assess the condition of their building at least annually to evaluate maintenance and repair needs. Appropriate provisions for funding maintenance and repair per each owner's internal protocol will be established for this work.	Annually	Over the course of the life of a transfer station, the floor will need repair at least one time. Costs for floor repair can exceed $100,000 and proper planning needed to fund this.
T-3	Maintain accurate weigh scales at the facilities.	Depending on maintenance and care of scales, scales at the three facilities may need to be replaced or significantly overhauled towards the end of the planning period. The owner of each station must provide proper planning for this.	Annually consider condition of scales. If deterioration is noted, replace or repair as necessary.	Cost to replace scales assuming that foundation is still intact estimated at $20,000 - $40,000.
T-4	Expand services at transfer stations as interest and funding allow.	None of the owners have identified specific action items for this. However in the normal course of operations, the expansion of services will be considered.	No specific project planned at this time.	No funding required at this time.

8.4 Disposal

During the planning period the existing contracts for disposal held by Smyth County, Washington County and the JPSA will expire and require renewal. The local governments will be required to bid the services. It cannot be predicted as to which landfills will continue to be used by the three entities.

TABLE 79
DISPOSAL SYSTEM
GOALS AND ACTION ITEMS

ITEM NUMBER	GOAL	ACTION ITEM	SCHEDULE	ESTIMATED COST (2004 dollars)
D-1	Assure that there are adequate disposal facilities available to handle the region's waste.	The Bristol landfill has an estimated closure date of 2029. Localities using this landfill should begin considering future options towards the end of the planning period.	2024	No costs are estimated at this time.
		The Carter Valley (BFI) landfill has an estimated closure date of 2026 but potential room for expansion. Localities using this landfill should begin considering future options in 2021.	2021	No costs are estimated at this time.
		The Johnson City, Iris Glen Landfill operated by WMX, has an estimated closure date of 2022 but considerable room for expansion which is estimated to be equivalent to an additional 70 years of life. Localities using this landfill should assure themselves of sufficient capacity in this facility in 2017 to allow them sufficient time to find alternative sites if necessary.	2017	No costs estimated at this time.
D-3	Assure that post closure	Each locality will	No specific	No cost

ITEM NUMBER	GOAL	ACTION ITEM	SCHEDULE	ESTIMATED COST (2004 dollars)
	is effectively handled at the previously operated landfills within the region.	continue to handle the post closure care of their landfills and to address compliance with DEQ.	schedule.	associated with this action.

8.5 Recycling

As indicated above, the region meets the current mandate of 25%. However, if the waste tonnage continues to increase without a corresponding increase in the recycling tonnage then the region will fail to meet the mandated 25% rate between 2012 – 2015 depending on the growth rate considered for the waste stream. At this time, the following localities do not track commercial or industrial recycling within their borders:

- Bland County
- Wythe County
- Abingdon
- Marion
- Chilhowie

Tracking the recycling within these jurisdictions could provide important information relative to additional materials being recycled within the region. A key goal is to encourage these localities to establish a reporting protocol for their businesses and industries to capture this information.

The responses to the questionnaire indicated an interest in household hazardous waste collection and in e-waste recycling. Evaluation of regional programs for both of these are considered below as goals.

Each individual locality is responsible for promoting recycling within their boundaries. However, in the future, it may be more efficient if a regional public education program is established. The consideration of such a program is also established as a goal below.

Recycling programs within the localities will be developed, expanded or abandoned as interest, funding, and markets dictate. Each locality will be responsible for their own program. The data collected will be provided to the PDC or other entity selected to oversee the program for inclusion in the regional report to be submitted to DEQ by April 30 of each year.

TABLE 80
RECYCLING SYSTEM
GOALS AND ACTION ITEMS

ITEM NUMBER	GOAL	ACTION ITEM	SCHEDULE	ESTIMATED COSTS (2004 dollars)
R-1	Improve the tracking of information on commercial and industrial recycling within the region.	Encourage those localities that are not tracking this recycling to develop programs to initiate tracking.	Implement in time to track 2004 data for DEQ report due in 2005.	No additional cost if completed internally. Will require some staff time.
		Educate the localities that are not collecting data on its importance. Hold a meeting at the PDC office to discuss.	2004	No cost if completed internally.
R-2	Consider regionalization of HHW program	Currently JPSA holds an annual HHW collection event. Consider regionalizing the event and contracting together.	2005	Event costs can range from $10,000 - $30,000 per event depending on contracter, types of materials and quantities of materials collected.
R-3	Consider regionalization of e-waste recycling.	Awareness is continuing to grow relative to the importance of e-waste recycling. The region will consider regionalizing this effort. To explore this, a meeting will be held at the office of the PDC to discuss further and to assign roles and responsibilities.	2005	Costs vary with type and quantity of materials collected. Should speak with Montgomery Regional Solid Waste Authority relative to their experiences.
R-4	Improve and expand public education and outreach.	Limited public education and outreach is done in the region outside of the schools.	2005	No cost if done in house. However, it may be helpful

ITEM NUMBER	GOAL	ACTION ITEM	SCHEDULE	ESTIMATED COSTS (2004 dollars)
		It may be helpful if the region develops public outreach materials together for distribution to the public. A meeting should be held to discuss this further.		to hire a person to develop the curriculum. This person could be a school teacher over summer break, or a college intern.
R-5	Continue to explore expanding programs as interest and funding allow.	Continue to discuss new programs and markets as a region. Hold an annual meeting to determine if there are new programs to explore then assign roles and responsibilities.	No specific project identified at this time.	No cost if done internally.

8.6 General Goals Relative to Hierarchy

The following table summarizes general goals for the region to be considered by each local government individually relative to addressing the hierarchy.

TABLE 81
GOALS AND OBJECTIVES FOR THE REGION
SOLID WASTE HIERARCHY

ELEMENT OF HIERARCHY	GOAL	OBJECTIVE
Source Reduction	To reduce the volume of solid waste entering the waste stream by curtailing waste generation.	• Educate private citizens and the business community on the importance of source reduction as opportunities present themselves. • Encourage teachers to continue to discuss source reduction in class room. • Consider developing a generic brochure on source reduction that could be used by all members of the region.
Reuse	To reduce the volume of	• Educate private citizens and

ELEMENT OF HIERARCHY	GOAL	OBJECTIVE
	solid waste entering the waste stream through reuse of existing materials.	the business community on the importance of reuse as opportunities present themselves. • Encourage teachers to continue to discuss reuse in class room. • Consider developing a generic brochure on reuse that could be used by all members of the region.
Recycling	To divert recyclable quantities from the municipal solid waste stream to reduce the tonnage that must be transferred and to meet the mandated 25% goal.	• Educate private citizens and the business community on the importance of recycling. • Make the opportunities to recycle more available to all members of the region. • For those members who do not currently track commercial and industrial recycling, assist with development of a reporting program to track this recycling. Require all commercial and industrial facilities to report annually on the tonnage recycled by weight and material type. • Increase public awareness of the cost of disposal and the potential benefits of recycling.
Waste to Energy	To remain informed on waste to energy technology so that new initiatives in the field can be evaluated.	• Continue to share information among the members of the region relative to waste to energy.
Incineration/Volume Reduction	To remain informed on incineration/volume reduction technology so that new initiatives in the field can be evaluated.	• Continue to share information among the members of the region relative to incineration and volume reduction.
Landfilling	To continue to provide cost effective disposal for the wastes generated in the region.	• Transfer stations to continue operation through the planning period. • Transfer station owners will

ELEMENT OF HIERARCHY	GOAL	OBJECTIVE
		continue to assess their contracts for hauling and disposal to assure the cost effectiveness of the programs. • Transfer station owners will continue to assess the disposal facilities for remaining life expectancy and compliance.

8.7 Treatment

There are no plans to develop any treatment programs during the planning period.

8.8 Litter Control

None of the localities have plans to modify or expand their programs during the planning period.

9.0 IMPLEMENTATION SCHEDULE

The implementation schedule for the region's integrated waste management program has been summarized under separate sections above.

10.0 FUNDING AND FINANCING

The following tables project the budgets of the Counties and the JPSA from FY2004 to FY2024 assuming a 2% inflation factor. Most of the hauling and disposal contracts carry some type of an escalation clause for annual increases in haul and disposal costs usually linked to the CPI or similar index. In these tables, the costs are also evaluated as cost per ton and cost per person. Table 87 provides a summary of these costs for FY2004 and FY2024. The Counties and the JPSA can use this information to prepare future funding efforts. All of the Counties, while collecting some revenues from the tipping fees at the transfer station or utility taxes, must offset their costs through use of the General Fund.

TABLE 82
BLAND COUNTY
PROJECTED BUDGET

Annual inflation rate 2.0%
Annual waste growth factor 1.0%

FISCAL YEAR	BUDGET	TONNAGE	$/TON	POPULATION	$/PERSON
2004	$123,000	2,708	$45.43	7,163	$17.17
2005	$125,460	2,735	$45.88	7,236	$17.34
2006	$127,969	2,762	$46.33	7,309	$17.51
2007	$130,529	2,790	$46.79	7,382	$17.68
2008	$133,139	2,817	$47.26	7,455	$17.86
2009	$135,802	2,846	$47.72	7,528	$18.04
2010	$138,518	2,874	$48.20	7,600	$18.23
2011	$141,288	2,903	$48.67	7,670	$18.42
2012	$144,114	2,932	$49.15	7,740	$18.62
2013	$146,996	2,961	$49.64	7,810	$18.82
2014	$149,936	2,991	$50.13	7,880	$19.03
2015	$152,935	3,021	$50.63	7,950	$19.24
2016	$155,994	3,051	$51.13	8,020	$19.45
2017	$159,114	3,081	$51.64	8,090	$19.67
2018	$162,296	3,112	$52.15	8,160	$19.89
2019	$165,542	3,143	$52.66	8,230	$20.11
2020	$168,853	3,175	$53.19	8,300	$20.34
2021	$172,230	3,207	$53.71	8,350	$20.63
2022	$175,674	3,239	$54.24	8,400	$20.91
2023	$179,188	3,271	$54.78	8,450	$21.21
2024	$182,772	3,304	$55.32	8,500	$21.50

TABLE 83
WYTHE COUNTY
PROJECTED BUDGET

Annual inflation rate 2.0%
Annual waste growth factor 1.0%

FISCAL YEAR	BUDGET	TONNAGE	$/TON	POPULATION	$/PERSON/YR
2004	$1,595,733	25,993	$61.39	28,000	$56.99
2005	$1,627,648	26,253	$62.00	28,100	$57.92
2006	$1,660,201	26,516	$62.61	28,200	$58.87
2007	$1,693,405	26,781	$63.23	28,300	$59.84
2008	$1,727,273	27,049	$63.86	28,400	$60.82
2009	$1,761,818	27,319	$64.49	28,500	$61.82
2010	$1,797,055	27,592	$65.13	28,600	$62.83
2011	$1,832,996	27,868	$65.77	28,700	$63.87
2012	$1,869,656	28,147	$66.42	28,800	$64.92
2013	$1,907,049	28,429	$67.08	28,900	$65.99
2014	$1,945,190	28,713	$67.75	29,000	$67.08
2015	$1,984,093	29,000	$68.42	29,100	$68.18
2016	$2,023,775	29,290	$69.09	29,200	$69.31
2017	$2,064,251	29,583	$69.78	29,300	$70.45
2018	$2,105,536	29,879	$70.47	29,400	$71.62
2019	$2,147,647	30,177	$71.17	29,500	$72.80
2020	$2,190,599	30,479	$71.87	29,600	$74.01
2021	$2,234,411	30,784	$72.58	29,700	$75.23
2022	$2,279,100	31,092	$73.30	29,800	$76.48
2023	$2,324,682	31,403	$74.03	29,900	$77.75
2024	$2,371,175	31,717	$74.76	30,000	$79.04

TABLE 84
JPSA
PROJECTED BUDGET

Annual inflation rate 2.0%
Annual waste growth factor 1.0%

FISCAL YEAR	BUDGET	TONNAGE	$/TON	POPULATION	$/PERSON/YR
2004	$1,185,543	28,701	$41.31	35,163	$33.72
2005	$1,209,254	28,988	$41.72	35,336	$34.22
2006	$1,233,439	29,278	$42.13	35,509	$34.74
2007	$1,258,108	29,571	$42.55	35,682	$35.26
2008	$1,283,270	29,867	$42.97	35,855	$35.79
2009	$1,308,935	30,165	$43.39	36,028	$36.33
2010	$1,335,114	30,467	$43.82	36,200	$36.88
2011	$1,361,816	30,772	$44.26	36,370	$37.44
2012	$1,389,053	31,079	$44.69	36,540	$38.01
2013	$1,416,834	31,390	$45.14	36,710	$38.60

FISCAL YEAR	BUDGET	TONNAGE	$/TON	POPULATION	$/PERSON/YR
2014	$1,445,170	31,704	$45.58	36,880	$39.19
2015	$1,474,074	32,021	$46.03	37,050	$39.79
2016	$1,503,555	32,341	$46.49	37,220	$40.40
2017	$1,533,626	32,665	$46.95	37,390	$41.02
2018	$1,564,299	32,991	$47.42	37,560	$41.65
2019	$1,595,585	33,321	$47.89	37,730	$42.29
2020	$1,627,496	33,654	$48.36	37,900	$42.94
2021	$1,660,046	33,991	$48.84	38,050	$43.63
2022	$1,693,247	34,331	$49.32	38,200	$44.33
2023	$1,727,112	34,674	$49.81	38,350	$45.04
2024	$1,761,655	35,021	$50.30	38,500	$45.76

TABLE 85
SMYTH COUNTY
PROJECTED BUDGET

Annual inflation rate 2.0%
Annual waste growth factor 1.0%

FISCAL YEAR	BUDGET	TONNAGE	$/TON	POPULATION	$/PERSON/YR
2004	$1,380,725	22,300	$61.92	33,369	$41.38
2005	$1,408,340	22,523	$62.53	33,441	$42.11
2006	$1,436,506	22,749	$63.15	33,512	$42.87
2007	$1,465,236	22,976	$63.77	33,584	$43.63
2008	$1,494,541	23,206	$64.40	33,656	$44.41
2009	$1,524,432	23,438	$65.04	33,728	$45.20
2010	$1,554,921	23,672	$65.69	33,800	$46.00
2011	$1,586,019	23,909	$66.34	33,870	$46.83
2012	$1,617,739	24,148	$66.99	33,940	$47.66
2013	$1,650,094	24,389	$67.66	34,010	$48.52
2014	$1,683,096	24,633	$68.33	34,080	$49.39
2015	$1,716,758	24,880	$69.00	34,150	$50.27
2016	$1,751,093	25,128	$69.69	34,220	$51.17
2017	$1,786,115	25,380	$70.38	34,290	$52.09
2018	$1,821,837	25,634	$71.07	34,360	$53.02
2019	$1,858,274	25,890	$71.78	34,430	$53.97
2020	$1,895,440	26,149	$72.49	34,500	$54.94
2021	$1,933,348	26,410	$73.20	34,570	$55.93
2022	$1,972,015	26,674	$73.93	34,640	$56.93
2023	$2,011,456	26,941	$74.66	34,710	$57.95
2024	$2,051,685	27,211	$75.40	34,780	$58.99

TABLE 86
WASHINGTON COUNTY
PROJECTED BUDGET

Annual inflation rate 2.0%
Annual waste growth factor 1.0%

FISCAL YEAR	BUDGET	TONNAGE	$/TON	POPULATION	$/PERSON/YR
2004	$1,789,157	36,346	$49.23	51,622	$34.66
2005	$1,824,940	36,709	$49.71	51,752	$35.26
2006	$1,861,439	37,076	$50.21	51,881	$35.88
2007	$1,898,668	37,447	$50.70	52,011	$36.51
2008	$1,936,641	37,822	$51.20	52,141	$37.14
2009	$1,975,374	38,200	$51.71	52,270	$37.79
2010	$2,014,881	38,582	$52.22	52,400	$38.45
2011	$2,055,179	38,968	$52.74	52,500	$39.15
2012	$2,096,283	39,357	$53.26	52,600	$39.85
2013	$2,138,208	39,751	$53.79	52,700	$40.57
2014	$2,180,972	40,148	$54.32	52,800	$41.31
2015	$2,224,592	40,550	$54.86	52,900	$42.05
2016	$2,269,084	40,955	$55.40	53,000	$42.81
2017	$2,314,465	41,365	$55.95	53,100	$43.59
2018	$2,360,755	41,779	$56.51	53,200	$44.38
2019	$2,407,970	42,196	$57.07	53,300	$45.18
2020	$2,456,129	42,618	$57.63	53,400	$45.99
2021	$2,505,252	43,045	$58.20	53,500	$46.83
2022	$2,555,357	43,475	$58.78	53,600	$47.67
2023	$2,606,464	43,910	$59.36	53,700	$48.54
2024	$2,658,593	44,349	$59.95	53,800	$49.42

TABLE 87
SUMMARY
PROJECTED BUDGET

Annual inflation rate 2.0%
Annual waste growth factor 1.0%

FISCAL YEAR	BUDGET	TONNAGE	$/TON	POPULATION	$/PERSON/YR
BLAND COUNTY					
2004	$123,000	2,708	$45.43	7,163	$17.17
2024	$182,772	3,304	$55.32	8,500	$21.50
WYTHE COUNTY					
2004	$1,595,733	25,993	$61.39	28,000	$56.99
2024	$2,371,175	31,717	$74.76	30,000	$79.04
JPSA					
2004	$1,185,543	28,701	$41.31	35,163	$33.72
2024	$1,761,655	35,021	$50.30	38,500	$45.76

FISCAL YEAR	BUDGET	TONNAGE	$/TON	POPULATION	$/PERSON/YR
SMYTH COUNTY					
2004	$1,380,725	22,300	$61.92	33,369	$41.38
2024	$2,051,685	27,211	$75.40	34,780	$58.99
WASHINGTON COUNTY					
2004	$1,789,157	36,346	$49.23	51,622	$34.66
2024	$2,658,593	44,349	$59.95	53,800	$49.42

11.0 PUBLIC PARTICIPATION

Under Section 9 VAC 20-130-90.B, multi-jurisdictional plans developed in fulfillment of the Regulations for Solid Waste Management Planning, Amendment 1, must be adopted under authority of specific state codes. For the Mount Rogers Planning Region, it was determined that the plan would be adopted under the "Regional Cooperation Act" (Chapter 42 (Sec. 15.2-4200 et. seq.) of Title 15.2 of the Code of Virginia) under the direction of the Mount Rogers Planning District Commission (MRPDC).

Under this act, the following activities must be completed:

- The plan must be submitted to the Department of Housing and Community Development (DHCD) and to the governing bodies of each locality for a period of not less than thirty days prior to a hearing to be held by the planning district commission.
    - Each local government must make recommendations to the PDC on or before the date of the hearing with respect to the effect the plan will have on its locality.
    - The DHCD shall notify the PDC prior to the hearing as to whether the proposed strategic plan conflicts with plans of adjacent planning districts.
- Upon approval of the plan by the PDC after a public hearing, it shall be submitted to the governing body of each locality (excluding towns of less than 3,500 population unless members of the commission) within the planning district for review and adoption.
- The regional public hearing will stand in lieu of local public hearings.
- The plan becomes effective upon approval by the PDC but not effective with respect to a local government until approved by that local government. It should be noted that for purposes of solid waste planning, all members of the region must approve the plan or else withdraw and complete their own plan. Copies of the adopting resolutions must be included with the plan at the time of submittal to DEQ.
- The adopted plan must be submitted within 30 days of adoption to DHCD for information and coordination purposes.
- Plan must be advertised for 2 consecutive weeks by the PDC.

Based on this list of activities, the following timetable has been established:

- July 16, 2004 – Final plan submitted to DHCD and member governments for comment.
- August 18, 2004 – Regional public hearing to be held at the Mount Rogers Planning District Commission offices.
- September 2, 2004 (First Thursday in September), the PDC Commission will meet to adopt plan.
- September 2004 – local governments adopt plan after PDC approves plan.
- No later than October 2, 2004 – Final plan as adopted by PDC is submitted to DHCD and DEQ.

The MRPDC advertised as was appropriate and held a public hearing on the plan on August 18, 2004 at the offices of the MRPDC. A copy of the advertisement and the results of the hearing is included in Appendix 8. Appendix 9 contains the adopting resolutions.

Copies of the plan were placed in the administrative offices of all members of the Region and the MRPDC.

No written comments were received on the plan.

12.0 RECORD KEEPING

In addition to the daily record keeping, the members of the region document their solid waste activities in several ways:

- Annual reports to the Counties Board of Supervisors by the solid waste directors or county administrators.
- Annual reports to the Wythe-Bland Joint Public Service Authority by the executive director.
- Periodic meetings with the Mount Rogers Planning District Commission of all members of the planning region.
- Annual submittal by April 30 of each year of the Recycling Rate Report (Form 50-30) to DEQ.
- Annual submittal usually by December of each year of the update to the financial assurance forms to DEQ.

All these reports, updates and DEQ submittals as well as all background and permitting information are kept in the central archive (files) of the various members of the region at the locations identified in Section 5.3.2. The Director of DEQ or other DEQ representatives receive copies of appropriate information relative to the Region's solid waste management program from the individual localities through the following sources:

- Direct submittal to DEQ of Form 50-30 on an annual basis
- Permit applications
- Permit amendment applications
- Updates to the solid waste management plan
- General correspondence which may be required from time to time.

Appendix 1

Regional Documentation

Appendix 2

Tonnage Projections for Localities 2004-2024

Appendix 3

Location Maps – Transfer Stations (Figures 8-10)

Appendix 4

Summary of Previously Permitted Landfills and Location Maps (Figures 3-7)

Appendix 5

Wytheville Commercial and Industrial Tracking Form

Appendix 6

Recycling Summary Forms 2002 and 2003

Appendix 7

Questionnaire

Appendix 8

Advertisement and Results of Meeting

Appendix 9

Resolutions

Appendix 10

Recycling Markets