Monongalia County
Commercial Solid Waste Facility
Siting Plan
~~2017~~ 2023

Prepared by: Monongalia County Solid Waste Authority

Monongalia County, West Virginia, Commercial Solid Waste Facility Siting Plan

Prepared by the Monongalia County Solid Waste Authority

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PREFACE

Monongalia County Commercial Solid Waste Facility Siting Plan

The Monongalia County Commercial Solid Waste Facility Siting Plan is designed to be a planning and information tool for the citizens of Monongalia County for the next twenty years. Not only is the plan an informational tool and asset in the planning for the solid waste disposal needs of Monongalia County, but the information contained within the plan is applicable to many planning and developmental purposes. Without doubt, this document will be amended many times over the next two decades in response to changes within the growing community. It should also be noted that the Monongalia County Solid Waste Authority (MCSWA) Board believes that as a Solid Waste Authority, the MCSWA will be actively pursuing legislation for the process of downsizing the current number of landfills in the state and to reduce through attrition over 15 years. Let it be said now, so future members of the Monongalia County Solid Waste Authority will always know, that this plan was developed with a clear goal of maximizing public participation in the planning process, to develop a rational approach to siting commercial solid waste facilities that will meet the need of the people of Monongalia County, and to create a plan that will be a model for all of West Virginia. We, the current members of the Monongalia County Solid Waste Authority, ask that any and all future members of this body strive toward these same ends.

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EXECUTIVE SUMMARY

The Monongalia County Solid Waste Authority (MCSWA) has revised the Commercial Solid Waste Facility Siting Plan in accordance with WV Code 22C-4-24 and Title 54, Legislative Rule, Series 4, Commercial Solid Waste Facility Siting Plans. This plan shall serve as the guide for the siting of all facilities that collect, process, recycle or dispose of solid waste generated within Monongalia County for the coming twenty (20) years.

Since the original plan in 1992, the only in-county landfill has been closed and ownership and relocation of the only privately owned transfer station has occurred. Socio-economic factors and demographic changes, coupled with future growth projections, increase in public awareness as to solid waste management from recycling to disposal and consumers concerns from escalating disposal cost to program conveniences. Also, the positive research and development advancements with the solid waste field alone suggest changes in management philosophy. Given so, the MCSWA has responded with position changes as necessary.

While previously, MCSWA prohibited construction of Class A, B, C and D landfills over any undermined area within the county, henceforth, these types of facilities will be prohibited county wide regardless of mining activities. While the opening of a new transfer station located within the Morgantown Industrial Park was overall positive for the county, it also raised some negative issues. Traffic flow, infrastructure impacts, litter concerns, public convenience, and competition to list a few. Given these concerns the MCSWA encourages and supports another privately owned and operated transfer station in the county. The closing of MCSWA's recycling program (2015) impact was felt throughout the county. Some small recycling opportunities currently are provided via private and public programs. While recycling has and remains MCSWA's primary objective, current recycling methods are becoming obsolete. Continuing technology advancements pertaining to renewable energy from waste merits consideration. Gasification, a closed loop process research ongoing at DOE's, National Energy Technology Laboratory in Morgantown supports this concept.

Schools, churches, historic areas, cemeteries, and high quality streams have been protected by at least a buffer of 1,000 feet. This restriction for all solid waste facilities will remain as tentatively prohibited until proper screening, traffic and vector control plans are approved by the authority.

It has been concluded that these positions and provisions will best protect the interests of the citizens of Monongalia County.

HIERARCHY OF FACILITIES FOR MONONGALIA COUNTY, WV

From Most to Least Desirable

1) **Resource Recovery Facility**: Strongly recommended. Ongoing technology advancements concerning gasification processes utilizing municipal waste and other carbon based resources warrants ranking.

2) **Recycling**: permitted anywhere within the county that does not conflict with existing laws (i.e., municipal or county zoning, FEMA, etc.) without any size restrictions.

3) **Transfer Stations**: one currently in operation in Monongalia County, another may be needed.

4) **Composting**: strongly recommended. Homeowners undertake composting in own backyard.

Restrictions on commercial facilities:

a) Limitations with regard to leachate on siting.
b) Prohibited on Waynesburg Coal strip mined lands.
c) General buffers around streams and roads apply but may be relaxed.
d) Screening required to keep from view.
e) A compost facility will not be located within a 100-year floodplain, a perennial stream, a high quality stream, or a wetland.

5) **Landfills**: The Monongalia County Solid Waste Authority does not support any landfill class facilities based on the excessive mining activities, population base and other solutions available. Both the Morgantown and Monongalia County Landfills are in the states LCAP program. Construction and closure of both facilities have been completed.

6) **Materials Recovery Facility**: Monongalia County Solid Waste Authority does not support opening such a facility. Population base and the large volume necessary could require the importation of material.

7) **Energy Recovery Facilities** are illegal under W.V. Code §22-15-19.

8) **Commercial Waste Incinerators** are illegal under W. Va. Code §22-15-19.

INTRODUCTION

This document is designed to be a comprehensive solid waste facility siting plan for Monongalia County West Virginia. This document will provide guidance to the people of Monongalia County in addressing their solid waste disposal needs during the next twenty years. This document will support the goals and provisions set forth in the Monongalia County Comprehensive Litter and Solid Waste Control Plan as related to the collection and disposal of solid waste and requirements for additional commercial solid waste landfill and transfer station capacity.

This document is divided into four Chapters. Chapter one is a summary of geological. hydrological and other technical data as required by rules and regulations of the Solid Waste Management Board. Chapter two is a summary of the socioeconomic factors that may influence the siting of solid waste disposal facilities in Monongalia County. Chapter three will discuss the rationale behind establishing each of these zones. Finally, chapter four will be a summary of all public comments, announcements of public hearings, as well as appropriate highway and topographical maps, and any other relevant material.

CHAPTER ONE: GEOLOGIC AND HYDROLOGICAL CONDITIONS IN MONONGALIA COUNTY

Introduction

Geologic and hydrological conditions play an important part in the siting criteria for many solid waste disposal facilities. Protection of ground and surface waters, and wetlands is a major geologic and hydrological siting concern. Many commercial solid waste disposal facilities disrupt large tracts of land and produce sources of pollution that could damage existing water sources. Since many commercial solid waste disposal facilities are located in rural areas where groundwater is an important if not the only source of water, hydrological criteria are critical siting considerations for the nearby homeowners and communities. This Chapter will discuss the basic geologic and hydrological characteristics of Monongalia County and how those characteristics will affect the siting of commercial solid waste disposal facilities in the County. A series or maps will portray the important geological features of the County. From this information and that which is contained in Chapter Two of this document an information base will be available that will allow for the construction of a comprehensive facility siting plan.

Mineral Assessment

General

Monongalia County encompasses 368.8 square miles in north central west Virginia. The county's geology is diverse and richly laden w1th minerals. The stratigraphic position, structure and character of these mineral beds are relatively consistent throughout the county. The geological knowledge gained through past years of surface and deep mining as well as gas and oil well drilling and interstate highway construction makes Monongalia County one of the most studied counties in the state. For the purpose of this siting plan report the geological information gathered using the West. Virginia Geological Survey Monongalia County Report, WVGS Coal Bed Maps, Linear Features Map, Interstate 79 Geological Study, Monongalia Conservation District Soil Survey and local information, has been condensed and applied to the possible selection of sites suitable for the disposal of solid waste in Monongalia County.

Geology

The topography of Monongalia County is that of a highly dissected plateau. Erosion has formed deeply indented 'V' valleys with perennial streams. The geological structure of the plateau lies relatively horizontal with no major faults and, with one exception, comparatively low folding. The Pittsburgh coal seam is a key rock on which to base the geological structure description since it is consistent and well known due to the extensive mining operations conducted in the County and from drilling for oil and gas. The importance of the Pittsburgh coal seam and other overlying seams will be addressed in a separate section of this report.

Monongalia County lies along the eastern flank of the Appalachian Basin or geosyncline, explaining the general dip, or decrease in elevation of the structure in a northwest direction from the County's eastern boundary. There are a number of minor anticlines, the upward bending arch

of the structure, and minor synclines, the downward bending trough of the structure that should be taken into account and assigned weight by a landfill applicant when considering siting a solid waste landfill operation. ~~Table 11 lists the anticlines and synclines which the Monongalia County Solid Waste Authority may consider when determining the viability of an application as it relates to the dip of the geological structure and the impact on potential contamination of translateral water flow.~~

The cropping rocks of Monongalia County fall mainly in the Carboniferous age or subdivision of the Paleozoic age. A typical section of rock column show formation from the Dunkard, Monongahela, Conemaugh, Allegheny, and Pottsville series, as well as Mauch Chunk shales and Greenbrier Limestone ~~(See Chart 11).~~

Rock succession in the geological column is of importance in the pre-plan considerations of a landfill site in order to locate possible aquifers, potential routes of contamination and the generation of bedding and cover material for the landfill operation. These pre-plan considerations must be site specific and it is advisable for them to be proven by test borings and pits in collaboration with published reports.

Coal Positioning as Related to Solid Waste Disposal

In the scope of this report coal structures have been limited to the discussion of the Pittsburgh, Sewickley, Redstone, Waynesburg, Upper Freeport and Upper Kittanning seams. Each of these coal seams crop in Monongalia County and affords easy access by both surface mining and deep mining methods of coal extraction operations. Both surface mining and deep mining operations are limiting factors in siting a landfill. West Virginia Solid Waste Regulations prohibit the siting on a surface mined area or above a deep mined area, unless approved by the Director in writing.

I. Pittsburgh, Sewickley and Redstone

The Pittsburgh, Sewickley and Redstone seams crop along the western banks of the Monongahela River which flows in a north northwest direction from just south of Everettsville in Grant District. The Pittsburgh, Sewickley and Redstone seams have been extensively surface mined along their crop line. Surface mining activities occurred in the 1930s and 40s. The evidence of which is readily visible in unreclaimed mining benches, now of little value.

The geological structure of the material overlying these seams shows typically the existence of calcareous shales, clays, limestone and some soft sandstones (Arnoldsburg). The overburden of these coal seams (particularly the Redstone overburden) produce a cover material which is neutral to slightly basic in pH and can be crushed and compacted with relative ease. Some Sewickley and Redstone benches in the Osage, Maidsville, and Ft. Martin areas show cover material suitable for landfill operations which can be moved by the use of excavation equipment such as pans or scrapers. These benches, unless undermined in lower seams, have been classified as 'Tentatively Prohibited' because of the availability of cover material and the deteriorated condition of the land caused by early mining practices.

Undermining, both current and future, of potential landfill sites must be given serious

considerations. The Pittsburgh and Sewickley coal seams which underlie the western three-fourths of Monongalia County, are both marketable seams of coal. Subsidence from the deep mining of these seams is a possibility throughout this area and should be addressed by the landfill applicant in terms of possible future undermining of the selected site, and protective measures and technology to be used to insure landfill liner integrity. The applicant may wish to present either technology based plans for optimizing landfill lining integrity on lands above areas of future mining.

Most of the area to the west of the Monongahela River has been classified as 'Prohibited' because of the extent of currently undermined areas, and the subsidence associated with mineral extraction. However, some areas of the Pittsburgh and Sewickley coal seams have not been mined, raising the question of degree of classification for these areas. The un-mined areas are classified 'Tentatively Prohibited' in order to alert the landfill applicant that 'Subsidence Rights' need to be addressed in the application and to protect the mineral holder from any action which may be construed as 'the practice of taking' caused by the Monongalia County Solid Waste Authority in classifying unlined areas as ‘Authorized’ or ‘Tentatively Prohibited’ with the potential to be ‘Authorized’.

II. Waynesburg

The Waynesburg coal seam lies approximately 300 feet above the Sewickley coal and crops several miles to the west of the Monongahela River. Although the West Virginia Geological Survey County Report notes that “the Waynesburg coal is of mineable thickness at all points within this district west of its outcrop”, due to the large shale parting typically found near the center of the seam and to the varying market conditions the seam probably will not be deep mined in the future within the scope of this plan. Some deep mining in the Waynesburg seams has occurred in the past and should be considered by the applicant.

Of major significance is the surface mined areas of the Waynesburg seam and the benches created by early surface mining practices. These benches, usually long and broad, at first glance seem suitable for landfill site. However, in general, most Waynesburg overburden is slightly acid in pH and consists of hard sandstones. These sandstones produce large boulders and little cover material for landfill operations. The soils generated by these sandstones tend to be sandy and shallow, reducing the volume of cover available on site.

Other factors should also be examined. The heavy sandstones above the Waynesburg coal, in most cases, serve as an aquifer and produce water in sufficient quantities that need to be considered in siting the landfill. Since the Waynesburg seam is underlain by the Pittsburgh, Sewickley, and Redstone seams of coal the same undermining considerations should apply.

Because the above mentioned limitations of the Waynesburg crop and benches are greater than those of the Pittsburgh, Sewickley and Redstone, these areas have been classified as 'Prohibited'

III. Upper Freeport and Upper Kittanning Coal Seams

The Upper Freeport and Upper Kittanning coal seams crop to the east of the Monongahela River in a line running from in Union District to in Clinton District. The Upper Freeport seam has been deep mined extensively in the Deckers Creek valley and on Owl Creek in Clinton District. Surface mining of the Upper Freeport seam has also occurred in selected areas along the crop, most notably on Maple Run in Union District and Booths Creek in Clinton District. All areas that have been either surface mined or deep mined have been classified as 'Prohibited' due to the existence of undermining in relation to the potential hydrological impact of each area. (See Hydrology Section for details)

Other Geological Factors for Consideration

Other geological factors which have not been mapped but will apply to the siting of a solid waste facility are: Landsat Features Map, and Landslide Prone Area Map (U.S. Geological Survey, USGS) in order to verify suitability.

Each area designated as 'Tentatively Prohibited' on the supplemental mapping made a part of this plan will be reviewed on an individual needs basis by the Monongalia County Solid Waste Authority or its agent. Soils mapping units as prescribed in the 'Monongahela Conservation District Soil Survey' will be applied to the proposed site in order to evaluate the soil type, permeability, suitability, depth to bedrock, and slope limitations. Each area will also be compared to the Landsat Features Map, and Landslide Prone Area Map (USGS) in order to verify suitability.

Soil Characteristics and Mapping

General

Favorable soil properties and site features are needed to insure proper functioning of sanitary landfills. The nature of the soil is important in selecting the sites for these facilities and in identifying limiting soil properties and site features to be considered in design and installation. Also, those soil properties that affect ease of excavation and installation should be of interest to contractors and planners of facilities.

~~(Sections of the Monongalia County Soil Survey, USDA SCS. concerning sanitary landfill facilities have been included in this plan.) The purpose of including these portions of the Soil Survey for Monongalia County is to give the applicant for a sanitary landfill, as well as local regulatory agencies, a general concept of the soil types that exist and which of those soils might support a landfill facility. Emphasis must be placed on the word "might". Extensive soils testing is highly recommended as part of a pre-application site investigation. The Soil Survey is only a generalized study of soil types and characteristics. Each specific site may vary from the generalized mapping and should be evaluated with this in mind.~~

Hydrological Assessment

General

Water supply may be subdivided as groundwater and surface water. Aesthetic value may be further subdivided as visual and recreational. Each stream or body of surface water has been buffered. Streams and bodies of surface water with no limitations have a buffer width of 300 feet. Streams and bodies of surface water with limitations, such as public water supply, have a buffer width of 1,200 feet. During the site selection process for the sanitary waste facility the applicant should address both categories on a site specific basis.

Drainage Areas

Major Basins
Two major basins drain Monongalia County, the Monongahela River and the Cheat River, with the Cheat River joining the Monongahela River at Point Marion, Pennsylvania. The Monongahela River. named from an Indian word meaning sliding banks, is formed by the junction of the West Fork and Tygart rivers. one half mile southwest of Fairmont. Marion County. The Monongahela River flow Northeast across Monongalia County and has a drainage area of 4,385 sq. mi. It serves as a major avenue of transportation from Fairmont to Pittsburgh. as well as a public water supply for the City of Morgantown Utility Board and its satellite cities and communities. The Monongahela River supports extensive aquatic life and is considered by the WV Division of Natural Resources as a high quality stream. Buffers of 1,200 feet have been established around these areas by the Monongalia County Solid Waste Authority in order to preserve the pristine nature of each site.

Other streams which are of greater significance because of their high quality are: Whiteday Creek, Cobun Creek, Aarons Creek, Indian Creek and Morgan Run. Each of these streams have a 1,200 foot buffer placed around them. Of this list, Whiteday Creek and Cobun Creek are most important.

Whiteday Creek is stocked regularly with trout and affords the regional sportsman a recreational area. When discussing Whiteday Creek, an adjacent Toms Run watershed, must be taken into consideration. The major geological dip in the area of Whiteday Creek is from the southeast to the Northwest. Any ground-water from the Southwestern side of the Toms Run watershed which forms a perched aquifer has the potential to translocate laterally and comingle with groundwater which feeds Whiteday Creek. It is for this reason that the Monongalia County Solid Waste Authority has added buffer area in the Toms Run watershed.

CHAPTER TWO: SOCIO-ECONOMIC FACTORS AND CONDITIONS IN MONONGALIA COUNTY

Introduction

The purpose of this Chapter is to identify and analyze the socioeconomic factors that will influence the siting and need for future solid waste disposal facilities in Monongalia County. A discussion of the economic structure of Monongalia County is provided in this Chapter as well as future development activities that may impact the area, projected population growth, and a description of sensitive environmental and recreation areas that should be given special consideration when siting solid waste disposal facilities.

~~Solid waste disposal facilities of any kind are generally considered by planners and the public as noxious facilities~~. For the most part ~~such~~ solid waste disposal facilities often impose some economic or social burden on those individuals or communities located near them. Such impacts can range from increases in noise and traffic levels, bad odors, vectors, loss in property values and unsightly surroundings. In some cases a hypothetical facility can change the very nature of a community and may alter its development. While the negatives of such facilities are many, in many cases solid waste disposal facilities can make positive contributions to the social and economic welfare of an area. They can provide a source of employment, create tax revenues, and provide a healthy confine for the proper disposal of solid waste. In either case what is clear is that siting of solid waste disposal facilities is an important community concern and should be done in a manner consistent with the orderly and positive development of that community.

~~Economic Overview of Monongalia County~~

~~Table 1: Employment – Data taken from the WV Bureau of Employment Statistics: Monongalia County – Employment & Wages, 4th Quarter, 2015~~

~~Sector~~	~~Number of Establishments~~	~~Total Wages~~	~~Number of Jobs~~
~~Mining~~	~~29~~	~~$86,278,296~~	~~1,032~~
~~Manufacturing~~	~~50~~	~~$301,533,000~~	~~3,937~~
~~Wholesale~~	~~60~~	~~$68,723,964~~	~~404~~
~~Retail~~	~~380~~	~~$135,756,720~~	~~6,039~~
~~Services~~	~~297~~	~~$475,376,580~~	~~5985~~

~~The pages following this one show the 2010 County Business Patterns for Monongalia County. As can be seen, there were 51,325 employees in the county that were responsible for an annual payroll of $2,089,675,737. The major contributors to both total number of employees and share if the annual payroll are summarized below.~~

~~Table 2: Summary of Monongalia County Business Patterns~~

~~Sector~~	~~Number of Employees~~	~~Annual Payroll~~
~~Coal Mining~~	~~274~~	~~$43,997,276~~
~~Construction~~	~~1,764~~	~~$149,456,664~~
~~Manufacturing~~	~~3,937~~	~~$301,533,000~~
~~Trade/Transportation/Utilities~~	~~6,881~~	~~$267,385,115~~
~~Retail~~	~~6,039~~	~~$135,756,720~~
~~Finance, Insurance, Real Estate~~	~~827~~	~~$35,086,302~~
~~Services~~	~~5,249~~	~~$318,908,244~~
~~Health Services~~	~~14,213~~	~~$711,488,567~~
~~Hospitals~~	~~7,349~~	~~$369,819,996~~
~~Food Services and Drinking Places~~	~~5,985~~	~~$106,634,745~~
~~Wholesale Trade~~	~~404~~	~~$7,928,500~~

~~In addition to these data, a major factor in the stability and growth of Monongalia County is attributed to West Virginia University and its affiliates, such as Health Services Complex. West Virginia University is the largest employer in Monongalia County, between its education and health care resources, WVU employed more than 12,000 people or almost one-fourth of all local workers in 2011. While the population of students increases slightly each year, the university continues to expand in size both on and off campus. Much of the economy in the county relies on jobs created by this expansion. Over the next decade, the student population will continue with this trend; the university's expansion will certainly be responsive to this increase in population of students.~~

Demographic Description

The County

According to the ~~1990~~ 2021 Census of Population, Monongalia County had a total population of ~~75,509~~ 106,387 people. The ~~1990~~ 2010 Census reported ~~75,509~~ 96,768 inhabitants of the county, increasing by 9.9% ~~only 485 or 0.6 percent in ten years~~. ~~Six~~ Five incorporated municipalities accounted for ~~35,480~~ 37,495 people, or ~~47~~ 35% percent of the total population. The majority of the county population resides in rural areas.~~; urban areas have about 2,779 people per square mile. The 2016 Census reported 104,622 people lived in Monongalia County. This is an 38.56% increase over 1990.~~

~~Table 3: Total Population and Density (drop 1990 add 2020)~~

~~Political Jurisdiction~~	~~Population 1990~~	~~Population 2015~~	~~Land Area (mf)~~	~~Persons/mi^2 1990~~	~~Persons/mi^2 2015~~
~~Monongalia Co.~~	~~75,509~~	~~104,236~~	~~361.2~~	~~209~~	~~267.1~~
~~Morgantown~~	~~28,879~~	~~30,708~~	~~10.17~~	~~3,318~~	~~2,917.0~~
~~Westover~~	~~4,201~~	~~4,145~~	~~1.3~~	~~3,232~~	~~3.188.5~~
~~Star City~~	~~1,251~~	~~1,917~~	~~0.5~~	~~2,502~~	~~3,834~~
~~Blacksville~~	~~168~~	~~182~~	~~0.3~~	~~560~~	~~606.66~~
~~Granville~~	~~798~~	~~2,554~~	~~0.4~~	~~1,995~~	~~6,385~~
~~Osage~~	~~183~~	~~0~~	~~0.1~~	~~1,830~~	~~0.0~~

** ~~Morgantown's population number was based on county residents and did not include transient population in it. Therefore the WVU student population needs added in before calculating waste generated in Table 5.~~

~~Most recent population data from 2015 reports the population of Monongalia County to be 104,236 people, showing a steady increase from 1990 until 2015. The median age of the population was 30.6 years, with the majority of the population between ages 18 – 64 years. According to the 2015 Census, there were 40,551 workers in Monongalia County. Of this total, 31,121 worked in the county (79.2%), 3,102 worked in another West Virginia county (7.6%), 1,707 worked in another state (4.2%), and 9 worked in another country (>0%). According to the WV Bureau of Employment Programs, in the final quarter of 2016, Monongalia County had a total of 47,605 employed individuals with a median household income of $45,467.~~

West Virginia University

The total fall ~~2016~~ 2022 enrollment for the university was ~~31,287~~ 24,471. At this point in time WVU is looking to maintain this level of enrollment, though expansion may be an option in the future. Summer session enrollment is about one-third that of regular fall and spring semesters. A small percentage of these students are tax paying residents.

Projected Future Population

A fluctuating state population makes it difficult to forecast population with standard projection models. Therefore, the Regional Research Institute of West Virginia University uses two models to estimate population: A Series and M Series. The A Series uses the last 15 years of migration as an average. A longer term trend is reflected in this method. The M Series uses an average of only the last 5 years. More recent trends are reflected with this projection.

~~Table 4~~ Table 1: Projected Future Population, Monongalia County

Year	2020	2025	2030	2035	2040
Population Projection	~~110,909~~ 105,822	~~119,273~~ 108,131	~~128,098~~ 109,745	111,384	113,047

Source: WVU Bureau of Business and Economic Research Population "Trends in West Virginia through ~~2030~~ 2040" ~~http://business.wvu.edu/files/d/fef23e19-5986-42a8-9cfb-299571820a18/bber-2014-04.pdf~~

Most of the employment in this county is with government service and trade. A small portion is mining, construction, manufacturing and transportation and utilities. The population increases will probably be toward further urbanization around the city of Morgantown and in the Cheat Lake area.

~~Table 5~~ Table 2: Future Projections of Waste Generated, Monongalia County**

Year	Tons per year	Tons per month
2020	~~79,854~~ 94,631	~~6,655~~ 7,886
2025	~~85,877~~ 96,696	~~7,156~~ 8,058
2030	~~92,231~~ 98,139	~~7,686~~ 8,178
2035	99,605	8,300
2040	101,092	8,424

~~Table 6: Future Projections of Waste Generated, Monongalia County plus WVU Future Students~~**

~~Year~~	~~Tons per year~~	~~Tons per month~~
~~2020~~	~~103,803~~	~~8,650~~
~~2025~~	~~109,909~~	~~9,159~~
~~2030~~	~~116,351~~	~~9,696~~

~~**Tonnage projections were calculated using population projections from the WVU Bureau of Business and Economic Research Population "Trends in West Virginia through 2030 2040" with a 4.9 pound per person per day waste generation rate established by the US EPA. 4 pound per person per day WV disposal rate established by a 1997 Solid Waste Management Board study. Methodology for population projections can be found at http://business.wvu.edu/files/d/fef23e19-5986-42a8-9cfb-299571820a18/bber-2014-04.pdf.~~

Special Areas (Recreation)

A number of areas of Monongalia County deserve special attention because of their recreation, tourism, or historic value. The first of these is the Coopers Rock State Forest in the Cheat Lake area. The area is the center of recreation for the county and much of the region. Coopers Rock State Forest consist of approximately 13,000 acres, of which 8,000 are in Monongalia County. Four hundred thousand visitors a year enjoy the beauty and facilities of the forest. The

Monongalia County-operated Chestnut Ridge Park is located nearby. The park consist of seventy three acres. Weekend users of the park average between 1,300 and 2,000. The number of overnight campers at the park were 13,500 in 1990. In addition to these two public facilities in the. area, privately owned Sand Springs Campground and Circle H Ranch Outfitters are additional recreational enterprises associated with the Coopers Rock area.

At Cheat Lake, boating, water skiing and swimming are the main recreational activities. There are three private marinas on the lake as well as numerous restaurants and other service-oriented establishments. There is a large hotel and convention center adjacent to the lake and 2 eighteen-hole golf courses. Cheat Lake or Lake Lynn is a man-made lake on the Cheat River. A small hydroelectric dam owned by West Penn Power creates the impoundment. Cheat River flows below the scenic overlook at Coopers Rock State Forest. A highly successful white water rafting industry has developed on the Cheat River. While centered mostly in adjacent Preston County the use of the Cheat River for whitewater rafting has enhanced and increased the recreational uses of the facilities in Monongalia County.

The Coopers Rock Foundation, a private foundation established to plan and care for the orderly development of the Cooper. Rock Slate Forest, has plans to purchase an additional 1,000 to 1,500 acres directly across from the scenic overlook and along the Cheat River. This area had at one time been a campground owned by the Boy Scouts of America. A map indicating this area is provided at the end of this Chapter.

The Whiteday Creek Smithtown area located in the southern part of Monongalia County is the county's best low impact recreation area. Whiteday Creek is a high quality stream that flows into the Monongahela River near the Opekiska Lock and Dam. The stream naturally supports small and largemouth bass, rock bass, bluegills, crappies, catfish, sunfish and suckers. It is more noted as the county's only trout stream and is stocked regularly by the West Virginia Department of Natural Resources. As it enters the Monongahela River, the stream is accessible by small boat. As one continues up Whiteday Creek the stream becomes swifter with pools. The rock and gravel stream bot ton and swift current enhance the trout potential of the stream. Along the stream exist several farms, homes and camps. About halfway up the stream a large pool of water with a natural spillway and beach exists, creating a natural swimming pool. Rope and iron swings drape down from a large oak tree and are used by those who enjoy this area for swimming.

Historically this area is quite rich. A major Native American Indian town existed in the area. Opekiska Lock and Dam is named after the last recorded chief known in the area. An Indian burial ground exists near Smithtown though the exact location is not known. There are several interesting rock formations overlooking the stream including several large overhangs. Indian remains have been found in several areas near the stream. The Eastern Indian Trail also ran through the Whiteday Creek Smithtown area.
At present a small golf course exist directly south of Smithtown. The road that winds alongside Whiteday Creek is scenic and is excellent tor family bike trips. The potential exist to create a bikeway from Fairmont to Morgantown using the current railway along the river if it Is abandoned. The current plans of funding and completing a sixty-mile bike and hiking trail from Parkersburg to Clarksburg on the old CSX system could afford an excellent opportunity to

develop an integrated biking and hiking trail from Parkersburg to Morgantown.

Under the original Comprehensive County Plan for Monongalia County (1969) it was considered important to create a Opekiska Regional Park as a response to expected recreational pressures put on the Coopers Rock State Forest and Chestnut Ridge Park facilities. The scenic nature of the area and its close location to Interstate 79 make it ideal for recreation. Some 2,000 acres were set aside for park development along the Monongahela River and White Day Creek in the old county plan. As recreational pressures on Coopers Rock State Forest and the entire Cheat Lake area have increased over the past decade. the development and protection of the Smithtown Whiteday Creek recreation area is an important consideration for the people of Monongalia County.

The Coburn Aarons Creek area of Monongalia County is of special recreational importance. The Boy Scouts of America's Camp Mountaineer borders Cobun Creek to the south. The creek runs into an impoundment located in White Park in the city of Morgantown. The impoundment provides excellent fishing to local residents, primarily bluegill and bass. Alongside the impoundment is a forested area consisting of hiking and mountain biking traits. Future plans for the area ca) I for the development of a par three golf course, canoeing and fishing facilities.

Aarons Creek though a small flow stream supports several recreational enterprises. A small private commercial campground and fishing ponds border the stream. The Izaak Walton League Club maintains their clubhouse and another small pond along Aarons Creek. Hikes are organized each summer up the more isolated section of the stream. The stream is used by WVU Biology faculty and students in the collection of aquatic insects. salamanders and crayfish. Somewhere on the upper portion of Aarons Creek is a pool of water known as the Black Hole or Black Pool. This pool of water has historically been used as a natural baptismal by local churches.

Other Recreation Areas or Enterprises

- Camp Muffly 4H Camp: 5 miles south from Morgantown off of Rt. 119
- Mason Dixon Park: just off of Rt. 7 west
- Mountaineer Golf Course: just off of Rt. 19 north
- Meadow Pond Golf Course: one mile west of Cassville
- Pines Country Club: one mile north of Easton
- Paradise Lake Golf Course: on the Grafton Road
- Blacksville Golf Course: on Rt. 7
- Krepps Park: in Morgantown, near Suncrest

- Marilla Park: in Morgantown, near Sabraton
- Westover Park: in Westover , west of Morgantown
- Granville Park: in Granville, west of Morgantown and Star City
- Emma Kaufmann Camp: at Cheat Lake, off of the Stewartstown Road
- Forks of Cheat Winery: off of the Stewartstown Road
- Mylan Park: Off Star City exit I-79

Rail to Trail development: all along the Monongahela River and Deckers Creek, paved from the Star City bridge to the Morgantown Utility Board water treatment facility along Rt. 119, following the river; and from Mason Dixon Park to Dell slow, just beyond Sabraton, along Deckers Creek. Non-paved extension of the trail already established to the Preston County border to the east along Deckers Creek, and both north and south along the Monongahela River

Transportation Routes

A network of federal and state highways, 168,1 79, Routes 119, 19, 218, 100 and 7 are maintained for car, truck, and bus service to the county. Two Class I rail companies serve the immediate and surrounding areas, CSXT, and Norfolk Southern. Morgantown Municipal Airport is the commercial and public flight service to the county. Greyhound bus service is available in downtown Morgantown through Mountain Line Transit. The Monongahela River is the main navigable channel through the county, and is host to coal and raw material barge traffic.

Interstates 68 and 79 are the main hauling routes for solid waste out of the county. Mountaineer Transfer Station, owned and operated by Republic Services, located in the Morgantown Industrial Park is easily accessible year round by haulers and private customers by utilizing Route 19 and Route 7 directly to I-79 and I-68 respectively. Republic Services then hauls this waste to Short Creek Landfill in Ohio County via I-68 west and I-79 north.

The transfer station is Monongalia County’s central area of disposal; however, some haulers truck their waste directly to any of the other nearby landfills, such as Meadowfill, Wetzel County Landfill, and S&S Grading.

The change in the hauling routes would involve the newly proposed Morgantown bypass that would connect I-68 to I-79 in a northern route around the city. However, the exact location of this bypass is still undecided, and construction would not begin in the recent future. Until there is a landfill of any type sited in the county, there are no anticipated changes in hauling routes to any of the landfills presently in use. The population growth in the eastern end of the county near Cheat Lake should not adversely impact the hauling and subsequent disposal of solid waste, as it is directly accessed by I-68 at the foot of Cheat Mountain.

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CHAPTER THREE: RATIONALE FOR SITING COMMERCIAL SOLID WASTE FACILITIES

Rationale For Siting Commercial Solid Waste Facilities

This Chapter discusses the criteria and rationale for siting commercial solid waste facilities in Monongalia County. Each facility is discussed in detail as are various siting zones related to the facility.

Three broad criteria were used in developing the rationale for the siting of commercial solid waste facilities. The first criterion is the position of the facility in the solid waste disposal hierarchy of the Monongalia County Comprehensive Solid Waste Litter and Control Plan. This was considered first because in meeting the goals of the comprehensive plan certain types of commercial solid waste facilities may be needed in the county, and if the goals of the plan are met, then changes in quantity and types of material in the local waste stream will change over this twenty year period. This would create a situation where some commercial facilities would be economically unviable using only the local waste stream. The second criteria are geological and hydrological conditions as they exist in Monongalia County today. In order to protect the environment and the health of the public, these criteria were considered second. The third criteria are those socioeconomic conditions that exist and may conflict with the siting of commercial solid waste facilities. These include how such facilities blend in with the economic structure of Monongalia County, their impacts on recreation. and property values.

The siting plan is also guided by those rules adopted by the Monongalia County Solid Waste Authority. These rules in some cases are more stringent than those prescribed by the State. In other cases these rules clarify particular community concerns over certain areas of Monongalia County or over certain facilities.

The rationale for facility zoning as required by Title 54 Legislative Rules, Series 4: Commercial Solid Waste Facility Siting Plans, is listed below:

- The efficient disposal of solid waste, including, but not limited to, all solid waste generated within the county or region, regardless of its origin - the plan describes how the zones established will ensure the efficient collection, transfer, and disposal of solid waste.
- Economic development B the plan describes how the zones established will have a positive or negative impact on the county or regional economy. It will detail the specific impact on the economy and give a rationale for said impact.
- Transportation infrastructure B the plan will describe how the transportation network will allow or prohibit the efficient transportation of solid waste into or through the established zones. It will address all transportation routes, i.e., roads, river, and rail.
- Property values B the plan will describe how the zones established will have a positive or negative impact on property values.
- Groundwater and surface waters B the plan will describe how the established zones will protect groundwater and surface waters in the area.
- Geological and Hydrological conditions - some of the factors which the authority shall consider are the existence of any known faults within two hundred (200) feet of the area, or other extreme hydrological or geological conditions, e.g., karst regions, solution

cavities, extensive sandstone aquifers, shales, consolidated formations, aquitards, and the existence of any mining in the area.

- Aesthetic and Environmental Quality – The plan will describe the positive or negative impacts the established zones will have on existing aesthetic and environmental conditions. For example, siting a recycling center at a former open dump might enable the reclamation of an unsanitary dump. Factors to be considered are the presence of public parks and recreation areas, state and national forests, and endangered or threatened species.
- Historic and Cultural Resources – The plan will describe any effect the zones will have on specific historic and cultural sites.
- The Present or Potential Land Uses - for residential, commercial, recreational, environmental conservation, or industrial purposes. - Provide the present land uses for the different zones, and realistic potential land uses for the zones.
- The Public Health, Welfare, and Convenience – The plan will describe how the established zones will protect the public health, welfare, and convenience, and still allow for the proper collection, transportation, and disposal of solid waste.

Environmental Risk Assessment

In this section we discuss some of the potential air, water, and land pollution problems associated with various solid waste disposal facilities. In addition, health risk and nuisance conditions are also discussed. This discussion is important in determine what facilities and locations are correct for the people of Monongalia County.

Sanitary Landfills

Air Pollution

Potential Contamination.

Methane gas is produced by decomposing garbage. At landfills it can accumulate, migrate laterally and pose a serious fire or explosion hazard. Landfills can cause odors, and dust is emitted by trucks and traffic hauling garbage.

Volatile organic compounds are emitted from landfills but there risk to human health is yet unknown.

Water Pollution

Potential Contamination.

Surface and groundwater may be contaminated by landfilling. Movement of contaminated ground water off-site can occur depending on the site's geology. The chemical composition of leachate varies, depending on the contents of the landfill. Common pollutants can include ammonia, metals, volatile organic compounds, and other toxic chemicals. Volatile organic compounds present a particular concern since many of these can be toxic and some are

carcinogenic.

Health Risk

Health risks at landfills primarily result from the potential for contaminated drinking water and explosions from methane buildup. Nuisance Conditions Noise and dust are generated while moving earth and waste. Heavy truck traffic increases.

Waste Processing and Incineration

W.Va. Code 22-15-19 makes incineration of municipal solid waste illegal in West Virginia. Exceptions can be made in the case of approved pilot projects.

This discussion applies to mass burn and modular incineration facilities that burn solid waste and to incinerators that burn refuse derived fuel (RDF) and densified RDF (dRDF). It also applies to facilities that burn solid waste without energy recovery facilities.

Air Pollution

Potential Contamination

Complex organics, metals, sulfur dioxides, nitrogen oxides, particulates and dust may be released in air emissions. Acid gases such as hydrochloric acid are also emitted into the air. Dust production is another concern inside of RDF and dRDF facilities.
Stack emissions include hydrogen chlorides, dioxins and furans, polynuclear aromatic hydrocarbons and metals such as cadmium and mercury. The Quantities of these substances emitted from a wastetoenergy system depend upon a variety of conditions, including the nature of the waste burned, combustion conditions, and the efficiency of the emission control equipment.

Mass burn systems can be expected to have increased metal emissions due to the presence of metals In common products such as household batteries (which may contain cadmium, zinc, mercury, silver, or lead), printing inks used oil and soldered cans in the waste burned. RDF also contains a significant amount of metals that are contained in plastic materials, magazine paper and printing inks. These metals may contribute to greater concerns at a landfill where the waste ash is disposed.

It is not certain what the effects on the environment or public health will be from long-term, low-level exposure to dioxins, furans, or other complex organics.

Water Pollution

Potential Contamination.

- Waste incineration and processing facilities can affect water quality from runoff, from air emissions and from leachate.
- High levels of lead and cadmium are present in solid waste incinerator ash leachate. Ash

contents will fluctuate.
- Acidic gas emission such as sulfur oxides and nitrogen oxides from a facility could contribute to the acid rain problem.

Impacts on Land

Potential Contamination.
- All waste incineration will require the landfilling of some wastes, whether they be ash, bypass wastes. residuals from RDF/dRDF production, or rejects that cannot be recycled.
- Metals and toxic organics released into the environment from air emissions may affect area soil and potentially bioaccumulated in area vegetation and feed animals.

Health Risks

Lead can affect the body's blood forming system by interfering with enzyme mechanisms. Hemoglobin synthesis is decreased, and red blood cells become fragile or deformed. Anemia is often the first clinical symptom of lead poisoning.
Dioxins, furans, the polynuclear aromatic hydrocarbons and metals are suspected or known carcinogens (causing cancer), mutagens (causing mutations), or teratogens (causing birth or developmental defects).

Nuisance Conditions

Nuisance impacts include litter, odor and noise from plant machinery and incoming trucks.

Resource Recovery Facilities

Resource Recovery Facility means any solid waste facility at which solid wastes are mechanically, biologically, chemically, or thermally transformed for the purpose of separating, removing, or creating any material or energy for reuse or sale, and at which land disposal of solid waste does not occur. Resource Recovery Facility: includes composting facilities, environmentally acceptable incinerators, materials recovery facilities, energy recovery facilities and other such solid waste facilities not herein specified.

Authorized: Upon MCSWA Board approval.

Prohibited: None

Tentatively Prohibited: None

Comprehensive Plan Criteria

Resource Recovery Facilities are first in desirable rank.

Geological and Hydrological Criteria

Resource Recovery Facilities as per commercial facilities will not be sited in wetland, flood prone areas, perennial streams, high quality streams, or rare habitats.

Socioeconomic Criteria

Resource Recovery Facilities will be sited in established industrial parks, which normally or historically have access to all major transportation modes, i.e. road, rail, river, that will minimize hauling cost operations, minimizes infrastructure deterioration, is competitive and customer convenient. Resource Recovery Facilities will not be sited in areas that are near schools, churches, meeting places, or homes unless properly screened.

Recycling Facilities

Recycling Facility**:** means any Solid Waste Facility for the purpose of recycling at which neither land disposal nor biological, chemical or thermal transformation of solid waste occurs; provided, that mixed waste recovery facilities, sludge processing facilities and composting facilities are not considered to be reusing or recycling solid waste within the meaning of W. Va. Code " 20-11-1 et seq., 22-15-1 et seq., and 22C-4-1 et seq.

Authorized:

All that meets the above criteria, as per MCSWA Comprehensive Litter and Solid Waste Control Plan approved ~~2016~~ 2021: Part E, page 21 for listing.

Prohibited: None.

Tentatively Prohibited: All that meets the above criteria, as per MCSWA Comprehensive Litter and Solid Waste Control Plan approved ~~2016~~ 2021: Part E, page 21 for listing.

Comprehensive Plan Criteria

Recycling centers hierarchy are second in desirable rank only behind “Resource Recovery Facilities” for Monongalia County preference.

Geological and Hydrological Criteria

Recycling centers as per commercial facilities will not be sited in wetland, flood prone areas, perennial streams, high quality streams, or rare habitats.

Socioeconomic Criteria

Recycling centers as per commercial facilities will not be sited in wetland, flood prone areas, perennial streams, high quality streams, or rare habitats.

Publicly-owned Recycling Center

Monongalia County's only public-owned recycling processing center closed February, 2015. All recycling commodities are now transported out of state for processing and marketing by the private sector. Limited public programs serviced by the Monongalia County Commission, the City of Westover, ~~the City of Star City~~ and WVU are in effect.

Transfer Stations

Transfer Station**:** means a combination of structures, machinery, or devices at a place, or facility where solid waste is taken from collection vehicles and placed in other transportation units (such as a walking floor, or other method of transfer as determined by the director) for movement to another solid waste management facility. Provided, when the initial generator of solid waste disposes of said waste into a container such as a roll-off, green box or bin which is temporarily positioned (not more than five days) at a specific location for transport by a transportation unit, such container shall not be considered a transfer station. Under any circumstances, leachate, litter and windblown materials must be properly managed.

Authorized: Mountaineer Transfer Station site in the Morgantown Industrial Park, located off of River Road.

Prohibited: In wetland areas, in a l00 year floatplane, in perennial streams and near schools, churches, residential area and other places as determined as inappropriate by this plan upon application.

Tentatively Prohibited: None: Upon MCSWA authorization.

Comprehensive Plan Criteria

Mountaineer Transfer Station, a new Class B three bay facility (2011) currently owned and operated by Republic Services, while an attractive alternative justifies prohibiting the siting of a landfill within the county, it does expose several deficiencies and concerns that need addressed.

Geological and Hydrological Criteria

Transfer stations will not be sited in wetland areas, in the l00 year floodplain, or in perennial streams. Transfer stations will not be sited in those areas as stated under "Prohibited" section above.

Socioeconomic Criteria

Transfer stations will be sited in locations that will minimize hauling cost operations, well off major roadways and will be screened from view, minimizes infrastructure deterioration, is competitive and customer convenient. Transfer stations will not be sited in areas that are near schools, churches, meeting places, or homes unless properly screened.

Compost Facilities

Composting Facility: means any solid waste facility processing solid waste by composting, including sludge composting, organic waste or yard waste composting, but does not include a composting facility owned and operated by a person for the sole purpose of composting waste created by that person or such person and other persons on a cost-sharing or non-profit basis and shall not include land upon which finished or matured compost is applied for use as a soil amendment or conditioner.

Authorized: None.

Prohibited: Composting facilities are prohibited in the following areas:

- A compost facility will not be located within a 100-year floodplain, a perennial stream, a high quality stream, or a wetland.
- A compost facility cannot be located within 1200 feet of any private, or public water supply well at the time the zone is established.
- A compost facility will be located in areas where soils are high in percolation of surface water and load-bearing capacity.
- Compost facilities will not be located in slide prone areas.

Tentatively Prohibited: Compost facilities are tentatively prohibited throughout Monongalia County at this time except for areas identified as prohibited by 54CSR4 or prohibited by this plan.

Comprehensive Plan Criteria

Composting has the fourth (4th) highest place in hierarchy established by the Monongalia County Solid Waste Authority (MCSWA). Due to the high investment/return in a commercial facility, private (homeowners) programs are highly recommended.

Geological And Hydrological Criteria

Commercial compost facilities should be of at least ten acres in size.

Socioeconomic Criteria

Compost facilities should be located in rural areas that are near major metropolitan or city/town centers.

Compost facilities should be at least 300 to 500 feet from nearby residences or other dwellings.

Ideally, compost facilities should be constructed in conjunction with other solid waste facilities and will not be authorized in watershed or recreation areas as designated by the MCSWA.

Criteria For Siting Landfills

Class A Facility

Class A facility means a commercial solid waste facility which handles an aggregate of between ten and thirty thousand (10,000-30,000) tons of solid waste per month. A "Class A facility" includes two or more Class B solid waste landfills owned or operated by the same person in the same county, if the aggregate tons of solid waste handled per month by such landfills exceeds nine thousand nine hundred ninety-nine (9,999) tons of solid waste per month.

Authorized: None.

Prohibited: Class A facilities are prohibited throughout Monongalia County.

Class B and C Landfills

Class B Facility means a commercial solid waste facility which receives, or is expected to receive, an average daily quantity of mixed solid waste equal to or exceeding one hundred (100) tons each working day; or serves, or is expected to serve, a population equal to or exceeding forty thousand (40,000) persons, but which does not receive solid waste exceeding an aggregate of ten thousand (10,000) tons per month. A "Class B Facility" does not include construction/ demolition facilities: Provided, that the definition of Class B facility may include such reasonable subdivisions or subclassifications as the director may establish by legislative rule proposed in accordance with the provisions of W. Va. Code ' 29A-1-1 et seq.

Class C Facility means a commercial solid waste facility which receives, or is expected to receive, an average daily quantity of mixed solid waste of less than one hundred (100) tons each working day; and serves, or is expected to serve, a population of less than forty thousand (40,000) persons. A Class C facility does not include construction/demolition facilities.

Authorized: None

Prohibited: Class B and Class C Facilities are prohibited throughout Monongalia County.

Class D Landfill

Class D facility means any commercial solid waste facility for the disposal of only construction/demolition waste, and does not include the legitimate beneficial reuse of clean waste concrete/masonry substances for the purpose of structural fill or road base material.

Authorized: None.

Prohibited: Class D Facilities are prohibited throughout Monongalia County.

United States Geological Survey 7.5' quad maps are available in the Monongalia County Solid Waste Authority office 3788 Morgantown Industrial Park, Morgantown, that more clearly designate zones that are tentatively prohibited or prohibited for the siting of any class of landfill.

An authority may base its decision to prohibit solid waste facilities in a particular zone upon one or more of the above criteria. However, a decision to authorize a solid waste facility in a particular zone shall be made only after consideration of all of the above criteria.

Material Recovery Facility

Materials Recovery Facility means any solid waste facility at which source-separated materials or materials recovered through a mixed waste processing facility are manually or mechanically shredded or separated for purposes of reuse and recycling, but does not include a composting facility.

Authorized: None.

Prohibited: At this time such facilities are prohibited countywide.

Tentatively Prohibited: At this time such facilities are tentatively prohibited countywide.

Comprehensive Plan Criteria

Material recovery facilities are rated 6th within the hierarchy of solid waste facilities in the comprehensive plan. This is due to two primary reasons. First such facilities generally manually or mechanically recover recyclable materials from the general waste stream or from commingled recyclables. Second, the comprehensive plan calls for mandatory separation of recyclable products by 1994.The economics for a material recovery facility over a recycling or resource recovery facility are not justified.

Geological And Hydrological Criteria

Such facility cannot be located within flood prone areas, near perennial streams, wetlands, near ground water sources or in high quality streams and would be required to have a leachate treatment facility due to county historical mining activities.

Socioeconomic Criteria

Local and regional solid waste volume is not economically viable to be sufficient.

At this time Materials Recovery Facilities are ranked low (6 of 8) within hierarchical importance.

Energy Recovery Facility Considerations

Authorized: None.

Prohibited: Illegal under W. Va. Code '22-15-19 and prohibited countywide.

Tentatively Prohibited: None.

Comprehensive Plan Criteria

Energy and resource recovery facilities are the second lowest rated commercial solid waste disposal facilities in the hierarchy established by the Monongalia County Solid Waste Authority. While composting and landfills with methane gas recovery are considered energy and resource recovery facilities this section of the siting plan excludes them from discussion. These particular types of hybrid facilities will be discussed in later sections.

Geological And Hydrological Criteria

Approximately 15 acres of suitable land are required for the development of energy or resource recovery facilities. This includes the facility site as well as interconnection corridors for transmission hookup to the power purchasing utility. Close approximation to major surface waters, highways and railroads are desirable. Large surface waters are potential water sources for the facility or wastewater discharge sites. Highway and rail locations are important factors in transporting solid waste to the proposed facility.

The recent construction of the MEA Beechurst power plant and related steam lines to the various campuses of West Virginia University have resulted in meeting steam demand of the largest steam consumer in Monongalia County. Additional energy or resource recovery facilities would be economically limited by steam market demand.

Resource and energy recovery facilities would have to meet National Ambient Air Quality Standards for particulate, sulfur dioxide, carbon monoxide, nitrogen dioxide, ozone and lead. With the construction and operation of the MEA Beechurst power plant the siting of such a facility within a ten-mile radius or Morgantown becomes problematic.

Areas within a 100-year floodplain or perennial stream will not be considered areas appropriate for siting resource and energy recovery facilities.

Socioeconomic Criteria

Waste-to-energy projects in small and medium sized communities (50,000 or less) have limited markets. For economic reasons facilities should be located within one mile of the user. Distances greater than a mile increase transmission cost and reduce the profitability of these types of facilities. Ideally, consumers should be full time, 365 days a year users of steam, hot water or electricity. Large industrial plants, mills, hospitals, and universities are good market candidates.

Archaeologically sensitive areas, areas of state and local historical importance, and sites listed on or near the National Register of Historic Places will not be considered as appropriate sites for resource and energy recovery facilities.

Ecological important areas that have been designated by the WV Division of Natural Resources, the US Fish and Wildlife Service, WV Solid Waste Management Board or the Monongalia County Solid Waste Authority and its regulations will also not be considered as appropriate sites for resource and energy recovery facilities. These include wetlands, endangered and threatened species habitat, high quality streams, and public lands.

Resource and energy recovery facilities often have stacks in excess of 200 feet. Such stack heights must be reviewed by the Federal Aviation Administration for airport and flight path impacts. Tall stacks also impose negative visual and aesthetic impacts on local communities.

Monongalia County is served by two Interstate systems. These highways serve as centers of economic development for the County and local area. Along each Interstate exit economic activity is taking place. Most of this activity is commercial retail, light industrial, or recreational. One exit is for Coopers Rock State Forest and Chestnut Ridge County Park access. The siting of a resource or energy recovery facility in close approximation to the existing Interstate system should be considered inappropriate.

Resource and energy recovery facilities generate ash, and other materials that must be properly disposed of. Potential landfill sites in Monongalia County are few in number. There is regulatory uncertainty as to how the waste generated by such facilities will be classified in the very near future, how it must be disposed of and what responsibilities local areas will have for the waste they generate from such facilities.

In considering siting energy and resource recovery facilities as well as commercial incinerators in Monongalia County special attention needs to be given to how these facilities would economically affect public Investments and preexisting private recycling, or composting facilities.

Over the next twenty years there will be little economic demand for steam or electricity generated by resource and energy recovery facilities. Such facilities are not important in meeting the goals of the Monongalia County Litter and Solid Waste Control Plan. When County recycling and composting goals are met the quantity of solid waste needed to make such facilities operable will not be available locally.

Commercial Incinerators

Commercial waste incinerators are prohibited under W. Va. Code '22-15-19. Exceptions can be made in the case of pilot projects.

Authorized: None.

Prohibited: Commercial incinerators are prohibited countywide.

Tentatively Prohibited: None.

Commercial incinerators are the lowest ranking commercial solid waste disposal facilities in the hierarchy established by the Monongalia County Solid Waste Authority.

Geological and Hydrological Criteria

Guidelines developed and approved by this authority on geological hydrological factors will be applied to the siting of possible approved commercial waste incinerator facility. Commercial waste incinerators are emitters of air pollution. While incinerators reduce solid waste into ash by-product must be exported extending its carbon footprint and presents a new source of air pollution.

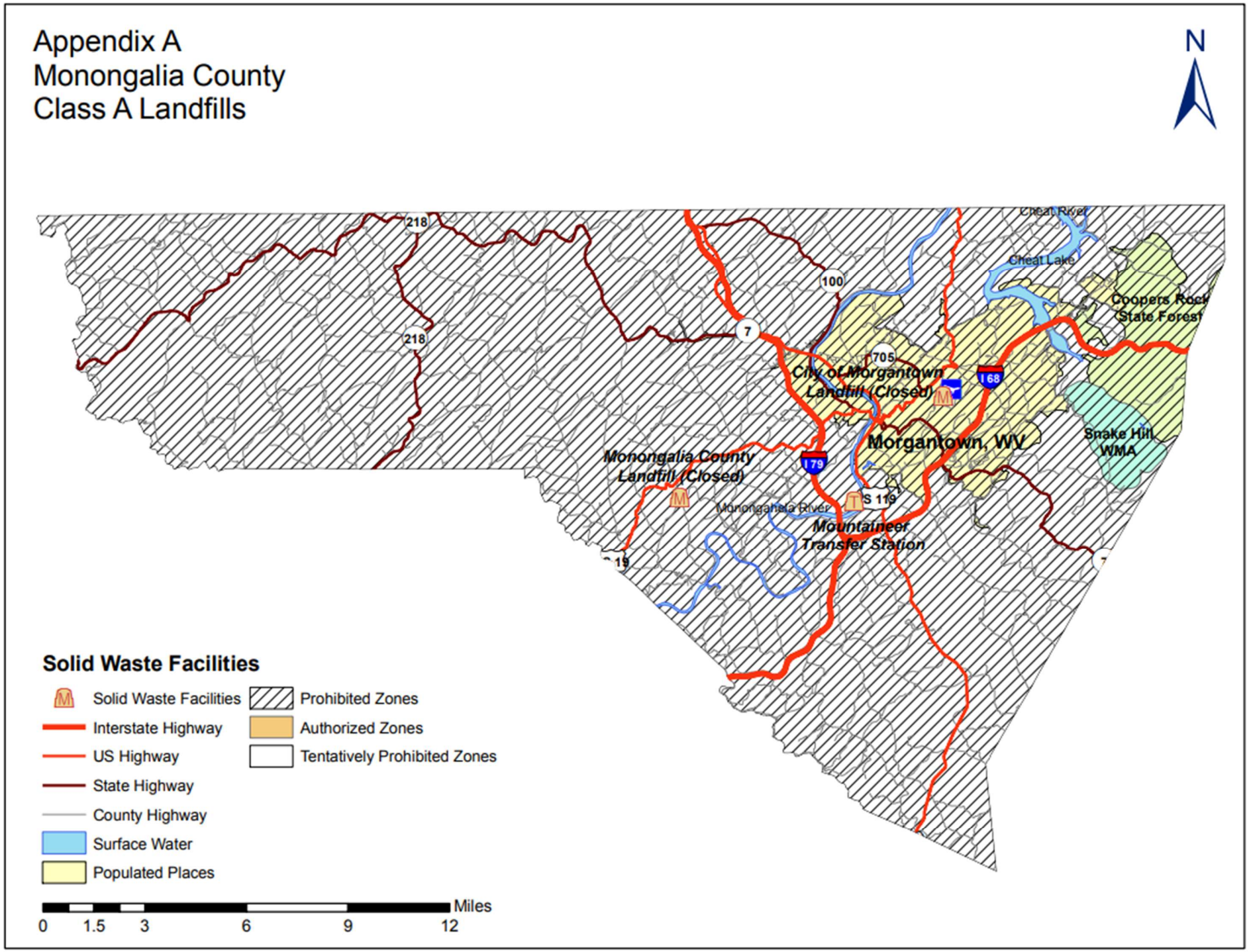
Socioeconomic Criteria

Monongalia County is an educational, research, medical practice and high technology area. Major economic expansions are taking place in or around the major interstates in the county would impact property values and alter current development. Regulatory uncertainty as to how incinerator ash is to be classified by the U.S. Environmental Protection Agency and local communities disposal responsibilities, also, a commercial incinerator would negatively impact environmental and health quality in Monongalia County.

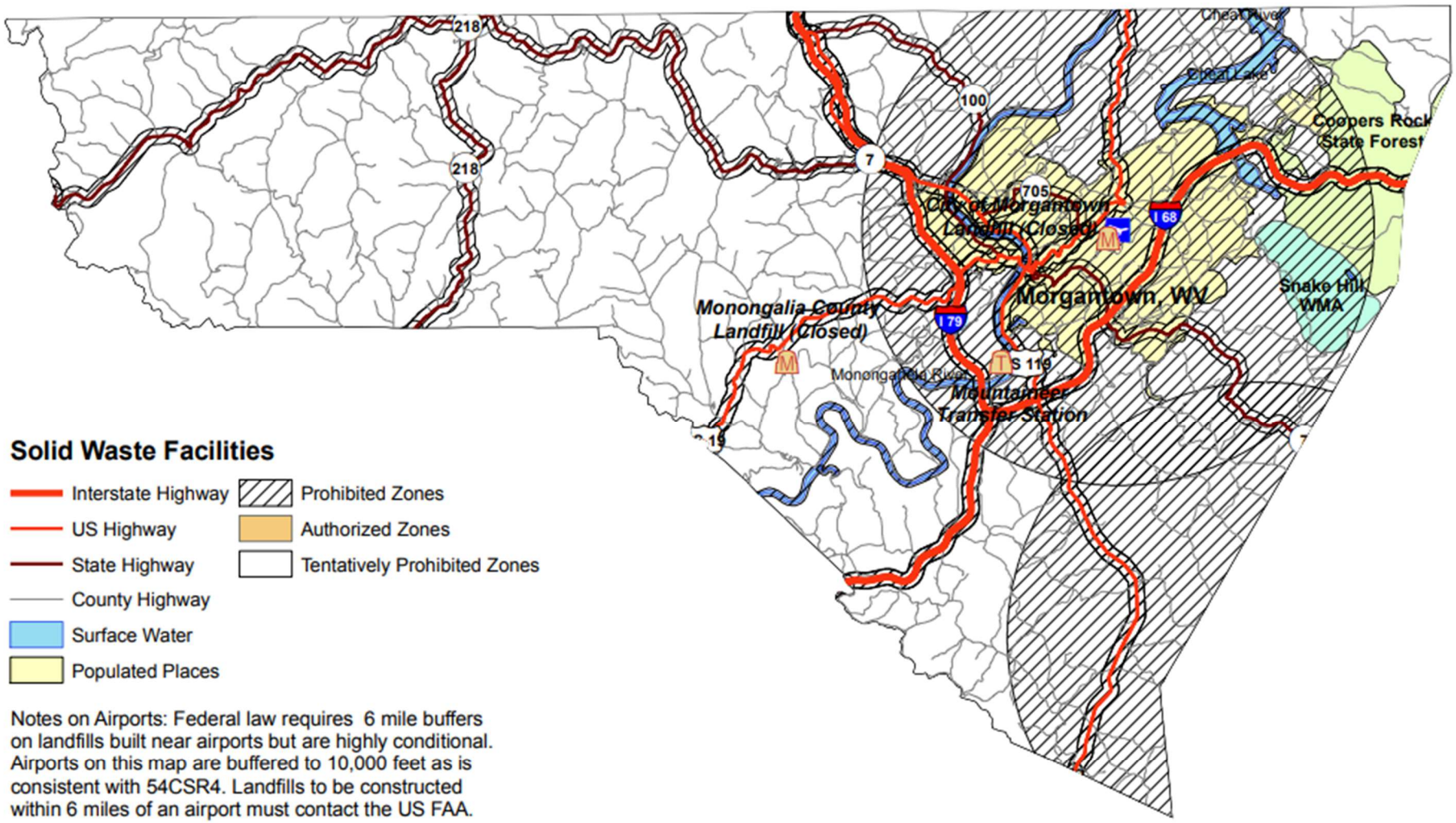
CHAPTER FOUR: MAPS

Appendices

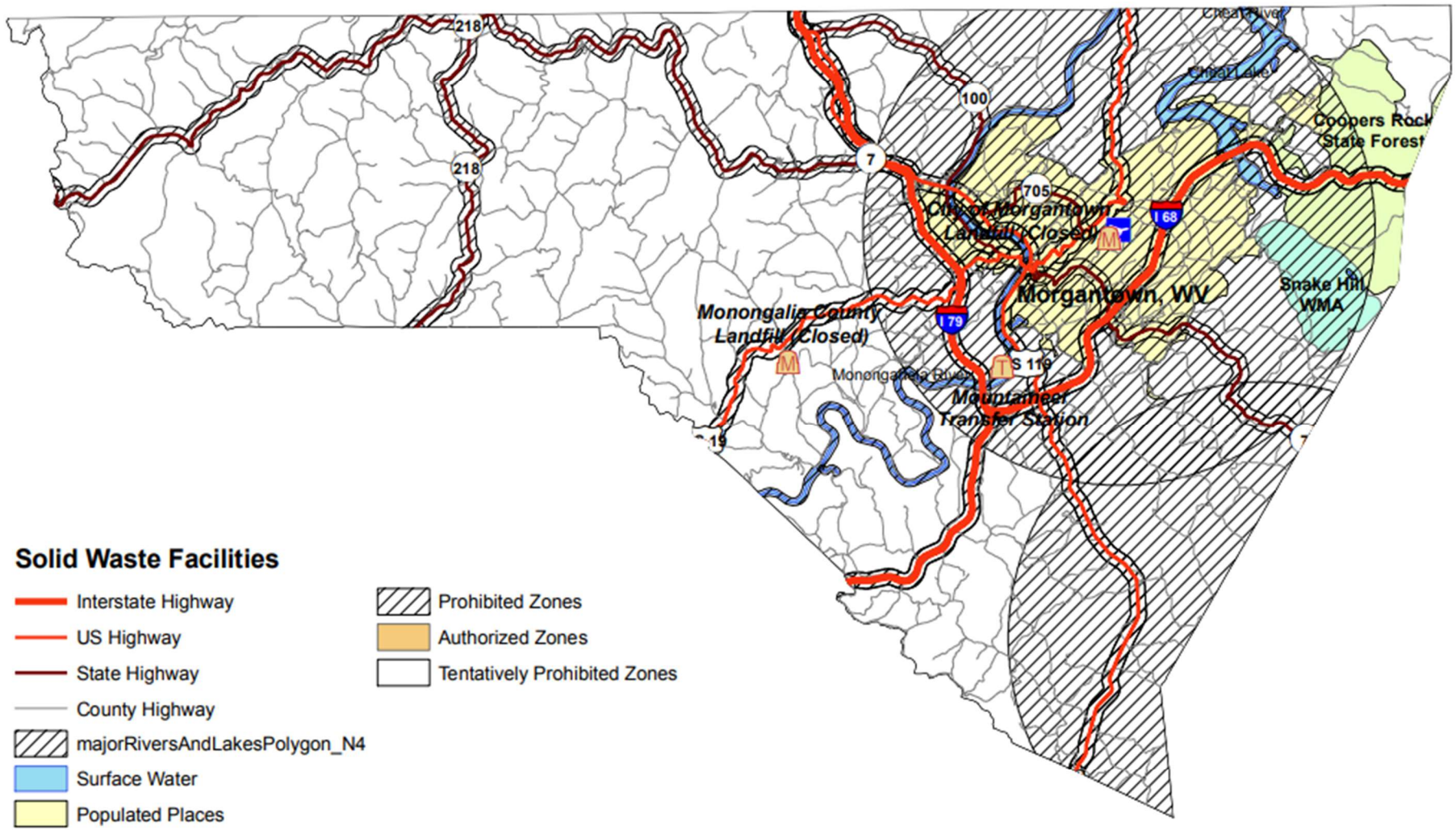
Appendix A
Monongalia County
Class A Landfills



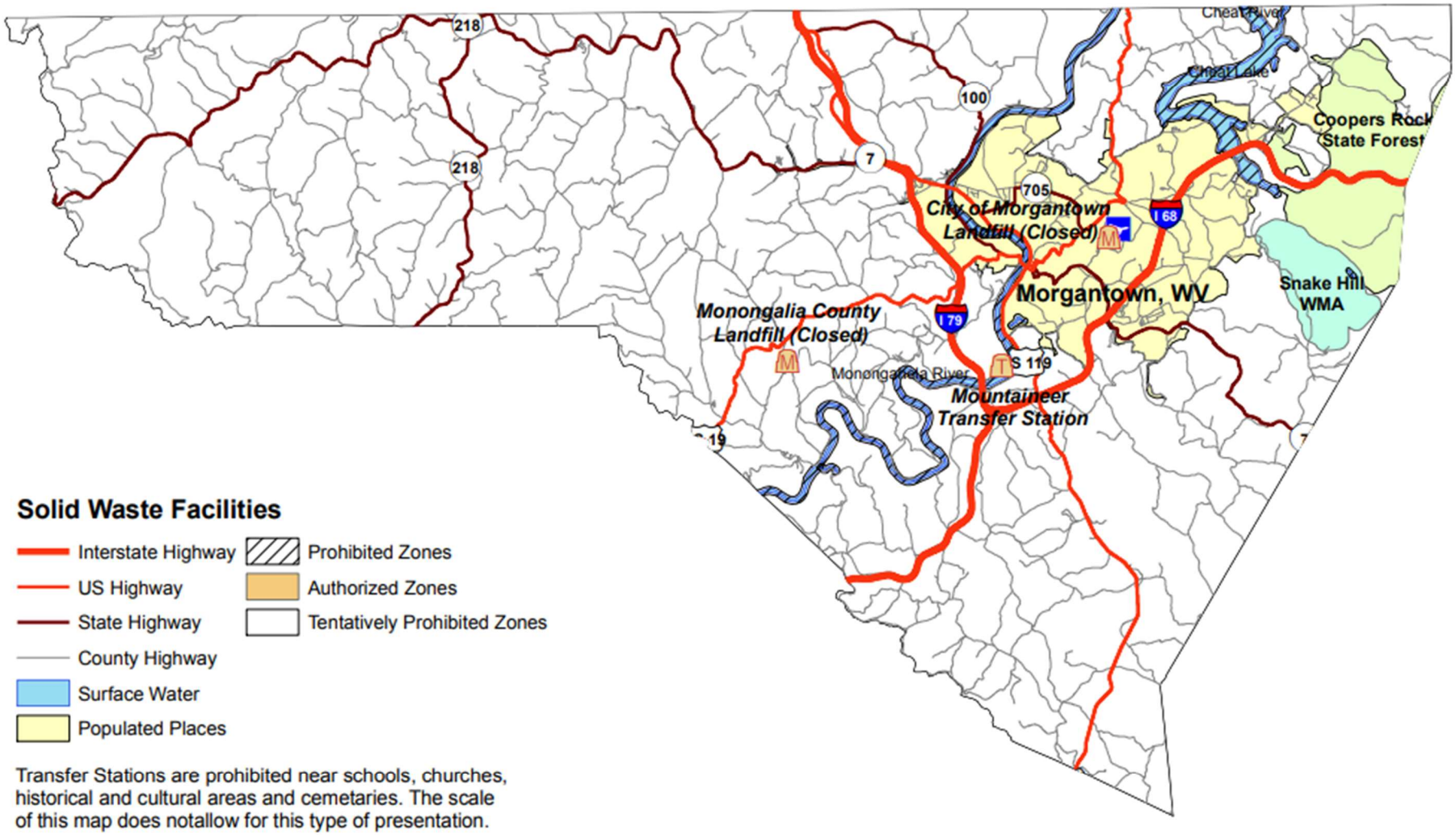
Appendix B
Monongalia County
Class B_C Landfills



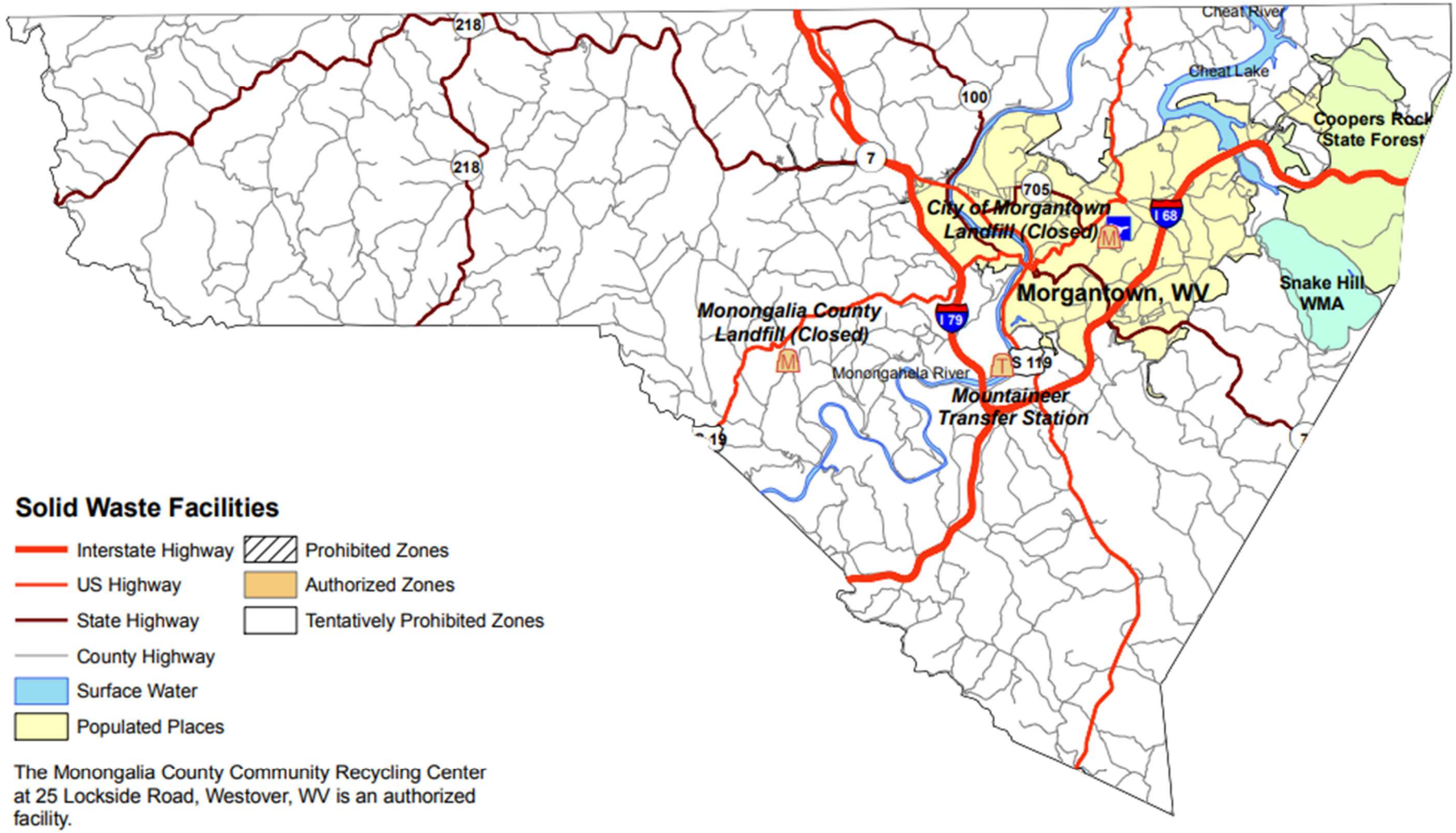
Appendix C
Monongalia County
Class D Landfills



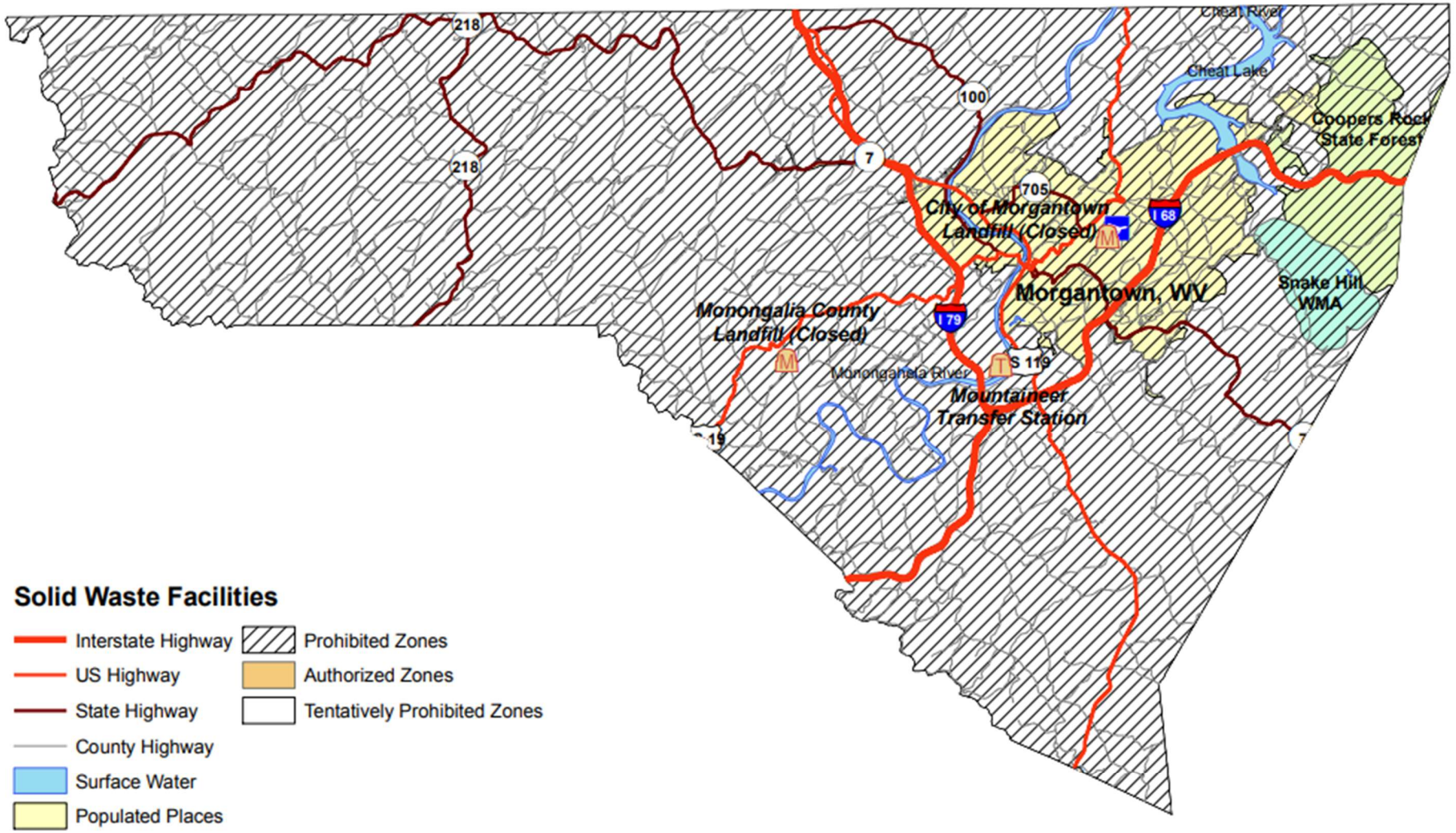
Appendix D
Monongalia County
Transfer Stations



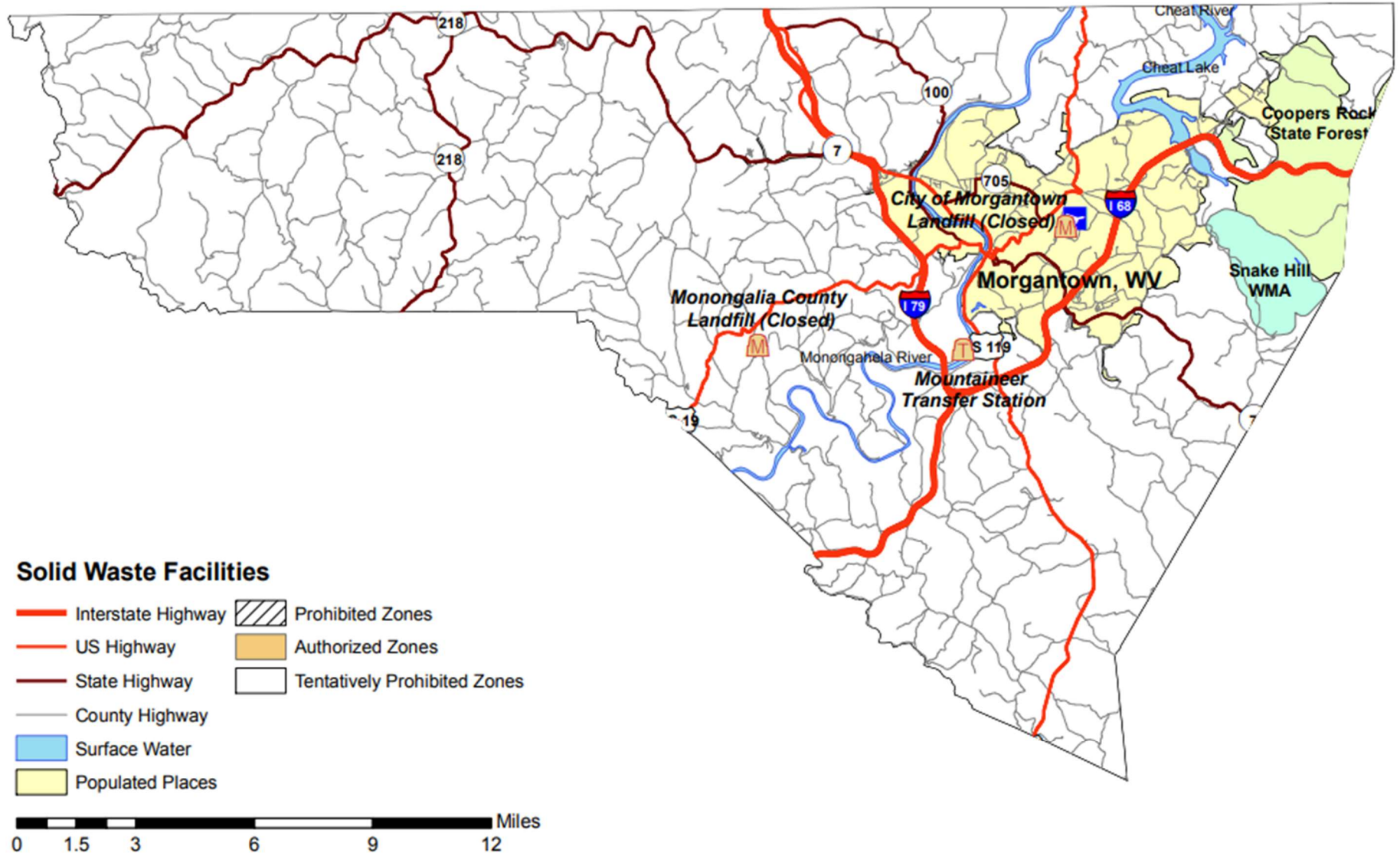
Appendix E
Monongalia County Recycling Centers



Appendix F
Monongalia County
Incineration Facilities



Appendix G
Monongalia County
Material Recovery Facilities (MRF)



Appendix H
Monongalia County
Commercial Composting Facilities