

# **CHAPTER 4**

## **TABLES**

**TABLE 4-1**

<b>CARROLL COUNTY RECYCLING RATE</b>	
<b>Year</b>	<b>Recycling Rate</b>
<b>1995</b>	<b>35%</b>
<b>1996</b>	<b>34%</b>
<b>1997</b>	<b>35%</b>
<b>1998</b>	<b>43%</b>
<b>1999</b>	<b>57%</b>
<b>2000</b>	<b>53%</b>
<b>2001</b>	<b>58%</b> <b>Plus 1% Source Reduction</b>
<b>2002</b>	<b>46%</b> <b>Plus 2% Source Reduction</b>
<b>2003</b>	<b>39%</b> <b>Plus 2% Source Reduction</b>
<b>2004</b>	<b>29%</b> <b>Plus 3% Source Reduction</b>

**1997-2003 Includes ash and scrap metal recovered at the waste-to-energy facility where the County's waste was transferred. Beginning in 2004, the County began transferring 90% of the municipal solid waste to an out-of-County landfill.**

**Source: MRA Reports to the State of Maryland.**

**TABLE 4-2**  
**SITING WASTE MANAGEMENT FACILITIES**

The process of site selection can be defined as stages or levels by which numerous possible sites are reduced to a few probable sites. Involvement of and communication with citizens through the entire process is essential to provide input for the site evaluation planning parameters, determination of and ranking of site suitability criteria and the matrix evaluation process.

***Establish Site Evaluation Planning Parameters*** as a framework for the site search direction. These parameters should include, but not be limited to, items such as size, service life, major areas excluded, minimum buffer zone requirements, compatible surrounding and adjacent land uses, preferred site distance from population acreage requirements.

***Data Collection of Baseline Information*** including previous studies and reports and conducting meetings with the interested county, citizen groups, committees, and regulatory agencies to discuss the proposed process.

***Prepare Land Use Opportunities and Constraint Maps*** depicting technical, environmental, economic, and socio-economic concerns relevant to solid waste management facility siting.

***Identify Primary Potential Solid Waste Management Facility Sites*** by a "windshield" survey, U.S.G.S. topographic maps, floodplain maps, aerial photographs, plat maps, zoning maps, project planning parameters, meetings with county officials, and regulatory agency representatives.

***Develop Screening Criteria***, taking the planning parameters into account; several key factors may be identified in screening sites. Key factors which are common to solid waste management facilities are that the site should:

- have a minimum impact on the community;
- be served by adequate road systems;
- be technically sound, environmentally suitable, and economically feasible; and
- have the support of elected officials and the public.

***First Level Screening*** (absolutes) involves an inherent constraint which does not allow a solid waste management site at the location due to conditions that, if found, would eliminate a site from further investigation. First level screening criteria may include, but is not limited to, highly developed areas, areas within 5,000 feet of an airport runway, areas within the 100-year floodplain, site boundaries with reasonable direct access beyond tow miles of a major arterial road or transportation network, national parks, or critical environmental areas.

***Develop a Site Feasibility Matrix*** to rank and provide a comparison of the sites based on the first level screening criteria. The site comparison will provide for elimination of non-feasible sites from further investigation. This site elimination is important as it would be inefficient (time wise and monetarily) to attempt to investigate all the primary potential sites in terms of the Level Two screening criteria. The end result is a listing of potential sites for further investigation as well as documentation of the non-feasible sites and why they were eliminated.

(continued)

**TABLE 4-2**  
**SITING WASTE MANAGEMENT FACILITIES**

**Conduct Field Inspection** of the potential sites with county officials.

**Second Level Screening** (non-absolutes) involves accessing the constraints which, by virtue of their nature, are not absolutely disqualifying. Second level screening is an evaluative process in qualitative and quantitative terms. Criteria for qualitative evaluation include, but are not limited to, buffer, easements, habitat impact, surface water quality impact, archaeological/historical, surrounding land-use, aesthetics (screening) and land ownership. Quantitative criteria are definable in terms of standard engineering practices and include haul distances, access, site size/shape, soils, availability of site resources (cover soil), site drainage, groundwater/aquifer impacts, site utilization, wetlands impacts, well inventory, proximity to sensitive areas, proximity to residential developments and development costs.

**Determine Matrix Rating Methodology** for evaluation of the second level screening criteria. Two of the more common matrix rating systems used are the ranking rating method.

The rating method simply assigns an unweighted numerical value for each screening criteria (1 – very good, 2 – good, 3 – fair, and 4 – poor). The numbers are tallied and the lesser overall total is the most desirable site. This method assumes that each criteria are of equal importance.

The ranking system uses a weighted numerical value to each criteria. The impact factors (1 – negligible impact, 2 – less significant impact, 3 – significant impact, and 4 – most significant impact) are used to reflect the relative value of each screening criteria. The impact factor is then multiplied by the numerical rating criteria to provide a weighted value.

**Develop a List of Preferred Sites** based on the matrix evaluation of the sites, a selected number of sites should be selected for further analysis.

**Conduct a Workshop** with the Board of County Commissioners to present the findings and list of preferred sites and the recommendations of the Consultant of the final sites for detailed investigation.

**Conduct Final Site Investigation** of the sites selected for detailed study.

**Conduct Public Participation** meetings to obtain community input into the decision-making process and to present site-specific data obtained in the final site investigation. The Board of County Commissioners shall oversee this meeting.

**Final Site Selection** shall be made by the Carroll County Board of County Commissioners based on the final site investigation data and public opinion. The site will be selected and procured by the Commissioners.

**TABLE 4-3**  
**SUMMARY OF ESTIMATED AVERAGE ANNUAL GROUND WATER RECHARGE**  
**RATES FOR HYDROLOGIC UNITS IN CARROLL COUNTY**

		RECHARGE RATE					
		Average Conditions (1-year-in-2)			Drought Conditions 1-year-in-10)		
Hydrologic Group	Aquifer Type	GPD/MI <sup>2*</sup>	GPD/ Acre <sup>**</sup>	Inches	GPD/MI <sup>2*</sup>	GPD/ acre <sup>**</sup>	Inches
Carbonate Rocks	Carbonate Rocks	750,000	1172	15.8	550,000	859	11.6
Meta-Volcanic Rocks	Saprolite	750,000	1172	15.8	550,000	859	11.6
Phyllite	Saprolite	290,000	453	6.1	170,000	266	3.6
Schist	Saprolite	540,000	844	11.3	280,000	438	5.9
Triassic Sedimentary Rocks	Triassic Sandstone-Silt- Stone, and Shale	410,000	641	8.6	220,000	344	4.6

\* = Gallons per day per square mile

\*\* = Gallons per day per acre

**TABLE 4-4**

**CARROLL COUNTY LEPC LONG RANGE PLANNING GOALS FOR HAZARDOUS MATERIAL RESPONSE**

Determine what hazardous materials are regularly transported into or through the County.

Continue to make contact with business is about hazardous materials concerns.

Continue to use telephone pagers for response personnel.

Continue annually to inventory records on file, and equipment and staff necessary to update and maintain data — requires clerical staff time.

Continue the three decontamination units including authorized equipment.

Continue on an annual basis update of database for: hazardous materials locations and types, inventory of all County staff, private company staff, emergency services personnel, and private individuals trained in hazardous waste response and their level of training; and other pertinent response data — requires data entry personnel.

Training and travel funds for HazMat responders is located in Emergency Management Budget.

Extend access to database to all first response and emergency services personnel (provide notebook computers, software, and routinely updated data files to fire companies).

The Fire Chief's Association to continue to purchase response equipment for HazMat team.

Maintain vehicles/equipment (restock expanded supplies, etc.) through Fire Chief's Association.

## **CHAPTER 4**

## **FIGURES**

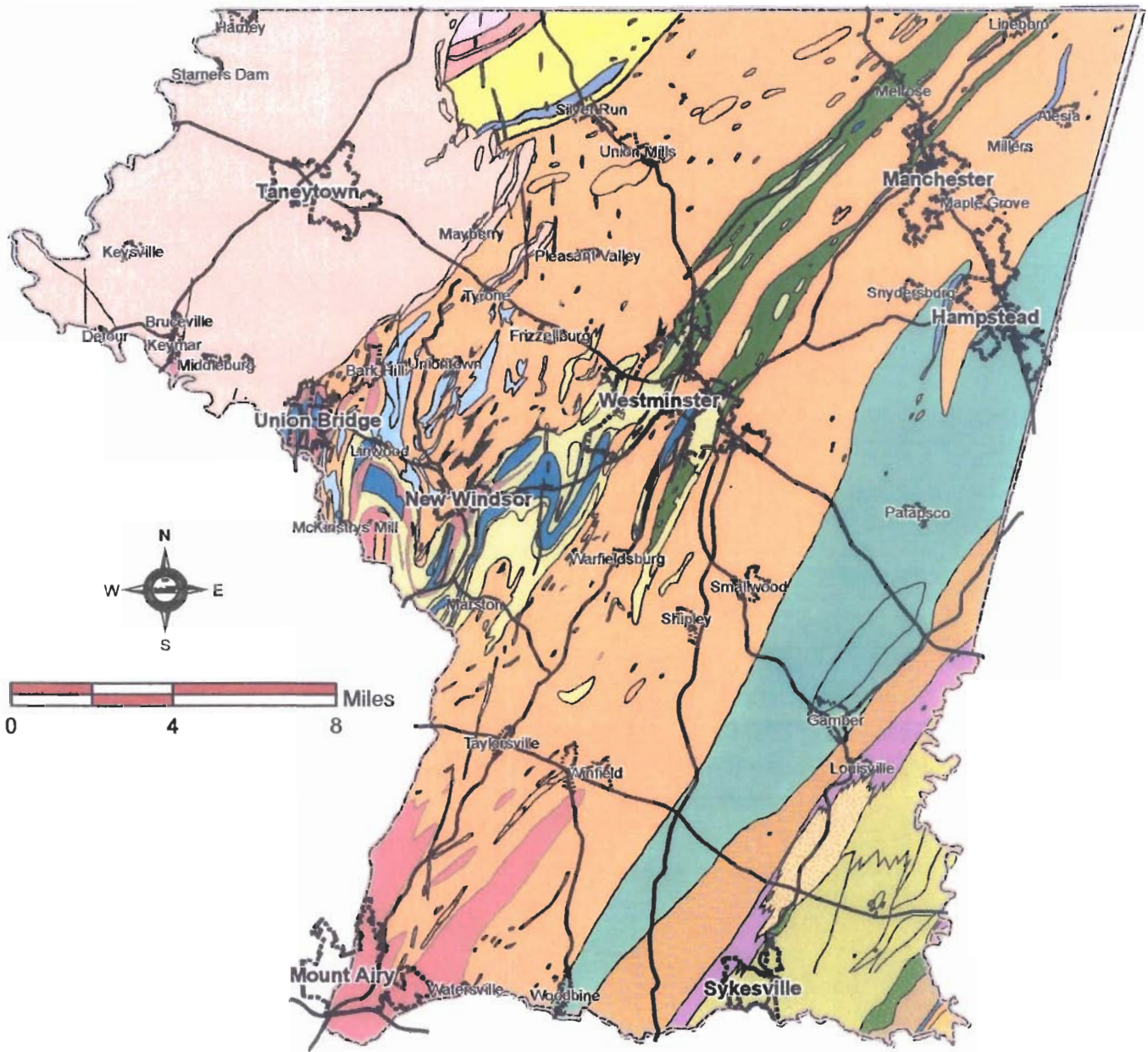
# General Geologic Map

## Carroll County

### Ten Year Solid Waste Management Plan

#### 2005

#### Figure 4-1



#### Geology Legend






New Oxford Fm.-Triassic	Ijamsville Phyllite	Setters Formation	Calcareous Zone
Pleasant Grove Schist	Bachman Valley Formation	Pretty Boy Schist	Morgan Run Formation
Piney Run Formation	Sams Creek Formation	Baltimore Gneiss	Cella Fm.
Cockeysville Marble	Wakefield Marble	Marburg Formation	Littlestown Staty Quartzite
Babylon Phyllite	Sykesville Formation	Silver Run Limestone	Blacks Corner Phyllite
Ultramafics			

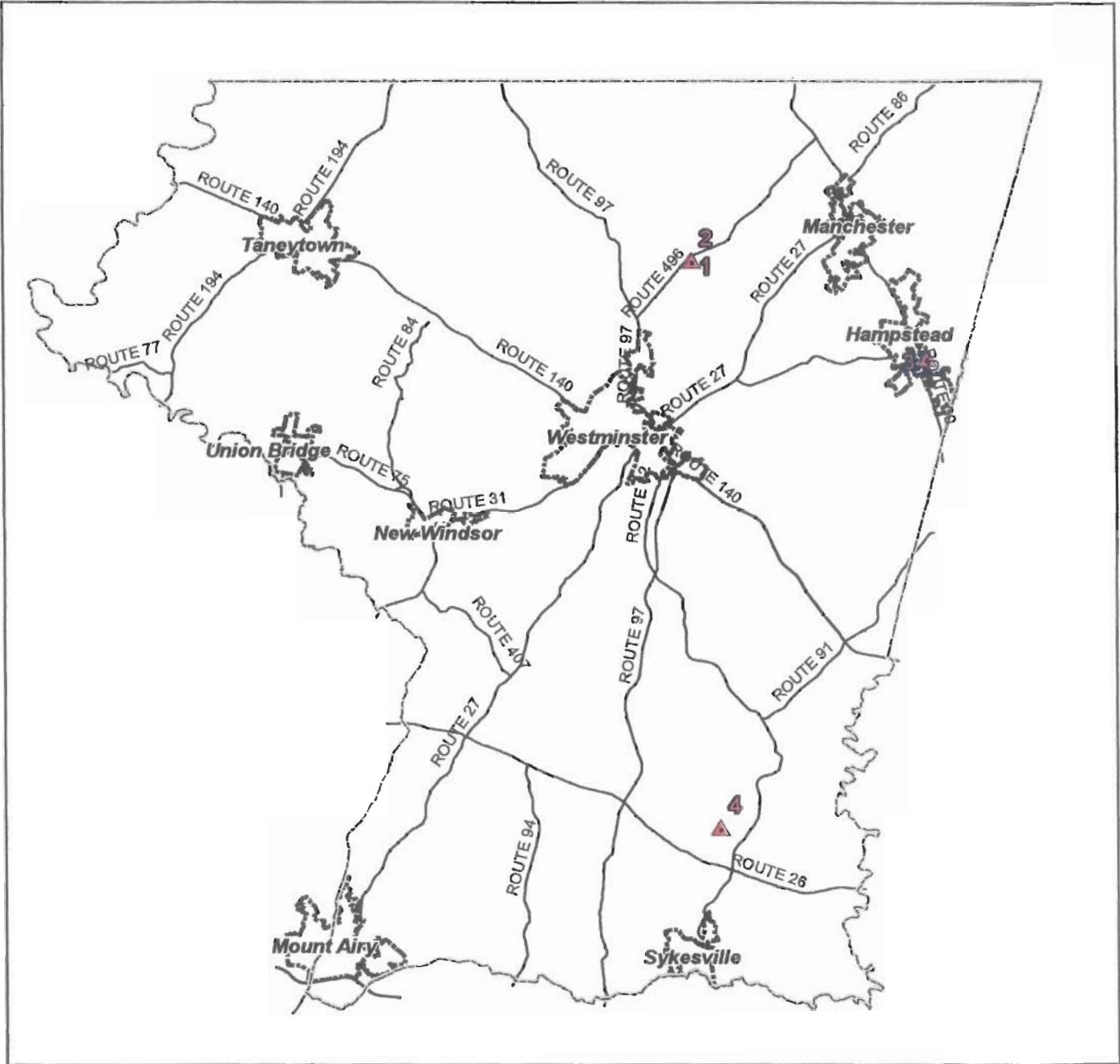
Updated geologic mapping has been completed for several of the quadrangles in Carroll County, contact Maryland Geological Survey for availability.  
 County Geologic Map derived from "Geologic and Watershed Map of Carroll County, MD", R.E. Wright Associates, Inc. 1983.

**General Hydrogeologic Map**  
**Carroll County**  
*Ten Year Solid Waste Management Plan*  
**2005**  
**Figure 4-2**



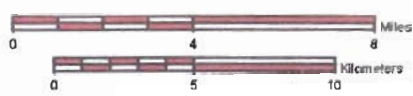
**Legend**

<p> <b>Triassic Sedimentary Rocks</b>  <i>Interbedded sandstone, siltstone and shale overlain by thin soil. Includes New Oxford Formation.</i></p> <p> <b>Carbonate Rocks</b>  <i>Marble, limestone and calcareous schist, deeply weathered and highly permeable. Often associated with metavolcanic rocks. Includes Wakefield Marble and Silver Run Limestone.</i></p> <p> <b>Metavolcanic Rocks</b>  <i>Schistose to massive greenstone and phyllite commonly with calcareous bands and lenses. Moderately to deeply weathered. Includes Sams Creek Metabasalt and Bachman Valley Formation.</i></p>	<p> <b>Finer Grained Metamorphic Rocks</b>  <i>Phyllite, slate and some quartzite, overlain by thin to moderately thick saprolite. Includes Marburg, Ijamsville, Babylon and Blacks Corner phyllites and Littlestown Slaty Quartzite.</i></p> <p> <b>Coarser Grained Metamorphic Rocks</b>  <i>Schist, gneiss and phyllite, overlain by a thick porous, weathered zone (saprolite). Includes all southeastern metamorphic rocks. Includes Piney Run and Morgan Run Formations.</i></p>
---	--



**Legend**

▲ CERCLIS Site

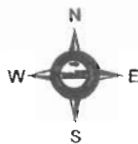
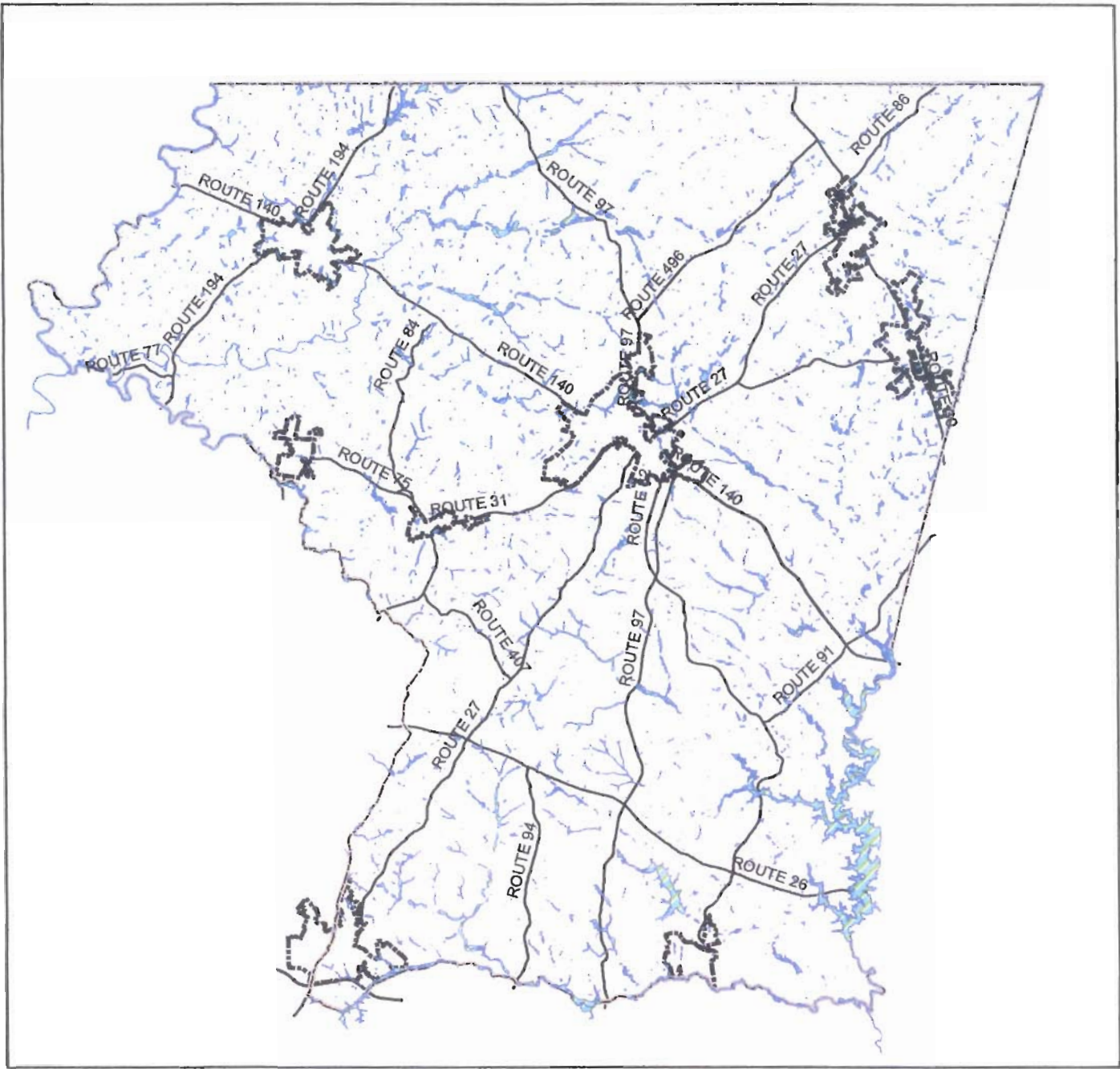


**CERCLIS Sites**  
 Carroll County, MD  
 Ten Year Solid Waste Management Plan  
 2005  
 Figure 4-3


## ***CERCLIS SITES***

### ***FIGURE 4-3***

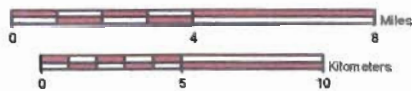
<i>Site Number</i>	<i>Site Name</i>	<i>State ID Number</i>
1	BACHMANS VALLEY LANDFILL	MD-333
2	BACHMAN'S VALLEY LANDFILL-II	MD-467
3	BLACK & DECKER (Hamptead Industrial Center)	MD-370
4	HODGES LANDFILL	MD-447



**Legend**

 Nontidal Wetlands\*\*

\*\*Contact Maryland DNR for wetlands classification.



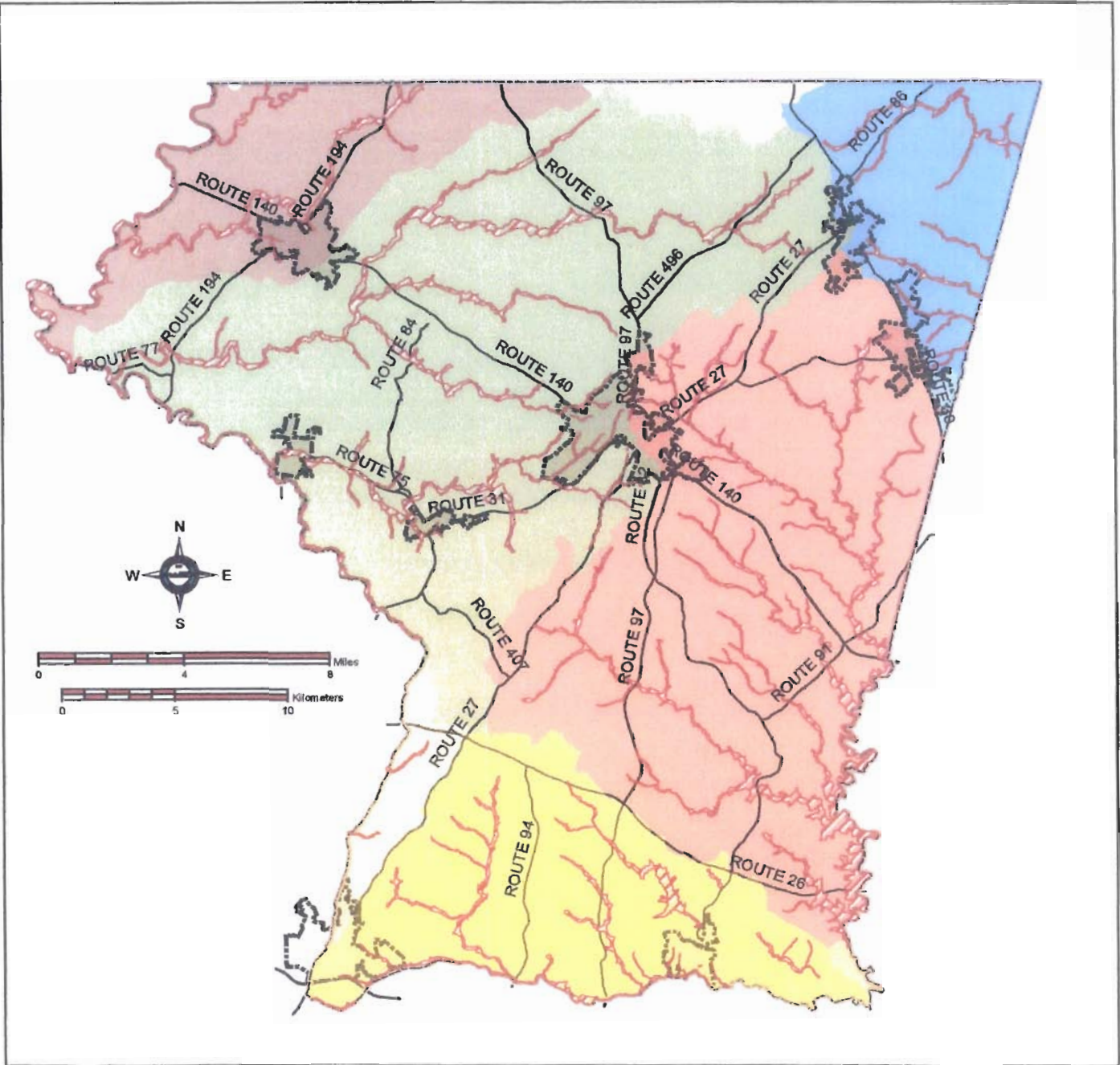
**Location of Wetlands\***

Carroll County, MD

Ten Year Solid Waste Management Plan  
2005

Figure 4-4

\*Nontidal Wetlands as mapped by Maryland Department of Natural Resources Wetlands Inventory. This data is to be used for guidance purposes only.



**Legend**

- 100-year Floodplain\*\*
- Prettyboy Reservoir
- Loch Raven Reservoir
- Patapsco River N Branch
- Liberty Reservoir
- South Branch Patapsco
- Lower Monocacy River
- Double Pipe Creek
- Upper Monocacy River
- Conewago Creek

**Watershed Boundaries\***  
**and 100-year Floodplains\*\***

Carroll County, MD  
Ten Year Solid Waste Management Plan  
2005  
Figure 4-5

\*Watersheds derived from Maryland DNR Shed97 using MDE 8 digit code.  
\*\*FEMA Q3 data zones A and AE.