

# Chapter 6

## Protection of Regionally Important Water Resources

### I. Background

#### A. Introduction

**This chapter articulates the need for careful judgment to facilitate the management and protection of regionally important water resources which are sensitive to local environmental impacts and yet provide important benefits to the residents of the region. These water resources can benefit from the strategies described in the Clean Water Plan (CWP), which includes both legislative and administrative management recommendations.**

A series of regionally important water resource categories have been identified in this planning process as candidates for protection under the CWP. These categories represent resources for which sufficient information exists to allow for the development of management recommendations and/or strategies by this plan. These include surface drinking water supplies, groundwater drinking supplies, and unique regional waters.

A number of protective measures were identified as possible means of enhancing water quality protection in the region under the auspices of the CWP. Different measures address different threats to water resources. In order to clarify which measures apply under specific conditions, a threat by threat analysis was produced. The threats analysis for the Regionally Important Water Resources categories are discussed and presented in Tables 6-5 to 6-7.

State and federal governments have identified water resources that warrant special protection through special water quality designations. The special protection available to these waters includes programs such as set-asides of assimilative capacity under the Anti-Degradation Policy, and the Total Maximum Daily Load (TMDL) studies. Local officials will have the opportunity to add to this list of protected waters through a recommendation of the CWP.

#### B. Regionally Important Water Resources

The development of management and protection strategies for regionally important water resources is based on existing information. As noted above, these include surface drinking water supplies, ground water drinking supplies, and unique regional waters. The following discussion describes each of these categories.

## **B.1 Surface Drinking Water Supplies**

Many surface impoundments in the region are designated by the Ohio EPA as being “water supplies”. This definition applies to all bodies of water greater than five acres in size that are in public ownership. **Surface Drinking Water Supplies** also represent those waters which are currently being used for active drinking water withdrawals. Protection of these waters and the watersheds that drain into them is a top priority within the region.

Some surface impoundments, mainly on the perimeter of the urban boundary of the region, may be considered for water supply use sometime in the future. All such impoundments should be subject to all of the recommendations that apply to existing use impoundments as soon as any public or private entity initiates planning for developing the resource for water supply.

The Ohio EPA maintains a data base of publicly-owned lakes and impoundments that are sufficiently large as to have potential for use as public water supplies. All of these bodies of water are designated for protection under the State’s water quality standards. This designation helps to minimize pollutant impacts from point source discharges. However, the designation cannot directly minimize contributions from nonpoint sources of pollution.

In order to provide for added protection of drinking water reservoirs, all such impoundments currently in use in the region were identified and mapped. The identification of existing water supply reservoirs was made by reviewing the Northeast Ohio Water Plan prepared by the Ohio Department of Natural Resources in 1992. The Ohio EPA, Ohio Water Resources Inventory, 2000 did not identify any water supply reservoirs in Wayne County. Table 6-1 lists these reservoirs. Figure 6-1 locates them regionally. Additional lakes and reservoirs should be added to this list in the future whenever water planning efforts begin to consider the development of new water supplies in bodies of water not already on the list.

Many lakes and reservoirs in the region support recreational uses. Local officials should look to nominate any of these water bodies for inclusion on the protected list whenever there is evidence that existing controls may not be adequate to protect the continued use of the resource for recreational use or drinking water purposes.

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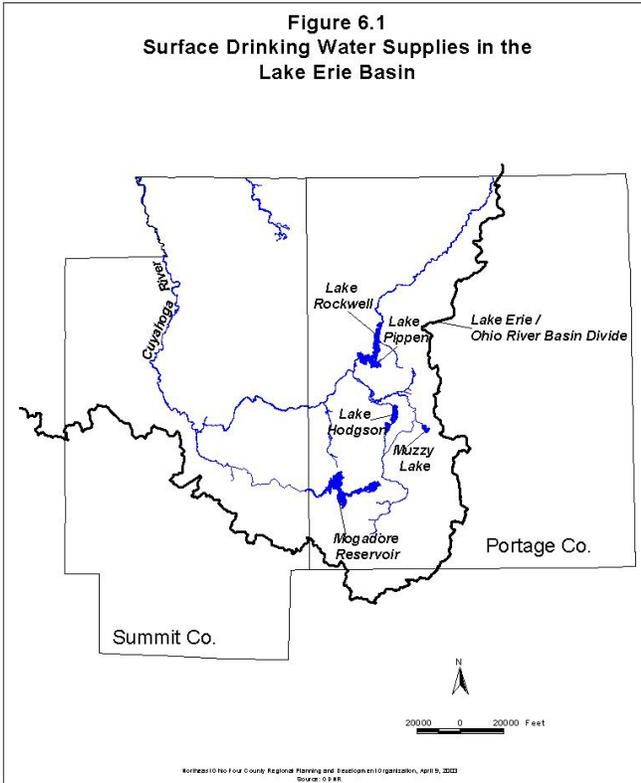
**Table 6-1: Active Inland Drinking Water Reservoirs important for the NEFCO Region**

<b>Reservoir(s)</b>	<b>Watershed</b>	<b>County</b>	<b>Community</b>
East Branch Reservoir*	Cuyahoga River	Geauga	City of Akron
LaDue Reservoir*	Cuyahoga River	Geauga	City of Akron
Lake Rockwell	Cuyahoga River	Portage	City of Akron
Berlin Reservoir**	Mahoning	Portage	City of Youngstown
Lake Hodgson	Cuyahoga River	Portage	City of Ravenna
Lake Phippen	Cuyahoga River	Portage	City of Akron
Michael J. Kirwin Reservoir	Mahoning	Portage	West Branch State Park
Mogadore Reservoir (potential backup supply)	Little Cuyahoga River	Portage	City of Akron
Muzzy Lake (potential backup supply)	Cuyahoga River	Portage	City of Ravenna
Walborn Reservoir	Mahoning	Stark	City of Alliance
Barberton Reservoir	Tuscarawas	Summit	City of Barberton

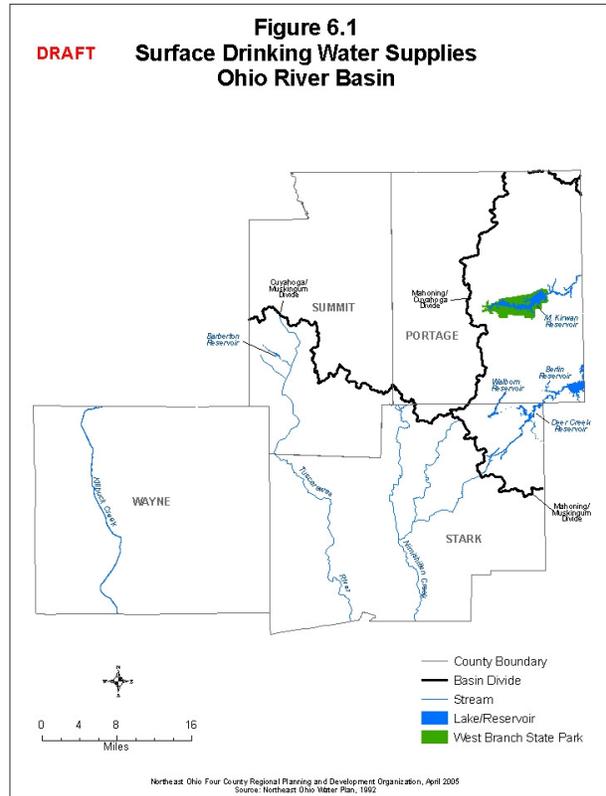
\*See Northeast Ohio Areawide Coordinating Agency, 2000, Clean Water 2000.

\*\*A pump station and pipe is maintained between the Mahoning Valley Sanitary District and Berlin Reservoir. It is currently not used to augment their water supply, though, but is maintained in preparedness.

**Figure 6.1**  
Surface Drinking Water Supplies in the  
Lake Erie Basin



**DRAFT** **Figure 6.1**  
Surface Drinking Water Supplies  
Ohio River Basin



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## **B.2 Groundwater Drinking Water Supplies**

The identification of groundwater areas in need of protection is less defined than surface waters. One can pinpoint the locations of groundwater withdrawals for municipal drinking water systems. Areas served by individual systems/wells are distributed over a broader area. It is important in groundwater protection to manage aquifer recharge areas. The definition of aquifer recharge areas requires extensive subsurface geological information which is often not readily available. Therefore, those areas which are dependent on groundwater for a sizeable portion of local water supply are identified here in general terms only.

Groundwater supply areas are less precisely defined than surface water supply areas. This reflects the extensive nature of groundwater aquifers. While it is true that groundwater flows pay little attention to political boundaries, groundwater resource areas are described here on a political jurisdiction basis. This is appropriate because groundwater management is usually centralized in city and county level agencies. These usually include local health districts, the sanitary engineer, and the planning commission. Also, the Ohio EPA and ODNR assist local governments in managing and protecting groundwater supplies, and most of their work is organized on a county basis. The Generalized Groundwater Drinking Water Supply areas identified for consideration for priority protection are listed in Table 6-2. Recommendations that provide groundwater protection apply to all communities that rely on public or private groundwater supplies. Those communities that can have a direct impact on the quality of the groundwater supply being used in a neighboring community should also implement groundwater protective measures even if they themselves do not rely on groundwater.

**Table 6-2: Generalized Groundwater Drinking Water Supply Areas in the NEFCO Region**

<b>Community or Geographic Area</b>	<b>Status of Development</b>
Eastern Portage	Rural/Urbanizing
Western Portage	Rural/Urbanizing
Northern Summit	Rural/Urbanizing
Southern Summit	Urbanizing
Northern Stark	Urbanizing
Southern Stark	Rural/Urbanizing
Northern Wayne	Rural
Southern Wayne	Rural

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### **B.3 Unique Regional Waters**

“Unique Regional Waters” is a general term (created by NEFCO) that refers to a series of stream segments that have unique or special characteristics. The segments selected for priority protection include all waterways designated by Ohio EPA as “State Resource Waters”. Additional segments have been identified in this planning process as meeting the criteria associated with State Resource Waters, but they have not yet been so designated.

“State Resource Waters” are surface waters that lie in National, State, or metropolitan park systems, wetlands, wildlife refuge areas, and preserves. They also include wild, scenic and recreational rivers, in addition to publicly-owned lakes and reservoirs.

Some of the segments that meet the State Resource Waters have also been nominated by the Ohio EPA as “Outstanding National Resource Waters” or as “Outstanding High Quality Waters” as part of the State’s Antidegradation Policy. These waters are surface waters that have a national or state ecological or recreational significance. Ecological significance may include providing habitat for populations of endangered or threatened species. Recreational significance can include designation in the national or state scenic river programs.

All river segments identified as “Unique Regional Waters” in this planning process are listed in Table 6-3 and shown in Figure 6-2. This table lists the unique or special characteristics for including each of the selected segments.

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**Table 6-3: Unique Regional Waters**

BASIN	COUNTY	STREAM NAME	TOTAL LENGTH (Miles)	TOTAL DRAINAGE (Sq. Miles)	LOCATION / LENGTH of SEGMENT River Mile (RM)	REASON
Cuyahoga	Geauga Portage	Cuyahoga River	100.1	813.3	Troy Burton Township Line (RM 83.9) to SR-14 (RM 61.5)	State Scenic River
Cuyahoga	Portage	Cuyahoga River	100.1	813.3	Lake Rockwell RM 62.98 to 58.00 / 4.98	Bald Eagle Nesting Site/ City of Akron Water Supply
Cuyahoga	Portage	Tinkers Creek	30.2	96.4	RM 29.3 - 28.9	J. Arthur Herrick Nature Preserve
Cuyahoga	Summit	Yellow Creek	10.3	30.80	RM 1.5 to mouth	CVNP
Cuyahoga	Summit	Slippery Run	2.3	1.42	North of Major Road	CVNP
Cuyahoga	Summit	Robinson Run	2.4	0.94	RM 2.5 to Mouth	CVNP
Cuyahoga	Summit	Furnace Run	10.4	20.35	Cuyahoga/Summit Co. Line (RM 8.8) to Mouth	CVNP
Cuyahoga	Summit	Salt Run	3.4	2.84	RM 3.1 to Mouth	CVNP
Cuyahoga	Summit	Haskell Run	3.0	2.15	RM 3.1 to Mouth	CVNP
Cuyahoga	Summit	Langes Run	2.7	1.41	RM 2.4 to Mouth	CVNP
Cuyahoga	Summit	Woodward Creek	3.8	3.07	Northampton Road (RM 3.4) to Bath Road	CVNP
Cuyahoga	Summit	Stanford Run	3.0	2.08	RM 2.8 to Mouth	CVNP
Cuyahoga	Summit	Dickerson Run	3.6	2.62	RM 3.1 to Mouth	CVNP
Cuyahoga	Summit	Cuyahoga River	100.1	813.3	Bath Rd.. (RM 37.2) to Rockside Rd.. (RM 13.1)	CVNP
Cuyahoga	Summit	Brandywine Creek	11.5	26.21	Old RR Tracks (RM 2.2) to Mouth	CVNP
Cuyahoga	Summit	Ritchie Run	2.0	0.61	RM 2.0 to Mouth	CVNP
Cuyahoga	Summit	Boston Run	2.6	2.74	Just North of SR-303	CVNP
Cuyahoga	Summit	Cuyahoga River	100.1	813.3	Edison dam (RM 44.6) to Cuyahoga Street RM 42.8/ 1.8	Summit County Gorge and Cascade Metro Parks
Ohio	Portage	Nelson Ditch	2.6	3.9	Nelson Township	State Nature Preserve
Ohio	Portage	Tinker Creek	7.8	16.2	Nelson Township	State Nature Preserve
Ohio	Portage	Camp Creek	4.6	6.52	Nelson Township	State Nature Preserve
Ohio	Portage	Silver Creek	7.2	11.4	Hiram Township (RM 0.80) SR 82	State Nature Preserve
Ohio	Portage	Eagle Creek	21.5	11.0	Village of Garrettsville (RM 45.08)	State Nature Preserve
Ohio	Portage	Black Creek	3.4	2.87	Freedom Township	State Nature Preserve
Ohio	Portage	Mahoning Creek	8.1	307	Windham Township (RM 47.4)	State Nature Preserve
Ohio	Portage	Eagle Creek South Fork	10.9	109.1	Windham Township	State Nature Preserve
Ohio	Portage	Sand Creek	7.9	13.9	Village of Windham	State Nature Preserve
Ohio	Portage	West Branch of Mahoning River	29.2	81 108.6	Charlestown Township	West Branch State Park
Ohio	Stark	Sippo Lake	6.5	15.07	Perry Township	Sippo Lake Wildlife Area

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<b>BASIN</b>	<b>COUNTY</b>	<b>STREAM NAME</b>	<b>TOTAL LENGTH (Miles)</b>	<b>TOTAL DRAINAGE (Sq. Miles)</b>	<b>LOCATION / LENGTH of SEGMENT River Mile (RM)</b>	<b>REASON</b>
Ohio	Summit	Tuscarawas River	53 est	79	City of Akron, Coventry Township, Franklin Township, City of Green	Portage Lakes State Park
Ohio	Summit	Tuscarawas River	Headwaters	9	City of Green	Singer Lake Nature Preserve
Ohio	Summit	Silver Creek	2.5	16 (est)	City of Norton	Silver Creek Metropark
Ohio	Wayne	Killbuck Creek	40.5	330	Franklin Township (RM 71.5)	Killbuck Wildlife Area
Ohio	Wayne	Shreve Creek	7.5	13.4	Clinton Township	Shreve Lake Wildlife Area
Ohio	Wayne	Muddy Fork	4.0	5.96	Plain Township	Funk Bottom Wildlife Area
Ohio	Wayne	Mohican River	Headwater	2.0 (est.)	Clinton Township	Browns Lake Bog

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### **C. The Analysis of Stressors on Regionally Important Water Resources**

A stressor is defined as a stimulus that causes stress. Stress is a constraining force or influence producing a response or reaction. In the context of water resources loss of riparian habitat (stressor) causes an increase in water temperature and a decrease in dissolved oxygen (stress) which results in a loss of flora and fauna diversity in the stream (response). A stressor, however, may not necessarily produce a negative response. For example, discharge from an off-lot discharging sanitary disposal system (stressor) could have the loading of nutrients (stress) assimilated by the stream's natural processing (response) ability. This could preclude any negative conditions, e.g. the loss of dissolved oxygen (stress), from occurring.

The listing of stressors for each of the priority categories contains an itemization of those stressors which have affected similar resources in the past or which are currently threatening resources in the region and expectations of what might go wrong in the future. It is important to realize that not all resources in a given category are subject to all of the stressors listed. The geographic location of a special resource is a primary determinate of the type or types of stressors that are applicable. Whether a resource is located in an agricultural or urban area is very important. Fully developed areas may no longer be threatened by development as too little of the watershed remains to be developed. Headwater streams are subject to different pressures than large rivers. Ohio EPA has recently initiated Primary Headwater Habitat and stream assessment protocols. In some locations, some aspects of resource protection may already be in place. For instance, the riparian corridors through major park areas tend to be protected over much of their course. Therefore, a community should undertake a more detailed analysis of land uses before settling on the optimum list of protective measures for a given resource.

The analysis of stressors on local waterways must also consider which stressors are present as differentiated from those that may develop in the future. For example, as noted in Chapter 2, many areas throughout the region are experiencing substantial urban development. Outlying areas contiguous to urban areas are expected to develop over time, while very little growth can be anticipated far into the future in other outlying areas.

Each locality must be evaluated with this factor in mind. One must also factor in the relative importance of various stressors. An example is that road salt runoff is a factor at a given location only if the paved areas in the upland areas of a watershed are enough to require the spreading of large quantities of salt. A determination at each location has to be made about how important such a factor is today as well as how it is going to be in the future.

**Table 6-4. Summarizes the stressors that have been identified as applicable to each of the resource categories.**

**Table 6-4: Stressors of Regionally Important Water Resources**

**Surface Drinking Water Supplies**

1. Increased rates of sedimentation, bacteria, phosphorus, nutrients, and carbonaceous biochemical oxygen demand (CBOD) in storm water runoff due to shifts in land cover and land use in the upper watershed e.g. mining and silvaculture.
2. Increased loadings of toxic materials including heavy metals and pesticides.
3. Bacterial, phosphorus, and nutrient loadings from Publicly-Owned Treatment Works (POTWs) and other Wastewater Treatment Plants (WWTPs).
4. Increased salinity due to road salt runoff.
5. Increased nutrient loadings emanating from failing on-site systems, and small package plants, lawn care, altered agricultural practices, and/or confined animal feeding operations (CAFOs).
6. Concentrated leaks, spills, or dumping of oil, septage, other hazardous materials (e.g. gasoline) by stationary or mobile equipment.
7. Loss of riparian vegetation in the watershed which would serve to reduce flowing pollutant loads.

**Groundwater Drinking Supplies**

1. Bacterial contamination due to faulty on-site system operation and maintenance.
2. Concentrated leaks, spills, or dumping of hazardous materials.
3. Over development of the resource either through over pumping or by over developing recharge areas.
4. Saline intrusion due to over pumping at depth.
5. Salinity problems resulting from road salt contamination.

**Unique Regional Waters**

1. Loss of riparian vegetation within a State Scenic or Wild River segment.
2. Stream channel instability problems related to the over development of the upper watershed and/or the loss of significant riparian vegetation in the watershed.
3. Habitat alteration due to increased storm water runoff from inadequately controlled development and from increased sediments loads related to poor construction practices.
4. Water warming due to the loss of riparian vegetation in upstream reaches or to increased surface runoff volumes.
5. Impairment or threat of impairment of recreational uses due to bacterial loadings.

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## II. Recommendations

This section outlines recommendations for actions by state and local management agencies for the protection of regionally important water resources identified in this chapter. These recommendations include measures geared specifically to the protection of resources and measures identified elsewhere in more detail (see Chapters 4 and 5). These latter measures are recommended for priority consideration and implementation by local jurisdictions to address the areas identified in this chapter.

The background section of this chapter addresses the resource problems and their causes. This section identifies potential solutions to ensure the long-term sustainability of these resources. As work progressed in this planning process, several themes emerged which established the framework and principles underlying the recommendations. Specifically:

- **Northeast Ohio depends on its water resources.** They are economically and ecologically important to the health and welfare of its citizens. These water resources provide drinking water from both surface and groundwater sources. They provide very important recreational benefits as well as contribute to a diverse ecosystem which provides important functional and economic benefits. However, changes in land use and population shifts have increased demands for these water resources and threaten many of these resources.
- **Nonpoint source pollution problems are both water quality and quantity based.** Nonpoint source pollution is a result of activities that take place on the land surface and the water dynamics that occur as a result e.g., how water runs off the land surface or is absorbed into the ground. Consequently, all land use activities have the potential to contribute to nonpoint source pollution problems. In particular, there is an emerging realization that unchecked storm water runoff, carrying debris, E-coli, CBOD, substances, oils and toxic materials from impervious surfaces, is in some cases a major stressor of critical water resources.
- **The solution to nonpoint source pollution and storm water runoff problems is watershed specific and often involves multiple governmental jurisdictions.** The nonpoint management programs that need to be utilized in any given watershed will vary depending upon the type of water resource present, the stressors on those resources, the existing land use, the future land use trends, the governmental structure having jurisdiction over land use decisions, the financial resources available, and the level of citizen involvement.

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- **Because Ohio is a home rule state, local governments have a particularly important role in protecting regionally important water resources.** However, both the technical/administrative capacity and regulatory base (ordinances in villages and cities and resolutions in townships and counties) for protecting resources, as well as financial resources to carry out local programs, may be limited.
- **Improved linkages between different levels of government and existing protective mechanisms (PTI/HSTS process) are needed.** Actions taken by one level of government should be coordinated to maximize local public investment and avoid long term irreversible negative impacts on water resources.
- Generally, because of the complexity of the problems and multiple jurisdictions involved, most likely no one protective mechanism will solve the problem. More likely a **wide range of mechanisms will be necessary** and, in many cases, may be preferred to give locally based and supported initiatives maximum flexibility in achieving their protection goals and needs.

The discussion below provides an overview of the stressors that apply to each category, and the protective measures that are recommended for application under the Clean Water Plan. Ground water protection is provided under the auspices of the Safe Drinking Water Act for public entities, and private water system rules for private entities. The measures recommended for managing individual on-site treatment systems and the septage that they generate have been discussed in Chapter 4. The need to carefully monitor road salt application in surface and groundwater supply areas was discussed in Chapter 5. The Riparian Corridor Protection Program outlined in Chapter 5 is the program that is needed to protect water resources in developing areas. Detailed recommendations below specify other measures for implementation to provide further protection to surface water drinking supplies and unique regional waters.

## **A. Stressors and Recommendations for Protection of Regionally Important Water Resources**

### **1. Surface Drinking Water Supplies**

**Stressor: a.** Increased rates of sedimentation and storm water runoff due to shifts in land cover/land use in the watershed.

- Recommendation**
- i) Conservation design for storm water management.
  - ii) Storm water management ordinances.
  - iii) Soil erosion on construction sites ordinances.
  - iv) Riparian zone restoration and improvement

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**Stressor: b.** Increased loadings of toxic materials including heavy metals and pesticides.

- Recommendation**
- i) Conservation design for storm water management.
  - ii) Antidegradation rule.
  - iii) Riparian zone ordinances or resolutions.
  - iv) Open space development.

**Stressor: c.** Bacteria, phosphorus and nutrient loadings from POTWs and other WWTPs

- Recommendation**
- i) Antidegradation rule
  - ii) Comprehensive study of effects of levels of fecal coliform, CBOD, suspended solids and nutrient loadings on surface water impoundment used for drinking water and aquatic habitat and low flow streams (e.g. TMDLs)
  - iii) Based on study findings and U.S. EPA studies, prescribe the appropriate effluent limits.

**Stressor: d.** Increased salinity due to road salt runoff.

- Recommendation**
- i) Road salt minimization and storage management programs.

**Stressor: e.** Increased fecal coliform, CBOD, suspended solids and nutrient loadings emanating from faulty on-site systems, small package plants, lawn care, altered agricultural practices, and/or confined animal feeding operations (CAFO).

- Recommendation**
- i) Storm water management ordinances.
  - ii) Antidegradation Rule.
  - iii) Riparian zone ordinances or resolutions.
  - iv) Open space development.
  - v) Regional BMP plan for home and small commercial sewage systems.
  - vi) Septage disposal plans.
  - vii) Link-deposit program.

**Stressor: f.** Concentrated leaks, spills or dumping of oil and/or other hazardous materials and gas leaks by stationary or mobile equipment.

- Recommendation**
- i) Conservative design of spill containment facilities
  - ii) Periodic (semi annual or annual) inspection of all oil and gas wells and hazardous material storage by the State of Ohio. Inspection frequency dependent upon location vs. water course, size of facility and potential for degradation of water quality.
  - iii) All pipe lines of oil, gas or hazardous materials be visually inspected monthly by owner and certified by owner to the State of Ohio that such inspection has been conducted.
  - iv) That all oil, gas or hazardous lines be hydrostatically tested every five (5) years and that such tests be certified.
  - v) Ohio Department of Transportation counties and cities install protective barriers and contaminant measures on all state highway crossing major and streams to prevent accidental spilled material from reaching the water.
  - vi) Development by the Ohio EPA/ODH - County Health Department of an enforceable multi-county manifest system for septage treatment by POTWs.

**Stressor: g.** Loss of riparian function in the watershed which would serve to reduce flowing pollutant loads.

- Recommendation**
- i) Conservation design for storm water management.
  - ii) Riparian zone ordinances or resolutions.
  - iii) Open space development.
  - iv) Purchase of lands or conservation easements to retain the land in a natural state.

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## 2. Groundwater Drinking Supplies

**Stressor: a.** Bacterial loadings and contamination due to faulty on-site system operation and maintenance.

- Recommendation**
- i) Enhanced regional management practices and programs for individual residential and commercial sewage treatment systems.
  - ii) Continuing education program.
  - iii) Support of innovative alternative technologies.

**Stressor: b.** Concentrated leaks, spills, or dumping of hazardous materials.

- Recommendation**
- i) Septage disposal planning.
  - ii) Enhanced regional management practices and programs for individual residential and commercial sewage disposal systems.
  - iii) Source water protection planning.
  - iv) Enhance regional management of industrial hazardous material and hazardous material transportation e.g. oil and gas production.

**Stressor: c.** Over development of the resource either through over pumping or by over developing recharge areas.

- Recommendation**
- i) Open space development.
  - ii) Enhanced regional management practices and programs for individual residential and commercial sewage disposal systems.

**Stressor: d.** Salinity resulting from road salt contamination.

- Recommendation**
- i) Road salt minimization and storage management programs.

## 3. Unique Regional Waters

**Stressor: a.** Loss of riparian vegetation within a State Scenic or Wild River segment.

- Recommendation**
- i) Riparian zone ordinance or resolution, e.g. agricultural, silviculture or mining

**Stressor: b.** Stream channel instability and water warming problems related to the over development of the upper watershed and/or the loss of significant riparian vegetation in the watershed.

- Recommendation**
- i) Conservation design for storm water management.
  - ii) Storm water management ordinance or resolution.
  - iii) Antidegradation Rule.
  - iv) Riparian zone ordinance or resolution.
  - v) PTI application process revisions to address hydrologic impacts of development.
  - vi) Environmental and financial assistance.

**Stressor: c.** Habitat alteration due to increased storm water runoff from inadequately controlled development and from increased sediment loads related to poor construction practices.

- Recommendation**
- i) Conservation design for storm water management.
  - ii) Storm water management ordinance or resolution.
  - iii) Soil erosion and sediment control at construction sites.
  - iv) Antidegradation Rule.

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- v) Riparian zone ordinance or resolution.
- vi) PTI application process revisions to address hydrologic impacts of development.

**Stressor: d.** Impairment or threat of impairment of recreational uses due to bacterial loadings.

- Recommendation**
- i) Enhanced regional management practices and programs for individual residential and commercial sewage disposal systems.
  - ii) Assimilative capacity reserve for exceptional waters.

## **B. Remediation of Stressors on Specific Regionally Important Water Resources**

### **Selection of Protective Measures to Remediate Stressors on Specific Regionally Important Water Resources**

A series of protective measures were identified in the planning process as potential means of protecting and restoring water quality protection in the region under the auspices of the Clean Water Plan Update. These are grouped into six categories:

#### **1. Permit to Install Measures**

- a) Antidegradation rule to include regional resource waters;
- b) PTI application process requirements to address hydrologic impacts of development;
- c) Local assimilative capacity set aside for exceptional waters;
- d) Support of innovative alternative technologies.

#### **2. Financial Incentives Measures**

- a) Revolving loan fund assistance
  - 1) Open space development enhancements;
  - 2) Link deposit program enhancements;
  - 3) Environmental and financial assistance (sewage disposal).
- b) WRRSP funding of projects in the funding sources watershed
- c) Locally developed independent revenue source for storm water management, operation and maintenance and capital expenditures.
- d) Funding source for local health departments to address items described above in Chapter 4.

#### **3. Waterway Protection Measures**

- a) Conservation design for storm water management;
- b) Riparian zone ordinances or resolutions;
- c) Road salt minimization and storage management programs;
- d) Purchase of lands or conservation easements to retain the land in a natural state.

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- e) Programs to prevent concentrated leaks and spills of hazardous materials at major road crossings over an important waterway.

**4. Construction Site Management Measures**

- a) Storm water management ordinances or resolutions;
- b) Soil erosion and sediment control ordinances or resolutions.

**5. Individual On-site Sewage Disposal System Management Measures**

- a) Regional BMP plan for home and small commercial sewage systems;
- b) Septage disposal plans;
- c) Better regional management practices and programs for individual residential and commercial sewage disposal systems;
- d) Continuing education programs.

**6. Source Water Protection Plans**

- a) Source water management and protection planning

The ability of a protective measure to effectively address resource stressors and to avoid degradation of a water resource is a function of several factors. This evaluation of specific water bodies includes a determination of stressors that are operative on that specific water resource. Resource stressors are classified as impacting if they presently exist. This can include stressors that are often associated with growing urbanization. Stressors are classified as threatening if they are likely to develop at some time in the near future.

Given the information about the stressors that are affecting a given water body, specific measures necessary for the protection of that resource can be identified. This identification has a similar hierarchy to the impacting/threatening nature of the stressors. In a given locale, a protective measure that has been identified as being applicable is considered to be a priority if its application is both needed and feasible, if it addresses a substantial portion of all the stressors operative at the locale, and if there is a reasonable base of information to guide the implementation of the measure.

Supplemental measures are those which can be expected to address a stressor that has a more limited potential to impact water quality at a given location. Land area affected by a specific stressor may be insignificant if the stressor is entrenched in the watershed. Table 6-5 identifies stressors and protective measures for surface drinking water supplies. Table 6-6 identifies stressors and protective measures for ground water drinking supplies. Table 6-7 identifies stressors and protective measures applicable to Regional Resource Waters.

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**Table 6-5**

**Stressors and Protective Measures for Threats to Surface Drinking Water Supplies**

Community	Reservoir(s) (Watershed)	Stressor		Protective Measures	
		Impacting	Threatening	Priority	Supplemental
Akron (rural)	East Branch Reservoir (Cuyahoga)	5	4,6,7	c,d,i,o	g,k,s,t,u,v,w
Akron (rural/urbanizing)	LaDue Reservoir (Cuyahoga)	1,2	3,4,5,6,7	b,e,i,o	c,d,g,k,s,t,u,v,w
Akron (rural/urbanizing)	Lake Rockwell (Cuyahoga)	1,3,4,5,6	2,3,7	b,d,e,i,o,s,t ,u,v,w	c,k,g
Ravenna	Lake Hodgson (Cuyahoga)	1,4,5		b,c,d,e,i	
Akron	Lake Phippen (Cuyahoga)	4			b,f
Akron	Mogadore Reservoir (Little Cuyahoga)	2	1	b,d,m	j,p,r
City of Barberton	Barberton Reservoir	5,1	1	b,c,e,I,q	k,p,r
City of Alliance	Walborn Reservoir	5,1	5	c,c,I,q	k,p,r
West Branch State Park	Michael J. Kirwin Reservoir	1,3,7	2,6	b,k,w	c,p
City of Youngstown	Berlin Reservoir	1,5	7	b,k	c,p

**Stressors**

1. Increased rates of sedimentation and storm water runoff due to shifts in land cover/land use in upper watershed.
2. Increased loadings of toxic materials including heavy metals and pesticides.
3. Increased bacteria, phosphorus, and nutrient loadings from POTWs, other WWTPs, and/or collection systems.
4. Increased salinity due to road salt runoff.
5. Increased nutrient loadings emanating from faulty on-site systems, small package plants, lawn care, and/or altered agricultural practices.
6. Concentrated leaks, spills in dumping of septage and/or hazardous materials by stationary or mobile equipment.
7. Loss of riparian function in the upper watershed would serve to reduce flowing pollutant loads.

**Protective Measures**

- a. Conservation design for storm water management.
- b. Storm water management ordinances or resolutions.
- c. Control of soil erosion on construction, mining, and agriculture sites ordinances or resolutions.
- d. Antidegradation rule.

- e. Riparian zone ordinances or resolutions.
- f. Open space development.
- g. Road salt minimization and storage management programs.
- h. Regional BMP plan for home and small commercial sewage systems.
- i. Septage disposal plans.
- j. Link deposit program.
- k. Better regional management practices and programs for individual residential and commercial sewage disposal systems.
- l. PTI application process revisions to address hydrologic impacts of development.
- m. Environmental and financial assistance.
- n. Assimilative capacity set aside for exceptional waters.
- o. Purchase of lands or conservation easements to retain the land in a natural state.
- p. Continuing education program.
- q. Source water protection planning.
- r. Support of innovative alternative technologies.
- s. Inspections of hazardous waste sites e.g. oil and gas storage.
- t. Inspection and hydrostatic testing of oil, gas, and hazardous material pipelines.
- u. Study and measures to reduce discharges of phosphorus, CBOD, and other nutrients from WWTPs that adversely impact drinking water supplies
- v. Enforceable manifest system for septage and other materials.
- w. Containment/spill prevention measures on all state, county, and city roads crossing major drinking water supply streams

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Community or Geographic Area	Stressor		Protective Measures	
	Impacting	Threatening	Priority	Supplemental
Western Portage County (rural/urbanizing)	1,3	2	k	i,m
Northern Summit County (urbanizing)	1	2	k	i,m
Eastern Portage County	1	2	k	i,m
Southern Summit County	1	2	i,k	m
Northern Stark County	1	2	i,k	m
Southern Stark County	1	2	i,k	m
Northern Wayne County	1	2	k	i,m
Southern Wayne County	1	2	k	i,m

### **Stressors**

1. Bacterial contamination due to faulty on-site system operation and maintenance
2. Concentrated leaks, spills, or dumping of hazardous materials.
3. Over development of the resource either through over pumping or by over developing recharge areas.
4. Salinity problems resulting from road salt contamination.

### **Protective Measures**

- a. Conservation design for storm water management.
- b. Storm water management ordinances or resolutions.
- c. Control of soil erosion on construction, mining, and agriculture sites ordinances or resolutions.
- d. Antidegradation rule.
- e. Riparian zone ordinances or resolutions.
- f. Open space development.
- g. Road salt minimization and storage management programs.
- h. Regional BMP plan for home and small commercial sewage systems.
- i. Septage disposal plans.
- j. Link deposit program.

- k. Better regional management practices and programs for individual residential and commercial sewage disposal systems.
- l. PTI application process revisions to address hydrologic impacts of development.
- m. Environmental and financial assistance.
- n. Assimilative capacity set aside for exceptional waters.
- o. Purchase of lands or conservation easements to retain the land in a natural state.
- p. Continuing education program.
- q. Source water protection planning.
- r. Support of innovative alternative technologies.
- s. Inspections of hazardous waste sites (e.g. oil and gas storage).
- t. Inspection and hydrostatic testing of oil, gas, and hazardous material pipelines.
- u. Study and measures to reduce discharges of phosphorus, CBOD, and other nutrients from WWTPs that adversely impact drinking water supplies
- v. Enforceable manifest system for septage and other materials.
- w. Containment/spill prevention measures on all state, county, and city roads crossing major drinking water supply streams

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**Table 6-7: Stressors and Protective Measures for Unique Regional Waters**

County	Basin	Name	Criteria	Stressor		Protective Measures	
				Impacting	Threatening	Priority	Supplemental
Summit	Cuyahoga	Boston Run (rural)	CVNP	1,4		d,e,k	
Summit	Cuyahoga	Brandywine Creek (urbanizing)	CVNP	1,2,3	4	a,b,c,e,o	d,f,l
Summit	Cuyahoga	Cuyahoga River	CVNP	2,3,4,5		b,c,e,m,p ,q	h,o,r
Summit	Cuyahoga	Dickerson Run (rural)	CVNP	1,4		d,e,k	
Summit	Cuyahoga	Yellow Creek (urbanizing)	CVNP	1,2,3	4	a,b,c,e,o	d,f,l
Summit	Cuyahoga	Furnace Run (urbanizing)	CVNP	1,2,3	4	a,b,c,e,o	d,f,l
Summit	Cuyahoga	Haskell Run (rural)	CVNP	1,4		d,e,k	
Portage	Cuyahoga	Lake Rockwell (urbanizing)	Bald Eagle Nesting Site/ City of Akron Water Supply	1,2,3	4	a,b,c,e,o	d,f,g,k,l,m,n,p,q
Summit	Cuyahoga	Langes Run (rural)	CVNP	1,4		d,e,k	
Summit	Cuyahoga/ Haskell Run	Ritchie Run (rural)	CVNP	1,4		d,e,k	
Summit	Cuyahoga	Robinson Run (rural)	CVNP	1,4		d,e,k	
Summit	Cuyahoga	Salt Run (rural)	CVNP	1,4		d,e,k	
Summit	Cuyahoga	Slipper Run (rural)	CVNP	1,4		d,e,k	
Summit	Cuyahoga	Stanford Run (rural)	CVNP	1,4		d,e,k	
Summit	Cuyahoga	Woodward Creek (rural)	CVNP	1,4		d,e,k	
Geauga Portage	Cuyahoga	Cuyahoga River (rural)	State Scenic River	1,4		d,e,k	

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**Table 6-7: Stressors and Protective Measures for Unique Regional Waters (cont.)**

County	Basin	Name	Criteria	Stressor		Protective Measures	
				Impacting	Threatening	Priority	Supplemental
Geauga	Cuyahoga	Cuyahoga West Branch (rural)	High Quality Wetlands/Candidate for State Scenic River	1,4		d,e,k	
Portage	Cuyahoga	Tinkers Creek (urban)	Tinkers Creek State Park/ High Quality Wetlands	2,3	4	d,e	k
Portage	Ohio	Nelson Ditch	State Park	2	4	c,e	f,h,k,m,o,p,r
Portage	Ohio	Tinker Creek	Nature Preserve	2	4	c,e	f,h,k,m,o,p,r
Portage	Ohio	Camp Creek	Nature Preserve	2	4	c,e	f,h,k,m,o,p,r
Portage	Ohio	Silver Creek	State Park	5	4	c,e	f,h,k,m,o,p,r
Portage	Ohio	Eagle Creek	Nature Preserve	2	4	c,e	f,h,k,m,o,p,r
Portage	Ohio	Black Creek	Nature Preserve	2	4	c,e	f,h,k,m,o,p,r
Portage	Ohio	Mahoning Creek	State Park	2	4	c,e	f,h,k,m,o,p,r
Portage	Ohio	Eagle Creek South Fork	State Park Nature Preserve	5	4	c,e	f,h,k,m,o,p,r
Portage	Ohio	Sand Creek	Nature Area	2	4	c,e	f,h,k,m,o,p,r
Portage	Ohio	West Branch Mahoning River	State Park	3	5	c,k	n,o,p,s,u,w
Stark	Ohio	Sippo Lake Park	County Park	2,3,4	5	a,b,c	g,p
Summit	Ohio	Portage Lakes State Park	State Park	1,2,3,5	4	b,c,h	i,p
Summit	Ohio	Singer Lake	Nature Preserve	2,3,4	1,5	b,c,h	i,p
Summit	Ohio	Silver Creek Park	County Park	2,3,4	5	a,b,c	i,p
Wayne	Ohio	Killbuck Creek	Wildlife Area	2	4	c,e	f,h,k,m,o,p,r,t
Wayne	Ohio	Shreve Lake	State Park	2,3,4	5	b,ch	i,p
Wayne	Ohio	Muddy Fork	Wildlife Area	4	2	c,k	n,o,p,t
Wayne	Ohio	Mohican River	Nature Preserve	4	2	c,k	n,o,p,t
Wayne	Ohio	Shreve Creek	Wildlife Area	4	2	c,k	n,o,p,t

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## **Stressors**

1. Loss of riparian vegetation within a State Scenic or Wild River segment.
2. Stream channel instability problems related to the over development of the upper watershed and/or the loss of significant riparian vegetation in the watershed.
3. Habitat alteration due to increased storm water runoff from inadequately controlled development and/or from increased sediments loads related to poor construction practices.
4. Water warming due to loss of riparian vegetation in upstream reaches or to increased surface runoff volumes.
5. Impairment or threat of impairment of recreational uses due to bacterial loadings.

## **Protective Measures**

- a. Conservation design for storm water management.
- b. Storm water management ordinances or resolutions.
- c. Control of soil erosion on construction, mining, and agriculture sites ordinances or resolutions.
- d. Antidegradation rule.
- e. Riparian zone ordinances or resolutions.
- f. Open space development.
- g. Road salt minimization and storage management programs.
- h. Regional BMP plan for home and small commercial sewage systems.
- i. Septage disposal plans.
- j. Link deposit program.
- k. Better regional management practices and programs for individual residential and commercial sewage disposal systems.
- l. PTI application process revisions to address hydrologic impacts of development.
- m. Environmental and financial assistance.
- n. Assimilative capacity set aside for exceptional waters.
- o. Purchase of lands or conservation easements to retain the land in a natural state.
- p. Continuing education program.
- q. Source water protection planning.
- r. Support of innovative alternative technologies.
- s. Inspections of hazardous waste sites (e.g. oil and gas storage).
- t. Inspection and hydrostatic testing of oil, gas, and hazardous material pipelines.
- u. Study and measures to reduce discharges of phosphorus, CBOD, and other nutrients from WWTPs that adversely impact drinking water supplies
- v. Enforceable manifest system for septage and other materials.
- w. Containment/spill prevention measures on all state, county, and city roads crossing major drinking water supply streams

## C. Detailed Recommendations

### 1. Permit to Install Measure Recommendations

**Recommendation 6-1: The Ohio EPA is requested to adopt changes to its Permit to Install (PTI) application procedure for new or increased discharges to areas identified as regionally important water resources in the CWP area as follows:**

- a) a PTI applicant would be required to assess potential land use disturbances and off-site hydrologic and hydraulic impacts associated with the potential discharge;**
- b) a PTI applicant would be required to develop measures to mitigate off-site hydrologic and hydraulic impacts to regionally important water resources, and agree to rigorously implement those measures.**

This measure, if adopted, would revise Ohio EPA's PTI application procedure to identify applicant requirements to address water quantity and water quality effects of the proposal on regionally important water resources and watersheds. It seeks to improve linkages between the local regulation base for storm water management and to enhance the consideration of nonstructural and structural practices to reduce and manage runoff from development sites. The current PTI application process does not require applicants to address proposed measures for limiting storm water quality and quantity impacts which may impact critical resources directly or indirectly.

This measure seeks to alleviate the hydrologic impacts associated with the dense urban development that is possible with central sanitary sewer service. It recognizes that storm water runoff increases with development, unless closely controlled. As storm water runoff increases, due to increased surface imperviousness and vegetation removal, streams are hydrologically and hydraulically modified. This threatens their biological, aesthetic and recreational values, which are sought to be protected by the PTI process. By linking the PTI application process with local storm water management requirements in areas where new development or redevelopment is occurring, it is expected that protection of critical resources will be enhanced due to the more rigorous implementation of storm water best management practices. This measure does not apply to PTI applications that seek to correct existing problems related to existing development.

This measure requires a rule making change at the state level. Under the proposal, Ohio EPA would require any PTI applicant to identify measures and procedures for reducing off-site impacts to regionally important water resources. Among the measures to be considered

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by the applicant are the nonpoint source programs recommended in Chapter 5. (See Recommendations 5-1 to 5-6).

**Recommendation 6-2: The CWP encourages local officials to augment state-initiated set asides for the Unique Regional Resource Waters within their jurisdictions by petition to the Ohio EPA and implemented through the Ohio EPA's TMDL process. Local officials are encouraged to request an additional set aside of up to 20% of the assimilative capacity as an expression of their commitment to maintain high quality water resources where those resources have local importance. This recommendation involves the following designation steps:**

- Step 1: An affected local jurisdiction or group of affected jurisdictions proposes an assimilative capacity set aside of one or more designated Unique Regional Resource Waters within its (their) jurisdiction(s);**
- Step 2: The proposed set aside would be evaluated through the NEFCO 208 review and circulated to all affected local jurisdictions for comment.**
- Step 3: Based upon the evaluation and recommendation by the NEFCO review process, the NEFCO Board would propose an amendment to the CWP seeking the designation of each accepted set aside.**
- Step 4: The Ohio EPA would consider this amendment for certification and implementation under the TMDL process.**

Section 303(d) of the Clean Water Act and Chapter 40 of the Code of Federal Regulations, Part 130 require states to develop total maximum daily loads (TMDLs) for waters not meeting designated uses under technology-based controls for pollution. The TMDL process quantitatively assesses the impairment factors so that states can establish water-quality based controls to reduce pollution from both point and nonpoint sources, and to restore and protect the quality of their water resources.

The Ohio EPA currently has the ability to establish assimilative capacity set-asides pursuant to the Ohio Administrative Code (OAC) Chapter 3745-1-05. At the present time, set-asides are developed on a case-by-case basis for proposals of new pollutant loadings to high quality waters protected by the State's Antidegradation Policy. The Director of the Ohio EPA may propose changes to the OAC to incorporate the new pollutant set-asides. The objective of Recommendation 6-2 is to reserve a portion of the assimilative capacity for all pollutants regulated by Water Quality Standards (OAC 3745-1) in streams designated as Regional Resource Waters in the CWP under the TMDL process. This reserve capacity would not be allocated to any pollution source.

Implementation of the set asides would limit or prevent threats caused by the impacts from new development proposed in areas designated for special protection through constraints on

future Permits-to-Install (PTI) decisions. The use of this measure preserves the aesthetic, aquatic, and recreational benefits associated with specific stream segments. These benefits directly help to sustain the property values of properties contiguous to these river segments.

## 2. Financial Incentives Recommendations

**Recommendation 6-3: The Ohio EPA’s Division of Environmental & Financial Assistance (DEFA) is requested to amend its policies regarding the Water Pollution Control Loan Fund (WPCLF) to make enhancements to its financial incentives program to give priority to the protection of critical water resources identified in the CWP.**

**Recommendation 6-3a: The Ohio EPA’s Division of Environmental & Financial Assistance (DEFA) is requested to amend its policies regarding the Water Pollution Control Loan Fund (WPCLF) so as to reduce the interest rate charged to certain applicants who agree to expand and enhance their septage handling capability. The interest rate sought is to a level which would allow an applicant to save interest costs in an amount equal to the capital cost of the septage receiving facilities included in new WPCLF construction loans. This request applies to facilities accepting septage from areas tributary to regionally important water resources identified in Tables 6-6 to 6-8 as threatened by the lack of adequate septage handling capacity.**

The Water Pollution Control Loan Fund, administered by the Ohio EPA-DEFA, can provide special interest rate incentives to cities/counties which agree to incorporate the installation of septage receiving/treatment facilities into pending treatment plant or collection improvement loans. This interest rate discount will provide an incentive to communities contemplating POTW improvements to add or expand such septage handling facilities to their proposed projects. Since the discount would be added to projects already planned to be constructed, the interest rate discount provides a “semi-grant” by absorbing the capital cost of the septage facilities. These facilities can, in turn be used by communities to generate revenue to either offset the additional treatment cost resulting from accepting septage at their POTWs or, in some cases, may even result in a net reduced operating cost. The establishment of septage disposal plans are essential to the successful implementation of the management recommendations presented in Chapter 4 to ensure proper operation and maintenance of individual sewage disposal systems (those used for residential dwellings and small business operation in unsewered areas). There is concern that with the enforcement of federal Part 503 Sewage Sludge and Septage Regulations, many of the current land application haulers may cease operations. It is essential to establish a network of publicly-owned treatment plants with septage receiving capabilities to cover septage generated in each county.

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**Recommendation 6-3b: The Ohio EPA-Division of Environmental and Financial Assistance (DEFA), through its Water Pollution Control Loan Fund (WPCLF) Link Deposit Program, is requested to provide low-interest financial assistance to individuals and private organizations for implementation of individual sewage treatment system improvements mandated by local health departments to reduce nonpoint source pollution in areas tributary to regionally important water resources waterways. The objective of this mechanism is to encourage the use of WPCLF monies for low interest loans to homeowners for system repairs and replacements.**

This protective mechanism allows local health departments and the Ohio EPA to facilitate the replacement of failing systems by providing below market interest loans for residential and small business sewage system owners. The Ohio EPA-DEFA purchases certificates of deposit and accepts a reduced interest from participating local banking institutions. These funds are then provided by the participating banks as reduced interest loans to the owners making sewage system improvements at three percentage points below the rate the individual would normally receive. The lending institution uses its own loan criteria in deciding whether or not to offer an applicant a loan and will set the term of the loan. Homeowners and businesses may use these loans to make necessary improvements under orders from the District Board of Health or the Ohio EPA, or to make voluntary improvements. To participate in the program a county health board must first develop a management plan, then identify interested local banking institutions. The Ohio EPA enters into formal agreements with each participating bank. The relationship between the Ohio EPA and the city or county health board is outlined in a memorandum of understanding which is signed by both parties.

Once a lending institution agrees to participate and meet the Ohio EPA requirements regarding the use of the funds, the local health department can begin issuing “Certificates of Qualification” to individuals for the Link Deposit Loan Program. The individual then takes the Certificate of Qualification to a participating lending institution. Upon receipt of a certificate, the lending institution can accept a low interest loan application. The application is reviewed by the bank and, if approved, the bank applies to the Ohio EPA for deposit funds. Once the WPCLF deposit funds are received, the bank disburses the loan monies to the homeowners as construction proceeds. The homeowner then repays the loan to the bank.

At the present time, all loan risks are assumed by the lending institution. The loan program would benefit if extra incentives could be made available to low and moderate income households. However, there are no such provisions in the program at this time.

Under this program, loans are available for the repair or replacement of a failing on-site system. Loans cannot be made to cover the cost of installing on-site systems associated

with new construction. In some limited cases, loans can also be made to facilitate the abandonment of an on-site system and the connection to a sanitary sewer. Current federal policy prohibits the use of federal funds for this purpose. However, state funds can be so used.

**Recommendation 6-3c: The Ohio EPA-Division of Environmental and Financial Assistance (DEFA), through its Water Pollution Control Loan Fund (WPCLF) Link Deposit Program, is requested to provide low-interest financial assistance to be utilized as an economic incentive for residential subdivisions and other development projects that utilize open space design techniques in areas that are tributary to regionally important water resources identified in the CWP.**

The Ohio EPA's Water Pollution Control Loan Fund assistance can provide an economic incentive to lay out and construct subdivisions and other development projects in a manner reflecting open space design techniques, avoiding adverse environmental impacts on a variety of resources, and promoting protection of environmentally-sensitive areas and resources. The basic criteria include proximity to the water resource, land use compatibility, timing of the nomination of the project for WPCLF financing, and environmental protection elements of the development proposal. The purpose of providing WPCLF assistance in this context is twofold: a) to protect a water resource that is fully attaining a warmwater, exceptional warmwater or cold water habitat designation or a high quality wetland, or b) to restore a water resource to full attainment with one of the aforementioned designated habitat uses, or a wetland area to a high quality wetland. The management plan is very specific that financed improvements must serve to accomplish either one of these purposes. Recommendation 6-3c seeks Ohio EPA prioritization of this form of assistance to projects addressing critical resources identified in this CWP.

In this context, WPCLF assistance to developers will encourage them to design and build projects that will provide appropriate scale housing (or other structure) densities while protecting environmentally sensitive areas, minimizing impervious surface area, and reducing soil loss from construction sites. By meeting the WPCLF criteria, developers may be eligible to borrow WPCLF funds at a below market rate for up to 20 years. In addition, the costs and time to develop projects will be lessened by specific actions such as eliminating stream crossings and reducing the area covered by impervious surface material. House lots adjacent to open spaces traditionally sell faster and at premium prices.

The open space concept encourages a reduction in 50-70 percent of a subdivision to remain as conservation areas, therefore; the watershed will have fewer impervious surfaces, reduced lawn chemicals and more natural wildlife habitat than that provided under typical zoning and land use proposed for the project site. Minimal construction activity in the project area will also result in less soil erosion and sedimentation into local streams.

Most rural zoning requirements have minimum lot sizes established for home sewage systems. Open space housing lots are normally smaller than the required minimum. Negotiations and innovative approaches may be key to resolving these types of issues in accordance with the minimum criteria established for the WPCLF program. Guidelines for the construction of these are discussed in Chapter 5 (see Recommendation 5-4).

In some circumstances, county and municipal building and zoning codes must be amended before developers will be able to take advantage of this program. All communities are encouraged to make such amendments if necessary.

### **3. Waterway Protection Measures Recommendations**

Chapter 4 presented a program for improved management of home sewage treatment systems and semi-public systems by local health departments. Chapter 5 recommended a variety of nonpoint source and storm water management programs for implementation by local jurisdictions. The CWP encourages local jurisdictions to pursue these actions on a priority basis in the critical resource areas identified in this chapter.

**Recommendation 6-4: Local jurisdictions are encouraged to pursue on a priority basis the implementation of nonpoint source recommendations outlined in Chapter 5 and the management of home sewage disposal systems in Chapter 4 in areas tributary to regionally important water resources.**

### **4. Construction Site Management Measures Recommendations**

Chapter 5 identified the need for construction site erosion and sediment control programs for implementation by local jurisdictions. The CWP encourages local jurisdictions to pursue these actions on a priority basis in the critical resources areas identified in this chapter.

**Recommendation 6-5: The Ohio EPA is requested to focus their enforcement activities of the National Pollutant Discharge Elimination System permits for construction site activities in developing communities which are tributary to Unique Regional Waters and Surface Drinking Water Supplies identified in the CWP that are not adequately protected by local construction site management programs.**

### **5. Individual On-site Sewage Treatment System Management Measures**

The reader is referred to Chapter 4 of the CWP for details and recommendations. Chapter 4 discusses problems associated with the management of home sewage and semi-public

sewage treatment systems in Northeast Ohio and outlines the roles of local and state management agencies in this management system. It presents a series of management system recommendations for implementation by local health districts and other management agencies that would improve the performance of these systems and reduce their impact on water quality in the region. These recommendations are the work of a committee of the seven county health districts, Ohio EPA, and NOACA and NEFCO. This chapter concludes with a discussion of strategies for implementing these recommendations.

## **6. Source Water Protection Plans Recommendation**

The specifics of measures to address impairments (existing and potential) to source waters are evaluated in a watershed management plan for surface water supplies and a wellhead protection plan for groundwater supplies. These plans detail the existing conditions, a diagnosis of problems, estimates of costs, and expected benefits. NEFCO advocates the use of watershed management plans, surface water, and source water protection plans to efficiently apply local monies and energy to protect and restore regionally important water resources.

**Recommendation 6-6: Local communities and agencies are encouraged to initiate and complete source water management plans.**

## **III. Policies for Encouraging Local Actions for the Protection of Regionally Important Water Resources**

This section sets forth areawide policies for supporting the program of regionally important water resources protections spelled out in this chapter.

**Policy 6-1:** NEFCO resolves that the surface drinking water reservoirs listed in Table 6-1 as regionally important water resources that warrant priority protective action by local jurisdictions whose land area is tributary.

**Policy 6-2:** NEFCO resolves that the groundwater drinking supplies in areas listed in Table 6-2 as regionally important water resources that warrant priority protective action by the Ohio EPA. Local jurisdictions are encouraged to work with the Ohio EPA and local health departments to implement programs developed to protect the groundwater supplies.

**Policy 6-3:** NEFCO resolves that the stream segments listed in Table 6-3 as Unique Regional Waters possess unique or special characteristics that warrant priority protective action by the Ohio EPA.

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Approved by the NEFCO General Policy Board (GPB)

12/21/11\*

\*The Ohio River Basin (GPB-approved on July 20, 2005) and Lake Erie Basin (GPB-approved on June 19, 2003) portions of the previous version of the Clean Water Plan were combined into a single document; information contained in these chapters will be reviewed and updated in a future version of the Clean Water Plan.

**Policy 6-4:** NEFCO encourages local and county jurisdictions to pursue implementation of the home sewage and semi-public sewage disposal management recommendations outlined in Chapter 4 and the nonpoint source management recommendations outlined in Chapter 5 on a priority basis in areas tributary to the regionally important water resources identified in this plan.

**Policy 6-5:** A local or county jurisdiction that agrees to implement one or more of the regionally important water resources protection recommendations outlined in this CWP are recognized as a designated management agency for that purpose in this plan.

**Policy 6-6:** Local and county jurisdictions are encouraged to pursue implementation of the regionally important water resources protection recommendations outlined in this CWP by cooperating on an interjurisdictional watershed basis.

**Policy 6-7:** NEFCO encourages state and federal funding agencies to provide, on a priority basis, nonpoint source and watershed grants to support implementation of regionally important water resources protection recommendations by designated management agencies recognized in this plan.

**Policy 6-8:** NEFCO will support local government planning and implementation of the protective measures for regionally important water resources with technical and planning support through the continuing planning process.

#### **IV. Strategy for Implementing Protection of Regionally Important Water Resources**

Implementation of the programs recommended in this chapter will require an active sustained effort of promoting and supporting local planning and implementation initiatives.

This is an effort that will require the sustained interest and cooperation of a number of agencies with nonpoint source technical resources, including the areawide planning agencies, county level support agencies such as the county soil and water conservation districts, county sanitary engineers, county engineers, county planning agencies, local health districts, designated sewer districts and municipalities, and others, state agencies including the Ohio EPA, ODNR, ODH, ODOT, the Ohio Lake Erie Commission and the OWDA among others, and area watershed planning organizations.

The presentation of the draft plan to local jurisdictions for review and comment provides an initial opportunity for promoting these recommendations, but the continuing planning process must take into account the need for on-going work.

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