



**STATE OF CONNECTICUT  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**



**BUREAU OF WATER PROTECTION AND LAND REUSE  
REMEDIATION DIVISION**

**Scovill Industrial Landfill Federal National Priorities List Superfund Site  
Waterbury, Connecticut  
Ground Water Use and Value Determination**

This document presents the State's determination of the use and value of groundwater in the area of the Scovill Industrial Landfill Superfund Site (the "site"). This document was prepared in accordance with EPA New England's *Final Draft Ground Water Use and Value Determination Guidance*, (the "Guidance") dated April 3, 1996.<sup>1</sup> The data supporting this determination were compiled from the various sources listed in the references. No original data were collected by the Department in support of this effort.

The Guidance specifies the consideration of a Review Area around a site in making the Use and Value determination. The Guidance specifies an initial two mile radius as a flexible guideline which can be expanded or contracted based on the hydrogeologic setting.<sup>1</sup> The boundaries of the Review Area for the Scovill site were contracted based on the hydrogeologic setting to encompass an area defined to the east, west and south by the Mad River subregional drainage basin and to the north by Wolcott town line (about 1 1/2 miles from the site)<sup>2</sup>. The Review Area is located entirely within the city of Waterbury, Connecticut. For the purpose of this determination, the site is represented by the property formerly owned by the Scovill Manufacturing Company ("Scovill"). The boundaries of the site, the Review Area and the relevant drainage basins are depicted in Figure 1.

The site is located in a mixed residential and commercial area within a densely developed section of Waterbury. The majority of the site is relatively flat and relatively densely developed. The site was originally bisected by the valley of Carrington Brook, however the valley was filled in the early to mid 20<sup>th</sup> century with waste from Scovill and buildings including residential apartment buildings and condominium complexes were constructed on the filled area. Carrington Brook now runs through the site in a culvert, and the eastern and northwestern edges of the site represent the relict escarpments from the former brook valley. Some of the surrounding residential properties are as much as 15 feet higher than the site. The topography of the Review Area outside the site boundaries varies, but the entire Review Area is also largely densely developed. Recent site conditions are shown on Figure 2.

Groundwater beneath the site generally flows from the topographic highlands to the east and west of the site and converges to the south, in the same general direction as regional flow to the Mad River.<sup>3</sup> There are no known uses of groundwater for drinking at the site or on abutting properties<sup>4</sup>, and public water is available to all developed properties within the Review Area.<sup>5</sup>

Connecticut's Water Quality Standards outline policies, goals, classifications and criteria that form the basis for a comprehensive program for managing statewide groundwater and surface water quality in accordance with the federal Clean Water Act. The Water Quality Standards are an important element of Connecticut's EPA-endorsed "Core Comprehensive State Ground Water Protection Program". The ground water classifications assigned under these standards have been derived through careful consideration of many of the same factors addressed in the Guidance. Designated uses are identified for each ground water classification. The ground water classifications therefore represent, in effect, the State's determination regarding the use and value of the ground water.

Ground water quality classifications in the Review Area are depicted in Figure 3. The ground water classification for the majority of the Review Area within the City of Waterbury is GB.<sup>6</sup> This classification is applied to ground water within a historically highly urbanized area or an area of intense industrial activity and where public water supply service is available. The ground water may not be suitable for human consumption without treatment due to waste discharges, spills, or leaks of chemicals, or land use impacts. The Department's policy is to: A) eliminate or reduce in the ground water any pollutant which presents a hazard of fire, explosion, or toxic or hazardous emission to the environment or otherwise poses a threat to public safety or an unacceptable risk to public health, and B) maintain the groundwater at a quality that will not adversely affect the quality of surface waters to which the ground water discharges or prevent the maintenance or attainment of any designated or existing uses in such surface waters, and C) maintain a quality consistent with all designated and existing uses of the ground water, including its use for drinking without treatment if such ground water has, prior to the adoption of the Water Quality Standards, been utilized for, and continues to be utilized for, drinking water, and D) regulate discharges to the ground water in order to prevent further degradation of ground water quality.<sup>7</sup>

The ground water classification for the portion of the Review Area east of the Mad River and much of the area south of I-84 is GA.<sup>6</sup> This classification is applied to ground water within the area of existing private water supply wells or an area with the potential to provide water to public or private water supply wells. Even though public water may be available, private water supply wells may still exist. The Department assumes that the ground water is suitable for drinking and other domestic uses without treatment. The State's goal is to maintain or restore the water to its natural quality. Where the Commissioner of Environmental Protection determines that, with respect to a particular pollutant, restoring or maintaining natural quality is not technically practicable, the Department's policy is to: A) maintain or restore quality such that the ground water is suitable for drinking or other domestic uses without treatment, and B) maintain or restore quality such that the ground water will not adversely affect surface water quality or prevent the maintenance or attainment of any designated uses of surface waters to which that ground water discharges, and C) eliminate sources of pollution to such ground water to the extent that the Commissioner determines to be technically practicable, and to regulate such discharges to ground water so as to prevent pollution.<sup>7</sup>

## **Overall Rating: Low/Medium**

Overall Groundwater Use and Value Ratings are depicted in Figure 4. The State has assigned different overall Use and Value ratings to ground water within different portions of the Review Area. These different overall ratings reflect the different patterns of water and land use, and water availability within the Review Area.

The State has assigned a Low overall Use and Value to the ground water within the portion of the Review Area with a ground water classification of GB, and where public water is available to all residences and businesses. This includes the Scovill Landfill site itself, as well as all of the area west of the Mad River and north of I-84. The State has assigned a Medium overall Use and Value to the portion of the Review Area with a ground water classification of GA, where public water is available to all residences and businesses. This includes the areas east of the Mad River and south of I-84. These ratings were determined through balancing the eight factors described in the Guidance as indicated below. The division of the Review Area into zones with Medium and Low overall Use and Value recognizes that the State takes different approaches to managing the ground water within each of these zones.

The State's Remediation Standard Regulations (RSRs)<sup>8</sup> were adopted in January 1996. These provide specific numeric criteria for remediation of a wide range of pollutants in soils and ground water. It is important to note that the requirements of these regulations will apply to any remedy which is selected at this site. These regulations establish numeric criteria for various contaminants based on the ground water classification. It may be necessary to determine background concentrations of contaminants in ground water pursuant to the RSRs. Because the groundwater classifications were generally developed on a basin-wide scale, it is important to note that private water supply wells may exist even within areas classified as GB. If such wells exist, the remediation criteria for GA areas would apply despite the GB classification, and the State's Use and Value classification would similarly be raised.

### **1. Quantity: Medium/Low**

The State has assigned a Medium rating for this factor to the aquifer within the stratified drift deposits associated with the Mad River (including the Site), and a Low rating for this factor to the aquifer within the remaining portion of the Review Area. The boundaries of these areas are shown on Figure 5.<sup>9</sup>

Much of the central part of the review area is underlain by stratified drift and alluvium. The average saturated thickness of the stratified drift is approximately 10 to 50 feet, with a saturated thickness at the site itself of 10 feet or less.<sup>10</sup> Test borings at the site indicated a saturated overburden thickness of about 25 feet, although it is not clear whether all of this material is stratified drift.<sup>3</sup> The transmissivity of the stratified drift aquifer near the site was mapped as 2,700 ft<sup>2</sup>/day or less; the

transmissivity of other areas of stratified drift closer to the river were mapped as between 2,700 and 10,500 ft<sup>2</sup>/day.<sup>10</sup> Slug tests of several overburden monitoring wells on the site indicated mean hydraulic conductivities of 0.45 ft/day to 24.78 ft/day however some of the higher values were from poorly consolidated fill material.<sup>3</sup>

The overburden aquifer in portions of the review area farther from the Mad River consists of glacial till, which generally has low hydraulic conductivity in the range of 0.013 to 29 ft/day.<sup>10</sup>

Little site-specific information is available regarding the hydrogeologic characteristics of the bedrock aquifer within the Review Area. The bedrock beneath the site is mapped as the Waterbury Formation gneiss and schist. No bedrock wells have been installed at the site, however a study by the US Geological Survey of 294 domestic wells tapping the crystalline bedrock aquifer in the lower Housatonic River Valley found a median yield of 5 to 6 gpm. About 75% of these wells yielded at least 3 gpm, while less than 10% yielded 20 gpm or more.<sup>10</sup>

## **2. Quality: Medium/ Low**

The State has assigned a Medium rating for this factor to the area with a classification of GA where public water is available to all residences and businesses. The State has assigned a Low rating for this factor to areas with a ground water classification of GB where public water is available to all residences and businesses. The groundwater classifications and areas of public water service are depicted on Figure 3.

Much of the review area is urban and densely developed. The site itself is located in a mixed residential/ commercial area. Several current commercial properties near the site can be characterized under the Guidance as High Risk, such as a gasoline station, an automotive repair shop, and a dry cleaner.<sup>1</sup> A variety of industrial discharges are depicted within the review area on the State's map of leachate and wastewater discharges however all of these known discharges are at least 1000 feet from the site.<sup>11</sup>

Groundwater at the site has been shown to contain trace to low concentrations of a number of contaminants, some of which (such as vinyl chloride, chloroform and several metals and pesticides) exceed criteria in the RSRs.<sup>8</sup> Additional groundwater investigation and monitoring are ongoing as part of the completion of the Remedial Investigation.

## **3. Current Public Water Supply Systems: Low**

No public water supply system sources, community wells, well head protection areas or surface water supply drainage areas are present within the Review Area.<sup>12</sup> Public water is available to all residences and businesses within the entire Review Area.<sup>5</sup> The public water is drawn from surface water sources outside the Review Area.<sup>13</sup>

#### **4. Current Private Drinking Water Supply Wells: Low**

The State has assigned a Low rating for this factor to the entire Review Area, since public water is available to all residences. Figure 3 depicts public water service areas within the Review Area; the areas shown as not served are areas unlikely to be developed in the near future, such as parks, cemeteries and ridges. No private drinking water wells currently exist at the site or on abutting properties.<sup>4</sup>

#### **5. Likelihood and Identification of Future Drinking Water Use: Low**

The State has assigned a Low rating for this factor to the entire Review Area, since public water is available to all properties. It is extremely unlikely any private drinking water wells will be installed within the Review Area in the future because the Connecticut Public Health Code prohibits a well permit from being issued for any property which is located within 200 feet of a community water supply system.<sup>14</sup> In addition, much of the Review Area is already heavily developed and may not support significant growth.

#### **6. Other Current or Reasonably Expected Ground Water Uses in Review Area: Low**

The State has assigned a Low rating to the entire Review Area for this factor. Although areas in close proximity to the Mad River may be hydrogeologically suitable for development of industrial process supply wells or other non-potable uses, it is unlikely that such wells would be developed in the future since the area is adequately served by public water.

#### **7. Ecological Value: Medium/Low**

The State has assigned a Medium rating to the portions of the Review Area which contain ecological resources such as streams, ponds or significant wetlands. This includes part of the site itself, which contains Carrington Brook and associated wetlands, as well as areas along the Mad River to the east of the site. Other portions of the review area which are heavily urbanized upland areas are assigned a Low rating. The areas of different ecological value are shown on Figure 6.

It is not known how much hydrologic support groundwater from the site contributes to Carrington Brook and its associated wetlands. The headwaters of Carrington Brook are located only a few hundred feet north of the site. The brook is culverted from the site to its discharge into a pond in Hamilton Park approximately 0.75 miles southwest of the site.<sup>15</sup> Because so much of the brook is culverted, the site and immediate vicinity may contribute a large portion of the base flow for this brook. The brook also receives stormwater runoff from the site and other areas via numerous catchbasins.

The Connecticut Natural Diversity Database was reviewed to determine how many listed species or significant natural communities exist within the site and Review Area.<sup>16</sup> No species or communities were present within the site boundaries. Only one species was listed on the database within the Review Area. *Carex polymorpha*, commonly known as variable sedge, a State Endangered Species, was observed to the south of the site. This species grows along the Mad River.<sup>17</sup> The approximate location of this species is depicted on Figure 6.

## **8. Public Opinion: Medium**

Minimal feed back has been received from the public regarding the current or future Use and Value of the ground water at this site. Several public meetings have been held during the remedial investigation process, and no input was received specifically regarding the Use and Value of site groundwater.

The Department held public hearings in 1981 when the ground water quality goals were established for this area and for subsequent revisions in 1997. The Department provided ample opportunity for comment during both the hearings and the regional workshops which preceded the hearings.

## **References**

1. US Environmental Protection Agency, 1996, Groundwater Use and Value Determination Guidance. EPA New England, Boston, MA, Final Draft document dated April 3, 1996, 27 pages.
2. Connecticut Department of Environmental Protection, 2006, Connecticut Subregional Drainage Basins, geographic information system layer.
3. Nobis Engineering, Inc., 2008, Final Data Evaluation Report, Scovill Industrial Landfill Superfund Site, Waterbury, Connecticut, August 2008, 61 pages.
4. Nobis Engineering, Inc., 2008, Memorandum regarding Scovill Industrial Landfill Superfund Site Groundwater Supplies, 2 pages.
5. Connecticut Department of Public Health, 2004, Water Service Areas, geographic information system layer.
6. Connecticut Department of Environmental Protection, 1999, Ground Water Quality, geographic information system layer.
7. Connecticut Department of Environmental Protection, 1997b, Water Quality Standards, Surface Water Quality Standards Effective December 17, 2002, Ground Water Quality Standards Effective April 12, 1996, 47 pages.

8. Regulations of Connecticut State Agencies, Sections 22a-133k-1 to 3, 22a-133q-1, and 22a-209-1 (Remediation Standard Regulations).
9. Connecticut Department of Environmental Protection and United States Geological Survey, 1995, Connecticut Surficial Materials, geographic information system layer.
10. Wilson, William E., Burke, Edward L., and Thomas, Chester E., 1974, Water Resources Inventory of Connecticut, Part 5, Lower Housatonic River Basin, prepared by the US Geological Survey in Cooperation with the Connecticut Department of Environmental Protection, Connecticut Water Resources Bulletin 19, 79 pages.
11. Connecticut Department of Environmental Protection, 1995, Leachate and Wastewater, geographic information system layer.
12. Connecticut Department of Environmental Protection, undated, Public Supply Wells geographic information system layer.
13. Heitkamp, Inc., 1995, City of Waterbury, Bureau of Water, Water Supply Plan, Update May 1995, 3 loose leaf volumes, on file with Connecticut Department of Environmental Protection, Bureau of Water Protection and Land Reuse, Planning and Standards Division.
14. Regulations of Connecticut State Agencies, section 19-13-B51m (Public Health Code).
15. Roy F. Weston Inc., 1999, Final Site Inspection Report for Scovill Industrial Landfill, Waterbury, Connecticut, 10 December 1999, 56 pages, 3 attachments.
16. Connecticut Department of Environmental Protection, 2010, Natural Diversity Database, geographic information system layer.
17. Connecticut Department of Environmental Protection, July 2010, Letter to Sheila Gleason regarding Natural Diversity Database information for the Scovill Industrial Landfill, 2 pages.

**Scovill Industrial Landfill Federal National Priorities List Superfund Site  
Waterbury, Connecticut  
Ground Water Use and Value Determination**

**Conclusions and Recommendations**

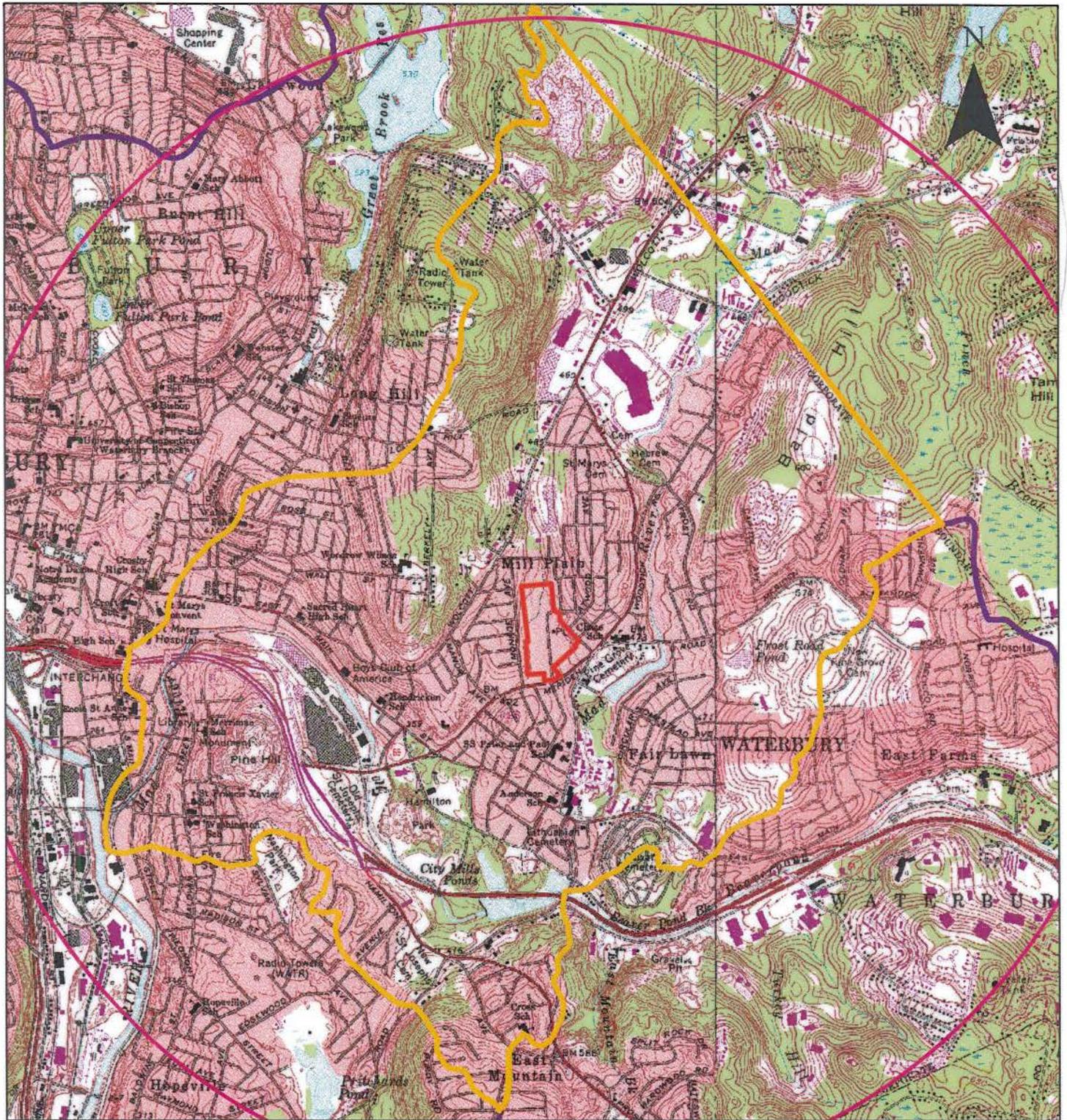
The Connecticut Department of Environmental Protection has determined that the contaminated aquifer within the Review Area for the Scovill Industrial Landfill NPL site in Waterbury, Connecticut, is a Low/Medium Use and Value Aquifer, based on the considerations presented in the attached Ground Water Use and Value Determination Document. The Connecticut Department of Environmental Protection has also determined that immediate restoration of the contaminated aquifer is not required. The groundwater remediation goals for the site should include prevention of exposure to contaminated groundwater, including contamination volatilizing from the contaminated groundwater, prevention of further degradation of groundwater quality, and prevention of further contaminant migration.

The Connecticut Department of Environmental Protection has undertaken this Ground Water Use and Value Determination pursuant to a Memorandum of Agreement dated March 14, 1997 between the Department and the US Environmental Protection Agency (EPA). This determination has been conducted in accordance with EPA's April 3, 1996 Ground Water Use and Value Determination Guidance Document.

CONNECTICUT DEPARTMENT OF  
ENVIRONMENTAL PROTECTION

By Amey Marrella  
Amey W. Marrella, Commissioner

Date 9/29/10



0 1,000 2,000 4,000 6,000 8,000 Feet

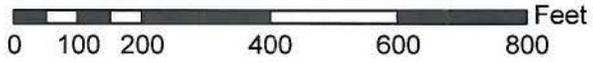
**Legend**

- Review Area
- Site
- Default Two-Mile Radius
- Subregional Basin

**SCOVILL INDUSTRIAL LANDFILL FEDERAL SUPERFUND SITE  
GROUNDWATER USE AND VALUE DETERMINATION**

**REVIEW AREA**

**FIGURE 1**



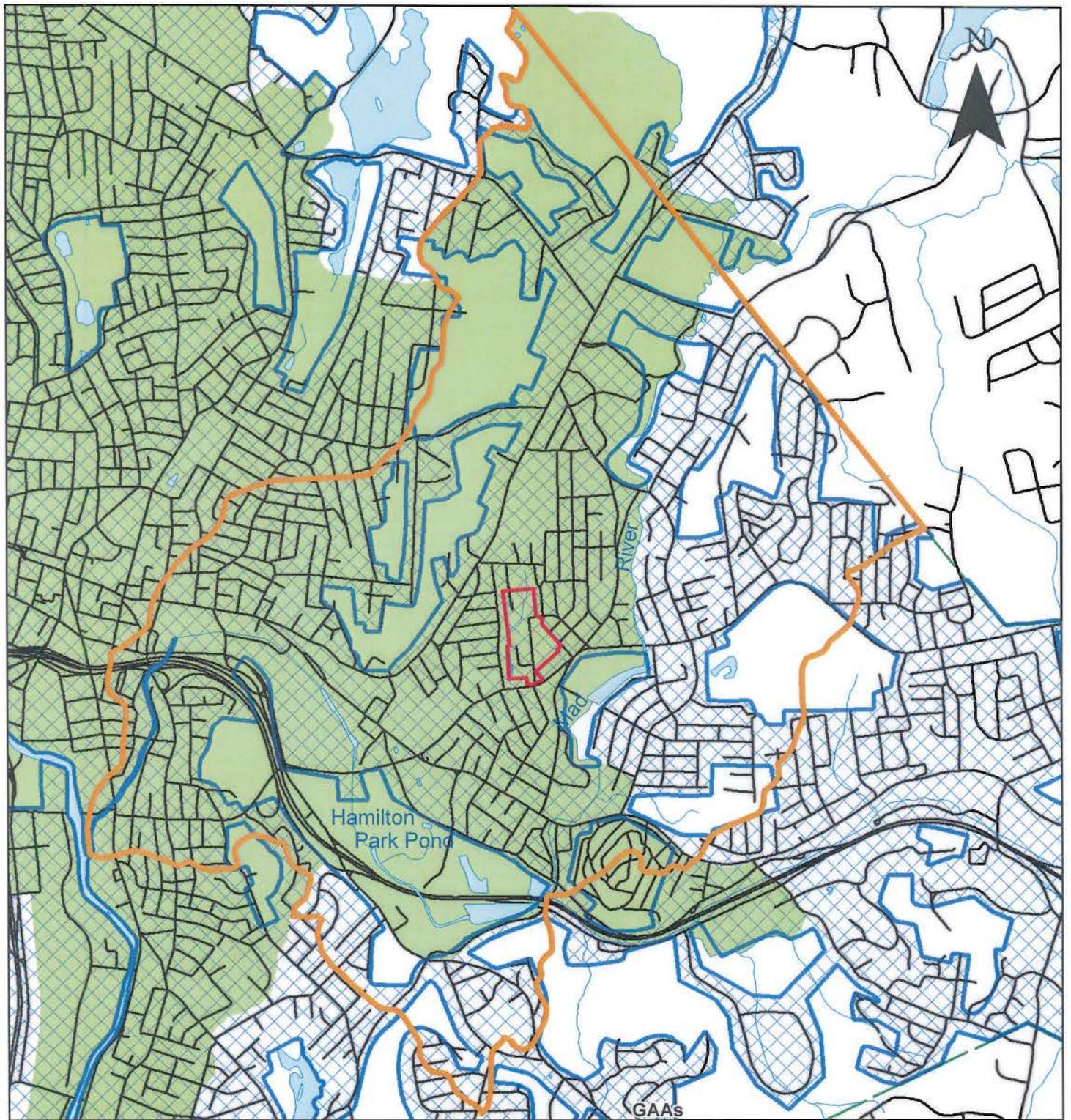
**Legend**

 Site

**SCOVILL INDUSTRIAL LANDFILL FEDERAL SUPERFUND SITE  
GROUNDWATER USE AND VALUE DETERMINATION**

**RECENT SITE CONDITIONS**

FIGURE 2



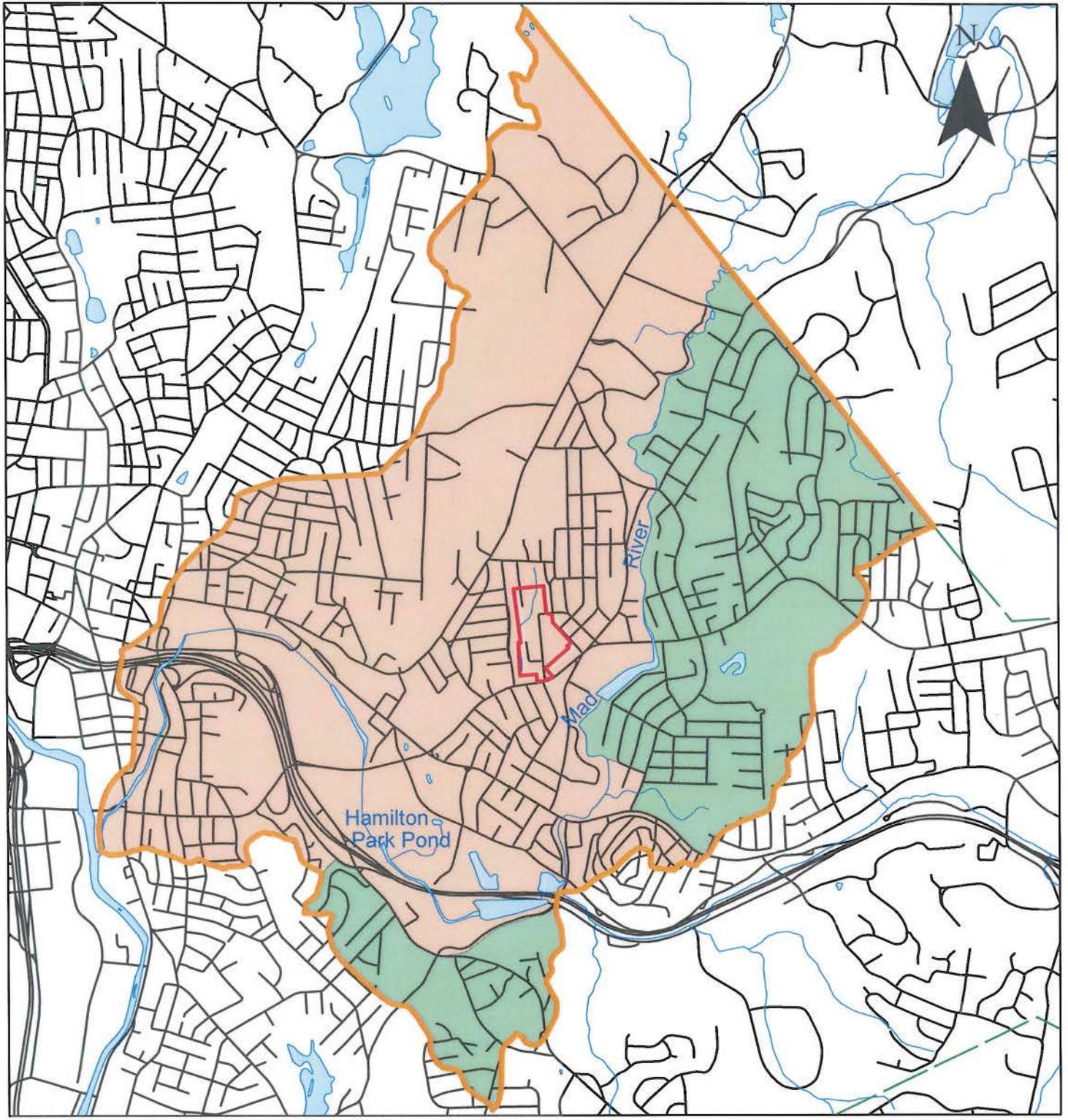
**Legend**

-  Review Area
-  Site
-  GA
-  GAA, GAAs
-  GB
-  Public Supply Service Area

**SCOVILL INDUSTRIAL LANDFILL FEDERAL SUPERFUND SITE  
GROUNDWATER USE AND VALUE DETERMINATION**

**GROUNDWATER CLASSIFICATIONS AND  
AREAS OF PUBLIC WATER SERVICE**

FIGURE 3



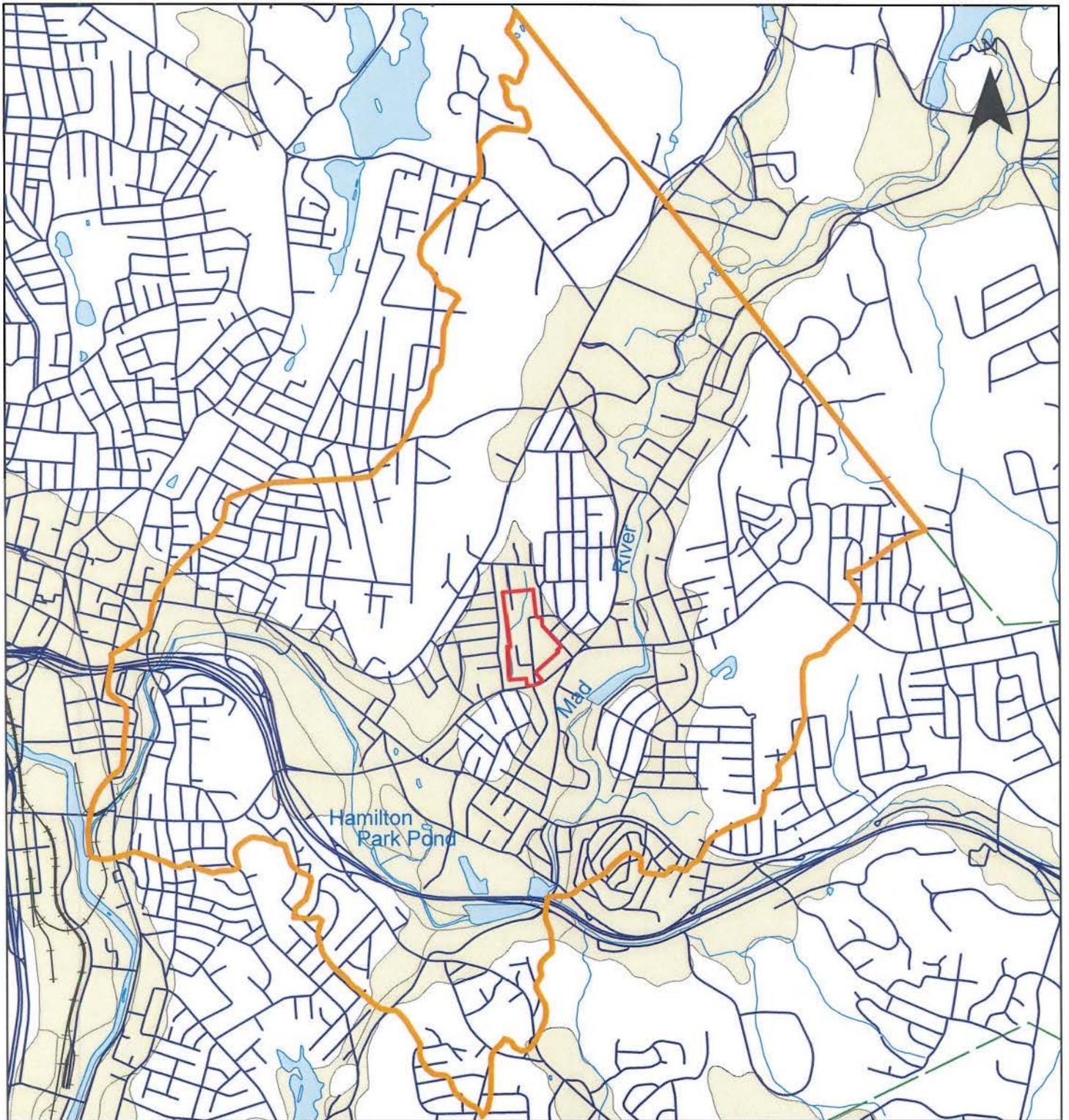
**Legend**

-  Review Area
-  Site
-  Low Use and Value
-  Medium Use and Value

**SCOVILL INDUSTRIAL LANDFILL FEDERAL SUPERFUND SITE  
GROUNDWATER USE AND VALUE DETERMINATION**

**OVERALL GROUNDWATER USE AND VALUE**

FIGURE 4



0 1,000 2,000 4,000 6,000 8,000 Feet

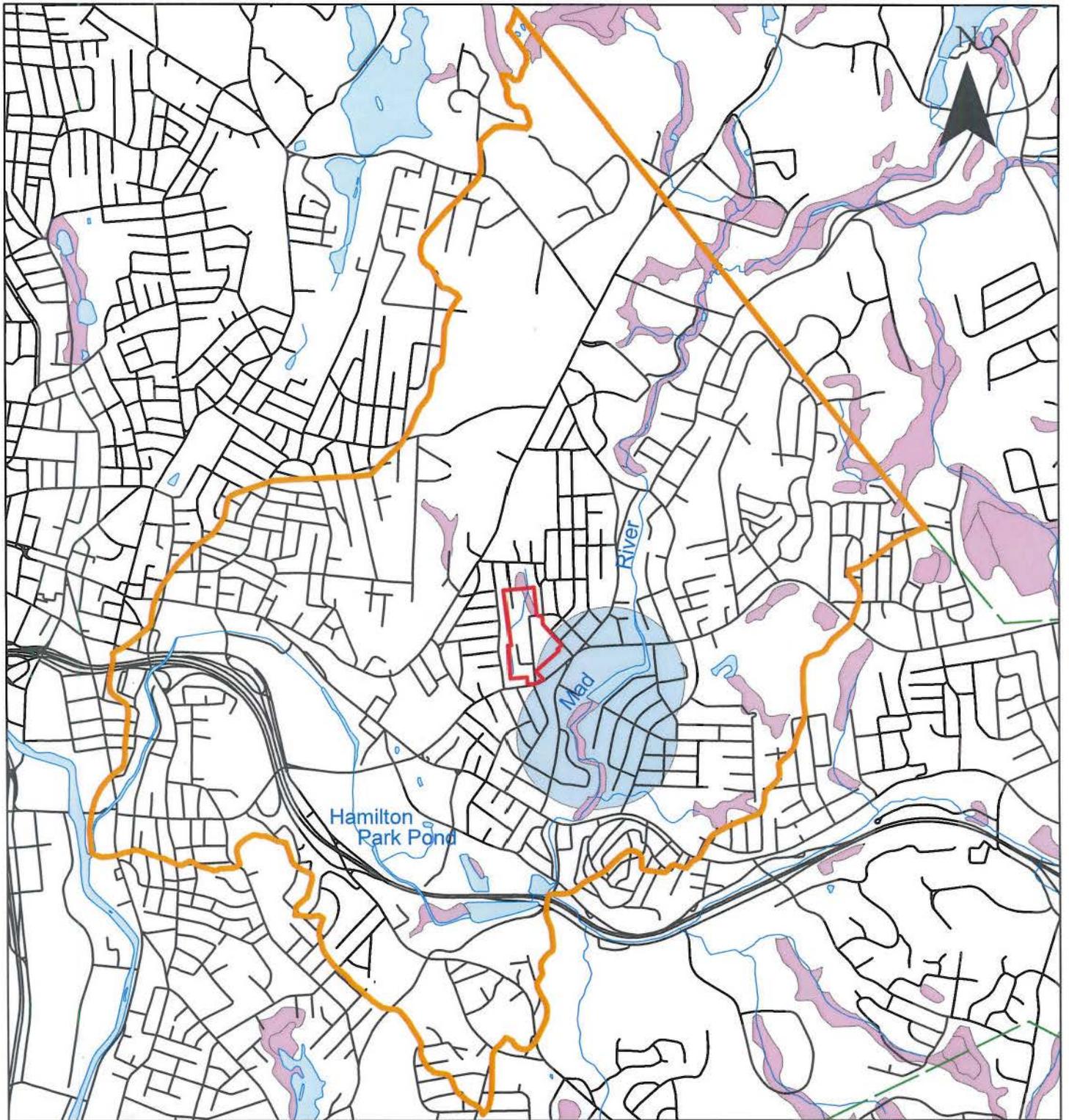
**Legend**

- Review Area
- Site
- Stratified Drift Deposits

**SCOVILL INDUSTRIAL LANDFILL FEDERAL SUPERFUND SITE  
GROUNDWATER USE AND VALUE DETERMINATION**

**AREAS OF STRATIFIED DRIFT**

FIGURE 5



0 1,000 2,000 4,000 6,000 8,000 Feet

**Legend**

 Review Area

 Site

 Medium Use and Value

 Low Use and Value

 Natural Diversity Database locations

**SCOVILL INDUSTRIAL LANDFILL FEDERAL SUPERFUND SITE  
GROUNDWATER USE AND VALUE DETERMINATION**

**ECOLOGICAL USE AND VALUE**

FIGURE 6