

US EPA ARCHIVE DOCUMENT



SUPERFUND

Cleaning Up New England

PROPOSED PLAN

AMENDMENT
JULY 2012

Centredale Manor Restoration Project

North Providence, RI

U.S. EPA | HAZARDOUS WASTE PROGRAM AT EPA NEW ENGLAND



THE SUPERFUND PROGRAM protects human health and the environment by investigating and cleaning up often-abandoned hazardous waste sites and engaging communities throughout the process. Many of these sites are complex and need long-term cleanup actions. Those responsible for contamination are held liable for cleanup costs. EPA strives to return previously contaminated land and groundwater to productive use.

2012 COMBINED PUBLIC INFORMATIONAL MEETINGS & FORMAL HEARINGS

MON., JULY 30, 2012
7 PM

POCASSET BAY RETIREMENT LIVING
12 Old Pocasset Lane, Johnston

TUES., JULY 31, 2012
3 PM

CENTREDALE MANOR
2074 Smith Street, North Providence

TUES., JULY 31, 2012
7 PM

NORTH PROVIDENCE TOWN HALL
2000 Smith Street

YOUR OPINION COUNTS: OPPORTUNITIES TO COMMENT ON THE AMENDMENT

EPA, the lead agency for all site activities, will be accepting public comments from July 19, 2012 through August 17, 2012 on just the revised human health risk assessment, this proposed change to the dioxin cleanup levels, and the resulting modifications to site cleanup alternatives. PLEASE NOTE: Opinions regarding other cleanup issues from the October 2011 Proposed Cleanup Plan have already been received by EPA during the comment period which ran from November 14, 2011 through March 2, 2012 and hence will not be accepted during this Proposed Plan Amendment comment period.

You don't have to be a technical expert to comment. If you have a concern, suggestion, or preference regarding this Proposed Plan Amendment, EPA wants to hear from you before making a final decision on how to protect your community.

Comments can be sent by mail, email, or fax (see page 11 for details). People also can offer oral or written comments at the formal public hearings. If you have specific needs for the public meetings/hearings, questions about the meeting facilities and their accessibility, or questions on how to comment, please contact Stacy Greendlinger (see below).

WHY ISSUE AN AMENDMENT?

In October 2011, EPA issued its Proposed Cleanup Plan for the Centredale Manor Restoration Project Superfund Site for public comment. In February 2012, EPA released a final non-cancer toxicity value for dioxin. EPA now requires this value to be used in calculating cleanup levels for Superfund sites. In order to use the best, current science as the basis for cleanup actions at the Centredale Manor Restoration Project Superfund Site, EPA revised its site-specific human health risk assessment and cleanup levels using the final

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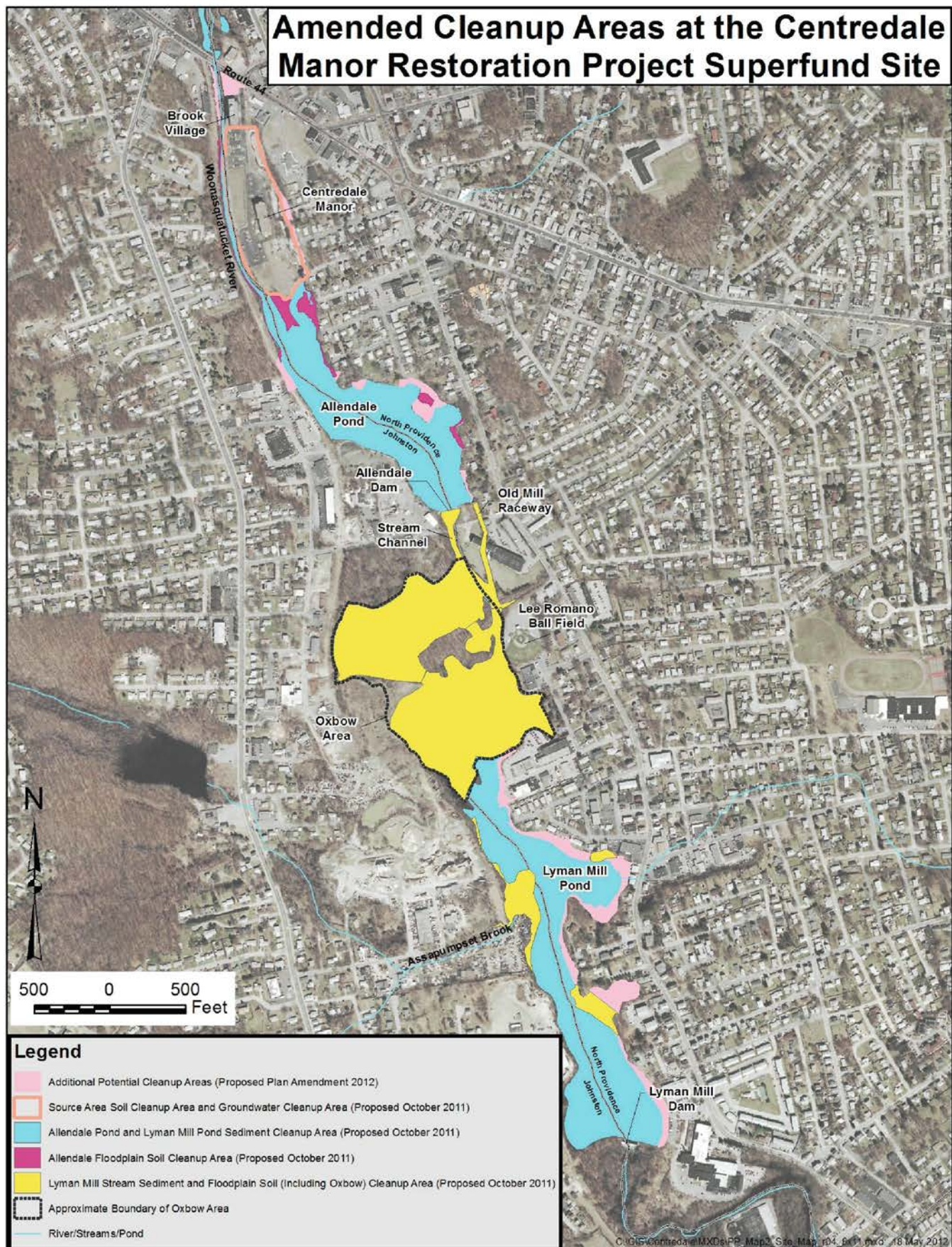
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superfund/sites/
centredale

Amended Cleanup Areas at the Centredale Manor Restoration Project Superfund Site



non-cancer dioxin toxicity value and issued this Proposed Plan Amendment so that the public can comment on the following proposed changes:

- Including the newly calculated site-specific non-cancer human health hazards from dioxin exposure;

- Lowering the residential cleanup level of 1,000 parts per trillion for dioxin in soil (used for earlier short-term cleanups) to a site-specific cleanup level of 50 parts per trillion; and,

- Potentially conducting additional cleanup beyond what was proposed in the October 2011 Proposed Cleanup Plan in three of the site's five cleanup areas and thus potentially increasing the cleanup costs. The three impacted cleanup areas are the Source Area Soil, Allendale Floodplain Soil, and the Lyman Mill Stream Sediment and Floodplain Soil (including the Oxbow Area).

SITE'S CLEANUP AREAS:

The site is organized into five cleanup areas. Based on the proposed new cleanup levels calculated with the non-cancer dioxin toxic-

ity value, the extent of the proposed cleanup actions changed in three of the five cleanup areas (areas with proposed cleanup actions not impacted are noted below):

1. Source Area Soil

The nearly 9 acre Source Area is the main part of the site where the contamination originated and now includes two apartment buildings, paved and landscaped surfaces, and three temporary capped areas. These three temporary soil covers were constructed from the 1990s through mid-2000s in the area not occupied by buildings, parking lots, or roadways; soil was also removed under one of the parking lots in 2009/2010 as part of the groundwater short-term cleanup. Most of the Source Area is located within the floodplain and also includes riverbank wetlands.

2. Groundwater

Groundwater is the water that is found beneath the surface of the ground. The groundwater area contaminated in excess of cleanup levels is located underneath the 9-acre Source Area which is bound by the Woonasquatucket River and streams. The 2009/2010 short-term cleanup focused on about 0.13 acres on the west side of the Brook Village parking lot where contaminated groundwater was flowing into the river. Future monitoring will be done to confirm that contaminated groundwater is not leaving the Source Area. *The remaining parts of this area's cleanup – land use controls, long-term monitoring, and five-year reviews – are not impacted by this amendment's proposed revised human health assessment and cleanup levels.*

3. Allendale Pond and Lyman Mill Pond Sediment

This area includes all contaminated sediment in Allendale Pond, Lyman Mill Pond and the river channel that runs along the Source Area. *The revised human health assessment shows this area does pose non-cancer human health effects, but the cleanup proposed in the October 2011 Proposed Cleanup Plan is extensive enough to address the non-cancer health hazards identified in this amendment (see page 4).*

4. Allendale Floodplain Soil

A floodplain is the flat or nearly flat land next

In accordance with Section 117 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the law that established the Superfund program, this document summarizes EPA's amendment to its October 2011 cleanup proposal. For detailed information on the cleanup options evaluated for use at the site, see the Centredale Manor Restoration Project October 2011 Proposed Plan, the Centredale Manor Restoration Project Feasibility Study and other documents contained in the site's Administrative Record available for review at the site information repositories at the North Providence Union Free Library, 1810 Mineral Springs Ave., North Providence, RI, the Mohr Memorial Library, 1 Memorial Ave., Johnston, RI and the EPA New England Records Center, 5 Post Office Sq., First Floor, Boston, MA or online at www.epa.gov/region1/superfund/sites/centredale.

DIOXINS

Dioxins are a group of toxic chemical compounds¹ that share certain chemical structures and biological characteristics. They can be released into the environment through some industrial activities, forest fires, backyard burning of trash, past commercial burning of waste or industrial waste disposal. Dioxins break down very slowly and past releases of dioxins still exist in the environment. Significant levels of dioxin have been found at the site in soil, sediment, fish, tree swallows, other wildlife (e.g., earthworms and insects), and water.

While EPA recognizes that, from a national standpoint, emission rates, dietary intake and body burdens are trending downward for the U.S. population as a whole, people living at or near dioxin-contaminated waste sites may have a relatively higher exposure to dioxins. The health effects associated with exposure to high levels of dioxins depend on a variety of factors including: the level of exposure, when someone was exposed, and for how long and how often someone is exposed. The dioxin-related cancer health effects for the Centredale Manor site were included in the October 2011 Proposed Cleanup Plan. The latest science available has focused on the non-cancer health effects of dioxin exposure and the site's human health risk assessment was revised to include non-cancer health effects and is reflected in this amendment (see pages 4-5). Adverse non-cancer health effects from exposure to dioxins may include developmental and reproductive effects, damage to the immune system, interference with hormones, skin rashes, skin discoloration, excessive body hair, and possibly mild liver damage. At much higher doses, dioxins can cause a serious skin disease in humans called chloracne.

¹The most toxic compound in this group is 2,3,7,8-tetrachlorodibenzo-p-dioxin, usually abbreviated TCDD. The toxicity of the other dioxin-like compounds in the group is evaluated by considering the toxicity of each compound relative to TCDD. The concentration in the environment of the individual dioxin-like compound relative to TCDD concentration is known as toxicity equivalence (TEQ). Total TEQ for the dioxin mixture in the sample is the sum of individual TEQs for the dioxin compounds.

to a river that floods easily. This cleanup area includes riverbank and floodplain residential areas next to the Woonasquatucket River along the Source Area and Allendale Pond.

5. Lyman Mill Stream Sediment and Floodplain Soil (including the Oxbow Area)

This cleanup area includes the stream channel and old mill raceway connecting Allendale Pond and Lyman Mill Pond, the Oxbow Area, and riverbank and floodplain residential areas along Lyman Mill Pond. The Oxbow Area is a large forested wetland below Allendale Dam.

EXPOSURE PATHWAYS & POTENTIAL RISK:

Just because contamination exists does not mean the environment or people are at risk. One has to have exposure to the contaminant to have a potential risk. Exposure occurs when people or other living organisms eat, drink, breathe or have direct skin contact with a substance or waste material. Based on existing or reasonably anticipated future land and water use at a site, EPA develops different possible exposure scenarios to determine potential risk, appropriate cleanup levels for contaminants, and potential cleanup approaches.

Human health and ecological risk assessments have been prepared for the site (detailed risk summaries can be found in the Administrative Record). These assessments use a number of contamination exposure scenarios to determine if and where there are current or potential future unacceptable risks. With the introduction of EPA's new non-cancer toxicity value for dioxin, the site's human health risk assessment has been revised and now includes the calculated non-cancer health hazards in humans from dioxin exposure². (The Administrative Record has been

updated to include documents that support the proposed changes to the risk assessment for human health, including a new May 2012 Technical Memorandum with risk calculations.) The site's ecological risk assessment is not affected by the new non-cancer dioxin toxicity value because ecological risk is calculated using different equations and toxicity values.

HUMAN HEALTH—REVISED RISK ASSESSMENT:

People have the potential for exposure to the site's contaminants through eating fish from the river and having contact with sediment and soil. When contacting soil or sediment, contamination can accidentally enter a person's mouth, for instance when someone eats or smokes without washing, or tracks contaminated soil or sediment into a home and it is transferred to other surfaces and eventually onto a child's or adult's hands and then into mouths. In addition, at the most heavily contaminated areas of the site, like the Source Area soil and Lyman Mill Pond sediment, absorption of contaminants through skin contact is another potential pathway of concern. EPA's revised human health risk assessment, which used the newly released non-cancer dioxin toxicity value, identified adverse non-cancer human health risks in addition to the previously identified cancer risks. Overall, EPA's revised risk assessment determined that the following exposure pathways pose unacceptable risks in the following cleanup areas:

Cleanup Area (1): Source Area

- Accidentally ingesting and having direct skin contact with contaminated soil may pose a 4 in 1,000 increased chance of causing cancer and may pose non-cancer health hazards for PCB (man-made chemicals banned in 1979 and used in electrical manufacturing) exposure 305 times greater than the acceptable level of 1 and may pose non-cancer health effects for dioxin exposure 150 times greater than the acceptable level of 1, as well as elevated non-cancer health hazards from other site contaminants for Source Area residents. PLEASE NOTE: this location is generally covered by an interim soil

cap and paved areas and thus, residents have no current exposure. These calculations show potential future health effects should a cap or paved areas not exist.

Cleanup Area (3): Allendale Pond and Lyman Mill Pond Sediment

- Eating contaminated fish in Allendale Pond may pose a 5 in 1,000 increased chance of causing cancer and may pose non-cancer health effects for dioxin exposure 129 times greater than the acceptable level of 1, as well as elevated non-cancer health effects from other site contaminants, for residents living along the river and visiting recreational anglers;

- Accidentally ingesting contaminated sediment in Allendale Pond may pose a 2 in 10,000 increased chance of causing cancer and may pose non-cancer health effects for dioxin exposure 16 times greater than the acceptable level of 1 for residents living along the river;

- Eating contaminated fish in Lyman Mill Pond may pose a 6 in 1,000 increased chance of causing cancer and may pose non-cancer health effects for dioxin exposure 159 times greater than the acceptable level of 1, as well as elevated non-cancer health effects from other site contaminants, for residents living along the river and visiting recreational anglers;

- Accidentally ingesting and having direct skin contact with contaminated sediment in Lyman Mill Pond may pose a 3 in 10,000 increased chance of causing cancer and may pose non-cancer health effects for dioxin exposure 24 times greater than the acceptable level of 1 for residents living along the river.

Cleanup Area (4): Allendale Floodplain Soil

- Accidentally ingesting contaminated floodplain soil may pose a 2 in 100,000 increased chance of causing cancer and may pose non-cancer health effects for dioxin exposure equal to the acceptable level of 1 for recreational visitors;

- Accidentally ingesting contaminated floodplain soil may pose up to 2 in 10,000 increased chance of causing cancer and may pose non-cancer

² The ARARs/TBC requirements for the site have also been revised to include EPA's 2012 non-cancer reassessment as the basis for non-cancer cleanup goals. ARARs (Applicable or Relevant and Appropriate Requirements) are state and federal environmental laws and regulations that address a hazardous substance, pollutant, contaminant, and type of action, location or other circumstance at a CERCLA site. TBC (To Be Considered) requirements are non-promulgated criteria, advisories, guidance, and proposed standards issued by federal or state governments and include EPA's 2012 non-cancer reassessment.

health effects for dioxin exposure up to 17 times greater than the acceptable level of 1, as well as elevated non-cancer health effects from other site contaminants, for residents living along the river.

Cleanup Area (5): Lyman Mill Stream Sediment and Floodplain Soil (including the Oxbow Area)

- Accidentally ingesting contaminated floodplain soil may pose up to 9 in 1,000 increased chance of causing cancer and may pose non-cancer health effects for dioxin exposure up to 20 times greater than the acceptable level of 1, as well as elevated non-cancer health effects from other site contaminants, for residents living along the river.

- Oxbow Area: Accidentally ingesting contaminated floodplain soil may pose a 6 in 100,000 increased chance of causing cancer and may pose non-cancer health effects for dioxin exposure 4 times greater than the acceptable level of 1 for recreational visitors in a portion of the Oxbow Area.

SITE EXPOSURE ASSUMPTIONS:

EPA used the following exposure assumptions to estimate the potential human health risks posed by the site:

- For eating fish, it is assumed that residents along the river and visiting recreational anglers would eat, on average, 14 grams per day (adult), 9.3 grams per day (older child), or 4.7 grams per day (young child) for 350 days a year for a total of 30 years – this corresponds to approximately 23 fish meals per year or about 2 fish meals per month;
- For accidentally ingesting and having direct skin contact with contaminated sediment, it is assumed that a resident living along the river would wade and swim 4 days a week between June and August for a total of 30 years;
- For the Oxbow Area and recreational areas along Allendale Pond, accidentally ingesting and having direct skin contact with contaminated floodplain soil, it is assumed a recreational

visitor would visit the area 26 days a year for a total of 30 years;

- For residential properties along Allendale and Lyman Mill Pond and in the Source Area, accidentally ingesting and having direct skin contact with contaminated floodplain soil or soil, it is assumed a resident would be present 350 days a year for a total of 30 years.

REVISED CLEANUP OBJECTIVES & MODIFIED SCOPE OF CLEANUP ALTERNATIVES:

Once possible exposure pathways and potential risk have been identified at a site, cleanup alternatives are developed to address the identified risks and achieve the Remedial Action Objectives³, also known as cleanup objectives. Some cleanup objectives, cleanup alternatives, and costs for three of the five cleanup areas have been revised based upon the new non-cancer health effect calculations used to derive cleanup levels, although in most cases they remain the same as in EPA's October 2011 Proposed Cleanup Plan. The revised cleanup objectives and alternatives are as follows:

(1) Source Area Soil Cleanup Area

Both cleanup objectives for Source Area soil were revised to lower the dioxin cleanup goal for soil from 1,000 parts per trillion to a site-specific level of 50 parts per trillion.

Revised Cleanup Objectives:

- Prevent direct human exposure by incidental (accidental) ingestion of and dermal (skin) contact with Source Area soil that contain contamination in excess of state and federal environmental laws

³ The Remedial Action Objectives in this Proposed Plan Amendment include language in parentheses (.). The language in parentheses is included solely to facilitate understanding by the reader.

⁴ ARARs (Applicable or Relevant and Appropriate Requirements) are state and federal environmental laws and regulations that address a hazardous substance, pollutant, contaminant, and type of action, location or other circumstance at a CERCLA site. These ARARs include, for example, RIDEM residential direct exposure criteria and TSCA requirements for PCBs.

⁵ EPA's recommended residential level of 1 part per million for PCBs is based upon EPA guidance issued in 1990.

and regulations⁴ and EPA's recommended residential level of 1 part per million for PCBs⁵;

- Prevent direct human exposure by incidental (accidental) ingestion of and dermal (skin) contact with soil containing contaminants at concentrations that would result in a total excess lifetime cancer risk greater than the target risk range⁶ of 10^{-6} to 10^{-5} or a hazard index (for non-cancer health effects) greater than 1⁷.

Modified Scope of Cleanup Alternatives:

Based on the new, site-specific dioxin non-cancer calculations, EPA is proposing to adjust the human health cleanup level in soil from 1,000 parts per trillion to 50 parts per trillion. As a result of this revised cleanup level, the area that would be addressed for all cleanup alternatives (except No Action alternatives) would now be slightly larger in size (see p.6), so that all soil that exceeds EPA's revised cleanup level for dioxin would be addressed either by extending the cap or excavating and removing additional soil. The potential additional soil is estimated to be 430 cubic yards for a total of approximately 63,300 cubic yards. Depending upon the cleanup alternative, costs would increase by up to \$400,000.

(4) Allendale Floodplain Soil Cleanup Area:

One cleanup objective for Allendale Floodplain Soil was revised to lower the dioxin cleanup goal for soil in residential areas from 1,000 parts per trillion to a site-specific level of 50 parts per trillion.

Revised Cleanup Objective:

- Prevent direct human exposure by incidental (accidental) ingestion of and dermal (skin) contact with floodplain soil that contain

⁶ The term " 10^{-6} to 10^{-5} " is referred to as scientific notation which is used to express risk. For example, a risk value of 2×10^{-4} would mean a 2 in 10,000 increased chance of causing cancer and a risk value of 7×10^{-5} would mean a 7 in 100,000 increased chance of causing cancer.

⁷ The revised human health risk assessment which is open to comment also included a calculation of cancer risk in the Source Area.

Amended Proposed Cleanup Area for Source Area Soil

Explanation:

- Additional Cleanup Area
- October 2011 Proposed Cleanup Area
- Former Buildings
- River



Map 2

contaminants at concentrations in excess of state and federal environmental laws and regulations⁸ and/or that would result in a total excess lifetime cancer risk⁹ greater than the target risk range of 10^{-6} to 10^{-5} and/or a hazard index (for non-cancer health effects) greater than 1.

Modified Scope of Cleanup Alternatives:

Between 1999 and 2003, various short-term cleanups were conducted which included, in part, installation of fencing to restrict access to potentially contaminated areas and the excavation and off-site disposal of contaminated floodplain soil from residential properties and recreational access points along Allendale Pond. These activities were based on a cleanup level of 1,000 parts per trillion for dioxin in soil and were designed to deal with immediate threats while the long-term cleanup would address any remaining potential long-term human health and/or ecological effects. Based on the newly proposed site-specific cleanup levels, EPA is proposing that the cleanup alternatives (except for No Action) for Allendale Floodplain Soil would require implementing precautionary interim measures to prevent exposure, sampling the residential properties within the 100-year floodplain (approximately 28 properties), and eventually excavating contaminated soil where composite sampling¹⁰ results show contamination is above the dioxin cleanup level of 50 parts per trillion and/or above the respective cleanup levels of other site contaminants (see p.8)

A potential increase of about 4,200 cubic yards of contaminated soil is anticipated; bringing the total to an estimated 6,600 cubic yards of soil that would be removed under the cleanup alternatives for this cleanup area. Depending upon the disposal option, the costs of the cleanup alternatives (except for No Action) would increase from between \$700,000 and \$3.7 million.

⁸ These ARARs include, for example, RIDEEM residential direct exposure criteria.

⁹ The Rhode Island Site Remediation Regulations define acceptable carcinogenic risk as within the range of 10^{-6} to 10^{-5} .

¹⁰ In some areas, such as residential properties, EPA may use composite sampling which is a collection of numerous individual samples collected in a common container and analyzed to produce an average result designed to be representative of an area as opposed to a discrete sample that produces results for a specific singular sampling location.

(5) Lyman Mill Stream Sediment and Floodplain Soil (including Oxbow) Cleanup Area

To meet the cleanup objective for Lyman Mill Stream Sediment and Floodplain Soil (including Oxbow), the dioxin cleanup goal was lowered for floodplain soil in residential areas from 1,000 parts per trillion to a site-specific level of 50 parts per trillion and for recreational use to a site specific level of 680 parts per trillion.

Revised Cleanup Objective:

- Prevent direct human exposure by incidental (accidental) ingestion of and dermal (skin) contact with floodplain soil and/or sediment or human ingestion of fish and other aquatic organisms that contain contaminants at concentrations in excess of state and federal environmental laws or regulations¹¹ and/or that would result in a total excess lifetime cancer risk¹² greater than the target risk range of 10^{-6} to 10^{-5} (soil) or 10^{-6} to 10^{-4} (sediment) and/or a hazard index (for non-cancer health effects) greater than 1.

Modified Scope of Cleanup Alternatives:

EPA's October 2011 Proposed Cleanup Plan used a cleanup level of 1,000 parts per trillion for dioxin in soil as one factor in deciding how much soil should be excavated in the Oxbow Area. Based upon new calculations by EPA, that dioxin cleanup level for excavation would be changed from 1,000 parts per trillion to 680 parts per trillion for recreational uses, but the estimated extent of the excavation area in the Oxbow Area would largely remain the same.

Between 1999 and 2003, various short-term cleanups were conducted which included, in part, installation of fencing to restrict access to potentially contaminated areas and the excavation and off-site disposal of contaminated floodplain soil from residential properties and recreational access points along Lyman Mill Pond.

¹¹ These ARARs include, for example, RIDEEM residential direct exposure criteria.

¹² The Rhode Island Site Remediation Regulations define acceptable carcinogenic risk for soil as within the range of 10^{-6} to 10^{-5} .

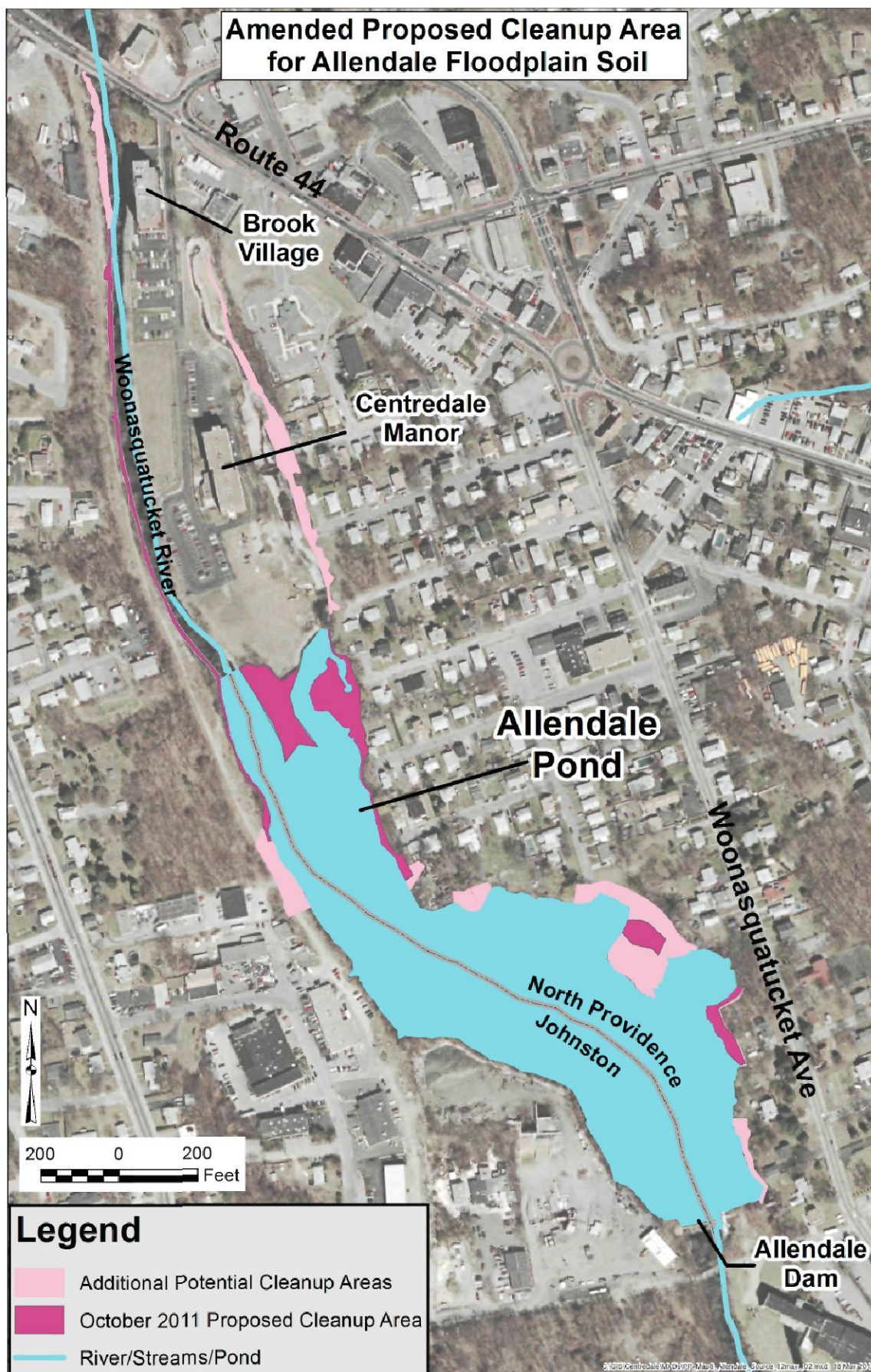
These activities were based on a cleanup level of 1,000 parts per trillion for dioxin in soil and were designed to deal with immediate threats while the long-term cleanup would address any remaining potential long-term human health and/or ecological effects. Based on the newly proposed site-specific cleanup levels, EPA is proposing that the cleanup alternatives (except for No Action) for Lyman Mill floodplain soil would require precautionary interim measures to prevent exposure, sampling the residential properties within the 100-year floodplain (approximately 20 properties), and eventually excavating contaminated soil where composite¹³ sampling results show contamination is above the dioxin cleanup level of 50 parts per trillion and/or above the respective cleanup levels of other site contaminants. As a result, a potential increase of approximately 5,600 cubic yards, for a total of about 64,000 cubic yards of soil, would be included in the cleanup alternatives (except for No Action) for this area of the site (see p. 9). Thus, depending upon the cleanup alternative and disposal option, costs would increase between \$2.4 million and \$7.9 million.

CLEANUP ALTERNATIVES COMPARISON:

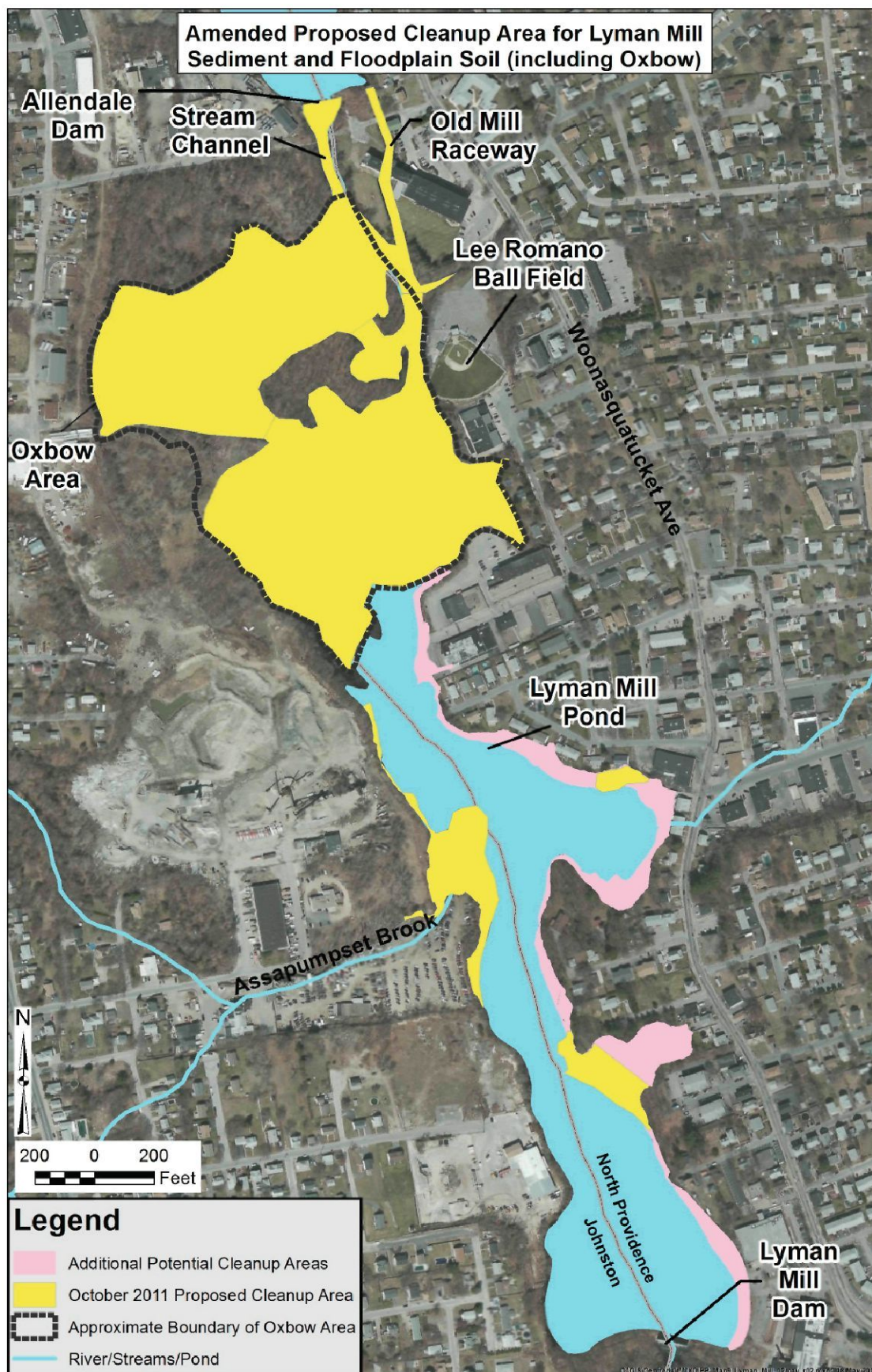
EPA's October 2011 Proposed Cleanup Plan included a comparison of each of the cleanup alternatives against the Superfund nine criteria that are used for choosing a final cleanup plan. That comparison has not significantly changed based upon this Proposed Plan Amendment's revisions to the site's dioxin cleanup levels, with the following exceptions:

- Residential properties would have short-term impacts as work would now be conducted on these properties. The addition of residential properties within the 100-year floodplain to the soil cleanup effort would directly impact these properties and

¹³ In some areas, such as residential properties, EPA may use composite sampling which is a collection of numerous individual samples collected in a common container and analyzed to produce an average result designed to be representative of an area, as opposed to a discrete sample that produces results for a specific singular sampling location.



Map 3



Map 4

Comparison of Costs¹ for Cleanup Area Alternatives

Cleanup Area & Alternatives	October 2011 Proposed Plan	2012 Proposed Plan Amendment
Source Area Soil		
Alternative 1 - No Action	\$170 thousand	\$170 thousand
Alternative 3E - Targeted Excavation, Upgrade and Maintain Existing Surfaces, and Off-Site Disposal and/or Treatment	\$24.4 million	\$24.8 million
Alternative 4E - Targeted Excavation, Convert to Caps Designed to Cover Hazardous Waste and Maintain, and Off-Site Disposal and/or Treatment	\$21.3 million	\$21.7 million
Allendale Floodplain Soil		
Alternative 1 - No Action	\$0	\$0
Alternative 5 – Excavation and Disposal and/or Treatment		
5A - On-Site Containment in Upland Confined Disposal Facility	\$1.4 million	\$2.1 million
5B - On-Site Containment in Near Shore Confined Disposal Facility	\$1.4 million	\$2.1 million
5D - On-Site Incineration	\$4.3 million	\$8.0 million
5E - Off-Site Disposal and/or Treatment	\$3.2 million	\$5.7 million
Lyman Mill Stream Sediment and Floodplain Soil (including Oxbow)		
Alternative 1 - No Action	\$250 thousand	\$250 thousand
Alternative 3 - Targeted Excavation, Enhanced Natural Recovery, and Disposal and/or Treatment		
3A - On-Site Containment in Upland Confined Disposal Facility	\$16.4 million	\$19.4 million
3B - On-Site Containment in Near Shore Confined Disposal Facility	\$13.7 million	\$16.1 million
3D - On-Site Incineration	\$33.3 million	\$41.2 million
3E - Off-Site Disposal and/or Treatment	\$26.0 million	\$32.0 million
Alternative 5 - Partial Excavation, Enhanced Natural Recovery, and Disposal and/or Treatment		
5A - On-Site Containment in Upland Confined Disposal Facility	\$31.5 million	\$34.4 million
5B - On-Site Containment in Near Shore Confined Disposal Facility	\$24.1 million	\$26.6 million
5D - On-Site Incineration	\$73.3 million	\$81.2 million
5E - Off-Site Disposal and/or Treatment	\$55.3 million	\$61.2 million

Notes:

¹ The economic term, Estimated Total Present Value, is the amount of money that would need to be set aside today to ensure that enough money is available over the expected life of the project, assuming certain economic conditions (e.g., inflation).

WHAT IS A FORMAL COMMENT?

EPA will only accept public comments on the changes discussed in this Proposed Plan Amendment—the changes to the human health risk assessment, the proposed dioxin cleanup level change, and the resulting modifications to site cleanup alternatives. Opinions regarding other cleanup issues from the October 2011 Proposed Plan have already been received by EPA during the comment period which ran from November 14, 2011 through March 2, 2012.

EPA considers and uses these comments to improve its cleanup approach. During the formal comment period, EPA will accept written comments via mail, email, and fax. Additionally, oral comments may be made during the formal Public Hearings on July 30 and July 31, 2012 during which a stenographer will record all offered comments during the hearings. EPA will not respond to your comments at the formal Public Hearings but will hold brief informational meetings prior to the start of the formal Public Hearings (see page 1 for details).

EPA will review the transcript of all formal comments received at the hearings, and all written comments received during the formal comment period, before making a final cleanup decision. EPA will then prepare a written response to all the formal written and oral comments received. Your formal comment will become part of the official public record. The transcript of comments and EPA's written responses will be issued in a document called a Responsiveness Summary when EPA releases the final cleanup decision, in a document referred to as the Record of Decision. The Responsiveness Summary and Record of Decision will be made available to the public on-line, at the North Providence Union Free Library, Mohr Memorial Library, and at the EPA Records Center. EPA will announce the final decision on the cleanup plan through the local media and via EPA's website.

would require open and frequent communication with the residents to ensure close coordination, minimal disruption, and general good practices on the property until additional evaluations and possible cleanup efforts can be undertaken as part of the cleanup plan. Precautionary interim measures to prevent exposure, such as fencing or spreading a cover—like mulch or clean soil—will be taken shortly after EPA selects the cleanup plan;

- Cleanup costs would increase for all the cleanup alternatives (except for the No Action alternatives) evaluated for the Source Area, Allendale Floodplain Soil and Lyman Mill Stream Sediment and Floodplain Soil (including the Oxbow Area); and,
- By revising the new, site-specific dioxin cleanup level in soil, EPA believes that the cleanup alternatives (aside from No Action) for

these three cleanup areas would be protective of human health for cancer and non-cancer risks from dioxin in soil.

FOR MORE DETAILED INFORMATION:

The Administrative Record, which includes all documents that EPA has considered or relied upon in proposing this cleanup plan amendment for the Centredale Manor site, is available for public review and comment at the following locations:

EPA Records and Information Center
5 Post Office Square, First Floor
Boston, MA 02109-3912
(617) 918-1440

North Providence Union Free Library
1810 Mineral Springs Ave.
North Providence, RI 02904
(401) 353-5600

Marian J. Mohr Memorial Library
1 Memorial Ave.
Johnston, RI 02919
(401) 231-4980

Information is also available for review on-line at www.epa.gov/region1/superfund/sites/centredale

SEND US YOUR COMMENTS:

Provide EPA with your written comments about the Proposed Plan Amendment for the Centredale Manor Restoration Project Superfund Site.

Please email (krasko.anna@epa.gov), fax (617-918-0232), or mail comments, postmarked no later than Friday, August 17, 2012 to:

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