Explanation of Significant Differences

Ley Creek Deferred Media Portion of General Motors–Inland Fisher Guide Subsite Onondaga Lake Superfund Site

Town of Salina, Onondaga County, State of New York

EPA Region 2 April 2023

INTRODUCTION

Under Section 117 (c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA or Superfund), as amended, the U.S. Environmental Protection Agency (EPA) is required to publish an explanation of significant differences (ESD) when, after selection of a remedy,[1] subsequent circumstances lead to significant, but not fundamental, differences in the approach to effectuate the selected remedy. Sections 300.435(c)(2)(i) and 300.825(a)(2) of the National Oil and Hazardous Substances Contingency Plan (NCP) set forth the criteria for issuing an ESD and require that an ESD be published if the remedy is modified in a way that differs significantly in either scope, performance, or cost from the remedy that was selected.

In 2015, the New York State Department of Environmental Conservation (NYSDEC) and EPA selected a remedy for the Ley Creek Deferred Media (LCDM) portion of the General Motors–Inland Fisher Guide (GM-IFG) subsite (Subsite) that was memorialized in a record of decision (ROD). The area addressed in the remedy is also referred to as the "LCDM operable unit" of the Onondaga Lake Superfund site. That remedy called for, among other things, the excavation and off-site disposal of floodplain soil exhibiting contaminant concentrations greater than restricted soil cleanup objectives (SCOs) based on current and reasonably anticipated future land use. It was estimated in the ROD that 15,000 cubic yards (CY) of contaminated soils would need to be excavated and disposed of at a present-worth cost of $7.6 million. Extensive soil sampling was conducted during the remedial design to better delineate the areas of contamination. The results of this sampling indicated that the contamination at LCDM is much more widespread than what was originally estimated. The estimated volume of contaminated soils that need to be addressed increased almost 10-fold to approximately 144,000 CY. This new information prompted EPA to re-evaluate the remedy selected in the ROD and explore other possible remedial alternatives. In September 2022, EPA affirmed the 2015 remedy, as memorialized in an ESD ("2022 ESD"), to reflect that notwithstanding the increased soil volumes at LCDM and the associated remedial costs, based on the current and reasonably anticipated future land use, the clean-up approach remains unchanged. In the 2022 ESD, EPA chose not to address a specific portion of LCDM that contains mature tree growth (hereinafter referred to as the "forested area") that is located mostly to the north of Ley Creek toward the Townline Road end of the reach of Ley Creek, between Townline Road and Route 11 (a.k.a. Brewerton Road). The present-worth cost of the remedy (excluding the forested area) was estimated to be $44.5 million.

The forested area was not addressed in the 2022 ESD because, at that time, an alternative in-situ remedial approach was being evaluated for this area. That evaluation has been completed and is memorialized in a report titled, "2022 GM--IFG Subsite OU2 and Expanded Territory Treatability Study Report." Following an analysis of this report, EPA and NYSDEC have concluded that it is unlikely that the in-situ treatment will be an effective remedy in the forested area of LCDM. Therefore, the soil remedy selected in the ROD remains the most suitable approach for addressing the forested area, notwithstanding the increased soil volumes and associated remedial costs. This determination is consistent with the requirements of Section 121 of CERCLA, 42 U.S.C. § 9621, and provides the optimal balance of tradeoffs with respect to the NCP's nine evaluation criteria, set forth at 40 CFR § 300.430(e)(9).

The current estimated volume of contaminated soils in the forested area that require excavation and off-site disposal

[1] A remedy is memorialized in a document called a record of decision, or ROD.

is approximately 80,000 CY within a 13.9 acre area, and the current estimated present-worth cost of this portion of the remedy is $55 million.

This ESD serves to document EPA's decision not to modify the remedial approach with respect to the forested area and to update the total soil volume and associated remedial cost estimates for the LCDM remedy to include the updated estimates for the forested area. As mentioned above, the total estimated volume of contaminated soils at LCDM that require excavation and off-site disposal is now estimated to be approximately 144,000 CY within a 21-acre area, which includes the 80,000 CY of soil contamination in the 13.9-acre forested area. The current estimated present-worth cost of implementing the remedial approach selected in the 2015 remedy to address contaminated soils at LCDM (and not creek sediments) is $99.5 million, including $55 million to address the contaminated soil in the forested area. The total estimated cost of implementing the entire LCDM remedy, including both the soil and creek sediment, is $114.5 million.

SITE DESCRIPTION

LCDM is located in the Town of Salina, Onondaga County, New York (see Figure). It consists of approximately 9,200 linear feet of Ley Creek, including the adjacent floodplains, located between Townline Road and the Route 11 Bridge. LCDM does not include the Ley Creek PCB Dredgings subsite, an area that has previously been addressed and which is located south of Ley Creek between the creek and Factory Avenue. Also included in LCDM is a 10-acre wetland (referred to as the "National Grid Wetland") located on the northern portion of the National Grid property directly west of the former GM-IFG facility, soil in the approximately 1.8-acre area located directly between the former GM-IFG facility's northern property boundary and Factory Avenue (referred to as the "Factory Avenue Area"), and soil in the area located along the northern shoulder of Factory Avenue in the vicinity of LeMoyne Avenue (referred to as the "Factory Avenue/LeMoyne Avenue Intersection Area").

Ley Creek, which drains an area of approximately 30 square miles, flows due west approximately two and a half miles downstream from the former GM-IFG facility, where it discharges into Onondaga Lake. The Ley Creek drainage basin is generally described as a highly urbanized area. Portions of the City of Syracuse and the towns of Cicero, Clay, DeWitt, Manlius, and Salina are located in the Ley Creek drainage basin. Also located in the Ley Creek watershed are interstate highways, a National Grid electrical transfer station, Syracuse International Airport, and the Air National Guard's Hancock Field. Large areas of impermeable surfaces in the Ley Creek watershed cause rapid runoff during storms and corresponding precipitous rising of flow and water levels.

The LCDM forested area is an approximately 32-acre area of mature tree growth located in the floodplains adjacent to Ley Creek. The forested area is situated mostly to the north of Ley Creek toward the Townline Road end of the reach. A small portion of the forested area is located south of Ley Creek. This forested area consists of both forested wetland and forested floodplain. The New York State Thruway is located directly to the north of the portion of the forested area on the north side of Ley Creek. Impacted soil/dredged materials are present within a portion of the forested area (approximately 13.9 acres). The forested area is the focus of this ESD.

The National Grid Wetland is part of the New York State-regulated wetland known as "SYE-6." A drainage ditch is located along the northern edge of the National Grid property along Factory Avenue. Upland drainage flows into this wetland from the south and is discharged north to the ditch and through culverts under Factory Avenue towards Ley Creek. Wetland vegetation, trees, and shrubs comprise the dominant vegetation of the wetland. The National Grid property is currently zoned for industrial use. The National Grid Wetland area, shown in the Figure, was remediated by the Revitalizing Auto Communities Environmental Response Trust (RACER)[2] in 2019, consistent with the 2015 remedy.

The Factory Avenue Area extends easterly from the northwestern corner of the former GM-IFG facility property to Townline Road and is located between the facility property and Factory Avenue. The Factory Avenue Area is characterized by maintained grass and is a corridor for overhead and underground utilities. Specifically, a natural gas pipeline and an Onondaga County sanitary sewer are present underground along this corridor. This area is currently zoned for industrial use. The Factory Avenue Area, shown in the Figure, was remediated along with the National Grid Wetland in 2019.

During pre-design investigations (PDI) in 2015, soil sampling and analysis was conducted in a residential area located adjacent to the northern bank of Ley Creek, as depicted in the Figure. PCB-impacted soil (*i.e.*, soil with PCB concentrations greater than 1 part per million [ppm], or 1 milligram per kilogram [mg/kg]) was encountered at depths ranging from 2 inches to 5 feet below ground surface. PCB-impacted soil was found at varying distances to the north on each of the nineteen properties within this residential area. This residential area was remediated in 2018.

[2] In 2009, GM filed for bankruptcy. On March 31, 2011, administration of the remedial activities at the Subsite was taken over by RACER.

The Factory Avenue/LeMoyne Avenue Intersection Area is located north of Factory Avenue between LeMoyne Avenue and the Route 11 Bridge, as shown in the Figure. This area is currently zoned for commercial use. The Factory Avenue/LeMoyne Avenue Intersection Area has not yet been remediated.

SITE HISTORY, CONTAMINATION, RELATED SUBSITES, AND THE SELECTED REMEDY

The area in the vicinity of Ley Creek was primarily farmland up until the late 1930s. Since then, commercial and industrial development has occurred in the drainage basin, including in areas bordering the creek.

General Motors (GM) began operating the GM-IFG manufacturing facility in 1952. GM's operations included the following: metal die casting; nickel, chromium, and copper cyanide electroplating; stamping; polishing; buffing; painting; and machining. In the early 1960s, GM began injection molding operations, and by the early 1970s, injection molding had replaced metal finishing and die casting operations at the facility. GM used PCB-containing hydraulic oil in die cast machines and injection molding operations until 1968 and in the diffusion pumps of three vacuum metallizers until 1969. More than 120 injection molding machines were operated at the plant until the plant closed in December 1993. PCB-containing oil leaked from the machines to floor drains and sumps. During early facility operations, this oil and other process waste was discharged to a swale at the facility. The swale discharged to Ley Creek, where PCBs are now found in the sediments down to the mouth of the creek at Onondaga Lake.

Prior to the early 1970s, poor channel conditions and large impermeable areas in the Ley Creek watershed caused extensive flooding of the creek. These flooding events led to the creation of the Ley Creek Drainage District. Beginning in 1970, the Onondaga County Department of Drainage and Sanitation widened, deepened, and rerouted Ley Creek through the Town of Salina Landfill. Dredged materials were spread along the banks of Ley Creek in addition to being disposed of at the Town of Salina Landfill. Areas along the south bank of Ley Creek, upstream of the Route 11 Bridge, where PCB-contaminated dredge spoils were placed were included on the New York State Registry of Inactive Hazardous Waste disposal sites as the Ley Creek PCB Dredgings subsite. A remedy was selected by the NYSDEC under state law for the Ley Creek PCB Dredgings subsite in March 1997, which called for the excavation and disposal of PCB-contaminated material greater than 50 mg/kg and the consolidation and capping of less contaminated material below 50 mg/kg in compliance with the Toxic Substances Control Act (TSCA) PCB cleanup and disposal regulations (40 CFR Part 761). That remedy was completed in 2001, and the Ley Creek PCB Dredgings subsite is currently monitored and maintained.

The Lower Ley Creek subsite, which is located downstream of LCDM, consists of the contaminated sediments and floodplain soils along the lower two miles of Ley Creek, beginning at and including the Route 11 Bridge, and ending downstream at the mouth of Ley Creek at its confluence with Onondaga Lake, as well as the sediments and floodplain soils associated with the "Old Ley Creek Channel" (the route of Ley Creek prior to the dredging and partial rechanneling of the Creek in the 1970's). A remedy was selected for the Lower Ley Creek subsite in 2014. The selected remedy calls for the excavation and disposal of PCB-contaminated creek sediments, wetland sediments, and floodplain soils. The design is currently underway for the Lower Ley Creek subsite.

NYSDEC and GM entered into an administrative order on consent for the GM-IFG Subsite (Index # D-7-0001-97-06) in September 1997. That order required GM to conduct a remedial investigation/feasibility study (RI/FS) for the GM-IFG Subsite, including LCDM. Soil, sediment, surface water and biota samples were obtained for chemical analysis as part of the RI. Three significant interim remedial measures[3] were implemented at the Subsite from 2002 to 2004 to prevent further migration of PCBs from the former GM-IFG facility to Ley Creek.

The RACER Trust completed the RI/FS for the Subsite. The RI report was approved by NYSDEC in April 2013. The FS report was approved concurrent with the issuance of the ROD in March 2015 by NYSDEC and EPA. RACER sold the former GM-IFG facility property in 2020. RACER is also currently conducting an RI/FS for the former GM-IFG facility property and related groundwater.

As mentioned above, the remedy selected for LCDM in 2015 addresses contaminated soil and sediment and includes, among other things, the following components:

- Excavation of an estimated 9,600 CY of sediments in Ley Creek exceeding 1 mg/kg of PCBs;
- Excavation of an estimated 15,000 CY of surface and subsurface floodplain soil to meet the restricted SCOs[4] consistent with current and reasonably anticipated future land use of discrete Subsite areas;
- Transport of the excavated creek and wetland sediments to a staging area where they will be dewatered. It is anticipated that this water will require treatment prior to discharge;
- Transport of the excavated contaminated soils and sediments containing greater than 50 mg/kg of PCBs to a TSCA-compliant facility;
- Transport of those soils and sediments which fail Toxic Characteristic Leaching Procedure testing and are

[3] An interim remedial measure is a discrete action under state law for both emergency and non-emergency situations that can be conducted without extensive investigation and evaluation.

[4] SCOs identified in the ROD are identified in the attached table.

determined to be characteristic hazardous waste and non-TSCA waste (*i.e.,* less than 50 mg/kg PCBs) to an off-site RCRA-compliant facility;
• Transport of those soils and sediments that are non-TSCA-regulated (less than 50 mg/kg of PCBs) and are not characteristic hazardous waste to a RCRA-compliant facility;
• Use of clean fill meeting the requirements of DER-10, Technical Guidance for Site Investigation and Remediation, Appendix 5,[5] to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at the Subsite;
• Habitat restoration of Ley Creek excavated areas;
• Use of institutional controls in the form of environmental easements to restrict intrusive activities in areas where contamination remains unless the activities are in accordance with an approved Site Management Plan (SMP); and
• Proper management of all post-construction remedy components, as provided for in the SMP. Specifically, the SMP will describe procedures to confirm that the requisite engineering (*e.g.,* demarcation layer) and institutional controls are in place and that such controls continue to protect public health and the environment.

The SMP will also include the following:

• provisions for the management of future excavations in areas where contamination remains;

• an inventory of any use restrictions; provisions for the implementation of the requirements of any above-noted environmental easements and/or restrictive covenants;

• a provision for the performance of the operation and monitoring required for the remedy; and

• a provision requiring that a property owner or party implementing the remedy submit periodic certifications that the institutional and engineering controls are and remain in place.

Between 2018 and 2021, extensive soil sampling was conducted during the remedial design to better delineate the areas of contamination. This sampling consisted of approximately 2,400 samples from approximately 570 discrete locations within LCDM. The residential areas and National Grid wetland have already been remediated consistent with the 2015 remedy requirements.

The estimated volume of contaminated soils at LCDM that require excavation and off-site disposal increased to approximately 144,000 CY. This new information prompted EPA and NYSDEC to reconsider the remedy selected in 2015 and explore other remedial alternatives. Specifically, seven remedial alternatives for LCDM were evaluated in a focused feasibility study (FFS), including the “no action” alternative, and the 2015 remedy was affirmed and updated to reflect its appropriateness notwithstanding the increased volume and cost.

Based upon a detailed analysis of the alternatives in the FFS report, EPA and NYSDEC determined that the soil remedy selected in 2015 remains appropriate notwithstanding the increased soil volumes and associated remedial costs. This determination is consistent with the requirements of Section 121 of CERCLA, 42 U.S.C. § 9621, and provides the optimal balance of tradeoffs with respect to the NCP’s nine evaluation criteria, set forth at 40 CFR § 300.430(e)(9). Accordingly, the 2022 ESD was issued to document the increase in both the volume of contaminated soil and the associated estimated cost associated with the remedy selected in the ROD. As previously described, and as detailed below, the forested area was not addressed in the 2022 ESD because, at that time, an alternative in-situ remedial approach was being evaluated for this area.

BASIS FOR THE DOCUMENT AND DESCRIPTION OF SIGNIFICANT DIFFERENCES

Since the 2022 ESD, an evaluation of in-situ treatment in the forested area (*i.e.,* the addition of biochar or activated carbon to the soil to bind the metals and PCBs) has been completed. That evaluation is memorialized in a report entitled, “2022 GM--IFG Subsite OU2 and Expanded Territory Treatability Study Report.” Following an analysis of this report, EPA and NYSDEC have concluded that the application of biochar or activated carbon to the contaminated soils in both the shallow soil and at depth would necessitate extensive disturbance to tree root structures, which would likely result in a subsequent loss of tree canopy, thereby killing the trees that were meant to be preserved. The soil remedy selected in 2015, notwithstanding the increased volume of contaminated soil and associated costs, continues to best satisfy the requirements of Section 121 of CERCLA, 42 U.S.C. § 9621, and provides the optimal balance of tradeoffs with respect to the NCP's nine evaluation criteria, set forth at 40 CFR § 300.430(e)(9).

The estimated volume of contaminated soils in the forested area that require excavation and off-site disposal is approximately 80,000 CY within a 13.9-acre area, and the current estimated present-worth cost to address the contaminated soils in the forested area is $55 million.

This ESD serves to document EPA’s decision not to modify the remedial approach with respect to the forested area and to update the total soil volume and associated remedial cost estimates for LCDM to include the soils from the forested area. The estimated volume of contaminated soils at LCDM that require excavation and off-site disposal is now estimated at approximately 144,000 CY within a 21-acre area, which includes the 80,000 CY of soil contamination in 13.9-acre portion of the forested area. The estimated present-worth cost of

[5] This policy provides an overview of the site investigation and remediation process for the State Inactive Hazardous Waste Disposal Site Remedial Program and was issued by NYSDEC’s Division of Environmental Remediation on May 3, 2010.

implementing the remedy selected in the ROD to address contaminated soils at LCDM (and not creek sediments) is $99.5 million, including $55 million to address the contaminated soil in the forested area. The total estimated cost of implementing the entire LCDM remedy, including both the soil and creek sediment, is $114.5 million.

SUPPORT AGENCY COMMENTS

NYSDEC supports this ESD, as the differences in the remedy are significant but do not fundamentally alter the 2015 remedy selected for LCDM.

FIVE-YEAR REVIEWS

Because hazardous substances, pollutants, or contaminants will remain at LCDM, which will not allow for unlimited use or unrestricted exposure, in accordance with 40 CFR 300.430(f)(4)(ii), the remedial action will be reviewed no less often than every five years to ensure that the remedy is, or will be, protective of human health and the environment.

AFFIRMATION OF STATUTORY DETERMINATIONS

The 2015 remedy selected for LCDM remains fundamentally unaltered, and the statutory determinations made in the ROD still apply. The decision not to modify the soil remedy in the forested area and the revelation that the volume of contaminated soils to be excavated was significantly underestimated in the ROD does not require EPA to alter the remedial approach. The significant difference to the remedial action includes an increase in the volume of contaminated soil requiring excavation and a corresponding increase in the cost to implement the remedy. This ESD, in conjunction with the 2022 ESD, updates the estimated costs and volume of soils that were set forth in the ROD.

The remedy, notwithstanding the significant increase in soil volume to be addressed and the associated increase in remedial costs, will continue to be protective of human health and the environment and will comply with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and the remedy remains technically feasible and cost-effective.

PUBLIC PARTICIPATION ACTIVITIES

Pursuant to NCP §300.825(a)(2), this ESD will become part of the Administrative Record for the remedial decisions for LCDM. Links to the Administrative Record and other site-related documents can be found on the EPA Site Profile Page at www.epa.gov/superfund/onondaga-lake. EPA is making this ESD available to the public to inform them of the differences in the remedy. Should there be any questions regarding this ESD, please contact:

Victoria Paris Sacks
Remedial Project Manager
Eastern New York Remediation Section
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, New York 10007-1866

e-mail: sacks.victoria@epa.gov

With the publication of this ESD, the public participation requirements set out in §300.435(c)(2)(i) of the NCP have been met.

Pat Evangelista Digitally signed by Pat Evangelista Date: 2023.04.17 14:30:47 -04'00'

Pat Evangelista, Director
Superfund and Emergency Management Division
U.S. Environmental Protection Agency

Date

Andrew Guglielmi

Andrew Guglielmi, Director
Division of Environmental Remediation
New York State Department of Environmental Conservation

4/11/23
Date

Figure: Ley Creek Deferred Media and Areas of Interest

Table. Soil Cleanup Objectives (SCOs) identified in 2015 Record of Decision (ROD)

		SCO (mg/kg)			
COC	AREA	Residential	Commercial	Industrial	Ecological
PCB	Factory Avenue Area (North of GM-IFG facility)		1		
	National Grid Property (along access road)			25	
	Factory Avenue Area (at Lemoyne Avenue)		1		
	Ley Creek Floodplain				1
	National Grid Wetland				1
Arsenic	Factory Avenue Area (North of GM-IFG facility)		16		
	National Grid Property (along access road)			16	
	Factory Avenue Area (at Lemoyne Avenue)		16		
	Ley Creek Floodplain				13
	National Grid Wetland				13
Chromium[3]	Factory Avenue Area (North of GM-IFG facility)		1500		
	National Grid Property (along access road)			6800	
	Factory Avenue Area (at Lemoyne Avenue)		1500		
	Ley Creek Floodplain	36			41
	National Grid Wetland				41
Copper	Factory Avenue Area (North of GM-IFG facility)		270		
	National Grid Property (along access road)			10000	
	Factory Avenue Area (at Lemoyne Avenue)		270		
	Ley Creek Floodplain				50
	National Grid Wetland				50
Lead	Factory Avenue Area (North of GM-IFG facility)		1000		
	National Grid Property (along access road)			3900	
	Factory Avenue Area (at Lemoyne Avenue)		1000		
	Ley Creek Floodplain				63
	National Grid Wetland				63
Nickel	Factory Avenue Area (North of GM-IFG facility)		310		
	National Grid Property (along access road)			10000	
	Factory Avenue Area (at Lemoyne Avenue)		310		
	Ley Creek Floodplain				30
	National Grid Wetland				30
Zinc	Factory Avenue Area (North of GM-IFG facility)		10000		
	National Grid Property (along access road)			10000	
	Factory Avenue Area (at Lemoyne Avenue)		10000		
	Ley Creek Floodplain				109
	National Grid Wetland				109

Notes:
1. Ley Creek Floodplain uses the ecological SCO unless the residential SCO is lower and that portion of the Ley Creek Floodplain is zoned residential.
2. Chromium refers to trivalent chromium.
3. The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.