SIXTH FIVE-YEAR REVIEW REPORT FOR CLOTHIER DISPOSAL SUPERFUND SITE TOWN OF GRANBY, OSWEGO COUNTY, NEW YORK

Prepared by

U.S. Environmental Protection Agency
Region 2
New York, New York

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Date: 2022.11.15 15:39:19 -05'00'

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Date

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List of Abbreviations & Acronyms

ARARs	Applicable or Relevant and Appropriate Requirements
CIC	Community Involvement Coordinator
CPAH	Carcinogenic polycyclic aromatic hydrocarbons
EPA	United States Environmental Protection Agency
FYR	Five-Year Review
mg/kg	Milligrams per kilogram
NPL	National Priorities List
NYSDEC	New York State Department of Environmental Conservation
NYSGWQS	New York State Groundwater Quality Standards
OU	Operable Unit
PCB	Polychlorinated biphenyl
PCE	Tetrachloroethylene
PRP	Potentially Responsible Party
ROD	Record of Decision
RSLs	Regional Screening Levels
RAOs	Remedial Action Objectives
RI/FS	Remedial Investigation/Feasibility Study
SCO	Soil Cleanup Objective
USFWS	United States Fish and Wildlife Service
VOC	Volatile organic compound

I. INTRODUCTION

The purpose of a five-year review (FYR) is to evaluate the implementation and performance of a remedy to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

This is the sixth FYR for the Clothier Disposal site. The triggering action for this statutory review is the signature date of the last review, which was January 17, 2018.

The work at the site was conducted as a single operable unit (OU) that covered on-property soil and groundwater.

The U.S. Environmental Protection Agency (EPA) conducted this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act Section 121, consistent with the National Contingency Plan (40 CFR Section 300.430(f)(4)(ii)), and considering EPA policy.

The Clothier Disposal FYR team was led by Joel Singerman (section chief) and included Kathryn Flynn (hydrogeologist), Julie McPherson (human health and ecological risk assessors), and Michael Basile (community involvement coordinator [CIC]). The potentially responsible parties (PRPs) were notified of the initiation of the FYR. The FYR began on March 29, 2022.

Site Background

The Clothier Disposal site is located in a rural area on the south side of South Granby Road, in the town of Granby, Oswego County, New York (see Appendix A, Figure 1). This location is about 7 miles south of the city of Fulton, 18 miles northwest of the city of Syracuse, and 16 miles southeast of Lake Ontario.

The site is a 15-acre privately-owned parcel of land. Six acres of the site were used to dispose of demolition debris, household wastes, junk vehicles, and drums of hazardous chemical waste from the Pollution Abatement Services, Inc., site, which is listed on the National Priorities List (NPL). The property was purchased in 2019 and is currently being used as a scrap/junk yard. These activities do not interfere with the soil cover.

The site is located adjacent to and east of the Ox Creek wetlands. An east-west trending swale crosses the central portion of the site and channels runoff toward the creek. Other than this swale, surface drainage at the site is minimal. Groundwater flows toward Ox Creek. Ox Creek flows through the site in a northerly direction, feeding into the Oswego River. A portion of the site is located within the 100-year floodplain.

Appendix B, attached, summarizes the documents utilized to prepare this FYR. Appendix C, attached, includes an assessment of climate change at the site. For more detail related to background, physical characteristics, geology/hydrogeology, land/resource use, and history related

to the site, please refer to www.epa.gov/superfund/clothier-disposal.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: Clothier Disposal		
EPA ID: NYD000511576		
Region: 2	**State:** NY	**City/County:** Granby/Oswego County
SITE STATUS		
NPL Status: Deleted		
Multiple OUs? No	**Has the site achieved construction completion?** Yes	
REVIEW STATUS		
Lead agency: EPA ***[If "Other Federal Agency", enter Agency name]*:**		
Author name (Federal or State Project Manager): Joel Singerman		
Author affiliation: EPA		
Review period: 01/18/2018 - 11/02/2022		
Date of site inspection: 8/3/2022		
Type of review: Statutory		
Review number: 6		
Triggering action date: 1/17/2018		
Due date *(five years after triggering action date)*: 1/17/2023		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

Following PRP- and EPA-performed removal actions at the site (see the "Response Actions' section, below), only low-level residual soil contamination--polychlorinated biphenyls (PCBs) and carcinogenic polycyclic aromatic hydrocarbons (CPAHs) (benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and chrysene)--remained on-site. Volatile organic compounds (VOCs) were detected in the groundwater.

A risk assessment performed as part of a remedial investigation and feasibility study (RI/FS) (see the "Response Actions' section, below) indicated that the major route of human exposure of concern at the site was through direct contact with on-site soil residually contaminated with PCBs and CPAHs. The highest PCB concentration observed in surface soil was 2.5 milligrams per kilogram (mg/kg) (the next highest PCB concentration was 0.72 mg/kg). Because no promulgated cleanup criterion for PCBs existed at the time of the ROD, a risk-based cleanup level of 1 mg/kg for total PCBs was selected. For CPAHs, the highest observed concentration was 0.9 mg/kg. A total CPAH concentration of 0.33 mg/kg was utilized as a clean closure limit. This level was based on the CPAH detection limit for the EPA contract laboratory program.

Current-use scenarios for the plausible maximum case were not associated with any excess cancer risks greater than the $2x10^{-6}$ for direct contact to adult trespassers. Future lifetime residential use of the site for the plausible maximum case was associated with a $3x10^{-5}$ cancer risk from direct lifetime contact with soils at the site. These excess cancer risks were primarily due to PCBs and carcinogenic PAHs. While some of the maximum concentrations of the groundwater contaminants marginally exceeded applicable or relevant and appropriate requirements (ARARs), the geometric mean values never exceeded ARARs. Excess cancer risk associated with lifetime use of groundwater as a source of drinking water was $5x10^{-5}$ for the reasonable maximum exposed individual, due primarily to tetrachloroethylene (PCE) and trichloroethene. The evaluation of noncancer risk associated with lifetime use of groundwater as a source of drinking water for the reasonable maximum exposed individual resulted in a total Hazard Index of 10 (due primarily to cadmium, which was not considered site-related). On the above basis, EPA selected a remedy of a soil cover, institutional controls and monitoring (see "Response Actions," below) as a conservative measure to reduce further exposures to the low level contamination present at the site.

Response Actions

In 1973, the Oswego County Health Department found approximately 2,200 drums of chemical waste dumped on the site and requested an investigation by New York State Department of Environmental Conservation (NYSDEC). In 1976, NYSDEC brought suit against the owner of the property for operating an illegal dump. In 1977, the owner made an attempt to bury or cover the waste materials dumped on the site. In doing so, drums were broken open and drained. Between early 1978 and 1980, additional efforts were made by the owner to clean up the property. Again these efforts largely entailed burying or covering previously exposed wastes. The site was included on the NPL in 1986.

In 1986, prior to the completion of the RI/FS, a number of potentially responsible parties (PRPs), operating under an Administrative Order with EPA, removed and disposed of 1,858 drums. The remaining drums and visibly-contaminated surficial soils were removed by EPA during 1987 and 1988.

In 1988, pursuant to a cooperative agreement with EPA, NYSDEC completed a RI/FS designed to determine the nature and extent of the contamination at the site, assess the threat that the site posed to public health and the environment, and develop and evaluate various alternatives to remediate the site. Based upon the results of the RI/FS, a Record of Decision (ROD) was signed in 1988.

Remedial action objectives (RAOs) are specific goals to protect human health and the environment. The RAOs were as follows:

- Prevent direct human contact with contaminated soil on-site, thereby eliminating the incremental carcinogenic risk associated with this contact, and reducing the total incremental carcinogenic risk to less than $1x10^{-7}$;
- Prevent infiltration through contaminated soil and subsequent leaching of contaminants to groundwater;
- Prevent erosion of contaminated soil from the site and subsequent deposition into the Ox Creek wetland; and
- Prevent migration of contaminated groundwater in excess of Maximum Contaminant Levels from the site into the wetland.

The elements of the remedy as selected in the ROD are as follows:

- Placement of a one-foot clean soil cover, brought from an off-site source, over the contamination areas. Sampling will be performed during the design phase to determine the extent of the areas of residual contamination requiring covering.
- Regrading and revegetating the site to prevent soil erosion and minimize surface water runoff toward neighboring properties, Ox Creek, and the adjacent wetland. The regrading plan and types of vegetation will be determined during the design phase, and will be compatible with the wildlife habitat.
- Installing rip-rap, as needed, on the embankment sloping toward Ox Creek to prevent soil erosion. The extent of the rip-rap will be determined during the design phase, and will consider the impact on the wildlife habitat.
- Performing long-term groundwater, soil and ox creek sediment and surface water monitoring to evaluate any changes should they occur. The long-term monitoring program will consider the installation of additional wells including bedrock wells.
- Performing construction and post-construction air monitoring. This may also include, but it is not limited to, baseline pre-construction air monitoring and/or analysis to delineate further areas of the site requiring covering.
- Applying, to the extent possible, institutional controls to prevent the utilization of the underlying groundwater (*e.g.,* through the drilling of wells in the shallow aquifer), the future development of the site for residential use, or any use involving excavation at the site or significant disturbance of the soil cover. Any institutional controls, including, without limitation, deed restrictions or easements, shall be consistent with New York State law.

Because there were no soil cleanup objectives (SCOs) at the time of the ROD, as was noted above, a risk-based cleanup level of 1 mg/kg for PCBs was used, and a cleanup level of 0.33 mg/kg was utilized for total CPAH based on the CPAH detection limit for the EPA contract laboratory program.

With respect to groundwater, although a number of federal and state groundwater standards were marginally exceeded, it was believed that the presence of turbidity in the groundwater samples

artificially inflated the level of contamination actually present in the groundwater. The ROD noted that, if based upon the results of further investigation, it was determined that there was a need to remediate the groundwater, a subsequent operable unit would be undertaken.

The U.S. Fish and Wildlife Service (USFWS) conducted an investigation of Ox Creek. In its 1988 report of its findings, entitled, "Effects of Contaminants from the Clothier Disposal Site on Fish and Wildlife Resources of Ox Creek, Oswego County, New York," it was concluded that there was no evidence of either environmental damage in the area around the site or contamination of Ox Creek at levels likely to be associated with risks to wildlife. A local citizens' group, after reviewing the USFWS report, expressed concern that the USFWS investigation did not include an eleven-acre wetland located adjacent to the site.

To address the groundwater issue noted in the ROD and the concern raised by the local citizens' group regarding the wetland, EPA tasked its contractor, Ebasco Environmental, to perform a post-RI/FS investigation specifically to collect and evaluate samples of the groundwater and surface water and sediment in the wetland. The results of this investigation, which were presented in the 1990 Post-RI/FS Evaluation of Groundwater and Wetlands Report, indicated that a significant threat to human health and the environment did not exist and remedial actions for the groundwater and wetlands were not warranted.

Status of Implementation

In 1989, a consent decree was entered by the Northern District of New York with the PRPs to undertake the design and construction of the remedy selected for the site. The design was performed by Canonie Environmental Services Corporation and approved by EPA in 1991. The PRPs subsequently awarded a remedial action contract to Sevenson Environmental Services, Inc. During the course of grading two above-grade mounds of soil, it was discovered that one mound contained parts of four drums. Further, while grading the slope to the wetland, parts of three other buried drums were uncovered. The drum parts were removed, sampled, and disposed of off-site. The installation of the soil cover and revegetation was completed in 1992.

Institutional Controls

Table 1, below, summarizes the status of the institutional controls.

Table 1: **Institutional Controls Summary Table**

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs needed?	ICs called for in the decision documents?	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Groundwater and land use	Yes	Yes	Site property	Prevent utilization of underlying groundwater and future development of site for residential use.	Easement recorded by Oswego County on May 31, 1991.

Systems Operation/Operation & Maintenance

The ROD required monitoring of surface water and sediment in Ox Creek. These activities were conducted between 1994 and 1999. The results of these sampling events indicated no change from previous sampling events. Therefore, sampling of sediment and surface water was discontinued in 1999.

The ROD also called for long-term monitoring of the groundwater. In 2002, EPA and the PRPs agreed upon a sampling program that included the collection and analysis of groundwater samples for VOCs once every five years. Based upon an evaluation of the results of the groundwater sampling in the 2013 FYR, it was recommended that two groundwater monitoring events (for PCE only) be conducted during the following FYR period. The two monitoring events were performed in September and December 2014. Based on the monitoring results and data that supports attainment of New York State Groundwater Quality Standards (NYSGWQS), in May 2017, the PRPs requested approval to abandon the remaining monitoring wells CBW-3, CBW-4S, CBW-4D, and CBW-8. After EPA reviewed and approved a monitoring well abandonment plan, the monitoring wells were abandoned in July 2017.

Operation and maintenance activities are limited to site inspections. Site inspections are conducted once every five years to check the integrity of the fencing, identify irregular settlement, cracking, erosion or other disturbances which might affect the integrity of the soil and vegetative cover and to check the integrity of the monitoring wells. Maintenance is performed as necessary.

Potential site impacts from climate change have been assessed, and the performance of the remedy is currently not at risk due to the expected effects of climate change in the region and near the site (see Appendix C).

III. PROGRESS SINCE THE LAST REVIEW

The protectiveness determinations from the last FYR are summarized in Table 2, below.

Table 2: **Protectiveness Determinations/Statements from 2018 Five-Year Review**

Operable Unit (OU)	Protectiveness Determination	Protectiveness Statement
01	Protective	The remedy for OU1 is protective of human health and the environment.
Sitewide	Protective	The sitewide remedy is protective of human health and the environment.

The previous FYR had no recommendations or suggestions.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

On August 15, 2022, EPA Region 2 posted a notice on its website indicating that it would be reviewing site cleanups and remedies at Superfund sites in New York, New Jersey, and Puerto Rico, including the Clothier Disposal site. The announcement can be found at the following web address: https://www.epa.gov/superfund/R2-fiveyearreviews.

In addition to this notification, the CIC for the site, Michael Basile, posted a public notice on the EPA site webpage, www.epa.gov/superfund/ clothier-disposal, and provided the notice to the city of Fulton by email on August 19, 2022, with a request that the notice be posted on its webpage. This notice indicated that a FYR would be conducted to ensure that the cleanup at the site continues to be protective of human health and the environment. Once the FYR is completed, the results will be made available on EPA's Clothier Disposal site webpage and at the site information repositories maintained at EPA, 290 Broadway, 18th Floor, New York, New York and at the Fulton Public Library, 160 South First Street, Fulton, New York. Efforts will be made to reach out to local public officials to inform them of the results.

Data Review

As was noted in the "Systems Operation/Operation & Maintenance" section, above, based on the monitoring results and data that supported the attainment of the NYSGWQS, the PRPs abandoned the monitoring wells in 2017. Therefore, groundwater samples are no longer being collected at the site.

Site Inspection

An inspection of the site was conducted on August 3, 2022 by Mark Granger of EPA and Stephanie Fitzgerald of NYSDEC. During the inspection, it was observed that the property is currently being

utilized for the storage of scrap metal and other salvaged materials. The soil cover, fencing, and access road were found to be in good repair.

Ms. Fitzgerald subsequently checked property records and determined that the property was purchased on October 5, 2019.

V. TECHNICAL ASSESSMENT

QUESTION A: *Is the remedy functioning as intended by the decision documents?*

The remedy selected for the Clothier Disposal site included the placement of a one-foot clean soil cover over the contamination areas; regrading and revegetating the site to prevent soil erosion and minimize surface water run-off toward neighboring properties, Ox Creek and the adjacent wetland. Placement of one foot of clean fill over the residually-contaminated area was implemented and has interrupted the exposure pathway to the residual soil contamination. The site fence prevents unauthorized access to the site. The remedy selected for the soil is functioning as intended and is currently protective.

USFWS determined in 1988 that the Clothier Disposal site had not contaminated Ox Creek or the Ox Creek wetland. Because there is a soil cover, constituents potentially in the subsurface are unlikely to be transported via erosional runoff or wind. Therefore, the remedy is protective for ecological receptors. The most recent surface water sampling report (1999) indicated that naturally-occurring inorganic compounds were detected at concentrations consistent with previous monitoring events and exceedances were identified in background samples. The report also concluded that no site-related compounds (VOCs, pesticides, and PCBs) were detected in sediment samples and the concentrations of inorganic compounds (barium) were detected at higher concentrations upgradient, are generally consistent with previous sampling events and not considered hazardous to fish and wildlife. The remedy continues to be protective of ecological receptors.

Although a groundwater remedy was not selected for the site, the ROD required groundwater monitoring to evaluate residual groundwater contamination. Groundwater samples collected during the previous FYR period (2014) indicated that the groundwater had met NYSGWQS. As a result, monitoring was discontinued and the PRPs abandoned the monitoring wells.

To prevent the utilization of the groundwater underlying the site, future development of the site for residential use, and to allow unrestricted site access for maintenance and monitoring activities, a permanent easement was acquired by NYSDEC on May 31, 1991. The exposure pathways have been interrupted; therefore, the remedy is functioning as intended.

QUESTION B: *Are the exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy selection still valid?*

The soil remedy was reviewed to address the protectiveness of the remedy presented in the 1988 ROD.

Some chemical-specific toxicity values have changed since the site was originally assessed. In order to account for these changes since the RI was initiated, the maximum detected concentrations of constituents of potential concern identified during the RI were compared to their respective Regional Screening Levels (RSLs) for residential soils. RSLs are human health risk-based values that are equivalent to a cancer risk of 1 x 10^{-6} or a Hazard Index of 1. During this assessment, contaminant concentrations were found to be below their respective criteria. Therefore, the concentrations of contaminants detected in the soil are considered not to be of concern.

As was noted above, 1 mg/kg PCBs and a total CPAH concentration of 0.33 mg/kg were utilized as soil cleanup levels. Subsequent to the ROD, SCOs were established pursuant to 6 NYCRR Part 375, Environmental Remediation Programs, Subpart 375-6, effective December 14, 2006. The unrestricted use (use without imposed restrictions, such as environmental easements or other land use controls) SCO for PCBs is 0.1 mg/kg. Of the 35 locations that were sampled for PCBs, there were five locations where the surface soil exceeded 0.1 mg/kg and five locations at depth where this SCO was exceeded. The maximum surface soil concentration is 2.5 mg/kg PCB and the maximum subsurface concentration (13-15 feet) is 2.7 mg/kg PCB. The SCOs for the CPAHs detected at the site are 1 mg/kg for benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene and chrysene and 0.8 mg/kg for benzo(k)fluoranthene.. The concentrations for all of the CPAHs are below the unrestricted use SCO. The cleanup levels were also compared to EPAs Risk Screening Levels for Residential Use. The comparison found that the soil cleanup levels identified for PCBs and CPAHs were either within or below the cancer risk range. Based upon this assessment of the residual PCB and CPAH concentrations in the soil, it has been concluded that the remedy is still protective of human health. A soil cover is in place and the use of the property has been restricted, which further reduce exposure to contaminants present at the site.

Soil vapor intrusion was addressed in the 2003 FYR, which concluded that due to the site conditions (*i.e*., buildings are not located on the property), vapor intrusion does not pose a risk to public health. Considering the current information available on the concentrations of VOCs in the groundwater on the site and the institutional controls implemented on the property, the conclusions made during the 2003 evaluation are still valid.

As was noted above, the RAOs for the site included preventing direct human contact with contaminated soil, preventing infiltration through contaminated soil and subsequent leaching of contaminants to groundwater,[1] preventing erosion of contaminated soil from the site and subsequent deposition into the Ox Creek wetland, and preventing migration of contaminated groundwater into the wetland.

Subsequent investigations of the groundwater and wetlands indicated that remedial actions for the groundwater and wetlands were not warranted.

[1] While preventing infiltration through contaminated soil and subsequent leaching of contaminants to groundwater is an RAO, because only residual contamination in the soil remained following the excavation of visibly-contaminated surficial soils, the selected remedy called for a soil cover to prevent direct contact (*i.e.,* infiltration was no longer a concern).

QUESTION C: *Has any other information come to light that could call into question the protectiveness of the remedy?*

There is no other information or issues related to the site that would change the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

As can be seen in Table 4, below, there are no recommendations or follow-up actions for this FYR.

Table 4: Issues and Recommendations

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
OU 01 has no issues/recommendations

OTHER FINDINGS

There are no other findings for this FYR.

VII. PROTECTIVENESS STATEMENT

Table 5, below, provides protectiveness statements.

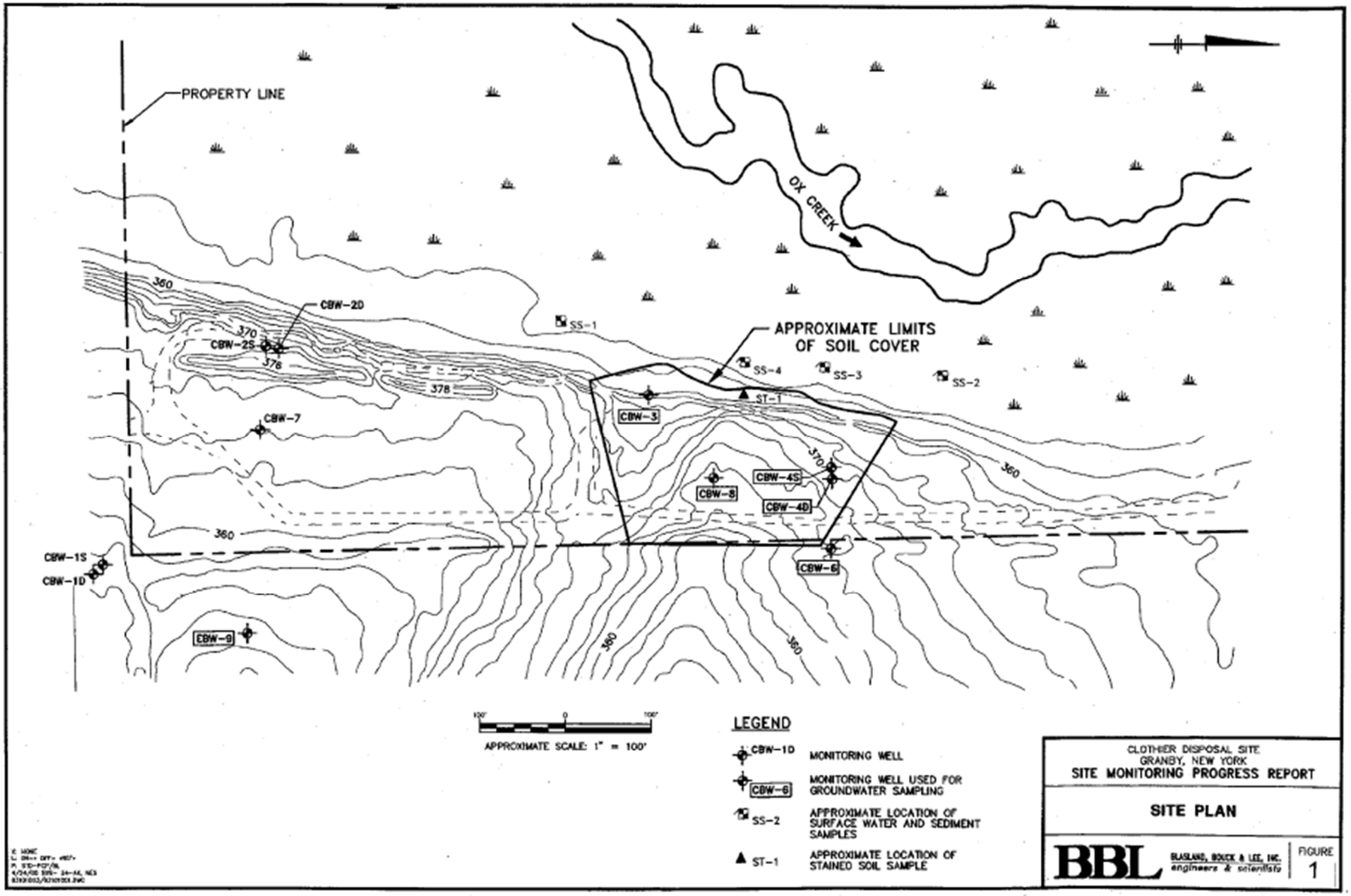
Table 5: Protectiveness Statements

Protectiveness Statement(s)	
Operable Unit: OU1	*Protectiveness Determination:* **Protective**
Protectiveness Statement: The remedy for OU1 is protective of human health and the environment.	
Sitewide Protectiveness Statement	
Protectiveness Determination: **Protective**	
Protectiveness Statement: The sitewide remedy is protective of human health and the environment	

VIII. NEXT REVIEW

The next FYR report for the Clothier Disposal site is required five years from the completion date of this review.

APPENDIX A: FIGURE



CLOTHIER DISPOSAL SITE
GRANBY, NEW YORK
SITE MONITORING PROGRESS REPORT

SITE PLAN

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 1

APPENDIX B: REFERENCES

Documents, Data and Information Reviewed in Completing the Fifth Five-Year Review

Document Title (Author)	Submittal Date
Record of Decision, EPA	1988
Final Post-RI/FS Evaluation of Groundwater and Wetlands, Ebasco Services, Inc.	1990
Remedial Action Report, Blasland, Bouck & Lee	1993
Preliminary Close-Out Report, EPA	1993
Close-Out Report, EPA	1993
First Five-Year Review Report, EPA	1998
Second Five-Year Review Report, EPA	2003
Third Five-Year Review Report, EPA	2008
Fourth Five-Year Review Report, EPA	2013
Fifth Five-Year Review Report, EPA	2018
EPA guidance for conducting five-year reviews and other guidance and regulations to determine if any new Applicable or Relevant and Appropriate Requirements relating to the protectiveness of the remedy have been developed since EPA issued the ROD	

APPENDIX C: CLIMATE CHANGE ASSESSMENT

According to the Region 2 *Guidance for Incorporating Climate Change Considerations in Five Year Reviews*, three climate change tools were utilized to assess the Clothier Disposal Superfund Site. Screenshots from each of the tools assessed are included here.

The first tool utilized was The Climate Explorer. As can be seen from Figure C-1, there is a projected increase of days per year with maximum temperatures greater than 100°F in Oswego County. As can be seen on Figure C-2, there is a slight increase in potential drought conditions. A summary of the Top Climate Concerns from the tool can be seen in Figure C-3.

The second tool utilized is called the Flood Factor. According to this assessment tool, there are over 1,297 properties in Oswego County that have greater than a 26% chance of being severely affected by flooding over the next 30 years. As can be seen from Figure C-4, the Clothier Disposal site is outside of that major flood risk area.

The final tool utilized is called Sea Level Rise. Because the site is located over 300 miles from the coast, coastal flooding impacts at the site is unlikely. Figure C-5 illustrates the Sea Level Rise Viewer for Oswego County.

Based on these results, the performance of the remedy is currently not at risk due to the expected effects of climate change in the region and near the site.

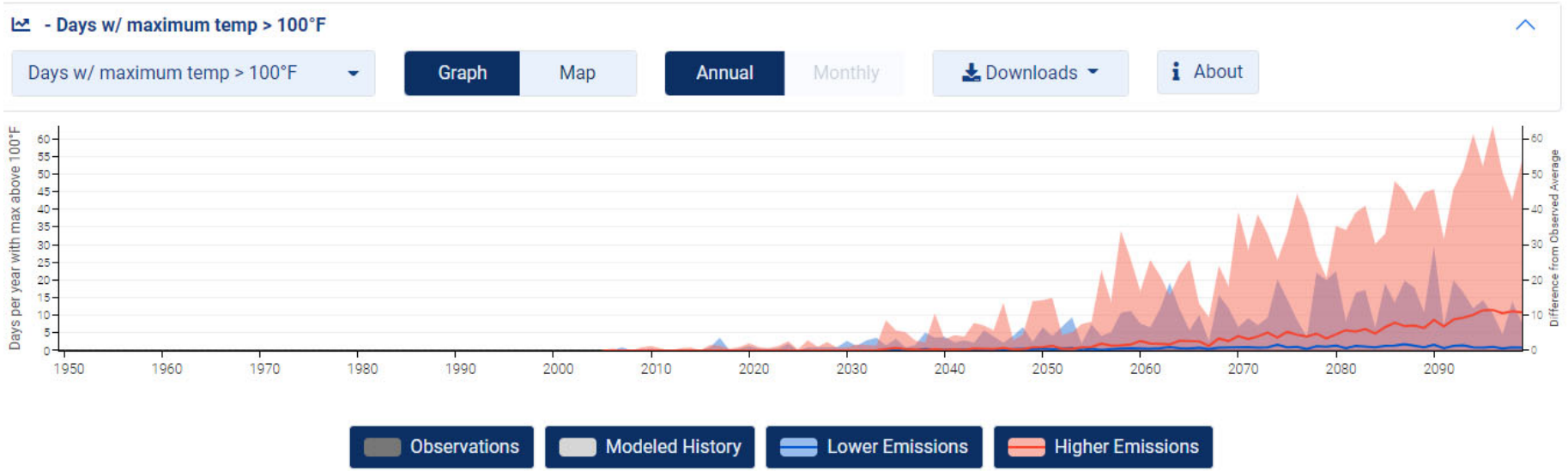


Figure C-1: Oswego County Days per Year With Maximum Temperatures Greater Than 100°F

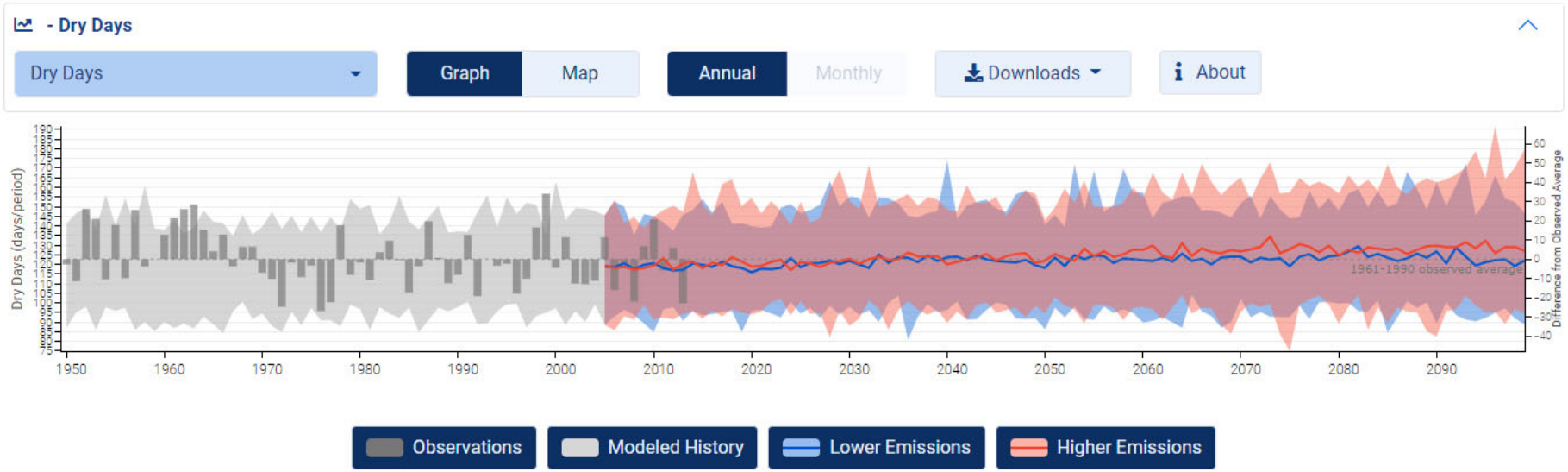


Figure C-2: Oswego County Drought Conditions

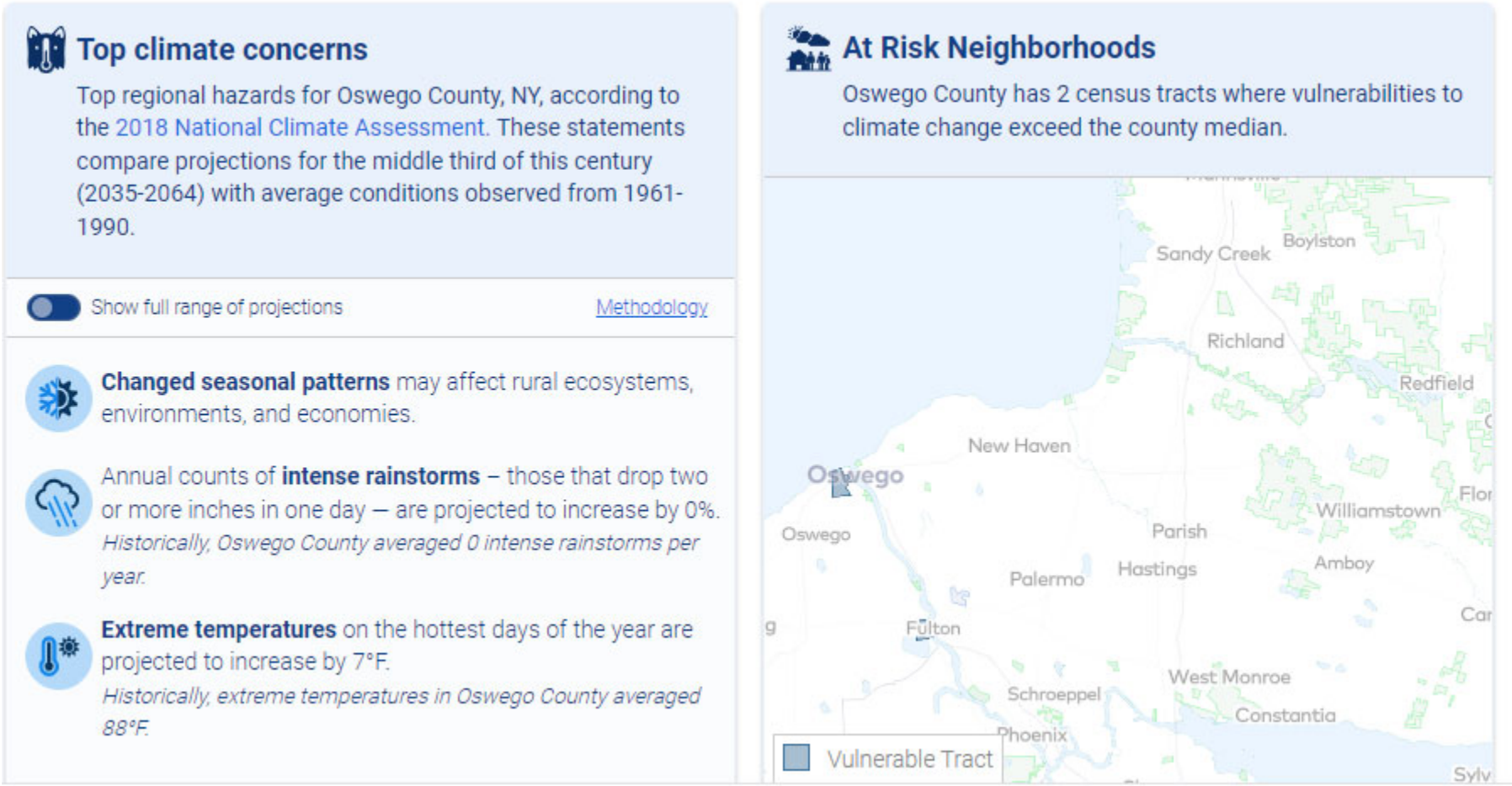


Figure C-3: Summary of Top Climate Concerns for Oswego County, NY

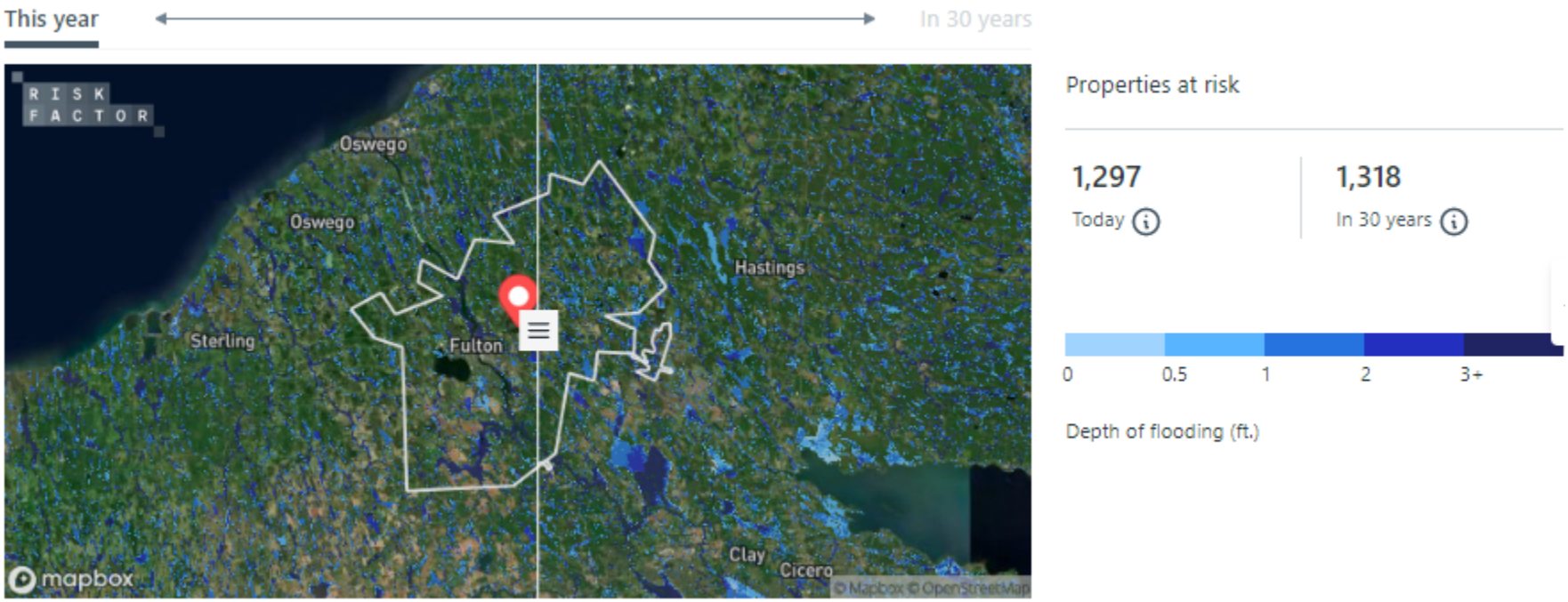


Figure C-4: Flood Factor

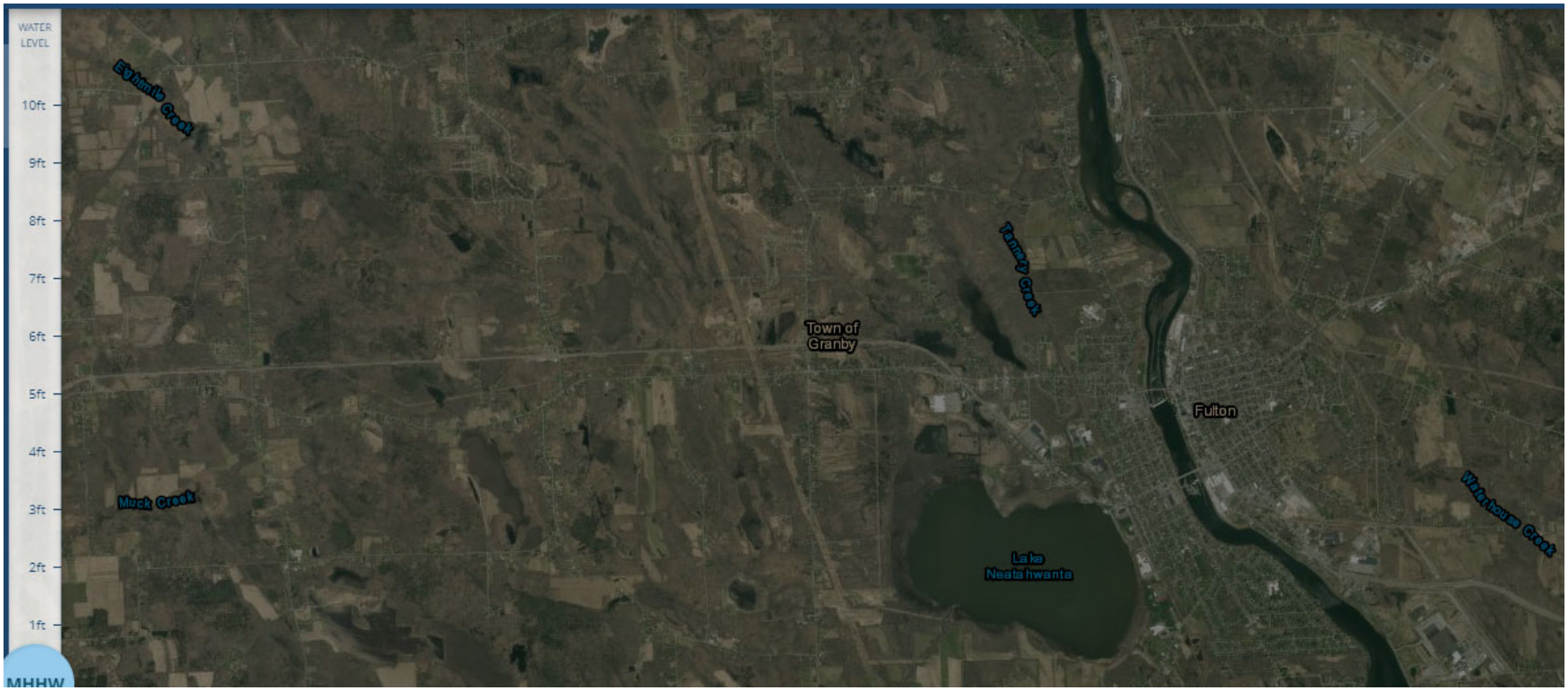


Figure C-5: Sea Level Rise Viewer