

**RECORD OF DECISION for the Kalamazoo River Natural Resource
Damage Assessment: Final Restoration Plan and Programmatic
Environmental Impact Statement**

November 2016

Lead Agencies:

National Oceanic and Atmospheric Administration

U.S. Fish and Wildlife Service

Cooperating Agencies:

Michigan Department of Natural Resources

Michigan Department of Environmental Quality

Michigan Attorney General

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Table of Contents

1. Introduction.....	1
A. Purpose and Need.....	1
B. Public Coordination and Agency Consultation.....	2
2. Decision Made by Trustees.....	2
3. Alternatives Considered.....	3
A. No Action Alternative.....	4
B. Restoration of the Kalamazoo River Corridor within the Kalamazoo River Superfund Site.....	4
C. Restoration within the Kalamazoo River Watershed.....	4
4. Environmental Consequences of the Alternatives.....	5
5. Mitigation Measures and Monitoring.....	12
6. Future Restoration Planning and Implementation.....	12
7. Conclusion.....	13
8. References.....	13

1. Introduction

Natural resources in Michigan have been injured by releases of polychlorinated biphenyls (PCBs) from City of Kalamazoo-area paper mills that contaminated sediments, floodplain soils, surface water, and living organisms in and near Portage Creek and the Kalamazoo River. PCBs are organic chemical compounds that can cause death, cancerous tumors, chromosome alterations, decreased fertility, reduced growth, physical deformations, endocrine system malfunctions, immune system impairment, and other biochemical changes in living organisms. Because of concerns about the persistence and toxicity of PCBs in the environment, Congress banned their manufacture and distribution in the late 1970s.

The National Oceanic and Atmospheric Administration (NOAA), the U.S. Fish and Wildlife Service (USFWS), the Michigan Department of Natural Resources (MDNR), the Michigan Department of Environmental Quality (MDEQ), and the Michigan Attorney General (collectively referred to as the Trustees) are in the process of determining the extent of injuries to natural resources caused by these releases of PCBs, and how to restore these injured natural resources and the services they provide to both other natural resources and the public. This evaluation is known as a natural resource damage assessment (NRDA), which is authorized under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980.

The Trustees prepared the *Final Restoration Plan and Programmatic Environmental Impact Statement for Restoration Resulting from the Kalamazoo River Natural Resource Damage Assessment* (Final RP/PEIS). The RP/PEIS was prepared under the authority of CERCLA and was also developed to comply with the federal agency decision-making requirements of the National Environmental Policy Act of 1969 (NEPA) and NOAA's environmental review procedures [NOAA Administrative Order 216-6, as preserved by NAO 216-6A]. The document was designed to solicit public opinion on a proposed restoration program for the Kalamazoo River NRDA. In the draft version of the RP/PEIS, the Trustees solicited input on the analysis of three alternatives: a No Action alternative and two restoration alternatives that differ in geographic scope. The Trustees also solicited input on two proposed dam removal restoration projects (Otsego City Dam and Otsego Dam) that could be a part of either of the two restoration alternatives.

The scale of restoration activity that will be implemented by the Trustees under the RP/PEIS is not yet known, and will depend upon the resolution of natural resource damage claims with the parties responsible for the PCB releases. Under CERCLA, settlements received by the Trustees, either through negotiated or adjudicated processes, must be used to restore, rehabilitate, replace, and/or acquire the equivalent of those natural resources that have been injured. This RP/PEIS will guide future Trustee decision-making regarding the expenditure of settlements and the implementation of restoration activities.

A. Purpose and Need

The purpose of the proposed restoration program is to restore or enhance ecological services in aquatic, riparian, and upland habitats of the Kalamazoo River watershed that would benefit the types of natural resources injured by PCBs in the Kalamazoo River Environment (KRE) and

increase ecological services provided to humans. The RP/PEIS describes alternative restoration categories that meet the legal requirements of the NRDA process, namely, to restore, replace, rehabilitate, or acquire the equivalent of natural resources and services injured or lost because of releases of PCBs into the KRE.

The federal actions are needed because the response actions alone will not be sufficient to compensate the public for the ecological functions and natural resource services lost due to injuries from the PCB releases that began decades ago.

The Trustees plan to significantly improve the Kalamazoo River watershed through this proposed Natural Resource Damage Assessment (NRDA) restoration program. The overall goal of this program is to contribute to restoring and maintaining a riverine ecosystem with structural and functional components similar to those of the historical Kalamazoo River corridor, before it was degraded by dams and contaminated waste releases. The program includes improving habitat quality and enhancing the fish and wildlife of the Kalamazoo River watershed, as well as improving human-use services.

B. Public Coordination and Agency Consultation

Public participation and input are important parts of the restoration planning process, and are required under NEPA [40 C.F.R. § 1503.1(a)(4) and § 1506.6]. The Trustees solicited public input on restoration during the development of the Stage I assessment report (MDEQ et al., 2005a, 2005b), during the public review of the Operable Unit 1 RP/EA (Stratus Consulting, 2013), and during the scoping process for the RP/PEIS. The scoping process included a public meeting on September 15, 2015 at the Kalamazoo River Nature Center to seek input on potential restoration alternatives.

The Trustees encouraged the public to review and comment on the draft RP/PEIS during a 45-day comment period extending from September 14, 2015 through October 29, 2015 (80 FR 55144). The Trustees used several media outlets to notify the public that the draft RP/PEIS had been released for review and comment, including press releases and direct communications that resulted in an article in the *Kalamazoo Gazette*, posting to the MDEQ calendar; and distribution via email list-serves through the MDNR and the Kalamazoo River Watershed Council that collectively reached over 40,800 people. The Trustees considered all relevant comments received during the public comment period, and revised the Draft RP/PEIS, as warranted. A Final RP/PEIS was made available to the public on August 29, 2016 (FR# 2016-20723), and the document included a summary of comments received and the Trustees' responses in Appendix D of the RP/PEIS.

Future restoration planning and implementation is described later in this Record of Decision (ROD) in Section 6, and includes descriptions of Trustee governance and public coordination for restoration actions.

2. Decision Made by the Trustees

This ROD documents NOAA's and USFWS' decision, as the lead Federal Trustees, to approve the Trustee's Preferred Alternative C and the decision to conduct restoration within the Kalamazoo River watershed (described in the RP/PEIS in Section 3.2.3). This alternative would

consist of a mixture of aquatic habitat restoration, riparian and wetland habitat restoration, dam removal for river and fish passage restoration, and habitat conservation actions in the 5,230-square-kilometer (2,020-square-mile) Kalamazoo River watershed, including potential projects in tributaries. Under this alternative, the Trustees could conduct restoration actions in locations that have not been affected by PCBs, including projects in tributaries other than Portage Creek, and in remediated areas that were previously contaminated with PCBs. This alternative also includes the two specific projects to restore aquatic connectivity on the Kalamazoo River by removing dams in and near Otsego, Michigan. The Trustees selected this alternative since it allows the most flexibility to meet the Trustees' restoration objectives, both in terms of geographic location and timing.

The scale of restoration activity that will be implemented under the RP/PEIS is not yet known, and will depend upon the resolution of natural resource damage claims with the parties responsible for the PCB releases. The Trustees expect to have opportunities to settle natural resource damage claims with willing parties. Under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), settlements received by the Trustees, either through negotiated or adjudicated processes, must be used to restore, rehabilitate, replace, and/or acquire the equivalent of those natural resources that have been injured [42 U.S.C. § 9607(f)(1)]. The RP/PEIS will guide future Trustee decision-making regarding the expenditure of settlements and the implementation of restoration activities – it also provides criteria and guidance for Trustees to use in selecting restoration projects that are feasible and most effectively benefit the types of natural resources that were injured by the PCB contamination.

3. Alternatives Considered

The Trustees considered a range of alternatives for restoring natural resources. The Trustees developed restoration alternatives in a step-wise process. First, the Trustees identified categories of restoration projects and techniques that could be incorporated (either singly or in combination) into specific projects. Next, the Trustees developed two restoration alternatives that would apply the restoration project categories in different geographic regions. These two alternatives, plus a No Action alternative, were carried forward for analysis. Finally, the Trustees evaluated all of the alternatives and identified a preferred alternative. The preferred alternative allows the most flexibility to meet the Trustees' restoration objectives, which are presented in Table 2.1 of the RP/PEIS, and include objectives related to ecological quality, geophysical/ chemical quality, and public recreational access, as well as other considerations.

The restoration categories and the techniques for each are as follows and are described in detail in Section 3.1 of the RP/PEIS:

- Aquatic habitat restoration
 - a. Instream restoration
 - b. Streambank restoration
 - c. Reintroduction and enhancement of native species
 - d. Invasive aquatic species control

- Riparian and wetland habitat restoration
 - a. Riparian and wetland restoration
 - b. Reintroduction and enhancement of native plants
 - c. Reintroduction and enhancement of native animals
 - d. Invasive species control
- Barrier removal
 - a. Dam removal
 - b. Small barrier removal and replacement
 - c. Other fish passage types and fish passage modifications
- Habitat conservation
 - a. Habitat conservation

The three alternatives considered are:

- A. **No Action Alternative.** With the No Action Alternative, required by NEPA [40 C.F.R. § 1502.14(d)], the Trustees would not initiate any specific actions to restore injured natural resources or compensate the public for losses from ongoing natural resource injuries from the release of PCBs. State and federal agencies would continue to manage, conserve, and protect the Kalamazoo River watershed, as outlined in current programs and regulations, other than the NRDA, and within current budgets and budget constraints. This alternative was included to present a restoration baseline for the comparison of the impacts of the other two alternatives.
- B. **Restoration of the Kalamazoo River Corridor within the Kalamazoo River Superfund Site.** With this alternative, the Trustees would conduct restoration only in the 129-kilometer (80-mile) stretch of the Kalamazoo River corridor and the 4.8-kilometer (3-mile) stretch of Portage Creek within the designated Superfund Site. Restoration actions could include any of the desired restoration project categories discussed in Section 3.1 of the RP/PEIS, including the two specific projects to restore aquatic connectivity in the Kalamazoo River by removing dams in and near Otsego, Michigan. This restoration alternative would primarily focus on longitudinal connectivity of the river and its riparian corridor, but could also address lateral connectivity of the Kalamazoo River with its floodplain and surrounding watershed. The Trustees could conduct restoration in areas that have already been remediated and in areas that are upstream of all planned remediation. This alternative is constrained in terms of space (within the Superfund Site and along the Kalamazoo River corridor) and time (for restoration in areas that are to be remediated under the direction of the U.S. Environmental Protection Agency (EPA)).
- C. **Restoration within the Kalamazoo River Watershed.** With this alternative, the Trustees would conduct restoration in the 5,230-square-kilometer (2,020-square-mile) Kalamazoo River watershed, including projects in tributaries in addition to Portage

Creek. Restoration actions could include any of the desired restoration project categories discussed in Section 3.1 of the RP/PEIS, including the two specific projects to restore aquatic connectivity in the Kalamazoo River by removing dams in and near Otsego, Michigan. Because of the inclusion of the broader watershed, this alternative places a greater emphasis on lateral connectivity of the Kalamazoo River to floodplain and riparian habitats, than Alternative B. The Trustees could conduct restoration actions in locations that have not been affected by PCBs, including projects in tributaries other than Portage Creek, and in remediated areas that were previously contaminated with PCBs. Under this alternative, there are more opportunities for more timely restoration actions and for restoration in a larger area not directly affected by PCB releases, but which would still provide benefits to injured natural resources in the KRE through overall improvements in water quality and habitat restoration, rehabilitation or protection.

Compared to Alternatives A and B, Alternative C is the environmentally preferable alternative. It would have the greatest overall benefits to the biological and physical environment in the overall watershed, and would best protect, preserve, and enhance the broadest range of natural resources evaluated in the RP/PEIS.

4. Environmental Consequences of the Alternatives

The RP/PEIS presented a detailed evaluation of the reasonably foreseeable consequences of implementing the alternatives on the physical, biological, and human environment. These are summarized in the following section and Table 1.

- A. **No Action Alternative.** The No Action Alternative is not anticipated to cause any adverse or beneficial impacts on water resources and water quality, geological resources, biological resources, air quality, socioeconomic resources/environmental justice, recreation and land use, noise, or cultural resources.
- B. **Restoration of the Kalamazoo River Corridor within the Kalamazoo River Superfund Site.** Impacts from this alternative would be similar to those described for Alternative C, below; however, they would differ in terms of the geographic scope and timing. Short-term impacts on cultural resources could be greater if restoration actions were concentrated in a smaller geographical area than those described for Alternative C.
- C. **Restoration within the Kalamazoo River Watershed.** This alternative would result in a variety of short-term, direct and indirect, adverse impacts, resulting from restoration activities, which range in severity from negligible to moderate impacts on:
 - a. Water resources and water quality, during restoration activities
 - b. Sediment quality, during restoration activities
 - c. Fish, during barrier removals
 - d. Aquatic invertebrates, during aquatic habitat restoration, riparian and wetland habitat restoration, and barrier removals
 - e. Wildlife during aquatic habitat restoration, riparian and wetland habitat restoration, and barrier removals

- f. Vegetation, during aquatic habitat restoration, riparian and wetland habitat restoration, and barrier removals
- g. Karner blue butterfly, Mitchell's satyr butterfly, copperbelly water snake, and eastern massasauga; unlikely, but could occur from vegetation removal during riparian and wetland habitat restoration, depending on the timing and location of construction activities
- h. Air quality, from increased air emissions and particulate matter of vehicles, machinery, and construction equipment
- i. Noise, from increased noise of equipment and vehicles during restoration activities
- j. Recreation and land use, from the temporary closure of recreational areas
- k. Cultural resources, from visual impacts and increased noise of equipment and vehicles during restoration activities

In addition to those impacts described above, the alternatives could also result in short-term, moderate to major, adverse impacts on the federally-listed Indiana bat and northern long-eared bat. Impacts are unlikely, but could occur if there were a loss of trees resulting from riparian and wetland habitat restoration activities during the bat breeding season. The Trustees, in consultation with the USFWS through the Endangered Species Act, as appropriate, will carefully plan such activities to avoid these potential impacts. Long-term, minor, adverse impacts on aquatic invertebrates could occur, if barrier removals allow the spread of invasive plant or animal species. The Trustees will evaluate the potential for introduction of invasive species for proposed barrier removal projects and will take necessary precautions to limit such introductions.

In the long-term, the Alternative C is expected to result in a variety of direct and indirect, minor to major, beneficial impacts on water resources and water quality, sediment quality, biological resources, the local economy, recreational opportunities, and cultural resources. No impacts to geological resources are expected.

The Trustees also evaluated cumulative impacts, which are the combined effects on the quality of the human environment that result from the incremental impact of the alternative when added to other past, present, and reasonably foreseeable future actions [40 C.F.R. §§ 1508.7, 1508.25(a), and 1508.25(c)]. In the short-term, there would be potential for cumulative impacts with anticipated remedial actions under CERCLA. In the long-term, the Trustees' restoration program and proposed remedial actions are expected to provide moderate to major cumulative benefits to the environment and to human uses of the environment, combined with other restoration, watershed management, and soil conservation programs in the Kalamazoo River watershed.

Table 1. Summary of environmental impacts

Resource Area	Alternative A (No Action)	Alternative B	Alternative C (Preferred Alternative)
Water resources and water quality	No impacts on water resources or water quality would be expected.	Impacts would be similar in nature but differ in terms of geographic scope and timing than those described for Alternative C. No long-term impacts would be expected.	Short-term, minor to moderate, adverse impacts on water resources and water quality would be expected during restoration activities. Long-term, moderate to major, beneficial impacts on water resources and water quality would be expected from aquatic habitat restoration, riparian and wetland habitat restoration, barrier removals, and habitat conservation.
Geological resources and sediment quality	No impacts on geologic resources or sediment quality would be expected.	Impacts would be similar in nature but differ in terms of geographic scope and timing than those described for Alternative C. No long-term adverse impacts on sediment quality would be expected. No impacts on geologic resources would be expected.	Short-term, moderate, adverse impacts on sediment quality would be expected during restoration activities. Long-term, moderate to major, beneficial impacts on sediment quality would be expected from aquatic habitat restoration, riparian and wetland habitat restoration, barrier removals, and habitat conservation. No impacts on geologic resources would be expected.
Fish			
Biological resources	No impacts on fish would be expected.	Impacts would be similar in nature but differ in terms of geographic scope and timing than those described for Alternative C.	Short-term, minor, adverse impacts on fish would be expected during barrier removals. Long-term, direct and indirect, minor to moderate, beneficial impacts on fish would be expected from aquatic habitat restoration, riparian and wetland habitat restoration, barrier removals, and habitat conservation.

Table 1. Summary of environmental impacts (cont'd)

Resource Area	Alternative A (No Action)	Alternative B	Alternative C (Preferred Alternative)
Aquatic invertebrates			
No impacts on aquatic invertebrates would be expected.	Impacts would be similar in nature but differ in terms of geographic scope and timing than those described for Alternative C.	Short-term, minor, adverse impacts on aquatic invertebrates would be expected from aquatic habitat restoration, riparian and wetland habitat restoration, and barrier removals. Long-term, minor, adverse impacts on aquatic invertebrates could occur as a result of barrier removals if they allow the spread of invasive species into new areas. Long-term, minor to major, beneficial impacts on aquatic invertebrates would be expected from aquatic habitat restoration, riparian and wetland habitat restoration, barrier removals, and habitat conservation.	
Wildlife			
No impacts on wildlife would be expected.	Impacts would be similar in nature but differ in terms of geographic scope and timing than those described for Alternative C.	Short-term, minor to moderate, adverse impacts on wildlife would be expected from aquatic habitat restoration, riparian and wetland habitat restoration, and barrier removals. Long-term, minor to major, beneficial impacts on wildlife would be expected from aquatic habitat restoration, riparian and wetland habitat restoration, barrier removals, and habitat	

Biological resources

Table 1. Summary of environmental impacts (cont'd)

Resource Area	Alternative A (No Action)	Alternative B	Alternative C (Preferred Alternative)
Vegetation			
No impacts on vegetation would be expected.	Impacts would be similar in nature but differ in terms of geographic scope and timing than those described for Alternative C.	Short-term, minor, adverse impacts on vegetation would be expected from aquatic habitat restoration, riparian and wetland habitat restoration, and barrier removals. Long-term, minor to major, beneficial impacts on vegetation would be expected from aquatic habitat restoration, riparian and wetland habitat restoration, barrier removals, and habitat conservation.	
Indiana bat and northern long-eared bat			
No impacts on Indiana bat or northern long-eared bat would be expected.	Impacts would be similar in nature but differ in terms of geographic scope and timing than those described for Alternative C.	Short-term, moderate to major, adverse impacts are unlikely but could occur if there were a loss of trees during riparian and wetland habitat restoration activities during bat breeding season. Long-term, minor to moderate, beneficial impacts would be expected from aquatic habitat restoration, riparian and wetland habitat restoration, and habitat conservation.	
Karner blue butterfly, Mitchell's satyr butterfly, copperbelly water snake, and eastern massasauga			

Biological resources

<p>No impacts on Karner blue butterfly, Mitchell's satyr butterfly, copperbelly water snake, and eastern massasauga would be expected.</p>	<p>Impacts would be similar in nature but differ in terms of geographic scope and timing than those described for Alternative C.</p>	<p>Short-term, moderate, adverse impacts are unlikely but could occur from vegetation removal during riparian and wetland habitat restoration, depending on the timing and location of construction activities. Long-term, moderate, beneficial impacts would be expected from increased and improved wetland, bog, and fen habitats.</p>
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Table 1. Summary of environmental impacts (cont'd)

Resource area	Alternative A (No Action)	Alternative B	Alternative C (Preferred Alternative)
Air quality	No impacts on air quality would be expected.	Impacts would be similar in nature but differ in terms of geographic scope and timing than those described for Alternative C.	Short-term, direct, minor, adverse impacts from increased air emissions and particulate matter of vehicles, machinery, and construction equipment. No long-term impacts on air quality would be expected.
Socioeconomic resources and environmental justice	No impacts on socioeconomic resources or environmental justice populations would be expected.	Impacts would be similar in nature but differ in terms of geographic scope and timing than those described for Alternative C.	No short- or long-term impacts on population would be expected. Short- and long-term, minor to moderate, beneficial impacts on the local economy would be expected.
Recreation and land use	No impacts on recreation and land use would be expected.	Impacts would be similar in nature but differ in terms of geographic scope and timing than those described for Alternative C.	Short-term, direct, minor to moderate, adverse impacts from the temporary closure of recreational areas would be expected. Long-term, minor to moderate, beneficial impacts from increased recreational opportunities would be expected. No short- or long-term impacts on land use would be expected.
Noise	No impacts on the noise environment would be expected.	Impacts would be similar in nature but differ in terms of geographic scope and timing than those described for Alternative C.	Short-term, direct, minor, adverse impacts from increased noise of equipment and vehicles during restoration activities would be expected. No long-term impacts on the noise environment would be expected.
Cultural resources	No impacts on cultural resources would be expected.	Impacts would be similar in nature but could be greater if restoration actions were concentrated in a smaller geographical area than those described for Alternative C. They would differ from Alternative C in	Short-term, direct, negligible to minor, adverse impacts from visual impacts and increased noise of equipment and vehicles during restoration activities would be expected. Long-term, moderate, beneficial impacts on cultural resources would be expected.

5. Mitigation of Impacts

Potential adverse impacts will be mitigated in several ways. First, the Trustees' project evaluation criteria (described in Table 2.2 of the RP/PEIS) encourage the selection of projects that do not negatively impact the environment. Upon selecting projects, the Trustees would employ a variety of practical mitigation measures to minimize adverse environmental impacts resulting from the restoration alternatives. Mitigation measures include avoiding impacts by not taking a certain action or parts of an action; limiting the degree or magnitude of the action; reducing or eliminating the impact over time by preservation and maintenance actions; and rectifying or compensating for the impact by repairing, rehabilitating, restoring, or replacing the affected environment [40 C.F.R. § 1508.20]. In addition to specific mitigation measures, the Trustees would use adaptive management techniques to minimize impacts and would conduct project monitoring and rectify problems as they arise. The Trustees will minimize cumulative adverse impacts associated with the remedial actions by coordinating the timing and nature of restoration projects with remedial projects being directed by EPA.

A. Project Evaluation Criteria, Monitoring, and Performance Criteria

The Trustees will evaluate and prioritize specific projects using a set of evaluation criteria that are described in Table 2.2 of the RP/PEIS. These criteria are consistent with the NRDA regulations at 43 C.F.R. Part 11, and Trustees' mandates and preferences. The evaluation criteria fall into two categories: (1) threshold criteria that need to be met for a project to be considered, and (2) additional criteria that inform the selection process by identifying desirable qualities to be considered in order to rank alternatives, if sufficient funding is not available to execute all the acceptable actions.

Each restoration project will require long-term stewardship to ensure that it continues to meet objectives for the expected lifespan of the project. To achieve this goal, the Trustees will require that each project have the following:

- A project-specific monitoring plan and performance criteria (prior to project implementation);
- An adaptive management plan (prior to project implementation);
- An as-built construction survey or other appropriate documentation as determined by the Trustees (once construction is complete); and
- Annual monitoring reports and adaptive management actions that need to be implemented.

6. Future Restoration Planning and Implementation

The future responsibilities and actions of the Trustees will include restoration planning, public engagement, restoration implementation, monitoring and adaptive management, financial management, and restoration tracking. The Trustees will oversee and govern future restoration planning and implementation in compliance with CERCLA, NEPA, other federal, state and local

laws, and in the context of this RP/PEIS. The Trustees will ensure transparency and accountability of future actions via preparation of site-specific, project-based restoration plans that meet the criteria established in this RP/PEIS (see below), along with future NEPA analyses, as appropriate.

The Trustees will propose specific projects that will be consistent with the Final RP/PEIS and will be presented for public review and comment prior to finalization. Individual projects will contribute to one or more of the goals established for the relevant restoration categories and will be based on one or more of the restoration approaches analyzed for the relevant restoration categories in the Final RP/PEIS. The Trustees have determined that the subsequent projects must also be consistent with the objectives outlined in Final RP/PEIS Section 2.2 (see Table 2.1). In developing and evaluating projects, the Trustees will take into account the planning and implementation considerations described in Final RP/PEIS, and restoration planning will also be informed by public input.

7. Conclusion

Through the RP/PEIS, and documented in this ROD, the Trustees have developed and analyzed alternatives, associated impacts, and mitigation of those impacts. The Trustees received and considered public and agency input, and selected restoration within the Kalamazoo River watershed as their preferred alternative for restoring natural resources and services injured by PCBs. NOAA and USFWS as Federal Trustee co-leads have made the decision to accept the Trustee's Preferred Alternative, and this ROD supports this decision.

8. References

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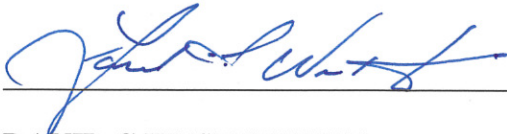
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NOV 29 2016

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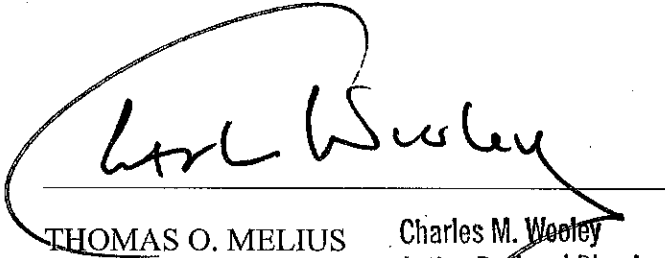
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FOR THE DEPARTMENT OF THE INTERIOR:

11/30/16

Date

A handwritten signature in black ink, appearing to read "Charles M. Wooley", is written over a horizontal line. The signature is stylized and cursive.

THOMAS O. MELIUS

Charles M. Wooley
Acting Regional Director

Regional Director, Region 3, U.S. Fish and Wildlife Service