FINDING OF NO SIGNIFICANT IMPACT (FONSI)
Cuyahoga Valley National Park
Tinkers Creek Aqueduct – Phase II

The National Park System preserves outstanding representatives of the best of America's natural, cultural, and recreational resources of national significance. These resources constitute a significant part of the American heritage, its character, and future. Along with similar resources of local, state, tribal, and national significance administered by other public and private organizations and supported by National Park Service (NPS) technical assistance and grant funding, the Cuyahoga Valley National Park (CVNP) is a vital part of America's system of parks and other preserved resources. Historic resources in the CVNP include the Ohio & Erie Canal (including the towpath), the Valley Railway, and numerous buildings and bridges. Many of these resources are on the National Register of Historic Places.

The Tinkers Creek Aqueduct is one of the historic resources to be preserved and protected for public use and enjoyment as part of the purpose for the CVNP. It carries the Ohio & Erie Canal over Tinkers Creek near the northern end of the CVNP in Cuyahoga County, Ohio. The aqueduct site is located between Locks 37 and 38 and is immediately adjacent to and downstream of the Canal Road Bridge over Tinkers Creek. It is located in the watered potion of the canal and is a critical element in maintaining the continuity of the waterway and the Towpath Trail in the area.

The Tinkers Creek Aqueduct is individually listed on the National Register of Historic Places and is a contributing resource in the Ohio & Erie Canal National Historic Landmark. The Ohio & Erie Canal National Historic Landmark includes a four-mile watered section of the canal that generally retains its historic appearance, Alexander Mill, the Lock Tender's House (currently the Canal Visitor Center), Locks 37 and 38, and the Tinkers Creek Aqueduct.

The original aqueduct carrying the Ohio & Erie Canal over Tinkers Creek was constructed between 1825 and 1827 at a location upstream of the current site. The first aqueduct at the current site was constructed in 1845. The aqueduct structure has been replaced and rehabilitated many times over the years. This is part of the nature of an aqueduct structure, because they must be constructed at the same elevations as the waterways that they convey. These elevations are below frequent flood elevations so that an aqueduct structure is subject to static and dynamic hydraulic pressures, scour, buoyancy, and debris impact from the waterbodies that they cross.

The aqueduct structure included a timber trough that required on-going maintenance to ensure water tightness. By the late 20th century it had deteriorated to the point that it could not effectively hold water. Earthen dams were placed at both ends of the aqueduct and three HDPE pipes were installed on the floor of the trough to convey the canal water across Tinkers Creek. The trusses, especially in their lower portions, continued to deteriorate to the point where they exhibited signs of localized failure and severe section loss.

In 2007, under emergency action, the NPS let a contract for Phase I of the aqueduct replacement project. Phase I included removal of the existing truss superstructure, timber trough, HDPE

conveyance pipes and Towpath Trail Bridge. To convey flow from Lock 37 to Lock 38 and to maintain the water levels in the Ohio & Erie Canal on either side of Tinkers Creek, the conveyance pipes were replaced with two steel pipes. Approximately 45 feet south of the structure, a vertical riser pipe and outfall pipe structure were constructed in the canal to serve as a temporary emergency outflow during storm events. A new two-span Towpath Trail Bridge was constructed that is supported off the existing stone abutments and pier.

The NPS is now proposing to complete the process that was started in Phase I with the construction of Phase II, which will consist of removal of the temporary twin steel pipes structure, removal of the vertical riser pipe and outflow pipe structure, repair and rehabilitation of the masonry pier and abutments and construction of a new aqueduct superstructure and transition structures to restore the canal to its historic, functional condition.

In consultation with the Ohio State Historic Preservation Office (SHPO), the NPS determined that the phased removal and replacement of the Tinkers Creek Aqueduct will have an adverse effect on Tinkers Creek Aqueduct and the Ohio & Erie Canal. In July 2006, the NPS and the SHPO entered into a Memorandum of Agreement (MOA) pursuant to 36 CFR 800.6(a) of the regulations implementing Section 106 of the National Historic Preservation Act. Stipulations in the MOA include:

- Documentation of the Tinkers Creek Aqueduct to Historic American Engineering Record (HAER) Documentation Level II standards. This documentation has been accomplished.
- A Wayside Exhibit to be constructed and installed along the Towpath Trail adjacent to the new aqueduct which discusses the history of the Ohio & Erie Canal aqueducts over Tinkers Creek. This will be accomplished as part of Phase II.
- Design Review – Plans for both phases to be reviewed and approved by the SHPO. This has been done for Phase I and will be done for Phase II.
- Archaeological monitoring by a qualified archaeologist during ground disturbing activity.

Since it was not possible to preserve or restore all of the previous aqueduct superstructure due to advanced deterioration, the purpose of the project is to construct a new aqueduct superstructure and rehabilitate the existing masonry abutments and pier to restore the canal prism across Tinkers Creek in a manner that maintains an acceptable degree of historic accuracy consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties, and SHPO.

The NPS has prepared an environmental assessment (EA) for the proposed Phase II. The EA was available for public review from November 5, 2009 until November 29, 2009 in the NPS Planning Environment and Public Comment (PEPC) system online and at park headquarters. The EA analyzed two alternatives: Alternative 1 – No Action Alternative and Alternative 2 - Construct New Aqueduct Structure. The EA was prepared pursuant to the Council on Environmental Quality's regulations for implementing the National Historic Preservation Act (NEPA) (40 CFR 1500 et seq.), 42 U.S.C. 4332(2), Director's Order #12: Conservation Planning, Environmental Impact Analysis, and Decision-making Handbook (2001) (DO-12). The NPS used a streamlined EA process, as outlined in the new Department of the Interior regulations at 43 CFR 46.310(b). That regulation allows the use of a streamlined EA process in specific circumstances: "... when there are no unresolved conflicts about the proposed action

with respect to alternative uses of available resources, the environmental assessment need only consider the proposed action and does not need to consider additional alternatives, including the no action alternative."

SELECTED ALTERNATIVE

Based on the analysis in the EA, the NPS has selected Alternative 2 - Construct New Aqueduct Structure. Under the Selected Alternative, the steel pipes will be replaced with an aqueduct superstructure that will restore the canal prism across Tinkers Creek, and will feature the same geometry, elevation and plan location as the previous aqueduct superstructure. The existing masonry substructures (center pier and abutments) will be rehabilitated in a manner that maintains an acceptable degree of historical accuracy, is consistent with the Secretary of the Interior's Standards of Treatment of Historic Properties, and is acceptable to the Ohio SHPO. The elevation of the low chord of the superstructure will be the same or higher than that of the previous aqueduct structure.

Design features will be utilized that can resist hydraulic loads including static and dynamic hydraulic pressure, buoyancy and debris impact. It will be a two-span, reinforced concrete through girder and floor slab system. The structural through girder and floor slab elements will also serve as the trough which will have inside dimensions that match the previous structure (5'-8 ¼" x 21'-10"). The total length of the aqueduct will be approximately 94'-0" with two identical continuous spans of 47'-0". The through girders will be designed to be cast-in-place or precast and the floor slab will be cast-in-place.

New concrete stub abutments will be located immediately behind the existing masonry abutments and founded on micropiles. The existing masonry abutments will feature non-structural restoration including replacement of crack stones, re-setting displaced stones, and re-pointing of open joints. The existing masonry pier will be restored, and will consist of dismantling the existing pier down to the timber mat (exclusive of the portion of the pier currently carrying the Towpath Trail Bridge), installation of micropiles, a reinforced concrete footing and reconstruction of the masonry pier back to its previous configuration.

Reinforced concrete transition structures will be constructed at either end of the new aqueduct to provide a smooth hydraulic transition from the earthen canal section to the concrete trough section. Sealed expansion joints will be provided at the trough-to-transition structure interface at each end.

The temporary high-water overflow spillway structure will be removed. Two 24" diameter cast iron waste gates will be located in the west wall of one transition structure with high-density polyethylene (HDPE) outfall pipes discharging downstream of the aqueduct.

A wayside exhibit will also be installed which will utilize the HAER documentation developed prior to removal of the previous aqueduct superstructure. The general site and canal will also be restored immediately adjacent to the aqueduct.

OTHER ALTERNATIVES CONSIDERED

Under Alternative 1 - No Action Alternative, the existing improvements constructed under Phase I would remain, and Phase II would not be constructed. The new Towpath Trail Bridge would remain in its current location. The steel pipes constructed to carry canal water over the creek would continue to maintain flow in the canal. The high-water overflow spillway structure would remain and continue to function as a flood event overflow. The abutments and center pier of the previous aqueduct structure would be maintained, but these features would continue to deteriorate. The NPS would be unable to fulfill all of the stipulations in the MOA with the SHPO.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The environmentally preferable alternative is the alternative that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historic, cultural, and natural resources. When identifying the environmentally preferable alternative, economic, recreational, and technical issues are not considered. The environmentally preferable alternative is the alternative that will promote the national environmental policy expressed in NEPA (Section 101(b)) as the alternative that will help the Nation:

1. fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

2. assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;

3. attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;

4. preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice;

5. achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and

6. enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The Selected Alternative best fulfills the responsibility of this generation as trustee of the environment for succeeding generations. This is based primarily on goals of this alternative to maintain the continuity of the Ohio & Erie Canal and Towpath Trail in this area while providing the cultural landscape of an aqueduct over Tinkers Creek.

The Selected Alternative fulfills the second objective by maximizing the assurance of safety, health, productivity and culturally pleasing surroundings. Upon completion of construction, the

Towpath Trail of Alternative 2 would provide a safe and healthful location with the aesthetically and culturally pleasing surroundings of a canal and aqueduct constructed to an acceptable degree of historical accuracy.

The Selected Alternative fulfills the third objective by aspiring to the widest range of beneficial uses of the environment without degradation or risk to health and safety. Alternative 2 aspires to the enjoyment of the Towpath Trail including views of the canal, Tinkers Creek, and an aqueduct structure without undesirable consequences.

The Selected Alternative fulfills the fourth objective by preserving the important historic and cultural aspects of our natural heritage in preserving an operating section of the Ohio & Erie Canal an aqueduct constructed to an acceptable degree of historical accuracy. It will do this as much as possible while maintaining an environment which supports diversity and variety of choice.

The Selected Alternative balances population with resource use by allowing an increase for use of the Towpath Trail, Towpath Bridge and appreciation for the Ohio & Erie Canal and the Tinkers Creek Aqueduct in a way which permits high standards of living and a wide sharing of life's amenities.

Alternative 1 - No Action Alternative would utilize the fewest depletable resources of the two alternatives, as no additional resources would be utilized.

The Selected Alternative, Alternative 2- Construct New Aqueduct Structure, is considered the environmentally preferable alternative, as it meets five of the six NEPA objectives.

WHY THE SELECTED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT

As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

There would be temporary construction impacts to streamflow from the use of falsework set in the streambed for construction of the concrete trough and from a cofferdam and causeway set in Tinkers Creek for the pier construction. The Selected Alternative would increase flood levels as compared to the twin pipes that presently span Tinkers Creek for a long-term moderate adverse impact; however, the structure would be a smaller hydraulic obstruction than the steel truss structure that was removed in 2007. It would be a long-term minor beneficial impact on flood flows compared with the impact from past aqueduct superstructures that have been in place since 1845.

The vegetation in the area immediately surrounding the aqueduct would experience short-term minor adverse impacts from construction. Upon completion of construction, impacted areas would be reseeded.

The Selected Alternative would replace the current steel pipes "with a contemporary-but-compatible structure using the historic abutments and center pier," which is part of the proposed mitigation for the adverse effect documented in the MOA with the SHPO. Coordination with the SHPO has established that the rehabilitation of the existing masonry substructures will be done in a manner that maintains an acceptable degree of historical accuracy and is consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties. The Selected Alternative would therefore result in a long-term moderate beneficial direct impact to the historic structure and to the cultural landscape, which would result in an overall mitigated long-term major adverse cumulative impact to the historic Tinkers Creek Aqueduct structure.

Construction of the Selected Alternative would require a detour for the Towpath Trail over the Canal Road Bridge causing short-term minor adverse impacts to visitor use and experience. Upon completion of construction, the long-term minor beneficial cumulative impact of the new Towpath Trail Bridge constructed in 2007 would be restored along with an overall long-term moderate beneficial cumulative impact to visitor use and experience and to park operations from the new aqueduct structure.

The degree to which the proposed action affects public health or safety.

The current Towpath Trail Bridge is too close to the aqueduct construction site for concurrent safe use and it would also need to be temporarily removed during the construction process to ensure it would not be damaged during construction of the new aqueduct superstructure. A detour would therefore be provided during construction for Towpath Trail users who would once again need to cross Tinkers Creek on the Canal Road Bridge. Upon completion of construction, the long-term minor beneficial cumulative impact of the new Towpath Trail Bridge constructed in 2007 would be restored.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

The Tinkers Creek Aqueduct is individually listed on the National Register of Historic Places and is a contributing resource in the Ohio & Erie Canal National Historic Landmark. The Selected Alternative is part of the proposed mitigation for the adverse effect from the 2007 Phase I project as documented in the MOA with the Ohio SHPO (letter dated July 5, 2006).

The federally endangered Indiana bat (*Myotis sodalis*) was found within CVNP boundaries in July 2002, the first instance of that species ever recorded in the Park. This documented bat location is approximately four miles south of the proposed project area. There are no potential roost trees or other habitat in the project area that would be suitable for Indiana bat.

The US Fish & Wildlife Service (USFWS) concurred in a correspondence dated November 6, 2009 that the project will not affect federally listed endangered or threatened species, nor will it have significant impacts on local wildlife species.

There are no prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas known to be in the project area.

The degree to which the effects on the quality of the human environment is likely to be highly controversial.

Implementation of the project will not result in controversial effects on the human environment. No comments received during public review indicate any such controversy.

The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

There are no identified risks associated with the Selected Alternative that are unique or unknown, and there are no effects associated with the Selected Alternative that are highly uncertain that were identified during the analysis for the EA or during the public review of the EA.

The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

The Selected Alternative does not establish a precedent for any future actions that may have significant effects, nor does it represent decisions about future considerations. The purpose of the project is to construct a new aqueduct superstructure and rehabilitate the existing masonry abutments and pier to restore the canal prism across Tinkers Creek in a manner that maintains an acceptable degree of historic accuracy consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties, and SHPO.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.

The EA included an evaluation of the potential for cumulative impacts for each impact topic. There are no other actions with individually insignificant and cumulative significant impacts. The Selected Alternative would complete the proposed work documented in the MOA with SHPO to mitigate the long-term major adverse cumulative impact from the past to the historic structure and cultural landscape. The Selected Alternative, along with the known impacts from other actions in the past, would cause a long-term minor beneficial impact in health and safety, visitor use and experience, and park operations.

The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

The Tinkers Creek Aqueduct is individually listed on the National Register of Historic Places and is a contributing resource in the Ohio & Erie Canal National Historic Landmark. The Selected Alternative is part of the proposed mitigation for the adverse effect from the 2007 Phase

I project as documented in the MOA with the Ohio SHPO (concurrence July 7, 2006; approved 106 dated July, 14, 2006).

The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

The federally endangered Indiana bat (*Myotis sodalis*) was found within CVNP boundaries in July 2002, the first instance of that species ever recorded in the Park. This documented bat location is approximately four miles south of the proposed project area. There are no potential roost trees or other habitat in the project area that would be suitable for Indiana bat.

The USFWS concurred in a correspondence dated November 6, 2009 that the project will not affect federally listed endangered or threatened species.

Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

This action violates no Federal, State, or local environmental protection laws.

PUBLIC INVOLVEMENT

External scoping was conducted with Federal, State, and local agencies, along with solicitation for public comment in the region surrounding CVNP. A request for public comment and project description was posted on the park's Planning, Environment and Public Comment (PEPC) website at http://parkplanning.nps.gov/ from July 7, 2009 to July 31, 2009. A notice was also published in the Akron Beacon Journal on July 13, 2009 requesting comments on the scope of the project and impact topics.

Four comments were received from the public. Most favored the proposal to replace the existing steel pipes with a new aqueduct. One commenter felt the pipes were adequate and was concerned a new structure would promote flooding upstream by catching debris the way the historic iron and steel aqueduct did. This is addressed in Section 4.1 of the EA. Those favoring replacement wanted a structure that was visually pleasing. One asked about the feasibility of filling the canal. This concern is addressed in Section 3.3.1 of the EA.

The EA was available for public review from November 5, 2009 until November 29, 2009 in the NPS Planning Environment and Public Comment (PEPC) system online and at park headquarters. Two comments were received. One was the USFWS correspondence and the supported the action without offering substantive input.

IMPAIRMENT

In addition to reviewing the list of significant criteria, the NPS has determined that implementation of the proposal will not constitute an impairment to the critical resources and values of the Park. This conclusion is based on a thorough analysis of the environmental impacts described in the EA, public comments, relevant scientific studies, and the professional judgment

of the decision-maker guided by the direction in NPS Management Policies 2006. The plan under the Selected Alternative will not result in any adverse impacts to Park resources. Overall, the plan results in benefits to Park resources and values, opportunities for their enjoyment, and it does not result in their impairment.

CONCLUSION

The Selected Alternative does not constitute an action that normally requires preparation of an EIS. The Preferred Alternative will not have a significant effect on the human or natural environment. Negative environmental impacts that could occur are negligible or minor in intensity. There will be no significant impacts on public health, public safety, threatened or endangered species, sites or districts listed in or eligible for the National Register of Historic Places, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the actions will not violate any Federal, State, or local environmental protection law.

Based on the aforementioned, it has been determined that an EIS is not required for this project and thus will not be prepared.

Recommended: _____ Acting Superintendent — 12/8/09 Date

Approved: _____ Midwest Regional Director — 12/21/09 Date