



FINDING OF NO SIGNIFICANT IMPACT

Improve Visitor Safety and Mitigate Rockfall Hazards

In the Paw Paw Tunnel Hollow

Hagerstown, Maryland

The National Park Service (NPS) prepared an Environmental Assessment (EA) to evaluate the impacts associated with mitigating safety issues at the downstream end of the Paw Paw Tunnel in the Chesapeake and Ohio Canal National Historical Park (the Park). This project would remove debris from the canal prism deposited from a 2016 rockslide and stabilize the rock face adjacent to the canal for 1,000 feet north of the Paw Paw Tunnel. The project would also replace in-kind the wooden boardwalk that serves as the towpath for 750 feet of this stretch.

This project is needed to improve visitor safety, prevent disruptions to towpath continuity that may result from future landslides, and allow the Park to address visitor safety and access issues at the Paw Paw Campground parking lot and on its entrance road. The campground parking lot is not currently large enough to accommodate the number of visitors to the area; when the existing parking lot fills, visitors park along State Route 51, creating a safety hazard. This project would provide the opportunity to use removed rock material to expand the existing parking lot and to widen the entrance ramp off of State Route 51 from one lane to two lanes, thus reducing the possibility of collision between cars entering and exiting the campground.

The EA was prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), the regulations of the Council on Environmental Quality (CEQ) for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and NPS Director's Order (DO) 12, *Conservation Planning, Environmental Impact Analysis, and Decision-making*. The statements and conclusions reached in this finding of no significant impact (FONSI) are based on documentation and analysis provided in the EA and associated decision file. To the extent necessary, relevant sections of the EA are incorporated by reference below.

SELECTED ALTERNATIVE

Based on the analysis presented in the EA, the NPS selected the Action Alternative: Stabilize Tunnel Hollow and Remove Spoils for implementation as described on pages 7-8 of the EA. Under this Alternative, a staging area would be established at the Paw Paw Campground, the wooden boardwalk would be replaced in-kind, the cliff faces in the Tunnel Hollow would be stabilized, and the rockfall from 2016 would be removed along with all material produced by the proposed stabilization efforts of this project.

The proposed staging area in the Paw Paw campground would be based around the existing parking lot and would likely involve an expansion of the parking lot to the east towards State Route 51. The current parking lot and area noted for parking lot expansion sit on a historic archeological site (18AG255) associated with the construction of the tunnel. Design and construction of the parking lot would be guided and monitored by an NPS archeologist.

The 750-foot wooden boardwalk in the Tunnel Hollow was constructed in the 1970s and has degraded to the point of being a safety concern. The boardwalk would be removed during the initial phases of the proposed project and replaced in-kind when the rock stabilization and removal portions of the project have been completed.

Rock stabilization would include scaling, rock bolts, shear blocks, pinned mesh, and rock drains as needed. Rockfall hazards would be addressed in priority order according to the 2019 geotechnical report. Draped mesh installed during the 2017-2019 emergency stabilization project would be removed. The slope under the removed mesh would be scaled and pinned mesh would only be added to the upper portions of the cliff.

This project also proposes to rehabilitate concrete drainage channels above the north portal of the Paw Paw Tunnel. These channels were installed by NPS in the 1970s and serve to drain surface water from the areas above the tunnel. Currently, the channels are silted in and damaged and do not function.

Three Options have been identified for the removal and spoiling of the rockfall material. Option 1 is preferred by NPS; however, as a design-build contract, final designs for the project will be based on minimizing impacts and costs and may differ from the NPS' current preferred option or may result in a design that incorporates a combination of these options. Impacts described in the EA and in this FONSI consider all scenarios described above, and as such, if the option moving forward is not the Park's current preferred option this FONSI is still valid.

Under Option 1, rockfall material would be transported along the canal prism until out of the deep cut and then along the towpath downstream to an existing causeway over the canal between Culvert 210 and the southernmost end of Outdoor Club Road. The rockfall would be spoiled to the north and south of existing spoil piles which contain material removed from Tunnel Hollow in the 1970s and again in the 1990s.

Under Option 2, rockfall material would be transported along the canal prism through the Paw Paw Tunnel and then along the towpath to the Paw Paw Campground. The material would be spoiled along the western edge of the campground entrance road where it meets State Route 51. Spoiling the material here would facilitate the expansion of the entrance road to two lanes, which would mitigate a long-standing safety issue of narrow access to and from the heavily used state route. Additional material may be spoiled on or around the existing parking lot or proposed staging area to permanently improve and expand the existing parking lot which would alleviate overcrowding seen in the existing parking lot.

Under Option 3, rockfall material would be transported along Tunnel Hill Trail and Tunnel Hill Road. If Allegany County permits the material would be spoiled on the trail and road to repair and improve the surface. Additional material may be spoiled on nearby roads managed by Allegany County in the Green Ridge State Forest. In order to use this route, Tunnel Hill Trail and Tunnel Hill Road would have to be widened in some areas to better accommodate vehicles.

The actions associated with this alternative are described in detail in the EA. As a design-build contract, final designs for the project will not be drafted until after the contract has been awarded. The Park will continue consultation with the Maryland Historical Trust (MHT) as the project develops to minimize impacts to the Park's cultural resources.

RATIONALE FOR DECISION

The NPS selected Action Alternative: Stabilize Tunnel Hollow and Remove Spoils because this alternative will address safety issues in the Paw Paw Tunnel Hollow and Paw Paw Campground while enhancing the visitor experience in the Tunnel Hollow by removing the rockfall debris from the 2016 landslide and reconstructing the aging boardwalk. This project will have an adverse effect on the cultural landscape of the Park, but mitigations will be implemented to address this impact. While there will be impacts to vegetation and wildlife, these impacts were not found to be significant.

MITIGATION MEASURES

The NPS places a strong emphasis on avoiding, minimizing, and mitigating potentially adverse impacts to affected resources, whether under the jurisdiction of the NPS or as a result of an NPS decision. To help ensure the protection of cultural and natural resources and the quality of the visitor experience, the NPS will implement mitigation measures to avoid and/or minimize impacts. In addition, in accordance with Section 106 of the National Historical Preservation Act (Section 106), the NPS entered into a Memorandum of Agreement (MOA) with the Maryland Historic Trust to ensure the final design avoids,

minimizes, and mitigates any adverse effects to the Park's cultural resources. The following mitigation measures will be implemented:

Historic Structures Mitigations

- The NPS will require its contractor to protect all historic structures in the project area per the conditions of the MOA (see attached). This will be accomplished by identifying historic structures, applying vibration monitors adjacent to vehicular paths, and maintaining speeds of 10 mph while traveling along the towpath and speeds of 5 mph while traveling past or near historic structures. High visibility material will be used to temporarily identify historic structures that are close to the proposed paths of travel and traffic delineators or boundary markers will be used to ensure vehicles do not stray from designated paths of travel as needed.
- Gravel, geotextile, timber mats, or steel plates will be placed, as needed, over sensitive historic structures such as historic retaining walls, Culvert 210, and the wastewer to more evenly distribute the weight of passing vehicles. If necessary, temporary bridges will be constructed over the structures to avoid damage.
- Cribbing or additional stabilization will be placed in locks if it is determined that the weight of heavy equipment may affect the lock walls.
- Vibration monitors and structural deformation monitors will be placed in the Paw Paw Tunnel. If the passage of vehicles creates unacceptable vibration levels or if the structural deformation monitors indicate strain or damage, additional timber mats or other structural supports will be installed before work could continue. Monitoring devices will be mounted on mortar joints, not on masonry.
- Unless a means of ingress and egress can be identified that does not cause excessive vibrations under Action Alternative Option 2, vehicular access through the Paw Paw Tunnel will be limited to smaller equipment and vehicle access will only occur when necessary to reach the project site. Ingress and egress through the tunnel will be limited to initial staging, final withdrawal, emergencies, daily crew transport, and limited construction needs using only smaller equipment.

Archeological Resources Mitigations

- Per the conditions of the MOA (see attached), any ground disturbance related to the parking lot expansion in the Paw Paw campground will be limited to the top six inches of soil, leaving a buffer of six inches before archeological features would be encountered. A Park archeologist will be present to monitor during any activities involving ground disturbance. Gravel and geotextile matting will be required in the staging area to distribute the weight of heavy equipment.

Cultural Landscape Mitigations

- The exterior portions of rock bolts and pinned mesh will be colored to match the surrounding rock face, if possible.
- The ends of the rock drains will be cut flush with the rock surface and will be painted to match the surrounding rock face.
- The existing draped mesh will be removed. Pinned mesh will be added at various locations along the slope but at higher elevations that would be less impactful to the cultural landscape.
- The contractor will be encouraged to develop designs to make shear blocks less apparent. Possible techniques may include coloring the concrete to match the surrounding rock face or shaping the concrete to appear more similar to the surrounding rock face.

Vegetation, Wildlife, and Special Status Species Mitigations

- To minimize potential impacts on northern long-eared bat habitat, no tree cutting will be allowed between June 1 and July 31.

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- Travel restrictions for vehicles through the Paw Paw Tunnel will be set in coordination with Maryland Department of Natural Resources in an effort to protect any hibernating bats that may use the tunnel.
 - State listed rare, threatened, and endangered plant species in the project area will be marked with high visibility flagging or other marker to avoid impacts when possible. Plant populations on the cliff face will not be marked due to the danger of traversing the steep and unstable slope. The Park will continue to coordinate with Maryland Department of Natural Resources throughout construction on measures to protect rare, threatened, and endangered plant species.

FINDING OF NO SIGNIFICANT IMPACT

As documented in the EA on pages 14-31, the selected alternative has the potential to adversely impact visitor use and experience, historic structures, archeology, and vegetation and wildlife, and will have an adverse effect on the cultural landscape. However, the NPS has determined that the selected alternative can be implemented without significant adverse impacts as defined in 40 CFR §1508.27.

This project will likely require that the project area is closed to visitors for the duration of the project, and a detour and/or shuttle service around the work area will be necessary. The negative impact on visitor use cannot be avoided. However, the impact on visitor use and experience is temporary, and this project will ensure visitor safety and improve visitor experience in the future.

While many historic structures are located within the project area, it is unlikely that any would be damaged by the project as actions would be taken to avoid any potential impacts. The preferred alternative and associated options in the EA outline the potential risks. The design plans are not yet available due to the nature of the project, but the Park will review them as they become available and will consult with MHT, per the conditions of the MOA (see attached), to ensure that the structures are protected.

Several archeological investigations have identified cultural material within the project area. When possible, the project area was altered to avoid archeological resources. During the expansion and improvement of the Paw Paw Campground, where a listed archeological site cannot be avoided, a Park archeologist will be present to monitor the work to ensure that accidental impacts to archeological resources are avoided. If new archeological resources are discovered during the project, work will stop until the new discovery can be assessed by a Park archeologist.

This project will impact flora and fauna in the project area, including some stated listed species of rare, threatened, or endangered (RTE) plants. However, the impacts will be temporary, will affect small numbers of individual plants, and the affected species are expected to recolonize the impacted areas after the project has been completed. Where possible, mitigations will be in place to protect RTE plants. Additional mitigations will be in place to avoid impacts to hibernating bats in the Paw Paw Tunnel or bats that may be hibernating in trees in the proposed spoil area near Culvert 210.

This project will have an adverse effect on the cultural landscape in the project area. The rock scaling and reconstruction of the boardwalk would have only temporary impacts to this viewscape in the Tunnel Hollow. The rock itself naturally fragments and falls as it weathers and rockfalls have been noted back to the excavation of the Tunnel Hollow. Previously installed and new rock bolts, shear blocks, and pinned mesh would remain visible within the cultural landscape. The rock pins and shear blocks protrude several inches from the rock face and are noticeable. The existing pinned draped mesh would be removed. Pinned mesh would be added as needed at various locations along the slope, but at only on the upper portions of the slope to reduce its impact on the cultural landscape.

The cultural landscape of the Paw Paw Campground would be affected by any expansion of the parking lot. However, the proposed area of expansion is between the existing parking lot, the entrance road, and State Route 51. State Route 51 dominates the landscape in this area. The cultural landscape of the Paw Paw Campground as viewed from the parking lot, facing away from Maryland 51 would remain unaffected.

The existing spoil piles from the 1970s and 1990s are visible from the towpath and the proposed spoil pile would also be visible. By placing it adjacent to the existing spoil, it is hoped that the impact on the landscape would be minimal. The repair of the causeway crossing the canal north of Culvert 210 would have little impact on the cultural landscape. The canal is littered with rubble debris from the original causeway, which has been damaged by repeated flooding. The realignment of Twigg Run with Gross Run through the historic drainage excavated for the task would improve the historic landscape. Currently, Twigg Run drains directly into the canal; it is not known when Twigg Run stopped flowing through the historic drainage.

The Park has signed a MOA with MHT to address the adverse impact to the cultural landscape. The MOA also addresses project parameters and limitations designed to protect historic structures and archeological resources in the project area. This MOA will be amended, as needed, as final plans for the project become available.

Overall, there will be no significant impacts on public health, public safety, or 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 NPS selected alternative will not violate any Federal, State, or local environmental protection law.

CONCLUSION

As described above, the selected alternative does not constitute an action meeting the criteria that normally requires preparation of an environmental impact statement (EIS). The selected alternative will not have a significant effect on the human environment in accordance with Section 102(2)(c) of NEPA.

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

Recommended:

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CAPPETTA** Digitally signed by TINA
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Tina M. Cappetta
Superintendent
Chesapeake and Ohio Canal National Historical Park
Region 1 – National Capital Area

Date

Approved:

**LISA MENDELSON-
IELMINI** Digitally signed by LISA
MENDELSON-IELMINI
Date: 2020.09.04
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Lisa A. Mendelson-Ielmini
Acting Director
Region 1 – National Capital Area

Date

Appendix A: Non-Impairment Determination

Appendix B: Memorandum of Agreement

Appendix C: Public Comment and Response

APPENDIX A: NON-IMPAIRMENT DETERMINATION

By enacting the NPS Organic Act of 1916 (Organic Act), Congress directed the US Department of Interior and the NPS to manage units “to conserve the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same in such a manner and by such a means as will leave them unimpaired for the enjoyment of future generations” (54 USC 100101). Congress reiterated this mandate in the Redwood National Park Expansion Act of 1978 by stating that the NPS must conduct its actions in a manner that will ensure no “derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress” (54 USC 100101).

NPS Management Policies 2006, Section 1.4 explains the prohibition on impairment of Park resources and values. While Congress has given the Service the management discretion to allow impacts within Parks, that discretion is limited by the statutory requirement (generally enforceable by the Federal courts) that the Park Service must leave Park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the National Park Service. It ensures that Park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

The NPS has discretion to allow impacts on Park resources and values when necessary and appropriate to fulfill the purposes of a Park (NPS 2006, Section 1.4.3). However, the NPS cannot allow an adverse impact that would constitute impairment of the affected resources and values (NPS 2006, Section 1.4.3). An action constitutes an impairment when its impacts “*harm the integrity of Park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values*” (NPS 2006, Section 1.4.5). To determine impairment, the NPS must evaluate “*the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts*” (NPS 2006, Section 1.4.5).

This determination on impairment has been prepared for the selected alternative described in this Finding of No Significant Impact. An impairment determination has been made for resource topics of historic structures and districts and vegetation, wildlife, and special status species. These resources are considered fundamental to the Chesapeake and Ohio Canal National Historical Park, and the NPS as a whole. Non-impairment determination is not made for visitor use and experience because impairment findings relate back to Park resources and values, and these impact areas are not generally considered to be Park resources or values according to the Organic Act and cannot be impaired in the same way that an action can impair Park resources and values. This determination on impairment has been prepared for the preferred alternative described in Chapter 2 of the EA. The intent of these proposed actions is to ensure the continued safety of Park staff and visitors. The summary of impacts described below show that the selected alternative does not run counter to the Park's establishing legislation, nor would it inhibit opportunities to see and interpret the historic and cultural resources of the Park.

Historic Districts and Cultural Landscapes: The selected alternative will have a minimal impact on the cultural landscape of the Paw Paw Campground: the permanent improvements proposed in the project will be located on the existing parking lot or between the parking lot and State Route 51. The cultural landscape of the majority of the Paw Paw Campground area would be unaffected. The impacts to the Paw Paw Tunnel Hollow are related to the stabilization efforts and cannot be avoided. While the various stabilization efforts will be visible and will detract from the landscape, the stabilization will preserve the overall structure and function of the Hollow. The proposed spoil location near Culvert 210 on the berm side of the canal will be visible from the towpath and will negatively impact the cultural landscape in this area. However, the spoil will be placed adjacent to the existing spoil pile from the 1970s and vegetation will obscure it for much of each year. The selected alternative will not result in impairment of NPS archeological resources, as the project parameters have been designed to avoid impacts to known resources. Mitigations have been developed to address resources that may be discovered during the

project. Many historic structures are located in or near the project area, but the project parameters have been designed to avoid impacts to historic structures. The Park will consult with MHT throughout the design process to ensure that appropriate mitigations are in place and that the impact is minimized. Overall, the selected alternative will not impair Park resources or values.

Vegetation, Wildlife, and Special Status Species: The selected alternative would impact the aquatic habitat by draining the canal for use as an access road for heavy equipment, by constructing platforms for scaling activities, and by spoiling rockfall material until it can be removed to the proposed spoil area. However, impacts to aquatic and semi-aquatic wildlife in the project area would be minimal, as suitable habitat exists up and downstream of the project area. Impacts to amphibians and amphibian habitat are expected to be negative, but temporary, with populations likely to recolonize the area after the project ends. Temporarily lowered water levels may also affect aquatic vegetation; however, the species present is resilient, and populations are expected to rebound.

Impacts to terrestrial special status plant species may occur during this project, though effects would be either minimal on the population and species as a whole or would be avoided. High visibility flagging, paint, or construction fencing would be used to mark RTE populations in the project area so that they can be avoided, if possible. Populations on the rockface will not be marked due to the danger of traversing the steep and unstable slope. Overall impacts to RTE species' habitat would be negative, but temporary, and would allow for recolonization after the project is complete. The Park will continue coordination with Maryland Department of Natural Resources on measures to protect special status plant species.

Conclusion: The NPS has determined that the implementation of the NPS selected alternative will not constitute an impairment of the resources or values of the Chesapeake and Ohio Canal National Historical Park. As described above, implementing the selected alternative is not anticipated to impair resources or values that are essential to the purposes identified in the establishing legislation of the Park, key to the natural or cultural integrity of the Park, or identified as significant in the Park's relevant planning documents. This conclusion is based on consideration of the Park's purpose and significance, a thorough analysis of the environmental impacts described in the EA, the comments provided by the public and others, and the professional judgment of the decision-maker guided by the direction of the NPS *Management Policies 2006*.

APPENDIX B: MEMORANDUM OF AGREEMENT

Memorandum of Agreement
Between
The National Park Service and
The Maryland State Historic Preservation Officer,
Regarding
Improving Visitor Safety and Mitigating Rockfall Hazards in the Paw Paw Tunnel Hollow
for the Chesapeake and Ohio Canal National Historical Park, Allegany County, Maryland

WHEREAS, the National Park Service (NPS) plans to carry out improvements of visitor safety and the mitigation of rockfall hazards in the Paw Paw Tunnel Hollow (Undertaking), which is an undertaking under Federal law, requiring compliance with Section 106 of the National Historic Preservation Act as amended (54 U.S.C. § 306108); and

WHEREAS, the Undertaking entails the following elements: the expansion of the Paw Paw Campground Parking Lot for a staging area, the replacement of the wooden boardwalk in Tunnel Hollow, the stabilization of the slopes in the Tunnel Hollow using scaling, rock bolts, rock drains, shear blocks, and pinned mesh, the removal of the debris from the canal prism in the Tunnel Hollow from the 2016 landslide and any debris generated by scaling activities, and the spoiling of debris along the Paw Paw Campground entrance road and/or an area north of Culvert 210, as shown on Attachments A, B, and C; and

WHEREAS, the Undertaking is located within the Chesapeake and Ohio Canal National Historic Park (Park) (AL-I-B-086), which is listed in the National Register of Historic Places, and the project area contains numerous contributing elements to the Park and National Register eligible archeological sites, as listed in Attachment D; and

WHEREAS, the NPS has determined that the Undertaking will have an adverse effect on the Park and has consulted with the Maryland State Historic Preservation Officer (MD SHPO) pursuant to 36 CFR Part 800, the regulations implementing Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108); and

WHEREAS, NPS has determined that there are no federally recognized Indian tribe(s) that might attach religious and cultural significance to resources in area of potential effects; and

WHEREAS, NPS has consulted with [insert names of other consulting parties, if any] regarding the effects of the undertaking on historic properties and has invited them to sign this MOA as a ["invited signatory(ies)" or "concurring party(ies)"]; and

WHEREAS, in accordance with 36 CFR § 800.6(a)(1), NPS has notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect determination with specified documentation on August 31, 2020; and

WHEREAS, the MD SHPO agrees that fulfillment of the terms of this MOA will satisfy the responsibilities of any Maryland state agency under the requirements of the Maryland Historical Trust Act of 1985, as amended, State Finance and Procurement Article §§ 5A-325 and 5A-326 of the Annotated Code of Maryland, for any components of the Undertaking that require licensing, permitting, and/or funding actions from Maryland state agencies; and

NOW, THEREFORE, the NPS and MD SHPO agree that the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the undertaking on historic properties.

STIPULATIONS

The NPS shall ensure that the following measures are carried out:

I. Avoidance, Minimization and Protection Measures for the Park

A. Historic Structures

1. The NPS will require its contractor to protect all historic structures in the project area. This will be accomplished by identifying historic structures, applying vibration monitors adjacent to vehicular paths, and maintaining speeds of 10 mph while traveling along the towpath and speeds of 5 mph while traveling past or near historic structures. High visibility material will be used to temporarily identify historic structures that are close to the proposed paths of travel and traffic delineators or boundary markers will be used to ensure vehicles do not stray from designated paths of travel as needed.
2. Gravel, geotextile, timber mats, or steel plates will be placed, as needed, over sensitive historic structures such as historic retaining walls, Culvert 210, and the wastewear to more evenly distribute the weight of passing vehicles. If necessary, temporary bridges will be constructed over the structures to avoid damage.
3. Cribbing or additional stabilization may be placed in locks if it is determined that the weight of heavy equipment may affect the lock walls.
4. Vibration monitors and/or structural deformation monitors will be placed in the Paw Paw Tunnel. If the passage of vehicles creates unacceptable vibrations levels or if the structural deformation monitors indicate strain or damage, additional timber mats or other structural supports will be installed before work can continue. Monitoring devices will be mounted on mortar joints, not on masonry.
5. Unless a means of ingress and egress can be identified that does not cause excessive vibrations under Action Alternative Option 2, vehicular access to the Paw Paw Tunnel will be limited to smaller equipment and allowed only when necessary to reach the project site. Ingress and egress through the tunnel will be limited to initial staging, final

withdrawal, emergencies, daily crew transport, and limited construction needs using only smaller equipment.

B. Archeological Resources

1. Any ground disturbance related to the parking lot expansion in the Paw Paw campground will be limited to the top six inches of soil, leaving a buffer of six inches before archeological features would be encountered. A park archeologist will be present to monitor during any activities involving ground disturbance. Gravel and geotextile matting will be required in the staging area to distribute the weight of heavy equipment.

C. Cultural Landscape

1. The exterior portions of rock bolts and pinned mesh will be colored to match the surrounding rock face, if possible.
2. The ends of the rock drains will be cut flush with the rock surface and will be painted to match the surrounding rock face.
3. The existing draped mesh will be removed. Pinned mesh will be added at various locations along the slope but at higher elevations that will be less impactful to the cultural landscape.
4. The contractor will be encouraged to develop designs to make shear blocks less apparent. Possible techniques may include coloring the concrete to match the surrounding rock face or shaping the concrete to appear more similar to the surrounding rock face.

II. Documentation

A. Cultural Landscape Report (CLR)

1. The NPS will complete a CLR documenting the cultural landscape of the project area within two (2) years after the date of the last signature of this MOA.
2. The CLR will provide guidance for protecting the significant elements of the Park in the project area, with emphasis placed on the Paw Paw Tunnel Hollow.
3. NPS shall provide one bound copy of the final CLR and one electronic copy on disk to the MD SHPO for inclusion in the Maryland Historical Trust Library.

III. Design Review

- A. The NPS shall ensure that the design for the stabilization activities will result in as little impact to the cultural landscape as possible. NPS will give particular consideration to ensure that the design will minimize impacts to any significant elements identified in the CLR.
- B. NPS shall submit proposed plans, including those for rock stabilization, parking lot and road expansion and resurfacing, site access, spoil transport, and spoiling to the MD SHPO for review and comment pursuant to Stipulation VI- and the ACHP. NPS will address any comments received during the 30-day review period in preparation of the final proposed design.

IV. Archeological Monitoring

- A. NPS completed archeological surveys of the proposed parking lot expansion area and the proposed spoil areas and did not identify new National Register-eligible resources. However, a previously identified site, 18AG255, is located in the Paw Paw Campground. A portion of the site is under the existing parking lot and the parking lot expansion will cover more of the site.
- B. NPS will develop and implement an archeological monitoring plan, in consultation with the MD SHPO pursuant to Stipulation VI, to ensure that any archeological resources are not damaged by the parking lot expansion or resurfacing or by the staging of equipment.
- C. If new resources are identified during the course of the project, NPS shall ensure that reasonable efforts are made to avoid, minimize, or mitigate adverse effects to such resources and will consult with the MD SHPO pursuant to Stipulation VIII to resolve the Undertaking's effects on any resources eligible for the National Register.
- D. NPS shall ensure that any resulting cultural resources work is accomplished in accordance with the relevant professional standards in Stipulation V.

V. Professional Qualifications and Standards

- A. NPS will ensure that all cultural resources investigations and documentation of historic properties carried out pursuant to this MOA is conducted by or under the direct supervision of a person or persons meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology and Historic Preservation (36 CFR Part 61).
- B. NPS shall ensure that all archeological investigations and work performed pursuant to this MOA shall be conducted in a manner consistent with the principles and standards contained in the *Standards and Guidelines for Archeological Investigations in Maryland* (1994)

VI. MD SHPO Review and Comment

The MD SHPO will review and provide written comments within forty-five (45) calendar days of receipt of completed documents, unless otherwise specified, on any documents and proposed plans prepared pursuant to this MOA. NPS will address any comments received during the 45-day review period in preparation of the final document or proposed design. If the MD SHPO fails to respond in writing within forty-five (45) calendar days of receipt, NPS may assume that the MD SHPO has agreed to the documents or proposed plans submitted for review.

VII. Duration

This MOA will be null and void if its terms are not carried out within eight (8) years from the date of its execution.

VIII. Post-Review Discoveries

The NPS shall ensure that all construction documents include the following provisions:

- A. If previously unidentified historic properties or unanticipated effects to historic properties are discovered during the project, the construction contractor shall immediately halt all activity

within a 100-foot radius of the discovery, notify the Contract Officer's Representative, Contract Officer, and NPS within 24 hours of the discovery, and implement interim measures to protect the discovery from looting and vandalism.

- B. Immediately following receipt of the notification, the NPS shall
1. inspect the project area to determine the extent of the discovery and ensure that project activities have halted;
 2. clearly mark the area of the discovery;
 3. implement additional measures, as appropriate, to protect the discovery from looting and vandalism;
 4. have an archeologist, meeting the qualifications listed in Stipulation V, inspect the project area to determine the extent of the discovery and provide recommendations regarding its NRHP eligibility and treatment; and
 5. notify the MD SHPO and other Consulting Parties of the discovery describing the measures that have been implemented to comply with Stipulation VIII.A.
 6. In the unlikely event that human remains are uncovered during the undertaking, the NPS shall treat all human remains in a manner consistent with the ACHP's "Policy Statement Regarding Treatment of Burial Sites, Human Remains and Funerary Objects" (February 23, 2007) or ACHP policy in effect at the time remains and funerary artifacts are handled.
 - A. If the remains found on federal lands are determined to be of Native American origin, the NPS shall comply with the provisions of NAGPRA (Public Law 101-601, 25 USC Sec 3001 et seq.) and regulations of the Secretary of the Interior at 43 C.F.R. § 10. If the remains are determined not to be of Native American Origin, the NPS shall comply with the *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994).
 - B. The NPS shall use reasonable efforts to ensure that the general public is excluded from viewing any burial site or associated funerary artifacts. The consulting parties to the MOA shall release no photographs of any burial site or associated funerary artifacts. The NPS shall notify the tribes when burials, human remains, or funerary artifacts are encountered on the Project.
 7. Within 48 hours of receipt of the notification described in Stipulation VIII.A of this document, the NPS shall provide the MD SHPO and other Consulting Parties with its assessment of the NRHP eligibility of the discovery and the measures the NPS proposes to take to resolve adverse effects. In making its official evaluation, the NPS, in consultation with the MD SHPO and other Consulting Parties may assume the discovery to be NRHP-eligible for the purposes of Section 106 pursuant to 36 CFR Part 800.13(c). The MD SHPO and other Consulting Parties shall respond within 48 hours after receiving the NPS evaluation.
 8. The NPS, which shall take into account the Consulting Parties' recommendations on eligibility and treatment of the discovery, shall ensure that appropriate actions are carried out and provide the MD SHPO and the other Consulting Parties with a report on these actions when they have been implemented.

9. Work activities may proceed in the area of the discovery when the NPS has determined that implementation of the actions undertaken to address the discovery pursuant to Stipulation VIII.A are complete.

IX. Review and Monitoring

Following the execution of this MOA until it expires or is terminated, NPS will provide to the MD SHPO an annual written summary report detailing work undertaken pursuant to the terms of this MOA. This report will include status of implementing the stipulations, scheduling changes proposed, any problems encountered, and any disputes and objections received by the NPS in its efforts to carry out the terms of this MOA.

NPS and the MD SHPO may agree to hold progress meetings, conference calls, and site visits as needed during the duration of the MOA to facilitate implementation of its terms and resolution of any issues encountered during design and construction of the Undertaking.

X. Dispute Resolution

Should any signatory to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented the objecting party will consult with the other parties to resolve the objection. If the NPS determines that such objections cannot be resolved, the NPS will:

- A. Forward all documentation relevant to the dispute, including the proposed resolution, to the ACHP. The ACHP shall provide the NPS with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the NPS shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP and the signatories and provide them with a copy of this written response. The NPS will then proceed according to its final decision.
- B. If the ACHP does not provide its advice regarding the dispute within the thirty (30) day time period, the NPS may make a final decision on the dispute and proceed accordingly. Prior to reaching a final decision on the dispute, the NPS shall prepare a written response that considers any timely advice or comments regarding the dispute from the ACHP and the signatories and provide them with a copy of such written response.
- C. The NPS is responsible for all other actions subject to the terms of this MOA that are not the subject of dispute.

XI. Amendments

Any party to this agreement may propose to the other party that it be amended, whereupon the parties will consult and consider the amendment pursuant to 36CFR 800.6(c)(7). The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP.

XII. Termination

If any signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation XI, above. If within thirty (30) days (or another time period agreed to by all signatories) an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories.

Once the MOA is terminated, and prior to continuing work on the undertaking, the NPS shall execute a new MOA pursuant to 36 CFR 800.7. The NPS shall notify the signatories as to the course of action it will pursue.

XIII. Anti-Deficiency Act

NPS obligations under this MOA are subject to the availability of appropriated funds, and the stipulations of this MOA are subject to the provisions of the Anti-Deficiency Act. The NPS shall make reasonable and good faith efforts to secure the necessary funds to implement this MOA in its entirety. If compliance with the Anti-Deficiency Act alters or impairs the NPS's ability to implement the stipulations of this agreement, the NPS shall consult in accordance with the amendment and termination procedures found later in this MOA.

Execution of this MOA by the NPS and the MD SHPO and implementation of its terms constitutes evidence that the NPS has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.

Improving Visitor Safety and Mitigating Rockfall Hazards in the Paw Paw Tunnel Hollow
C&O Canal National Historical Park, Allegany County, MD
Memorandum of Agreement


Signatories:

National Park Service

By: **TINA**
CAPPETTA Digitally signed by TINA
CAPPETTA
Date: 2020.09.02
15:37:18 -04'00' Date: _____

Tina M. Cappetta
Superintendent, Chesapeake and Ohio Canal National Historical Park

Maryland State Historic Preservation Officer

By:  Date: **9-3-2020**

Elizabeth Hughes
Director/State Historic Preservation Officer

List of Attachments

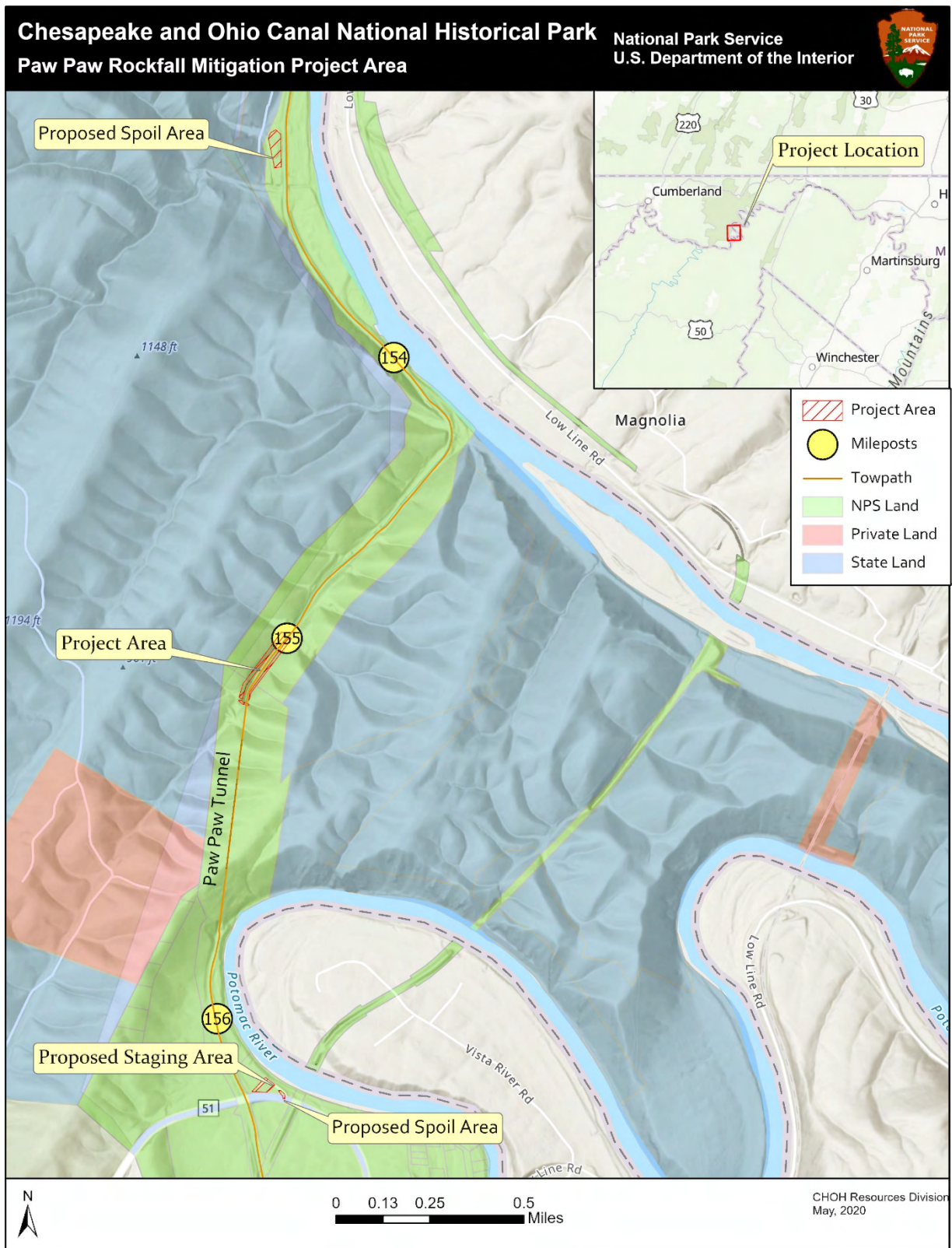
Attachment A: Map of Project Area

Attachment B: Map of Paw Paw Tunnel Hollow

Attachment C: Map of Paw Paw Campground

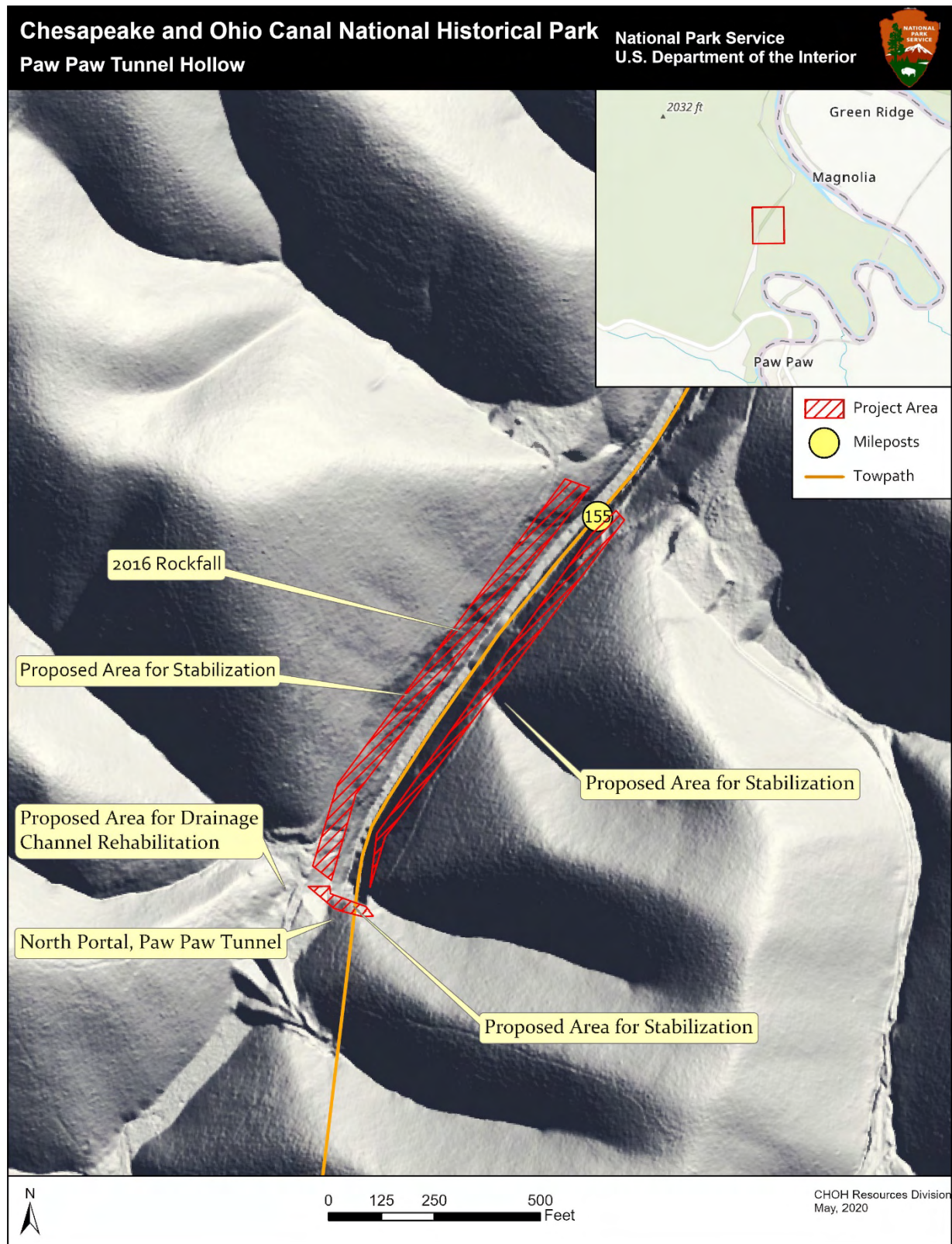
Attachment D: List of Contributing Resources to the Park and Archeological Sites within the APE

Improving Visitor Safety and Mitigating Rockfall Hazards in the Paw Paw Tunnel Hollow
C&O Canal National Historical Park, Allegany County, MD
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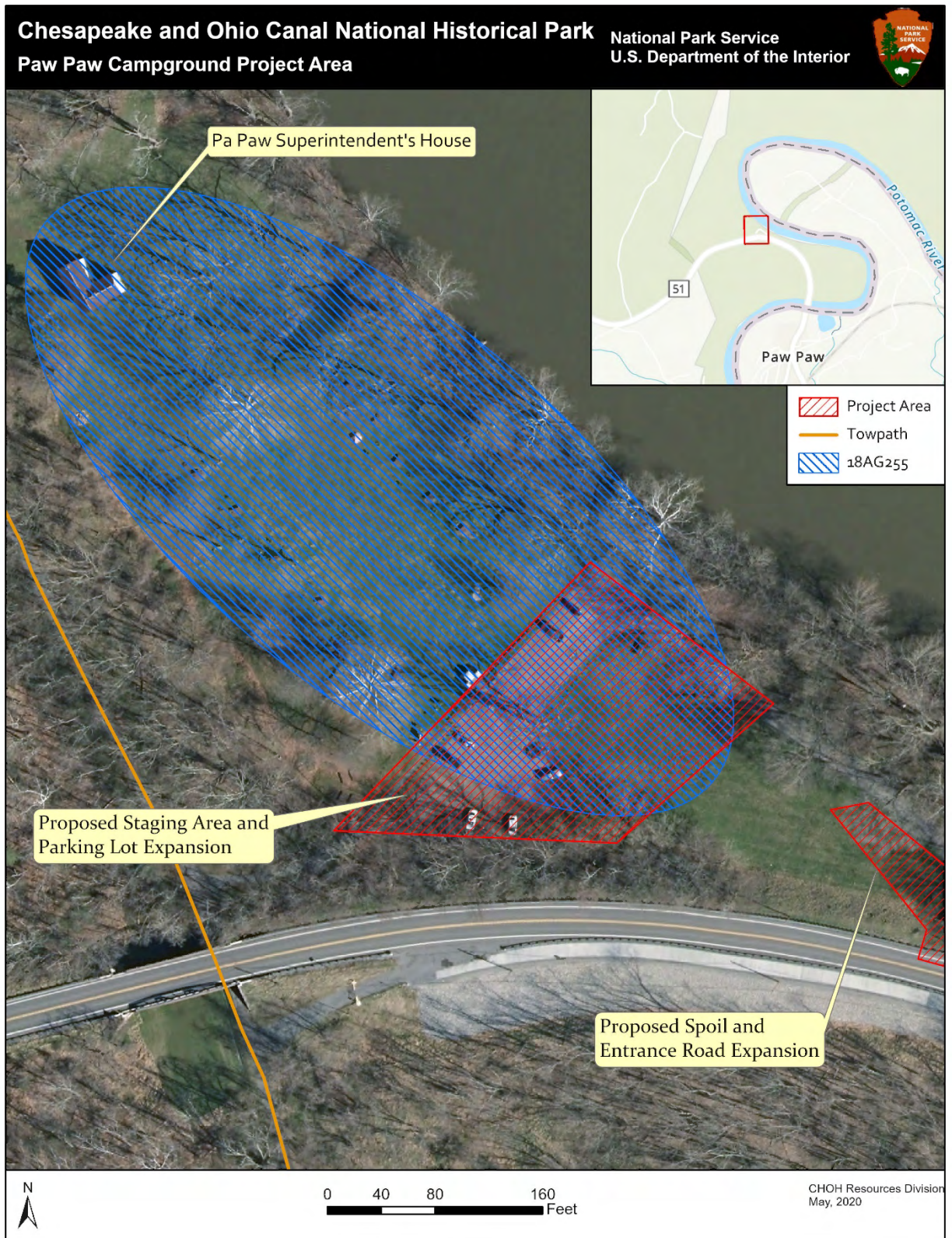


Attachment A

Improving Visitor Safety and Mitigating Rockfall Hazards in the Paw Paw Tunnel Hollow
C&O Canal National Historical Park, Allegany County, MD
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Attachment B



Attachment C

Improving Visitor Safety and Mitigating Rockfall Hazards in the Paw Paw Tunnel Hollow
C&O Canal National Historical Park, Allegany County, MD
Memorandum of Agreement

Structure	LCS Number	Mile Marker
Canal Prism	45702	153.0 – 154.0
Towpath	45703	153.0 – 154.0
Culvert 210	11737	153.46
Canal Prism	45704	154.0 – 155.0
Towpath	45705	154.0 – 155.0
Bypass Flume for Lock 62	12885	154.16
Lock 62	11738	154.17
Lockhouse Foundation at Lock 62	11739	154.18
Boat Basin at Sandy Flat Hollow	45638	154.21
Spillway and wasteweir	11740	154.29
Bypass flume for Lock 63 1/3	12866	154.48
Lock 63 1/3	11741	154.49
Lock 64 2/3	11742	154.61
Retaining Wall Ruins at Lock 64 2/3	45640	154.61
Bypass Flume for Lock 64 2/3	12877	154.62
Ruins at Lock 64 2/3	45641	154.63
Bypass Flume for Lock 66	17223	154.70
Carpenter's Shop Foundation at Lock 66	11744	154.71
Lock 66	45642	154.72
Towpath Boardwalk (Non-Contributing)	45631	154.95
Canal Prism	45706	155.0 – 156.0
Towpath	45707	155.0 – 156.0
Downstream Portal of Paw Paw Tunnel	45630	155.20
Paw Paw Tunnel	45629	155.70
Upstream Portal of Paw Paw Tunnel	45627	155.78
Canal Prism	45708	156.0 – 157.0
Towpath	45709	156.0 – 157.0
Paw Paw Superintendent's House	17224	156.16

Structure	Site Number	Mile Marker
Paw Paw Superintendent's House	18AG255	156.1 – 156.2
Paw Paw Tunnel Hollow Complex	18AG221	154.3 – 155.2

Attachment D

APPENDIX C: PUBLIC COMMENT AND RESPONSE

Correspondence ID: 2

Received: June 29, 2020

Correspondence: Would love to see this fixed! I greatly appreciate maintenance being done in the park. As a local volunteer I will help in any way possible

Response: Comment noted

Correspondence ID: 3

Received: July 1, 2020

Correspondence: Switch the wood boards to a composite decking board for the walk/bike way. I am not an engineer so I cannot comment on how to repair the issue of the rockslide. Wonderful to see the National Park Service wants to open the canal up and have the water flow from Cumberland to Georgetown, DC.

I know it will take time and money, but I think this is a wonderful start.

Thank you.

Response: The Park considered the use of composite decking for the repair of the boardwalk. Composite decking is less resilient than wood in hotter temperatures. Composite decking would also be less compatible with the cultural landscape as it would introduce an additional modern element into the area. Thus, the Park determined that wood would be the most appropriate material for the boardwalk.

Correspondence ID: 4

Received: July 2, 2020

Correspondence: Is wood the only material being considered to replace the boardwalk section of the towpath through the tunnel? Is there no more durable material that could be used?

Response: The Park considered the use of composite decking for the repair of the boardwalk. Composite decking is less resilient than wood in hotter temperatures. Composite decking would also be less compatible with the cultural landscape as it would introduce an additional modern element into the area. Thus, the Park determined that wood would be the most appropriate material for the boardwalk.

Correspondence ID: 5

Received: July 3, 2020

Correspondence: Yes i think that they need to do whatever they can to make the park as safe as possible for visitors both coming and leaving and also the trails also.

Response: Comment noted.

Correspondence ID: 6

Received: July 4, 2020

Correspondence: Please proceed with all plans to remove the rocks and stabilize both sides of the towpath. The Paw Paw tunnel is significant feature of the C&O canal.

Response: Comment noted.

Correspondence ID: 7

Received: July 7, 2020

Correspondence: Please make whatever repairs are necessary to the approaches from both directions to the Paw Paw Tunnel. The tunnel and adjoining park are vital for the tourism industry in the Town of Paw Paw (as small as it is).

Response: Comment noted.

Correspondence ID: 8

Received: July 8, 2020

Correspondence: Please consider fixing the rock slides. Our little town has many out of state visitors that come to see both sides of the tunnel. It brings revenue to our little town.

Response: Comment noted.

Correspondence ID: 9

Received: July 13, 2020

Correspondence: This looks like an excellent plan for critically needed work. I appreciate the concern for the environmental effects shown in the plan.

Response: Comment noted.

Correspondence ID: 10

Received: July 15, 2020

Correspondence: Hello,

I suggest improving visibility for travelers to go through the tunnel. I rode my bike through in May and was very uncomfortable traveling through the tunnel solo. There is no light at the end nearest the campground. I almost turned back several times even with a very strong bike light. I suggest removing the boards blocking the tunnel exit so much more light shines through. It currently only has the walk way door cut out. As it currently stands, I would not go back through the tunnel due to poor lighting. Another option would be to install lights through the tunnel, however I think fully opening the entrance/exit would be a good first step.

Response: Modifications and/or improvements to the Paw Paw Tunnel are not included in the current project; however, a tunnel condition assessment was developed as well as a cost estimate for repairs to the structure. This information is being used to develop a project that will request funding to specifically address the Paw Paw Tunnel. The Park believes that the rock fall hazards in the Tunnel Hollow are a more immediate safety concern.

Correspondence ID: 11

Received: July 24, 2020

Correspondence: The C&O Canal Association appreciates the opportunity to comment on the draft Environmental Assessment (EA) and Assessment of Effects on efforts to improve visitor safety by mitigating rockfall hazards in the Paw Paw Tunnel Hollow. The rockslides have been a problem in this area for 170 years, having been a recurring reason for temporary closing of the canal during its operating years. We remember more recent efforts to correct the problem, including closure of the towpath and detours over Tunnel Hill. We sincerely hope that efforts this time, ideally led by experienced geological engineers, will lead to a more permanent fix to the rockslide problems, as well as ancillary improvements to the visitor experience in and near the Paw Paw Tunnel, a significant landmark on the C&O Canal.

In sum, the C&O Canal Association supports the NPS preferred option, the action alternative, as an improvement over the no action alternative, the status quo. Our specific areas of support and our reservations are detailed below.

However, we fear that, rather than starting with a fresh analysis by an experienced geological engineer and prescription of new solutions, NPS will be doing more of the same, repeating measures that have been unsuccessful in the recent past. These measures include "scaling, rock bolts, shear blocks, pinned mesh, and rock drains." As the EA points out, these measures have been used since the 1970s, and they don't seem to have corrected the problem in any substantial way. Could the contractor be required to guarantee the work for, say, ten years or twenty years?

It is clear that safety concerns are paramount in this plan to mitigate the rockslide hazard. Given the history of the

slides - and attempts to prevent them - we do not have a clear picture of the 1850 appearance of the area. However, we hope that modern engineering measures will not clash with the historic appearance of the canal and the tunnel itself.

The C&O Canal Association trusts that NPS will strive to keep any closures - and the detour over Tunnel Hill - to the absolute minimum, in keeping with the need for safety in the tunnel itself and in the Hollow at its approaches. The detour over the Tunnel Hill Trail is awkward for hikers and for bikers (especially with loaded bikes), impossible to traverse for wheelchairs and others with mobility constraints, and nearly impossible for bikes with trailers for gear or infants. During one recent closure, the detour climbed the berm side of the canal rather than going over the top of the hill on the Tunnel Hill Trail; it rejoined the Tunnel Hill Trail at the end of the last switchback, so it was a far less onerous detour than the complete trail. Regarding timing, we hope that the tunnel work will be completed by the time the C&O Canal Association is scheduled to host the World Canals Conference in August - September 2021. The tunnel is one of the most significant structures on the canal and one that we plan to highlight in our study tours of the canal.

There are trade-offs in the composition of the new boardwalk both inside the tunnel and on the approaches outside of it. Wooden boardwalks - such as the in-kind replacements proposed for the Tunnel Hill Hollow - would be more historically authentic, but the modern ones made of recycled soda bottles - such as the ones at the Great Falls Overlook - are much more durable.

We are generally loath to criticize a project for what it does not try to accomplish. But this project is largely restricted to the Hollow, with no improvements proposed for the tunnel itself. Modest improvements are included for the campground and for adding a turn lane on the state highway. This project presents an opportunity to work inside the tunnel as well, particularly since the canal prism inside the tunnel will be drained and made temporarily passable for heavy equipment. This would be a good opportunity, for instance, to inspect and, if necessary, secure some of the millions of bricks in the ceiling of the tunnel. Falling bricks in the tunnel could be as much a hazard to staff and visitors as falling shale in the Hollow. A new towpath surface inside the tunnel could mitigate the current uneven path and puddles that present hazards to all visitors, especially those in wheelchairs or those less sure on their feet in the darkened tunnel. Although the towpath surface needs to be addressed, especially the gaps where it is collapsing into the prism, the wooden railing, with rope burns from the working era, should be retained. Similarly, the rope burns in the rock in the stone just outside the downstream (north) entrance should be preserved.

Because of the detour involved, implementation of the preferred action alternative requires that all the work be performed at once, rather than in an incremental manner. Thus, all the funding for completing the entire project must be in place before it is initiated. We trust the NPS to perform the work in a way that would have only minimal negative impact on historic structures, archeological sites, and rare, threatened, and endangered plants and animals.

We note that large portions of the Assessment of Effects and a bit of the correspondence with the Maryland Historical Trust in the Environmental Assessment are blacked out. We understand this redaction is to protect the precise locations of archaeological relics. We support this move to protect these precious resources and to restrict this information to those with a need to know, such as the Park staff, the Maryland Historical Trust, and the Association's Paleo Protectors.

We also note that these documents are relatively short - about 30 pages each for the Environmental Assessment and the Assessment of Effects. They have only two alternatives - an action alternative and the status quo. These are positive steps, and allow the Park to draft the documents in-house, saving funds for more pressing priorities. The cost of the documents - \$50,000 in this case - seems to be a new and positive feature of this set of assessments. In sum, we look forward to a restored and less hazardous the Paw Paw Tunnel Hollow, and eventually the Paw Paw Tunnel itself, major visitor destinations on the C&O Canal.

The C&O Canal Association is an all-volunteer citizen organization established in 1954 to help conserve the natural and historical environment of the C&O Canal and the Potomac River Basin. The Association thanks the National Park Service for the opportunity to comment on this project and looks forward to a functioning and historically appropriate restoration.

Response: Due to the nature of the geology in the Tunnel Hollow, the different rock strata will continue to fracture from water infiltration and differential weathering. It has been over forty years since the last major stabilization project and since that time, natural weathering processes have reduced the efficacy of the 1970s stabilization measures. The stabilization methods planned for the proposed project use similar methods to the work in the 1970s such as rock bolts and scaling, but also include additional measures such as rock drains, shear keys, and pinned mesh. The synergistic effect of these measures is expected to extend the effectiveness of the stabilization effort. The work will likely be covered by a 1-year warranty, which is typical for this type of contract.

The Park agrees that the Paw Paw Tunnel is one of the most significant historic structures in the Park. While repairs for the tunnel are not included in the current project, a tunnel condition assessment was developed as well as a cost estimate for repairs to the structure. This information is being used to develop a project that will request funding to specifically address the Paw Paw Tunnel. The Park believes that the rock fall hazards in the Tunnel Hollow are a more immediate safety concern.