

SECTION 7(a) REVIEW and DETERMINATION

Madison County, County Road 36 Bridge Replacement, Ohio

Prepared by the National Park Service

January, 2007

PROPOSAL SUMMARY: The project includes replacing the Amity Pike Bridge (County Road 36) over the Big Darby Creek Wild and Scenic River (BDC). Project plan sheets indicate the project earth disturbed area is 2.0 acres, the estimated contractor disturbed area is 1.25 acres, and the notice of intent earth disturbed area is 4.9 acres. Elements of the project include in-stream construction, channel excavation, and flow interruption. The project is defined as a water resources project and subject to the requirements of the Wild and Scenic Rivers Act (Public Law 90-542; 16 U.S. Code 1271-1287) (Act). The Ohio Department of Transportation (ODOT) is the project applicant.

LOCATION: The SR 235 bridge replacement project is located in Madison County Ohio at river mile 49.68.

PURPOSE OF THE PROJECT: The stated purpose of the project is to modify the vertical and horizontal roadway alignment on the east end of the bridge to eliminate a substandard curve that impacts site distance across the bridge. A greater bridge waterway opening would result by moving the bridge abutments away from the BDC, thereby reducing flood impacts in this area. The project is scheduled to be awarded in the May of this year. Work would be completed in one construction season.

BIG DARBY CREEK: BDC originates in Logan County and flows more than 80 miles before reaching the confluence to the Scioto River near Circleville, Ohio. Land use is predominately row crop agricultural, except for the watershed's suburbanizing eastern edge near the border of Madison and Franklin County. Both the Big Darby Creek and the Little Darby Creek provide habitat for 86 species of fish and 41 species of mollusks. The diverse fish and mussel communities of the BDC (including listed and non-listed species) are Outstandingly Remarkable Values (ORV) are considered nationally significant resources and are thus protected by the Act. Presently, many of the fish and mussel species normally found in the BDC are declining in population, and several are listed as either endangered or threatened by both the state and federal government.

PROJECT INFORMATION:

Site Conditions

The project is located at the northern end of the Middle Darby Creek sub-watershed. Land use is primarily rural, dominated by agricultural row crops and interspersed with small woodlands. Aquatic life uses in this area are impaired. Habitat alteration, channelization, riparian removal, and nutrient loading are principle causes of impairment in the watershed.

Comment: A detailed description of site conditions is necessary to compare existing project effects to those anticipated from the project proposal. In this example there is sufficient information from which to make a comparison.

At the project site, the overall Qualitative Habitat Evaluation Index (QHEI) score was 85¹. This score indicates the river segment is suitable for warm water habitat without impairment (QHEI measures the qualitative habitat corresponding to the physical features that affect fish and invertebrate communities). The stream condition report for this project characterized the river as having low sinuosity, slow to moderate velocities, and high stability with no evidence of channelization. High quality pool/glide and riffle/run habitats were present. The stream gradient was estimated at 6.8 feet/mile. The riparian zone and flood plain are in good condition with forests and/or fields adjoining the area. Both banks of the BDC are forested with little to no evidence of erosion. Ballenger Ditch joins the BDC at this location and retains a QHEI of moderate to good.

Comment: The use of reference material is highly encouraged. Citations add a sense of completeness to the analysis without undo repetition of information.

Hydraulic flood frequency data presented by ODOT indicates the 10 year flood discharge at this location is 9,041 cubic feet per second (cfs) and 100 year flood discharge is 14,958 cfs. The effective or dominant (1.5 year) discharge at this site was not included in the ODOT report.

Precipitation in Ohio varies. Spring and summer months are typically the wettest and the fall and winter months are the driest. In Madison County, average monthly precipitation data indicates October is the driest month, at just under 2.5 inches, followed by September with a little over 3 inches (based on average precipitation 1961-1990)². Mean monthly precipitation normals for Columbus, Ohio (<20 miles east of the project) between the years 1971-2000 indicate a similar trend, with October being the driest month³. Mean precipitation in July and August exceeded 4 inches.

Construction Activities

The proposal involves replacing the existing three-span bridge structure with a four-span bridge over the BDC. The new bridge abutments would be moved back from the existing location and the bridge would be elevated to improve the flow-through area under the bridge. The existing in-stream pier would be removed and replaced with one set of cap-and-pile piers that are more in line with the edge of the main channel, and would be angled into the current to minimize scour and snags. The stream bottom would be excavated to remove the existing pier and foundation to a depth of 1-foot below the stream bed and also to construct the new pier. Approximately 0.001 acre of permanent fill (20 cubic yards) would be required for the new pier. Retaining walls would be constructed on both the northwest and southeast approaches of the bridge to avoid impacting Ballenger Ditch and a backwater to BDC. A temporary work pad (causeway) of non-erodible clean rock (1,900 cubic yards) would be placed in the river and extend from the west bank of BDC to the center pier of the existing bridge (approximately 0.17 acre). The temporary work pad would be placed on top of open culverts in a manner that would allow for continuous river flows and normal volumes. After construction, the work pad would be removed to the existing channel bottom. The existing channel contours/elevations would be returned to their existing baseline (pre-construction) condition.

¹ Ohio Environmental Protection Agency QHEI Field Sheets (version 6/24/01), completed for ODOT Office of Environmental Services 9/25/03.

² *Water Resources of Madison County Fact Sheet- AEX-480.49*, Ohio State University Extension.

³ *Monthly Station Normals of Temperature, Precipitation and Heating and Cooling Degree Days. 1961-1990. Ohio.* Climatology of the United States, No 81. National Oceanic and Atmospheric Administration.

Up to 55 trees and shrubs would be removed within construction limits, including 15 trees that are 18-inches in diameter at breast height (DBH), three trees having a DBH of 30-inches and two trees that are 48 and 60-inches DBH, respectively. Trees that need to be removed would be specifically marked to prevent removal of non-targeted trees.

Appropriate sediment and erosion control measures would be in place for the duration of the project and until any disturbed sites are re-established with vegetation. A natural vegetative buffer along the stream banks would be maintained and/or restored with native tree species. A mussel relocation effort would be conducted no later than one month prior to the start of in-stream work. All living mussels in the primary and secondary impact zone (100 feet upstream of the centerline of the bridge to 400 feet downstream of the centerline of the bridge) would be marked and relocated to suitable habitat within the BDC. Relocation activities would be performed by a qualified malacologist listed on the U.S. Fish and Wildlife Service Approved Mussel Surveyors list.

Project Duration: It is expected that work would be accomplished within one year.

SECTION 7(a) DETERMINATION

Introduction: The U.S. Army Corps of Engineers (USACE) has requested the National Park Service (NPS) to prepare a determination of effect, pursuant to Section 7(a) of the Act. A section 7(a) determination is prepared by the NPS on behalf of the Secretary of the Interior to evaluate whether a proposed water resources project would have a direct and adverse effect on the values for which a designated river was established, namely its free-flowing condition, water quality, and Outstandingly Remarkable Values (ORV's). The BDC's ORV's include the rivers diverse fish and mollusk community.

Federal water resources projects that are determined to have a direct and adverse effect on the values for which designated rivers were added to the System are prohibited. Information to make this determination is derived from material provided to the NPS from the USACE, ODOT, Ohio Environmental Protection Agency (OEPA) and the Ohio Department of Natural Resources (ODNR); as well as from on site meetings with the NPS, relevant planning documents, local/state/federal weather data, and information in NPS files.

Impacts to Free-flowing Condition: Section 16(b) of the Act defines free-flowing as "existing or flowing in a natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway."

During construction, approximately 1,900 cubic yards of rock would be temporarily placed in the river channel for equipment to access the bridge on a constructed work pad (causeway). The causeway would be constructed using clean fill, would not extend beyond 50 percent of the channel bank width and would occupy approximately 0.07 acres. The work pad would allow for removal of the center pier and replacement with a new pier that would be moved from the centerline of the channel to a location along the west bank. The causeway would be removed upon project completion and the river channel (streambed and banks) would be returned to the pre-construction contours in a manner such that once completed, the cross sectional area or

width/depth ratio of the channel geometry would not be altered. As designed, the causeway constitutes a temporary diversion/modification of the river and could disrupt the natural free flowing condition of the river and/or change the channel morphology, absent certain measures to reduce impacts. To reduce impacts to flow and downstream aquatic communities, the work pad will be placed on top of a series of culverts with a six-foot or greater diameter opening to allow for continuous flow.

Retaining walls would be constructed on the northwest and southeast approaches of the bridge in order to avoid impacting an adjacent backwater area and Ballenger Ditch. A shelf would be incorporated into the design of the retaining wall along the north bank of Ballenger Ditch to reduce potential impacts. The shelf would be vegetated and stabilized with riprap.

Bridge piers typically alter normal river flows, can increase scour (channel and at abutments) and alter channel morphology. Excavation associated with the removal of the old pier and construction of the new pier would disrupt the channel bottom contour. The new pier and abutments are being moved such that a greater bridge waterway opening would be achieved, as well as a reduction in the amount of earthen approaching to the bridge. Approximately 20 cubic yards (0.001 acre) of permanent fill would be placed in the channel to allow for placement of the new pier. In-stream piers and riprap would alter the free-flowing condition of the river. The effects associated with bridge foundations and the work pad are both temporary (effects stemming from the construction process; turbidity and sedimentation) and permanent (effects that stem from hydraulic changes resulting in the loss of stream and floodplain habitat). Environmental measures may be implemented to reduce impacts.

Comment: An opportunity exists for additional comparison of effects between the existing and proposed project. Such additional comparison would support the determination that the proposed project does not have a direct and adverse to free flow.

Impacts to Water Quality: About eighty percent of the watershed is farmland, and local farming has subjected the watershed to both point source and nonpoint source pollution. Residential land uses and stress from the conversion of agricultural land to urban and suburban development have negatively impacted water quality by increasing sedimentation and nutrient runoff. A comprehensive report⁴ on water quality conditions released by OEPA indicates that while most streams in the BDC watershed are meeting standards for aquatic life quality, the upper and middle segments do not. Primary causes of impairment include excess nutrients, low dissolved oxygen, excess sediment and habitat destruction. The report states the decrease in water quality poses a threat to the watershed's aquatic species and biological diversity. OEPA studies have documented that the cumulative impacts of the water, energy and sediment delivered to the BDC from all the ditch systems and more recent disturbances caused by road construction and industrial development along the north edge of the watershed are responsible for the declines in indicators of biological health of the system. Additional stress to the system has been added by the activities of private landowners and public agency projects to control stream bank erosion and flooding in localized areas.

The removal and installation of bridge piers and associated structures could directly impact water quality. Short-and long-term increases in turbidity would likely occur during installation and removal of the temporary causeway, piers, abutments, and dewatering activities. Chemical contamination may result from concrete pouring in or near the BDC. Removal of riparian

⁴ *Big Darby Creek Watershed TMDL Report*. January, 2006. Ohio Environmental Protection Agency.

vegetation and/or other earth moving activities would also have short and long-term impacts (sedimentation, loss of shade) to water quality. However, the project proposal includes several Best Management Practices (BMP's) to minimize and/or mitigate adverse impacts to water quality. Filter fencing would be installed at the construction limits and a vegetation plan for replacing trees and shrubs would be adhered to. Additionally, motorized equipment would not be allowed to operate within the river unless operating on the temporary work pad. Given the current status of water quality in the BDC, it is critical that all efforts to avoid, reduce and minimize impacts to water quality are strictly adhered to. Assuming specific methods and monitoring procedures are in place throughout the duration of the project to avoid, minimize, or mitigate impacts to water quality, there is a reasonable expectation that the proposal would not have a direct and adverse affect on the BDC's water quality.

Impacts to Mollusk/Fish Community: Site specific qualitative and quantitative mussel surveys were conducted in the project area during 2000 and again in 2005. The survey documented approximately 216 individual live mussels representing nine species. Fresh dead shells of three other species were found. Mussels were found near the riffle area 100-200 feet downstream of the bridge and continuing for several hundred feet. Habitat under and just upstream of the bridge site is mostly unsuitable for large concentrations of mussels. This area is in slow water and dominated by well-packed cobble and large gravel. The area where the work pad would be placed to allow removal and replacement of the pier is deep and silty, and has concrete chunks scattered throughout the area. The substrate under the bridge also includes debris, especially along the sides of the channel and near the central pier. Mussels were found along the sides of the channel starting approximately 200 feet upstream of the bridge. Further upstream (starting approximately 500 feet upstream of the bridge) a sandy run area with a larger concentration of mussel species was found. Excluding silt tolerant mussel species, the backwater area near the bridge site is unsuitable mussel habitat. It may however, provide habitat for other aquatic species.

Generally, the upstream mussel bed area is outside of the footprint of the project and would not be impacted. However, this mussel bed could serve as a source population for recolonization of the area below the bridge if habitat conditions remain stable or improve. The downstream mussel bed location may be within the impact zone.

In the summer of 2001, the OEPA collected fish species data from the bridge site. A total of 737 individuals representing 28 species of fish and two hybrids were collected. Macroinvertebrate sampling was conducted 0.02 miles upstream of the bridge. The Invertebrate Community Index (ICI) for this site is 56 (out of 60), which is well within the Exceptional Warm water Habitat range. Impacts to the fish and macroinvertebrate habitats within the project area will be minimal. Higher quality habitats are located outside of the direct impact area, but could sustain temporary, short-term impacts from siltation.

As a group, mussels are the most rapidly declining faunal species in the nation. Potential project impacts to mussels may include crushing, burying, and short and long-term habitat loss caused by sedimentation, scour, or modified flow hydraulics. Thus, all mussels located within the primary and secondary impact area (400 feet upstream and 1,000 feet downstream) should be relocated by a qualified malacologist no later than one month prior to construction. Protocols for

mussel relocation have been established and would reduce impacts to mussels during relocation efforts.

Impacts to the fish community as a result of the project consist primarily of physical disturbance of substrate and spawning habitat from sedimentation and loss of riparian vegetation (bank stabilization, shade, woody debris). These impacts would be temporary in duration and minor in terms of intensity. Fishes would be able to relocate themselves to avoid direct impacts.

SECTION 7(a) FINDINGS:

The water quality of the BDC is already compromised. As such, OEPA has issued recommended actions for reversing water quality issues in the Big Darby Creek watershed, which include control of stream bank erosion, meeting geomorphological and hydrological targets, and protecting intact, wooded corridors along the stream⁵. Additional impacts associated with this project to the rivers free-flowing condition, water quality, and mussel and fish (and their habitat) could be significant.

Provided the measures/conditions and actions cited below are properly in place throughout the duration of the project, there is a reasonable expectation that the proposal would not have a direct and adverse affect on the BDC's free-flowing condition, water quality, and fish and mollusk community. Absent these conditions, the proposed project would have a direct and adverse affect on the river's free flowing condition, water quality, and fish and mollusk community.

REQUIRED PROJECT MEASURES/CONDITIONS:

Mussel Relocation:

1. All live mussels located within the primary and secondary impact area (400 feet upstream and 1,000 feet downstream) must be relocated no later than one (1) month prior to construction. Mussels will be relocated to an appropriate pre-identified upstream segment with suitable habitat by a qualified malacologist(s). Qualified malacologists must have diving experience, experience with successful mussel relocation efforts and the ability to identify mussel fauna of the BDC. Suitable habitats are areas that support a community of mussels similar to the area from which the mussels were relocated, including a similar species mix. Care will be taken to ensure that mussels are relocated to sites such that densities do not lead to crowding and mortality.
2. The relocation shall occur during appropriate weather and stream conditions to ensure success in locating mussels, as well as mussel survival. Stresses from both heat and cold shall be avoided during the relocation effort. All mussels will be measured (length, height, and width), aged (annual ring method), and given a unique numbered tag to enable annual monitoring. On the BDC, a post-relocation survival rate of 90 percent or greater is desired.

Comment: The river-administering agency is not required to develop mitigation measures if it finds a project proposal to have direct and adverse effects to free-flow, water quality, and/or outstandingly remarkable values. In this situation, the agency elected to develop measures that are protective and enhancing in nature so that the project could proceed.

Note: The project proponent was not able to fully meet required project conditions. New designs were submitted (which avoided the use of work pads). The project changes were evaluated in a new Section 7(a) analysis in response to an amended Section 404 (Clean Water Act) permit and were ultimately approved.

⁵ Ibid

3. All equipment (including dive gear, waders, boots, boats, and live wells) used for the pre-relocation site selection and mussel relocation work shall be free of Zebra mussel adults and veligers. If equipment used for the relocation has been in waters known to contain Zebra mussels, it must be properly decontaminated using established protocols.
4. Care will be taken to reduce handling time for all species. Relocated mussels will be kept submerged in flowing water as much as possible. Measuring and labeling the mussels and returning them to the relocation site must occur as quickly as possible and be conducted by experienced malacologists. Mussels shall be hand-placed within relocation sites in a natural position/orientation. Extreme precautions shall be taken to ensure that each mussel is firmly embedded and stabilized in the substrate.
5. A relocation report will be prepared following completion of all mussel relocation work describing the relocation: date, environmental conditions, methods, relocation site conditions (substrate; mussels community), mapped area of relocation site (from and to), species, numbers marked/tagged, and associated efforts, problems and solutions, results and conclusions. This report shall be submitted to the Wild and Scenic River Specialist, NPS, Midwest Regional Office (MWRO) within three months of the relocation effort.
6. Relocated mussels will be monitored for two years following the relocation to evaluate mortality. An interim and final report, including monitoring methods, results, discussion, conclusion, and recommendations for future relocation work, will be submitted to the Wild and Scenic River Specialist, NPS, MWRO within three months of final monitoring effort.

Erosion Control/Riparian Zone Protection/Tree Replacement:

1. Appropriate sediment/storm water controls will be installed prior to grading or other land disturbing activities.
2. All erosion control devices shall be inspected daily and maintained throughout the duration of the project. Accumulated sediment shall be cleaned out of erosion control devices, and worn-out or deteriorated materials should be replaced on a regular basis.
3. Disturbances to the riparian zone shall be limited to the access points and construction limits indicated in the 404 permit application. Provisions must be in place to protect remaining vegetation/trees from damage by construction equipment. These provisions must limit the removal of riparian vegetation and include measures to avoid equipment damage to remaining trees (trunks, branches, and/or roots) located in the work area. Severely damaged trees (damage would lead to mortality) may remain on site to serve as nesting cavities, hold soil, and prevent erosion. However, replacement trees must be planted as indicated in condition number six of this section.

4. Trees removed within the construction work limits and located 25 feet or less from the toe of the slope of BDC or Ballenger Creek must be cut flush to the ground. Bulldozers may not be used to knock trees/stumps/root wads out of the ground.
5. Disturbed/exposed areas in the riparian corridor (slope and banks) shall be properly stabilized (seeded, mulched, or otherwise) immediately after grading to prevent erosion and establishment of invasive plant species. Appropriate tree and shrub species must be planted to replace tree and shrubs removed along the riverbanks.
6. All trees removed, or otherwise severely damaged, from the river bank/riparian corridor (including ordinary high water mark to the bank top and 25 feet beyond) within the project construction limits of BDC and Ballenger Creek must be replaced as follows:
 - Trees less than 12 inches diameter at breast height (DBH) will be replaced with bare root tree seedlings at a 1:1 ratio.
 - Trees between 12 and 20 inches DBH will be replaced with bare root tree seedlings at a 2:1 ratio.
 - Trees greater than 20 inches DBH will be replaced at a 1:1 ratio with tree saplings that are at least 2 inches DBH and 12 feet in height.
 - Native shrubs should also be planted randomly throughout the disturbed area.

Replacement trees shall be planted by qualified staff, at the appropriate time of year (late fall or early spring), and in a random fashion to avoid crowding or a plantation appearance. Qualified individuals include arborists, foresters, or trained staff with similar expertise and experience in river restoration projects. Staff from the ODNR Scenic Rivers Program should be consulted prior to planting in order to determine species selection, spacing, care and cultivation (locations within the riparian corridor, river banks, as well as on ODNR property adjacent to the project area).

7. Planted tree seedlings/saplings shall be cultivated and monitored for two years to ensure success. Planted stock showing signs of mortality shall be promptly replaced. Only local, native trees/shrubs/grasses, naturally occurring within the BDC's riparian zone area shall be planted. Plant selection (species and size) should reflect the natural mixture/diversity of the immediate area, flood frequency and browse pressures. Watering and provisions for the replacement of trees/shrubs in the event of mortality should be addressed. Use of fertilizers and herbicides in the riparian corridor should be avoided.
8. A report depicting the number/size/location of trees removed and/or damaged; number/size/location of replacement trees and shrubs; planting methods; and provisions for replacing planted stock shall be provided to the NPS within 3 months of project completion.

Work Pad Construction/Bridge Demolition and Construction:

1. A single temporary work pad for the pier removal and bridge construction is permitted provided:
 - No more than 1,900 cubic yards of clean, non-erosive rock material will be used to construct the causeway. This material must be free of any fines, clay or silts and of sufficient size to prevent downstream movement.
 - The causeway does not exceed three feet in depth, 20-feet in width, and does not occupy more than 50 percent of the active river channel (from toe to toe).
 - The causeway is placed on top of an appropriate number of open culverts of sufficient diameter and numbers to pass a flow equal to 150 percent of existing flow in order to account for minor storm events. A 6-foot minimum diameter opening is required.
 - The culverts must be designed to allow fish passage and must be orientated parallel to normal stream flow.
 - The culvert devices must be clear of debris and fully functioning throughout the duration of the project.
 - The causeway must be removed prior to November 15.
 - The riverbed underneath the causeway must be returned to its pre-construction contours and elevations.
 - All motorized equipment operations must be conducted from the causeway; machinery is not being permitted to work or otherwise operate from within the riverbed.
2. In-stream work (causeway installation, pier removal and installation) shall be performed during September 1 and October 31 during low flow periods. The causeway must be removed from the channel by November 15. Temporary rock used for the causeway will be removed to channel bottom immediately upon completion of in-stream work and stored/disposed of at an appropriate upland site out of the 100-year flood plain.
3. Work area isolation (sheet piling, bladder bags, solid barriers or coffer dams) will be implemented prior to any streambed excavation unless it can be demonstrated that work area isolation will cause more resource harm than the excavation activity.
4. If cofferdams or dewatering is necessary to facilitate in-stream work, downstream normal flows must be maintained. Pumps or flume diversions may be necessary to prevent interruption of downstream flows.
 - Dewatering must be accomplished in accordance with OEPA's Water Quality Protection Plan total maximum daily load (TMDL) prescriptions for construction activities located in the Big Darby Creek Watershed. Water releases may not exceed regulated allowances and shall maintain a target

discharge performance standard of 45 mg/l total suspended solids up to a 0.75 inch rainfall event within a 24 hour period⁶.

- No wastewater may be discharged into the BDC.
 - All dewatering discharges must be filtered to remove excessive sediments and must be discharged onto an energy-dissipation device (e.g. splash pup, concrete weight, or equivalent) prior to discharge into the BDC or any watercourse draining directly into the BDC. Fish or mussels trapped in the dry area must be appropriately and properly relocated to a downstream section of the river by a designated/qualified individual.
5. No channel excavation associated with causeway placement is permitted. Channel modifications are to be avoided and the stream bottom must be returned to pre-construction elevations and contours using the natural substrate. The causeway culverts and rock (to the channel bottom) will be removed immediately upon completion of in-stream work and the fill material disposed of at an appropriate upland site.
 6. Underwater blasting and water jetting are prohibited, unless approved in writing by the NPS and ODNR.
 7. A final report to discuss the impacts to the stream bottom and habitats associated with the causeway shall be prepared. The report shall include pre and post-construction streambed measurements, an evaluation of the techniques used for placement/removal of the causeway, construction and monitoring methods, pre and post stream bottom elevations in 5-foot increments where the causeway was placed, discussion, conclusion, and recommendations. The report shall be prepared by a certified hydrologist and submitted to the Wild and Scenic River Specialist, NPS, Midwest Regional Office within 3 months of the final project closeout meeting.
 8. Aprons, shrouds, and/or other containment devices must be in place during bridge demolition, bridge construction and surfacing activities to capture falling debris, paints, welding slag, sealant overspray, or other debris. All concrete chunks, asphalt, grindings, concrete materials, wood, rebar, and other debris generated during demolition or construction that enters the river must be immediately removed from the river and taken to an appropriate disposal facility outside of the floodplain.
 9. Any concrete slabs, chunks or other construction debris currently in the river in the project area must be removed from the river and taken to an appropriate disposal facility.
 10. Excavation and fill placement work shall be performed with appropriate measures in place to minimize sedimentation and impacts to the streambed. All work shall be performed from the bank area, outside the active river channel or on the work pad causeway. Permanent modifications of the channel and/or movement of the thelweg

⁶ State Water Quality Management Plan, Appendix 9-3 (Water Quality Protection within the Big Darby Creek Watershed). Ohio Environmental Protection Agency. Approved November, 2006.

should be avoided. The stream bottom must be returned to pre-construction elevations and contours using the natural substrate. Rock weirs or other such diversions may not be established.

11. The bridge deck drains must convey deck run-off into filter catchments, the riparian zone, or other filtering system prior to discharge into BDC. Deck drains may not allow stormwater runoff to fall directly into the river.

Construction Equipment/Site:

1. All elements indicated on plan sheets (scenic river notes, stream channel excavation, and temporary construction fill) and this document must be strictly adhered to. Where conflicts arise between state and federal requirements, the more protective (restrictive) measure shall apply.
2. Litter and construction debris on the shore, banks and land area shall be contained daily. All construction debris and litter must be completely removed off site upon completion of the project.
3. All fueling operations, lubricating, hydraulic topping off, fuel tank purging, and equipment maintenance/repairs shall be performed at an upland site outside of the one-hundred year floodplain. These activities shall take place on an approved pad with spill control/collection devices in place.
4. All construction equipment shall be inspected daily for hydraulic and fuel leaks. When not in use, fuel and hydraulic fluids shall be stored at an upland site outside of the one-hundred year floodplain.
5. No mixes, cements, fluids or other construction wastewater may be discharged into the BDC. Spoil piles must be covered or otherwise managed to reduce sedimentation.

Project Coordination/Notification:

1. A pre-construction meeting with equipment operators shall be held to discuss each of the above requirements. The NPS must be notified in advance of pre-and post-construction meetings, and invited to pre-site construction meetings with the contractor, and to the final site inspection.
2. OEPA, Central District Office, Division of Surface Water and ODNR, Scenic Rivers Program staff must be notified prior to commencing construction.
3. The NPS will be promptly notified of accidents and/or failures of project features intended to protect the free-flowing condition or biological resources, and of mussels found in the impact area during construction activities.

Quality Assurance and Maintenance:

1. On-site construction reviews should be conducted to identify maintenance needs and chronic problems that may be occurring. Appropriate remedial actions should be implemented in a timely manner.
2. A final project completion report that describes how each of the above requirements has been met will be submitted to the NPS three months following project completion. This report may include sub-chapters containing reporting requirements associated with mussel relocation (interim), vegetation/streambed restoration, and other elements described above.

Signage:

1. Signs identifying the BDC as a "National and State Wild and Scenic River" shall be placed at both bridge approaches.

Provided the above requirements are fully and completely implemented for the duration of the project, and the project meets water quality targets/recommendations contained in the *Big Darby Creek Watershed TMDL Report*, published by OEPA (January, 2006), pursuant to Section 7 (a) of the Wild and Scenic Rivers Act, the NPS has determined, on behalf of the Secretary of the Interior, that this project will not have a direct and adverse effect on the free flow, water quality or fish and mussel resources of the Big Darby Creek Wild and Scenic River.

Any changes to any elements of the project or the scheduling of in-stream work, as described in the package submitted for evaluation and/or above, will require consultation with the NPS and may require additional Section 7(a) review/approvals.

APPROVED BY:

/s/ Ernest Quintana

11/9/07

Regional Director, Midwest Region
National Park Service

Date