The ITS specifies three reasonable and prudent measures (RPMs) necessary to minimize and monitor take of listed species. The RPMs outlined in the ITS are non-discretionary, and must be undertaken so that they become binding conditions for the exemption in section 7(o)(2) to apply. Failure to implement the terms and conditions through enforceable measures may result in a lapse of the protective coverage of section 7(o)(2). Monitoring that is required by the ITS will continue to supply information on the level of taking resulting from the proposed action.

This concludes formal consultation on the ODOT MIA-Great Miami Bridge Connector project. The Service appreciates the cooperation of FHWA and ODOT during this consultation. We would like to continue working with you and your staff regarding this project. For further coordination, or if you have any concerns about this Biological Opinion, please feel free to contact me or Karen Hallberg of this office at (614) 416-8993 extensions 12 and 23, respectively.

Sincerely,

Mary Knapp

Mary M. Knapp, Ph.D.
Field Supervisor

Enclosure

cc: Tim Hill, ODOT-OES
John Navarro, ODNR DOW, Columbus, OH (*email only*)
ODNR, DOW, SCEA Unit, Columbus, OH (*email only*)
Noel Mehlo, FHWA Ohio (*email only*)
USACE, Ohio Regulatory Transportation Office, Columbus, OH (*email only*)
OEPA, Columbus, OH (*email only*)

ATTACHMENT B4

OHPO Section 106 Coordination; September 8, 2010

OHIO DEPARTMENT OF TRANSPORTATION
INTER-OFFICE COMMUNICATION
Office of Environmental Services

RECEIVED

TO: Rex Dickey, District 7 Deputy Director **DATE:** September 8, 2010
Attn: Tricia Bishop, District Environmental Coordinator

Paul Graham, for

SEP 14 2010

FROM: Timothy M. Hill, Administrator,
Office of Environmental Services

PLANNING & PROGRAMS
DISTRICT 7 - BY:

SUBJECT: **Cultural Resource Coordination–Stipulation 4(B) Finding of No Historic Properties Affected**

PROJECT: MIA-Great Miami Bridge Connection [PID 84756] Project Located in Staunton Township, Miami County, Ohio

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On August 31, 2010, ODOT-OES staff completed a cultural resources review for the proposed MIA-Great Miami Bridge trail project located in Staunton Township, Miami County, Ohio. The proposed project will connect two segments of the Great Miami River Recreation Trail. The recently completed MIA-Great Miami Bikeway Phase 2 terminates off CR-25A near the I-75 Interchange. Another segment of the trail is currently under construction by the Miami County Park District north of Farrington Road. The proposed multi-use trail will extend north from the terminus of the MIA-Great Miami Bikeway Phase 2, will cross the Great Miami River on a new bridge, continue north through a wooded floodplain and fallow field, and terminate at a new parking lot (currently being constructed) north of Farrington Road (see attached preliminary plan sheets). The total length of the multi-use trail will be approximately 1600 feet. The preliminary cultural resource survey, including a literature review and field reconnaissance, focused on an approximate three acre-area along and adjacent to the multi-use trail and a barrow area.

Literature Review

The literature review was performed for this project in April 2010. No previously recorded archaeological sites or history/architecture resources were identified in the immediate project vicinity. The closest known archaeological site, 33MI161 (a prehistoric lithic scatter/Euro-American refuse scatter), was located 0.8 mile to the south. The closest previously recorded history/architecture resource, MIA-1138-09 (an 1870s farmstead), is located 2020 feet to the east-northeast. Therefore, no previously recorded cultural resources will be affected by the multi-use trail construction. The APE is limited to vacant fallow ground. Therefore, no further history/architecture investigations are recommended.

Archaeological Field Review

No standing pre-1960 structures are located within the proposed project area. Thus, the cultural resource field investigations were limited to an archaeological scope. Archaeological investigations were completed in April 2010. The entire project is located on a cut terrace/active floodplain represented by recent alluvial material designated Genesee silt loam. At the time of the survey, ground- cover conditions in general offered very little surface visibility across the area (i.e. 30 to 50 percent). However, the entire field had been slot cultivated by the Miami County Park District for the planting of trees (see attached memo-to-file dated 9/08/10 which summarizes the archaeological field review). This cultivation consisted of a two foot-wide cultivated furrow every ten feet. Each row was subsequently surface collected. No archaeological remains were identified during the surface survey.

Visual inspection along the trail section of the project identified an active floodplain with sand and gravel deposits indicative of sediment fallout during periods of inundation. The proposed alignment of the trail appears to be on a landform two to three feet higher than the adjoining field, where soil may have been placed along the margin of the river to protect the field from flooding. These conditions along with the negative results of the pedestrian survey indicate that no significant archaeological resources will be affected by the proposed construction.

Conclusion

In accordance with Stipulation 4(B) of the *Programmatic Agreement Among The Federal Highway Administration, The Advisory Council on Historic Preservation, The Ohio Historical Society, State Historic Preservation Office, and The State of Ohio, Department of Transportation Regarding the Implementation of the Federal-Aid Highway Program in Ohio (Agreement No. 12642)* executed July 17, 2006, and in compliance with 36 CFR Section 800.4 (d) (1), ODOT-OES has determined that "no historic properties affected" is the appropriate finding for the proposed trail project based on the following:

1. No previously recorded cultural resources were identified in the vicinity of the project and, therefore, none will be affected by the proposed project;

2. No standing pre-1960 structures are located within or adjacent to the proposed project area;

3. Based on the archaeological field investigations, no significant archaeological remains will be affected by the proposed construction; and

4. No further cultural resource investigations are recommended for the proposed MIA-Great Miami Bridge Connection (PID 84756) project.

This completes the Section 106 review by ODOT-OES and no further cultural resource investigations are required pending completion of the 15 day review and comment period at the State Historic Preservation Office (SHPO) with no comments or objections received from the SHPO during that period, pursuant with the Programmatic Agreement. You may then process the environmental document with no further comment or involvement from ODOT-OES unless the scope of the proposed undertaking was to change. Should the SHPO have comments on or object to the undertaking, ODOT-OES will work with your office to respond to the SHPO prior to finalization of the environmental document. In some instances it may be necessary to handle such responses as environmental commitments in the environmental document. The environmental document should note the date of this Inter-Office Communication for project Section 106 clearance. The environmental document should also note the date of the July 17, 2006 Programmatic Agreement as the basis for the Section 106 approval. A copy of this IOC and any subsequent consultation as a result of SHPO comments should be attached to the appropriate environmental document. If you have any questions or comments regarding this determination, please contact Jason Watkins, Staff Archaeologist, at (614) 466-5105.

TMH: jaw
c: Project File; Reading File; Mark Epstein, OSHPO w/attachments

ATTACHMENT B5

ODOT NEPA Clearance (CE); July 10, 2012

Preparers & Approvals

Form Preparer(s)

Form Preparer	District 7
Supporting Form Preparer(s)	Tricia Bishop

Approvals & Electronic Signatures

Approved & Electronically Signed By:	Approval Date:
Tricia Bishop MNGE ANAL SPV2	July 10, 2012
Erica Schneider ASST ENVIR ADM	July 9, 2012
Gary Parrill DEP DIRECTOR 5	July 9, 2012

ATTACHMENT B6

Flood Hazard Area Development Permit; November 19, 2011

MIAMI COUNTY PARK DISTRICT

John A. Wannemacher, President
Terry E. Netzley
R. Douglas Haines
Jerry R. Eldred, Executive Director

Administration office
2645 E. St. Rt. 41
Troy, OH 45373
(937) 335-6273
Fax (937) 335-6221

Education/Program office
2535 Ross Road
Tipp City, OH 45371
(937) 667-1286
Fax (937) 667-0919

November 24, 2010

Amy Schmidt
Transportation Tech 2, Project Manager
ODOT District 7, Production
1001 St. Mary's Ave, PO Box 969
Sidney, OH 45365

Re: Great Miami Bridge Connector PID84756

Dear Amy,

Please find enclosed our Flood Plain Permit for the Great Miami Bridge Connector PID84756.

Sincerely,

J. Scott Myers
Deputy Director
Miami County Park District

Cc: John W Panovsky
Korda/Nemeth Engineering, Inc

No. 255

FLOOD HAZARD AREA DEVELOPMENT PERMIT

This permit is issued based on documentation that the information provided in the Flood Hazard Development Permit Application is in compliance with the Miami County Flood Damage Reduction Regulations.

Address or property location: Peterson RD - Great Miami River

Description of development activity: Bikeway path Bridge Over Great Miami River

The permittee understands and agrees that:

- An as-built Elevation Certificate will be submitted to the Floodplain Administrator after the first floor of a new, substantially improved, or substantially damaged, residential or non-residential structure is constructed;
- A final Letter of Map Revision will be obtained where a Conditional Letter of Map Revision was required as part of the permit application;
- The permit is issued on the representations made herein and on the application for permit;
- The permit may be revoked because of any breach of representation;
- Once a permit is revoked all work shall cease until the permit is reissued or a new permit is issued;
- The permit will not grant any right or privilege to erect any structure or use any premises described for any purposes or in any manner prohibited by the codes or regulations of the community;
- The permittee hereby gives consent to the Floodplain Administrator to enter and inspect activity covered under the provisions of the Floodplain Management Regulations;
- The permit form will be posted in a conspicuous place on the premises in plain view; and,
- The permit will expire if no work is commenced within one year of issuance.

Issued by: _____ Date: 11-19-10
Floodplain Administrator

Permit Number: 255

No. 255

FLOOD HAZARD AREA DEVELOPMENT PERMIT
ADMINISTRATIVE CHECKLIST

NOTE: The following is to be completed by the local floodplain administrator. All references to elevations are in feet mean sea level (m.s.l.) according to the datum used on the effective Flood Insurance Rate Maps.

1. The proposed development is in:

✓ An identified floodway.
- Does a hydrologic and hydraulic engineering analysis accompany the application — Y/N
- Does the analysis have a certification that flood heights will not be increased — Y/N
- Is the analysis certified by a Registered Professional Engineer — Y/N

___ A flood hazard area where base flood elevations exist with no identified floodway.
- Does a hydrologic and hydraulic engineering analysis accompany the application — Y / N
- Does the analysis have a certification that flood heights will be increased less than the height designated in the community's flood damage reduction regulations (in no case will this be more than one foot) — Y / N
- Is the analysis certified by a Registered Professional Engineer — Y / N

___ An area within the floodplain fringe.

___ An approximate flood hazard area (Zone A).

___ Within the banks of a watercourse.
- Does an analysis demonstrating that the flood carrying capacity has not been diminished accompany the application — Y / N

Base flood elevation (100-year) at proposed site 848 feet m.s.l.

Data source FIRM

Map effective date 1-19-1983 Community-Panel No. 0040B, 0020B

2. Does proposed development meet NFIP and local "Use and Development Standards" of your regulations?

✓ Permitted Use.

___ Water and wastewater systems standards met.

___ Subdivision standards met (All public utilities and facilities safe from flooding, adequate drainage, flood elevations generated where applicable).

___ Residential/non-residential structures standards met. Lowest floor elevation _____ feet m.s.l.
- Substantial improvement / substantial damage — Y / N
- Anchored properly (manufactured home affixed to permanent foundation) — Y / N
- Utilities protected against flooding — Y / N
- Construction materials below flood protection elevation resistant to flood damage — Y / N
- Lowest floor elevated to or above flood protection elevation (BFE + freeboard (2') — Y / N
- Has an enclosure below lowest floor (crawl space, walkout basement) — Y / N
- Enclosure have proper number and area of openings — Y / N
- Enclosure unfinished and only used for parking, materials storage or entry — Y / N

___ Accessory structure standards met (square footage, use, foundation openings). — Y / N

___ Recreational vehicle standards met.

___ Above ground gas or liquid storage tank anchored.

✓ Flood carrying capacity maintained for floodway development, areas where FEMA has provided BFE data but no floodways, or for alterations of a watercourse.

3. Does proposed development trigger requirement to submit a Letter of Map Revision or Conditional Letter of Map Revision? Y (N)

DECISION RECORD

4. The proposed development is in compliance with applicable floodplain standards. **FLOOD HAZARD AREA DEVELOPMENT PERMIT ISSUED ON** 11-19-10.

5. The proposed development is not in compliance with applicable floodplain standards. **FLOOD HAZARD AREA DEVELOPMENT PERMIT DENIED ON** _____. Reason(s):

_____

6. The proposed development is exempt from the floodplain standards per Section _____ of the Flood Damage Prevention Ordinance (Resolution) No. _____.

Administrator's Signature: Jacob Hoover Date: 11-19-10

ATTACHMENT B7

USDOT Formal Consultation with USFWS; December 13, 2011

U.S. Department of Transportation
Federal Highway Administration

Ohio Division

200 North High Street, Rm 328
Columbus, Ohio 43215
614-280-6896
614-280-6876
@dot.gov

December 13, 2011

In Reply Refer To:
HDA-OH

Mary Knapp
Supervisor
U. S. Fish and Wildlife Service
4625 Morse Road, Suite 104
Columbus, OH 43230

Subject: Initiation of Formal Consultation for the MIA Great Miami Bridge Connector Project (PID 84756)

Dear Ms. Knapp:

Pursuant to 50 CFR Part 402.14 and Section 7 of the Endangered Species Act of 1973, as amended, the Federal highway Administration (FHWA) is hereby initiating formal consultation for impacts on federally listed species due to the proposed bikeway bridge over the Great Miami River in Miami County. This project proposes to construct a bike trail to connect two existing trails, and includes a bridge crossing over the Great Miami River in the vicinity of the IR 75 bridge over the Great Miami River.

The U.S. Fish and Wildlife Service's (USFWS) Ohio Field Office is the lead Service Field Office for the project. Prior technical assistance provided by the USFWS identified three (3) federally listed species of concern within the project area. The enclosed BA discusses the impacts expected to those federally listed species. The species discussed in the BA are listed below, along with the federal listing status and the effect determination for each:

- Snuffbox mussel (*Epioblasma triquetra*), Proposed for Listing as Federal Endangered – **may affect, not likely to adversely affect**
- Indiana bat (*Myotis sodalis*), Federal Endangered – **may affect, not likely to adversely affect**
- Rayed Bean mussel (*Villosa fabalis*), Federal Proposed Endangered – **may affect, likely to adversely affect**

The BA and associated appendices constitute a complete package of information regarding all phases of construction and operation of the project, and fulfills requirements under 50 CFR 402.14(c) to initiate formal consultation procedures.

The following are included in the BA:

- A description of the action being considered;

- A description of the specific area that may be affected by the action:
- A description of the listed species or their habitat that may be affected by the action;
- A description of the manner in which the action may affect the listed species or their habitat, and an analysis of any cumulative effects;
- Appendices containing reports documenting relevant studies of impacts of the action on the affected listed species or their habitat.

FHWA understands that, as stipulated in ESA Section 7(b)(1)(A) and 50 CFR 402.14(e), formal consultation will be initiated by your receipt of this formal consultation request and will conclude within 90 days from that date. We look forward to receiving the Biological Opinion (BO) on the federally listed species affected by the project, and a Conference Opinion for the proposed and candidate species affected by the project, within 45 days of completing the formal consultation period. FHWA requests an opportunity to review an advance copy of the BO prior to the issuance of the final BO.

If you have any questions, please contact Noel Mehlo, Environmental Specialist, at (614) 280-6841 or noel.mehlo@dot.gov.

Sincerely,

Noel Mehlo for

For: Laura S. Leffler
Division Administrator

Enclosure

ATTACHMENT C

Antidgradation Evaluation (401 WQC – Block 10)

ANTIDEGRADATION EVALUATION

Block 10a: Provide a detailed description of any construction work, fill or other structures to occur or to be placed in or near the surface water. Identify all substances to be discharged, including the cubic yardage of dredged or fill material to be discharged to the surface water. (OAC 3745-1-05(B)(2)(b)):

The proposed bridge, rock channel protection (RCP), support abutments, temporary clean non-erodible access fill, pier and associated grading activities will allow for the construction of the proposed bridge over the Great Miami River (GMR). Full project description details, including specifics of the bridge and multiuse trail, are provided in Attachment A. The purpose of the proposed project is to connect two segments of Great Miami River Recreation Trail (the Trail). A recently completed segment of the Trail terminates south of the Great Miami River and is the south terminus of the proposed project. The Miami County Park District has recently completed a parking lot off Farrington Road/Peterson Road; this parking lot is the north terminus of the project area and is a staging area for a Trail segment recently completed north of Farrington Road/Peterson Road in Miami County, Ohio, in order to complete the overall trail system. The proposed multiuse trail will provide a safe and easily accessible connection and remove pedestrians and cyclists from the surround roadways. Full details of the purpose and need for the proposed project are described in 2012 Final Categorical Exclusion (CE) Document Level 3; a copy of the Final CE has been provided as a separate document for your reference.

The current location of the proposed project evolved through both design requirements and the NEPA process with emphasis, in part, on avoiding and minimizing impacts to streams in the project vicinity. The project location within the approved NEPA corridor was evaluated and documented in the project's Final CE, approved by Ohio Department of Transportation (ODOT) on July 10, 2012 (see Attachments A which respond to Blocks 8a and 8b of the application form for further discussion). In general, a change in the current alignment location (e.g., placing multiuse trail along different alignment) within the approved NEPA corridor would not meet the purpose and need of the overall project and resulted in the current alignment.

Preferred Alternative

The Preferred Alternative is considered "preferred" due to the multiuse trail geometry (vertical alignment), overall project costs, and ease of constructability compared to the Minimal Degradation Alternative, however has a higher degree of waterway impacts in relation to other alternatives. The information provided herein for the Preferred Alternative has been analyzed as required for the Section 401 Water Quality Certification (WQC) process; and this alternative can be feasibly completed from design through construction and plans progressed into detailed design. The Preferred Alternative's impacts to streams are summarized in Table 1 below.

The Preferred Alternative alignment is shown in Attachment E (Figure 3) and the impacts to the GMR are shown in the plan sheets provided in Attachment F. The Great Miami River (GMR) will

be temporarily impacted for a total of approximately 144 linear ft. as a result of the placement of clean, non-erodible fill and a concrete support pier within the existing stream channel. Permanent impacts related to the proposed construction of the bridge across the GMR are located within the same footprint of the temporary impacts. Approximately 4,523 cubic yards of clean, non-erodible fill will be placed below the Ordinary High Water Mark (OHWM) for the temporary causeway during active construction. As part of the temporary causeway there will be approximately 21 - 36" diameter pipes, 15 - 30" diameter pipes, and 7 - 24" diameter pipes installed to allow for flow to pass through the construction limits with limited impact to the stream flow. The permanent impacts would consist of approximately 114 linear ft. as a result of the placement of 70 cubic yards of concrete and Rock Channel Protection (RCP) fill relating to the permanent placement of these materials below the OHWM associated with the support abutments only. Plan sheets in Attachment F show temporary impacts of the Preferred Alternative at approximately 144 ft., and permanent impacts restricted to the 114 linear ft. of impact as described above.

The horizontal alignment of the Preferred Alternative was selected to enable the proposed multiuse trail profile to meet current design standards; pavement along the project length would be 10 ft. wide with a 3 ft. gravel shoulder before a 3:1 slope to existing grade (Attachment F – Plan sheets).

Table 1. Summary of Actions by the Preferred Alternative

Feature	Preferred Alternative Crossing Structure[1]	Expected Impacts to Streams (linear ft.)
Great Miami River (GMR)	Construct/install support abutment, support pier, rock channel protection, temporary causeway	Temporary - 144 linear ft. of stream Permanent - 114 linear ft. of stream

[1]*Preliminary structure estimates only; see discussion above*

Construction of the Preferred Alternative would begin in autumn 2013 with an approximate duration of eleven (11) months (approximately 335 days). Initially the proposed construction corridor would first be cleared of woody vegetation to allow for construction equipment and materials to gain access to the project area. The areas within the Great Miami River where the temporary causeway will be placed will be surveyed prior to the placement of materials for mussel beds that could be impacted. Upon the completion of the mussel survey and any activity related to the relocation of mussels upstream of impact, placement of the temporary access fill (TAF) would occur within the extent of the GMR necessary for construction equipment to construct the proposed support structure and bridge decking. Upon the completion of construction activities that require the utilization of the temporary causeway across the GMR, all temporary fill materials will be removed. To limit temporary disturbance within the GMR efforts will be made to schedule and perform in-stream activities during low

flow conditions.

Best Management Practices (BMP's) would be used to control impacts due to erosion of exposed stream bank and channel, in strict accordance with ODOT's "Construction and Material Specifications" (CMS) and the project Stormwater Pollution Prevention Plan. Downstream sedimentation would be temporary and the impacted stream would be expected to recover shortly after the area is stabilized and construction completed. See Block 10b for a detailed description of anticipated impacts to water quality as a result of the Preferred Alternative.

Approximately 0.69 acres of disturbance will occur within the GMR due to the temporary causeway installed across the GMR. Approximately 0.33 acres of disturbance will occur within the upland floodplain areas adjacent to the GMR. See Table 1 for a summary of the proposed impacts as part of the Preferred Alternative.

A breakdown of activities and discharge quantities by impacted feature, a whole-project summary of activities, and direct comparison of the project waterway impact alternatives are presented in Tables B and C (Attachment D) of this 401 application.

Construction activity will be completed within the property owned by Miami County Park District; the project sponsor, or the Miami Conservancy District

Detailed structure design for the Preferred Alternative has been developed (Attachment F, Project Plan Sheets).

<u>Minimal Degradation Alternative</u>

The Minimal Degradation Alternative alignment is shown in Attachment E (Figure 3) and the impacts to the GMR are shown in the plan sheets provided in Attachment F. The Minimal Degradation Alternative will impact the GMR which are related to the proposed construction of the bridge across the GMR. The temporary impacts to the GMR will be a total of approximately 116 linear feet as a result of the placement of clean, non-erodible fill within the GMR for a temporary causeway required to construct the central pier. The temporary causeway will not span the river and will have approximately 13 – 36" diameter pipes, 11 – 30" diameter pipes, and 2 – 24" diameter pipes to allow for flow to continue downstream of the construction area. Approximately 114 linear ft. of permanent impact (within the same footprint of the temporary impact) will result to the GMR due to the construction of the central concrete support pier within the GMR stream channel and RCP placed below the OHWM adjacent to the central concrete support pier and on each stream bank. Approximately 1,665 cu. yards of clean, non-erodible fill will be placed below the Ordinary High Water Mark (OHWM) for the temporary causeway, and approximately 70 cubic yards of concrete and RCP fill relating to the permanent impacts. The impacts under this alternative are less than the Preferred Alternative. The Minimal Degradation Alternative's impacts to streams are summarized in Table 2 below.

Table 2. Summary of Actions by the Minimal Degradation Alternative

Feature	Minimal Degradation Alternative Crossing Structure[1]	Expected Impacts to Streams (linear ft.)
Great Miami River (GMR)	Construct/install support abutment, support pier, rock channel protection, temporary causeway	Temporary - 116 linear ft. of stream Permanent – 114 linear ft. of stream

The Minimal Degradation Alternative's construction procedures, methods, and design are similar to the Preferred Alternative; however, the installation of the temporary partial width causeway will extend approximately 160 ft. from the northern bank of the river into the stream channel (see Attachments D and F). The horizontal alignment of the Minimal Degradation Alternative will be located along a similar alignment as the preferred alternative multiuse trail. The construction of the partial causeway will slightly reduce the efficiency of the construction process. The lack of a causeway across the GMR will require construction equipment to travel on local roadways throughout the duration of construction activities. The decrease in the proposed stream impacts of the Minimal Degradation Alternative, as compared to the Preferred Alternative, is due to the change in construction methods.

Impacts to the GMR by the Minimal Degradation Alternative are reduced due to the change in construction methods. The permanent impacts are the same as the Preferred Alternative, consisting of approximately 114 linear ft. of impact from the constructed support pier and RCP with an anticipated volume of 70 cubic yards (Attachment D). The comparison between the Preferred and Minimal Degradation Alternatives are summarized in Attachment D (Permit Tables) and in the plan sheets provided in Attachment F (Minimum Degradation Alternative Plan Sheet).

The construction process for the Minimal Degradation Alternative is different than the Preferred Alternative (see details under the Preferred Alternative above). Construction under the Minimal Degradation Alternative is also expected to begin in autumn 2013; the construction timeframe is anticipated to be similar to the Preferred Alternative with an approximate duration of eleven (11) months (approximately 335 days). Construction techniques for the Minimal Degradation Alternative that are similar to the Preferred Alternative include: constructing support pier footings and placement of permanent RCP within existing waterway limits, as well as the placement of footings and rock channel protection in-stream on both banks to prevent scour in these locations. An in-stream partial causeway will be required for the Minimal Degradation Alternative. The major deviation from the Preferred Alternative is size of the temporary partial width causeway; the causeway will not cross the entire reach of the GMR as a result of the Minimal Degradation Alternative.

The BMP's utilized under the Minimal Degradation Alternative reflect those of the Preferred

Alternative (discussed above). See Block 10b for a detailed description of anticipated impacts to water quality as a result of the Minimal Degradation Alternative.

The Minimal Degradation Alternative would impact approximately 0.3 ac verses the 0.69 ac discussed in the Preferred Alternative. The difference in disturbance is due to the reduction in the area of the temporary impact to the GMR. See Table 2 for a summary of the proposed impacts as part of the Minimal Degradation Alternative.

As previously stated a breakdown of activities and discharge quantities by impacted feature, and a whole-project summary of activities are presented in Tables B and C (Attachment D) of this 401 application.

Construction activities will be completed within the property acquired by Miami County Park District; the project sponsor, or The Miami Conservancy District.

The structure design for the Minimal Degradation Alternative is the same as the Preferred Alternative.

As noted in the Table 2 above, impacts to the GMR were determined to be unavoidable (due to construction of the proposed stream crossing and other engineering constraints). Therefore, this alternative does not avoid all stream impacts but seeks to minimize these impacts, while allowing for project execution. Unavoidable impacts to the GMR (116 linear feet) by the Minimal Degradation Alternative are reduced as compared to the Preferred Alternative (144 linear feet of stream impact).

Non-Degradation Alternative

The Non-Degradation Alternative (No Build) would result in no impacts to streams. The implementation of the Non-Degradation Alternative does not meet the project purpose and transportation need, including connectivity and safety for non-motorized traffic (pedestrian and bicycle).

Block 10b: Describe the magnitude of the proposed lowering of water quality. Include the anticipated impact of the proposed lowering of water quality on aquatic life and wildlife, including threatened and endangered species (include written comments from Ohio Department of Natural Resources and U.S. Fish and Wildlife Service), important commercial or recreational sport fish species, other individual species, and the overall aquatic community structure and function. Include a Corps of Engineers approved wetland delineation. (OAC 3745-1-05(C)(6)(a, b) and OAC 3745-1-54):

Existing Stream, Wetland and Threatened and Endangered Species Conditions

The proposed project occurs in the following subwatershed: Great Miami River (Great Miami River below Rush Cr. to above Spring Cr.; 14-digit Hydrologic Unit Code [HUC] 05080001070080). This is located within the Great Miami River subbasin (8-digit HUC 05080001). As currently configured, the project is expected to impact the main channel of the GMR. Due to observations of mussels within the construction corridor and the project within the known range of the rayed bean (*Villosa fabalis*, Federally Candidate species) formal consultation with U.S. Fish and Wildlife Service (USFWS) has occurred, and a Biological Opinion (BO) including an Incidental Take Statement (ITS) as documented in the letter dated May 1, 2012 (Attachment B).

Ecological information presented below is summarized from data and conclusions reported in the project Level 1 Ecological Survey Report (ESR) prepared and coordinated with the appropriate agencies in August, 2010.

Total impacts of the proposed project for streams are summarized as follows:

Preferred Alternative: 144 linear ft. of impact to a perennial Exceptional Warmwater Habitat (EWH).

Minimal Degradation Alternative: 116 linear ft. of impact to a perennial EWH.

Streams

Existing conditions of the streams to be impacted by the project are summarized in Table A and Table C (Attachment D) of this 401 application. A summary of the proposed lowering of water quality by the Preferred and Antidegradation Alternatives is presented in Table B (Attachment D). A photo log and photographs of the impacted streams are presented in Attachments G.

The GMR, impacted by the Preferred and Minimal Degradation Alternatives, has an official Ohio Environmental Protection Agency (OEPA) Aquatic Life Use designation of EWH. The approximate drainage area to the impact site is approximately 880 square miles.

Additionally, the GMR has the following OEPA use designations: Primary Contact Recreation (PCR), agricultural water supply (AWS), and industrial water supply (IWS) (Attachment H). Additional stream conditions for this feature are summarized in Table A (Attachment D) of this

401 application, and in the project Ecological Survey Report, prepared and submitted in August 2010.

Wetlands

No wetland areas were identified within the project study area; therefore no proposed impact to wetland areas are anticipated by this project.

Threatened and Endangered Species

According to the ESR, the project area is located within the known range of the following federally-listed species: the federally endangered (E) Indiana bat (Myotis sodalis); rayed bean mussel (Villosa fabalis, C); and the snuffbox mussel (Epioblasma triquetra, Species of Concern(SC) proposed to be listed as Federally Endangered at the time of the ESR). According to a letter from US Department of Transportation Federal Highway Administration (US DOT FHWA) to the United States Fish and Wildlife Service (USFWS) dated December 13, 2011, they indicated that the project "may affect, not likely to adversely affect" both the Snuffbox mussel and the Indiana bat (Attachment B). However this coordination letter did indicate that the project "may affect, likely to adversely affect" the rayed bean mussel, which required ODOT and FHWA to provide a Biological Assessment (BA) on the potential impacts to the rayed bean; initiating formal consultation with USFWS for the proposed project.

USFWS responded on May 1, 2012 with a Biological Opinion (BO), the BO indicated "Because no critical habitat is designated for any of these species" (Indiana bat or snuffbox), "none will be affected by the proposed action." Conservation measures to avoid and/or minimize adverse impacts to Indiana bat will consist of the following: clearing activities of potential roost trees (PRTs) only between September 30th and April 1st; and better quality suitable habitat will be created by the control of invasive species plants (e.g. clearing of understory).

The BO also included an Incidental Take Statement (ITS) for the "incidental taking of two individual rayed bean mussels with the 2.47 acre area to be impacted (directly or indirectly) during the construction of the multi-use trail bridge over the Great Miami River, activity that is part of the Great Miami Bridge Connector project". As part of the ITS three reasonable and prudent measures (RPMs) which FHWA and ODOT must comply; these RPMs are provided in the USFWS letter dated May 1, 2012 (Attachment B).

Measures to avoid and/or minimize adverse impacts to snuffbox mussels will be completed by following similar measures discussed in the BO for the rayed bean (see Attachment B).

According to the ESR an Ohio Biodiversity Database OBD search completed in support of the project identified records Indiana bat records approximately 9 miles southwest of the project area at Ludlow Falls.

During the completion of the ESR the elktoe (Alasmidonta marginata, State Species of Concern) was identified with the project study area; however no record was identified by OBD.

Impacts to threatened and endangered species are summarized in Table C (Attachment D).

Magnitude of the Proposed Lowering of Water Quality by the Preferred Alternative

Streams

The proposed lowering of water quality by the Preferred Alternative is summarized in Table C (Attachment D), including expected impacts to streams, aquatic habitat/biota, riparian corridors, and threatened and endangered species. The Preferred Alternative is not expected to have a substantial impact on the water quality of the GMR impacted by the project.

Activities associated with the, placement of temporary fills, construction of support abutments, support pier, and construction of the associated multiuse trail approaches would locally impact existing aquatic habitat and may temporarily increase siltation during construction. Overall impacts however, are expected to be relatively minor and localized. Impacts from erosion and siltation will be minimized through the use of Best Management Practices for sediment and erosion control. The footprint of the Preferred Alternative includes areas around the support pier and associated RCP.

A total of 114 linear ft. of stream channel will be permanently impacted by the installation the central support pier and RCP fill material as a result of the project.

Wetlands

No wetland impacts will occur as a result of the Preferred Alternative.

Threatened and Endangered Species

Potential impact to the habitat for the federally listed rayed bean mussel (Villosa fabalis, C) and snuffbox mussel (Epioblasma triquetra, SC) will result from the project due to potential habitat disturbance. Because of potential impacts to the rayed bean mussel, a BO and ITS from the USFWS discussed above was obtained (see above under existing conditions). As part of the USFWS response it was indicated that the project "may affect but is not likely to adversely affect" the snuffbox mussel in the BO letter dated May 1, 2012.

Minor impacts to potential roosting trees for the federally endangered Indiana bat (*Myotis sodalis*) (see above under existing conditions) may result from the project; although no individuals of this species were identified during field surveys. Additionally, in their response letter to the project Ecological Survey Report, USFWS concluded that the project "may affect but is not likely to adversely affect" the species in the BO letter dated May 1, 2012 (Attachment B).

No impacts to any other federal- or state-listed species with known ranges that include the project area (see above under existing conditions) are expected because no suitable habitat for these species identified within the project area. These findings were fully documented in the Ecological Survey Report prepared in support of the proposed project. In their response letters

to the ESR, the USFWS (December 1, 2010) and ODNR (October 8, 2010) concurred with these findings (see Attachment B).

Magnitude of the Proposed Lowering of Water Quality by the Minimal Degradation Alternative

The proposed lowering of water quality by the Minimal Degradation Alternative is summarized in Table C (Attachment D), including expected impacts to streams, aquatic habitat/biota, riparian corridors, wetlands, and threatened and endangered species. The types of impacts associated with the Minimal Degradation Alternative are very similar to the Preferred Alternative; however, the extent of stream impacts would be minimized by reducing the temporary impact to the stream channel during construction of the center support pier.

Streams

Under the Minimal Degradation Alternative, impacts to the GMR are less as the multiuse trail crosses the project area. The lowered impacts result from the construction of a temporary partial width causeway verses constructing a full width causeway across the entire stream channel for the Preferred Alternative. A total of 116 linear ft. of impacts (temporary and permanent) will occur under the Minimal Degradation Alternative.

Wetlands

No wetland impacts will occur as a result of the Minimal Degradation Alternative.

Threatened and Endangered Species

Under the Minimal Degradation Alternative, impacts to threatened and endangered species within the project area will be identical to the Preferred Alternative (see above).

Magnitude of the Proposed Lowering of Water Quality by the Non-Degradation Alternative

The Non-Degradation Alternative (No-Build) would result in no impacts to streams, wetlands, or threatened and endangered species, and no direct water quality degradation. This alternative, however, does not meet the purpose and need of the project in order to provide a safe route for pedestrian and bike travel discussed in Block 8b of this 401 application. The need exists to provide safe pedestrian and bike traffic in the vicinity of the project area, and more specifically, the need to provide a connection to the two segments of the existing segments of the Great Miami River Recreation Trail.

Block 10c: Include a discussion of the technical feasibility, cost effectiveness, and availability. In addition, the reliability of each alternative shall be addressed (including potential recurring operational and maintenance difficulties that could lead to increased surface water degradation.) (OAC 3745-1-05(C)(6)(h, j-k) and OAC 3745-1-54):

Preferred Alternative

The Preferred Alternative is a feasible and available design, the design of the multiuse trail and bridge crossing over the GMR is similar to the Minimal Degradation Alternative however the construction methods differ. The techniques to be used to construct the Preferred Alternative have been accomplished on numerous occasions with other transportation projects. The construction of the multiuse trail and bridge installation techniques utilized for this project has been proven to be both reliable and cost-effective (see Attachment F). This alternative is considered to be technically feasible, although not the most environmentally friendly, but is the most practicable from an engineering and cost standpoint. The design life of structure's operational and maintenance costs associated with the Preferred Alternative are the same as the Minimal Degradation Alternative.

The impacts, overall, are considered to be minimal, and there will be similar with slightly less impact to the stream channel in the Minimal Degradation Alternative within the project area along the similar alignment. Regardless of construction methods of the proposed project the streams will have the same permanent impacts.

Estimated construction costs for the Preferred Alternative (using the complete crossing causeway) compared to the Minimal Degradation Alternative (temporary partial width causeway) at the currently proposed locations is presented in Table 3, below. The construction costs in the table are estimates based on the current plan sheets (Attachment F). Miami County Park District's major concern is the potential to extend the construction schedule due to agency coordination could result in project delays. If there are significant delays it could increase construction costs, which could result in jeopardizing the Miami County Park District to complete subsequent enhancement projects scheduled upon the completion of the proposed Great Miami River Connector Bridge. In summary, project costs for the Preferred Alternative are estimated to be approximately 4 percent lower than the project cost for the Minimal Degradation Alternative.

Table 3: COST ESTIMATE COMPARISON TABLE FOR CONSTRUCTION OF THE PROJECT ALTERNATIVES

Item No.	ITEM DESCRIPTION	Preferred Alternative Cost	Minimal Degradation Alternative Cost
1	Clearing, grubbing, removal	$6,500	$9,097
2	Earthwork	$35,000	$88,418
3	Roadway	$9,120	$9,120
4	Erosion Control/SWPPP	$45,925	$59,619

5	Drainage	$8,074	$8,074
6	Pavement	$38,306	$38,306
7	Traffic Control	$933	$933
8	Maintenance of Traffic	$31	$31
9	Bridge - Structure	$1,202,770	$1,202,770
10	Bridge - TAF/Causeway/Workpad	$185,000	$165,000
11	Incidentals	$50,000	$64,880
12	Inflation to midpoint of construction	$110,000	$115,698
	TOTALS:	**$1,691,659**	**$1,761,946**

Minimal Degradation Alternative

MDA is considered to be technically feasible from an engineering standpoint, and is environmentally friendly, and is also as practicable from a cost standpoint with the result of minimizing impacts by approximately 28 linear ft. and 0.37 acres (ac) resulting from using only a partial width temporary causeway. The MDA will impact approximate 0.30 ac from the placement of the temporary causeway that will require 1,665 cubic yards (cu yrd) of clean non-erodible fill which is 2,858 cu yrd less than the PA. The techniques to be used to construct the Minimal Degradation Alternative have been accomplished on numerous occasions with other transportation projects. The design is essentially the same as the Preferred Alternative, however the proposed temporary causeway will extend only 160 ft. into the channel of the GMR verses the entire width as indicated in the Preferred Alternative. The partial width temporary causeway will reduce impact to the hydraulics of the GMR verses the full width causeway crossing of the GMR under the PA. The partial width temporary causeway of the MDA has an open channel portion to the river that allows for a substantially greater flow than the full width causeway of the PA.

As indicated in the Preferred Alternative the proposed impacts to the stream channels are considered to be minimal and will result in a connection of the existing two segments of the Great Miami River Recreational Trail.

Estimated construction and mitigation costs for the Minimal Degradation Alternative (partial width temporary causeway) compared to the Preferred Alternative (entire stream channel temporary causeway) at the currently proposed locations is presented in Table 3 (above). In summary, project costs for the Minimal Degradation Alternative are estimated to be 4 percent more than the cost of the Preferred Alternative. The Minimal Degradation Alternative results in impacts to the GMR, however continues to meet the purpose and need of safely connecting the existing segments of the Great Miami River Recreation Trail system.

Non-Degradation Alternative

The Non-Degradation Alternative has no cost. This alternative, however, does not meet the purpose and need of safely connecting the existing trail system between the existing two segments of the Great Miami River Recreation Trail system.