DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
441 G Street N.W.
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF:

CECW-PC (1105-2-10a)

25 AUG 2006

THE SECRETARY OF THE ARMY

SUBJECT: Hocking River Basin, Ohio Monday Creek Sub-basin

1. I submit for transmission to Congress my report on the feasibility study of ecosystem restoration project features within the Monday Creek sub-basin of the Hocking River Basin, Ohio. It is accompanied by the report of the district and division commanders. These reports were completed in partial response to a resolution of the Committee on Transportation and Infrastructure of the House of Representatives dated March 7, 1996. The study resolution requested review of the report of the Chief of Engineers on Ohio River and Tributaries, published as House Document 306, Seventy-fourth Congress, First Session, and other pertinent reports to determine whether the modifications are warranted to solve a variety of water and related resource problems in the Hocking River Basin with priority given to Sunday and Monday Creek sub-basins. Special emphasis shall be given to the need for ecosystem restoration of lands and waters that have been impacted by resource extraction and other land uses. Preconstruction engineering and design activities for this project will be continued under this authority.

2. The project area is located in the unglaciated portion of the Allegheny Plateau region of southeastern Ohio and includes Monday Creek and its associated tributaries. The major problem identified in the Monday Creek watershed is common to those found in the Appalachian coal region of the eastern United States: acid mine drainage (AMD) emanating from abandoned coal mines. Many streams in this region have degraded to a state that is capable of supporting only limited AMD pollutant-tolerant species of fish and macroinvertebrates. Approximately 77 percent of streams in the Monday Creek watershed are rated by the Ohio Environmental Protection Agency as impaired due to AMD. There are eight subwatersheds within the Monday Creek basin that are unable to support aquatic life due to a pH less than 4.5. These eight produce most of the AMD pollutants in the Monday Creek watershed.

3. A study team conducted a detailed evaluation of the eight subwatersheds and identified 202 potential sites for restoration of the aquatic ecosystem and considered both active and passive treatment alternatives and stream subsidence closures. Further analysis of the identified sites resulted in a final array consisting of 13 alternative plans. Cost effectiveness and incremental cost analysis techniques identified the plans that were the best investments for restoring aquatic habitat and hydraulic connectivity of the headwater ecosystems of each subwatershed and those

of downstream areas. The recommended plan was identified as the national ecosystem restoration (NER) plan, which reasonably maximized restoration benefits relative to total project costs.

4. The reporting officers recommend authorization of a plan for ecosystem restoration that mitigates AMD impacts within the Monday Creek watershed and reestablishes connectivity of aquatic resources between the Hocking River and the Monday Creek headwaters. The recommended plan would restore 230 acres and 59 miles of aquatic ecosystem and stream habitat by ameliorating the conditions of severe acid loading and toxic metal concentrations. The plan consists of 180 restoration measures, including 45 open limestone channels, 3 low head dams, 39 limestone leach beds, 17 slag leach beds, 3 aerobic wetlands and 2 dosers, or limestone dispensers. Measures to restore surface flows and unblock natural drainage patterns include 25 subsidence closures, rerouting of 11 dissipating streams, and breaching or removing mine spoil piles at 35 sites. These components are located on both private (124.6 acres to be acquired) and Federal-owned lands in the Wayne National Forest. The recommended ecosystem restoration plan has been designed for a 20-year period of analysis with minimal operation and maintenance required for passive treatments and active dosers. Long-term operation and maintenance, including any necessary rehabilitation or repairs at the end of the 20 year period is included in the annual operation, maintenance, rehabilitation, repair and replacement (OMRR&R) estimate. Other measures are designed to be self-sustaining with no anticipated operation and maintenance requirements, other than periodic inspection and long-term monitoring.

5. Based on October 2005 price levels, the total first cost of the project is estimated at $18,800,000, of which $12,200,000 would be the Federal cost and $6,600,000 would be the non-Federal share. The average annual cost of OMRR&R is $320,000 and the cost for adaptive management monitoring phase is $27,000 per year for 5 years. The adaptive management phase involves monitoring restoration measure effectiveness and conditions and adapting restoration measures to optimize results. The non-Federal sponsor is responsible for 100 percent of OMRR&R and adaptive management costs.

6. The recommended plan would restore 230.2 acres or 98 percent of the aquatic habitat of the Monday Creek watershed, including 58.6 miles of aquatic stream habitat, and provide for a future sustainable ecosystem. A major plan feature is the reconnection of the headwater ecosystems of each subwatershed with those of the downstream waters and the Hocking River. The typical Monday Creek habitat currently existing in the affected areas is classified by the Invertebrate Community Index as "poor," containing pollution-tolerant fish and macroinvertebrates, such as carp and blood worms. It is expected that once all of the recommended plan components have been implemented, the watershed will be able to support species that require habitat that is rated as either "good" or "very good".

Many streams and related ecosystems within the Appalachian coal region of Ohio are heavily impacted by AMD. Reconnecting the restored ecosystem of a 116-square-mile watershed that

provides 10 percent of the flow of the Hocking River would greatly benefit the regional ecosystem.

7. A monitoring plan to ensure the effectiveness of ecosystem restoration is being recommended. The monitoring plan would consist of chemical and biologic monitoring at existing monitoring sites along the mainstem of Monday Creek and Snow Fork and the establishment of new sites on tributaries where restoration sites are located. This effort would be confined temporally to pre- and post-construction projects. Occasional reevaluation of the restoration treatments might become necessary as monitoring results are evaluated during the 5-year period.

8. Washington level review indicates that the proposed plan is justified, technically sound, and environmentally and socially acceptable. The proposed project complies with applicable U.S. Army Corps of Engineers planning procedures and regulations. Also, the views of interested parties, including Federal, State, and local agencies have been considered.

9. I generally concur in the findings, conclusions and recommendations of the reporting officers. Accordingly, I recommend that the plan described herein for ecosystem restoration be authorized for implementation as a Federal project, with such modifications as in the discretion of the Chief of Engineers may be advisable. My recommendation is subject to cost-sharing, financing, and other applicable requirements of Federal laws and policies, including the Water Resources Development Act of 1986, as amended by Section 210 of WRDA 1996 Federal implementation of the recommended project would be subject to the non-Federal sponsor agreeing to comply with applicable Federal laws and policies, including but not limited to:

a. Provide a minimum of 35 percent of total project costs as further specified below:

(1) Provide 25 percent of design costs allocated by the Government to the project in accordance with the terms of a design agreement entered into prior to commencement of design work for the project;

(2) Provide, during the first year of construction, any additional funds necessary to pay the full non-Federal share of design costs allocated by the Government to the project;

(3) Provide all lands, easements, and rights-of-way, including those required for relocations, the borrowing of material, and the disposal of dredged or excavated material; perform or ensure the performance of all relocations; and construct all improvements required on lands, easements, and rights-of-way to enable the disposal of dredged or excavated material

all as determined by the Government to be required or to be necessary for the construction, operation, and maintenance of the project;

(4) Provide, during construction, any additional funds necessary to make its total contribution for total project costs equal to at least 35 percent of total project costs;

b. Not use funds from other Federal programs, including any non-Federal contribution required as a matching share therefore, to meet any of the non-Federal obligations for the project unless the Federal agency providing the Federal portion of such funds verifies in writing that expenditure of such funds for such purpose is authorized;

c. Prevent obstructions or encroachments on the project (including prescribing and enforcing regulations to prevent such obstructions or encroachments) such as any new developments on project lands, easements, and rights-of-way or the addition of facilities which might reduce the outputs produced by the project, hinder operation and maintenance of the project, or interfere with the project's proper function;

d. Not use the project or lands, easements, and rights-of-way required for the project as a wetlands bank or mitigation credit for any another project;

e. Comply with all applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended (42 U.S.C. 4601-4655), and the Uniform Regulations contained in 49 CFR Part 24, in acquiring lands, easements, and rights-of-way required for construction, operation, and maintenance of the project, including those necessary for relocations, the borrowing of materials, or the disposal of dredged or excavated material; and inform all affected persons of applicable benefits, policies, and procedures in connection with said Act;

f. For so long as the project remains authorized, operate, maintain, repair, rehabilitate, and replace the project, or functional portions of the project, including any mitigation features, at no cost to the Federal Government, in a manner compatible with the project's authorized purposes and in accordance with applicable Federal and State laws and regulations and any specific directions prescribed by the Federal Government;

g. Give the Federal Government a right to enter, at reasonable times and in a reasonable manner, upon property that the non-Federal sponsor owns or controls for access to the project for the purpose of completing, inspecting, operating, maintaining, repairing, rehabilitating, or replacing the project;

h. Hold and save the United States free from all damages arising from the construction, operation, maintenance, repair, rehabilitation, and replacement of the project and any betterments, except for damages due to the fault or negligence of the United States or its contractors;

i. Keep and maintain books, records, documents, or other evidence pertaining to costs and expenses incurred pursuant to the project, for a minimum of 3 years after completion of the

accounting for which such books, records, documents, or other evidence are required, to the extent and in such detail as will properly reflect total project costs, and in accordance with the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments at 32 Code of Federal Regulations (CFR) Section 33.20;

j. Comply with all applicable Federal and State laws and regulations, including, but not limited to: Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d) and Department of Defense Directive 5500.11 issued pursuant thereto; Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army"; and all applicable Federal labor standards requirements including, but not limited to, 40 U.S.C. 3141 - 3148 and 40 U.S.C. 3701 - 3708 (revising, codifying and enacting without substantial change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a *et seq.*), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 *et seq.*) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c *et seq.*);

k. Perform, or ensure performance of, any investigations for hazardous substances that are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Public Law 96-510, as amended (42 U.S.C. 9601-9675), that may exist in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be required for construction, operation, and maintenance of the project. However, for lands that the Federal Government determines to be subject to the navigation servitude, only the Federal Government shall perform such investigations unless the Federal Government provides the non-Federal sponsor with prior specific written direction, in which case the non-Federal sponsor shall perform such investigations in accordance with such written direction;

l. Assume, as between the Federal Government and the non-Federal sponsor, complete financial responsibility for all necessary cleanup and response costs of any hazardous substances regulated under CERCLA that are located in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be required for construction, operation, and maintenance of the project;

m. Agree, as between the Federal Government and the non-Federal sponsor, that the non-Federal sponsor shall be considered the operator of the project for the purpose of CERCLA liability, and to the maximum extent practicable, operate, maintain, repair, rehabilitate, and replace the project in a manner that will not cause liability to arise under CERCLA; and

n. Comply with Section 221 of Public Law 91-611, Flood Control Act of 1970, as amended (42 U.S.C. 1962d-5b), and Section 103(j) of the Water Resources Development Act of 1986, Public Law 99-662, as amended (33 U.S.C. 2213(j)), which provides that the Secretary of the Army shall not commence the construction of any water resources project or separable element thereof, until each non-Federal interest has entered into a written agreement to furnish its required cooperation for the project or separable element.

10. The recommendation contained herein reflects the information available at this time and current departmental policies governing formulation of individual projects. It does not reflect program and budgeting priorities inherent in the formulation of a national civil works construction program or the perspective of higher review levels within the executive branch. Consequently, the recommendation may be modified before it is transmitted to the Congress as a proposal for authorization and implementation funding. However, prior to transmittal to the Congress, the non-Federal sponsor, the State of Ohio; interested Federal agencies; and other parties will be advised of any modifications and will be afforded an opportunity to comment further.

CARL A. STROCK
Lieutenant General, U.S. Army
Chief of Engineer