June 17, 2019

WATER PROTECTION PROGRAM
FINDING OF NO SIGNIFICANT IMPACT/ENVIRONMENTAL ASSESSMENT

TO: ALL INTERESTED GOVERNMENT AGENCIES AND PUBLIC GROUPS

In accordance with procedures for environmental review found at 10 CSR 20-4.050, a review has been performed on the proposed action below:

Project Identification: MSD Lower Meramec River System Improvements
    Baumgartner to Fenton WWTF Tunnel

Applicant: Metropolitan St. Louis Sewer District
Project No.: C295072-01

Cities: Fenton, Sunset Hills
County: St. Louis County
State: Missouri

Total Project Amount: $218,000,000
Potential Loan: $218,000,000

Total Eligible: $218,000,000

COMMUNITY DESCRIPTION:

Location: The Metropolitan St. Louis Sewer District (MSD) is responsible for stormwater management and wastewater collection and treatment throughout all of the City of St. Louis and 90 percent of St. Louis County; a service area of 93 municipalities covering approximately 525 square miles. This project is located in south St. Louis County. It traverses portions of unincorporated St. Louis County, the City of Sunset Hills, and the City of Fenton. It runs from Baumgartner Road (east of the intersection of Baumgartner Road and Lemay Ferry Road) to the Fenton Wastewater Treatment Facility.

Population, Present and Projected, and Design Year: The population for the MSD service area is approximately 1.4 million. This project area is within the MSD Lower Meramec Service Area and includes the Fenton Creek Watershed and portions of the Lower Meramec Subarea Watershed. The estimated population of the project service area is 32,000, based on 2010 U.S. Census data. Estimated from the East-West Gateway Coordinating Council show minimal increases and decreases in population in the service area between the years 2000 and 2030.

Current Methods of Waste Treatment: The current MSD collection system is a combination of gravity sewers, force mains, and pump stations that send flow to seven Wastewater Treatment Facilities (WWTF) located in five service areas. The current project is located in the Lower Meramec Service Area, 113 square miles in the southwest portion of St. Louis County. The project lies in the Fenton Creek Watershed, containing approximately 822,000 feet of sanitary
sewers and Lower Meramec Subarea Watershed, containing approximately 680,400 feet of sanitary sewers.

PROJECT DESCRIPTION:

Purpose and Need: The Lower Meramec Tunnel (LMT) Phase II project will allow the interim Fenton WWTF (discharges to Meramec River and frequently floods) to be taken out of service. The wastewater flows will be redirected to the existing Baumgartner tunnel which flows to the Lower Meramec Regional WWTF (this facility discharges to Missouri River and will be expanded in a separate project). The LMT Phase II project will allow the elimination of the existing Meramec Bottom Pump Station, one of MSD's largest pump stations with a history of flood plain issues.

Description of Project: The Lower Meramec Tunnel Phase II is a deep tunnel approximately 36,000 feet long, 8 feet in diameter. Tunnel construction will utilize a tunnel boring machine within rock approximately 100 feet below the ground surface. Two main construction shafts will be used for launch (Baumgartner, 31 feet diameter, existing) and retrieval (Fenton WWTF, 32 feet diameter). An optional intermediate shaft (Tesson Ferry Road, 14.5 feet diameter) may be constructed if the contractor chooses. Six drop structures, ranging in size from 12-inch to 30-inch in diameter, will be constructed along the alignment between the launch and retrieval shafts. The project will include all necessary appurtenances to complete the project.

Design Factors: Hydraulic modeling software was used in the development of projected flows for the LMT Phase II design. Flows in the Fenton Creek and Lower Meramec Subarea watersheds were developed using HYDRA modeling software with land use boundaries, population estimates, and flow and rainfall data collected from monitoring sites. The calibrated HYDRA flow models for the two watersheds were combined into one Lower Meramec Baumgartner and Fenton HYDRA model with existing flows added. This combined HYDRA was then converted to an XPSWMM model. This model was calibrated and used for the analysis of the LMT Phase II project.

ALTERNATIVES CONSIDERED:

The Preliminary Alignment Recommendations Technical Memorandum, October 29, 2010, identified 14 tunnel conveyance system alignment alternatives and four forcemain alignment alternatives for further investigation as potential solutions for elimination of the interim Fenton WWTF.

The technical memorandum looked at capital costs, 100-year life-cycle costs for the alternative. In addition Criterium Decision Plus, a decision modeling software, used criterion weighting factors to determine lowest cost-to-benefit ratios. The capital cost of the tunnel conveyance alternatives were all higher that the forcemain alternatives, however, due to the 100-year life cycle costs of the four forcemain alternatives, they were removed from further consideration. Tunnel alignment 14 was also removed from further consideration due to the high cost-to-benefit ratio. The cost-to-benefit results in the 2010 technical memorandum were used to further refine tunnel alignment alternatives in a 2012 evaluation.
Technical Memorandum Lower Meramec Tunnel Final Tunnel Alignment Study – Baumgartner to Grand Glaize, December 2012, further analyzed the 2010 alignment alternatives and provided a recommended tunnel alignment alternative, T-5. This memorandum reviewed tunnel constructability and a preliminary geological study. Meetings were held with Ameren to discuss utilization of the Ameren easement. Five soil borings were drilled and potential for existing pump station removal was analyzed. The estimated cost for the LMT Phase II project, at 60 percent design completion, with a 15 percent contingency, based on 2017 dollars, is $185,660,000.

REASONS FOR SELECTION OF PROPOSED ALTERNATIVE:

LMT Phase II Tunnel Alignment Alternative No. T-5 was determined to be the most cost effective, practical, and feasible. The Baumgartner to Fenton WWTF tunnel will allow for the decommissioning of the Interim Fenton Wastewater Treatment Facility once the Lower Meramec Regional WWTF has been expanded in a separate project. It will also allow the elimination of the Meramec Bottom Pump Station.

ENVIRONMENTAL IMPACT SUMMARY:

1. **Primary:**
   a. **Construction:** Blowing dust, temporary surface disruption, and noise from construction equipment will occur during construction, but these impacts are expected to be minor and temporary in nature.
   
   b. **Environmental:** Construction of the Baumgartner to Fenton WWTF tunnel will allow for the decommissioning of the 6.75 MGD Interim Fenton Wastewater Treatment Facility. This will greatly reduce wastewater effluent flows to the Meramec River and improve downstream water quality. Tunnel construction will also allow the elimination of the existing Meramec Bottom Pump Station and its related flooding issues.
   
   c. **Financial:** In April 2016, MSD voters approved a $900,000,000 bond issue to support the time-phased Capital Improvements and Replacement Program (CIRP). The LMT Phase II project is included in the CIRP. The user fee for an average family is expected to increase from $41.00/month to $61.00/month over a four year period.

2. **Secondary:**
   a. **Population Impacts:** No significant change in population trends is expected to result in this project. No significant relocation of people or structures shall result from this project.
   
   b. **Land use and Trends:** No significant change in land use trends is expected to result from this project. No development of sensitive areas is anticipated.
3. Mitigation Measures Necessary to Eliminate Adverse Environmental Effects: Noise, blowing dust, and erosion normally associated with construction should be minimized by Best Management Practices and good engineering practices. Restoration of disturbed areas will be promptly accomplished. Any debris, such as construction waste, trees or brush, will be disposed of properly.

4. Irreversible and Irretrievable Commitment of Resources: Fuel and construction materials will be irretrievably committed to this project. Future funds will be committed to the operation and maintenance of the system.

PUBLIC PARTICIPATION:

1. Public Involvement: A public hearing/meeting was held on Tuesday, February 12, 2019, at 4:00 pm at the City of Sunset Hills Community Center in the City of Sunset Hills, Missouri.

2. Public Opposition or Opinions: No adverse opinions to the project were expressed.

COORDINATION AND DOCUMENTATION WITH OTHER AGENCIES AND SPECIAL INTEREST GROUPS:

1. Facility Plan Dated: January 9, 2018
   Prepared By: HDR Inc.
   Facility Plan Dated: August 4, 2017
   Prepared By: HDR Inc.

2. Federal:  X  USFWS  X  Corps of Engineers

3. State:
   a. Missouri DNR – State Historic Preservation Office
   b. Missouri DNR – Missouri Geological Survey
   c. Missouri DNR – Division of State Parks
   d. Missouri Department of Conservation
   e. Missouri Office of Administration – Federal Assistance Clearinghouse

4. Consulting Engineer: Mr. Douglas D. Hickey, P.E.
   HDR Inc.
   401 South 18th Street, Suite 300
   St. Louis, MO 63103-2296
5. In accordance with the National Historic Preservation Act Section 106, notice was given to all tribes that may attach a religious or cultural significance to historic properties in the region that may be affected by this undertaking. No tribes expressed concerns regarding the project.

Positive Environmental Effects to be Realized from the Proposed Project: Improved water quality in the Meramec River, downstream of the Interim Fenton WWTF.

Reasons for Concluding There Will Be No Significant Impacts: The proposed project will have a positive impact on water quality and will not result in any significant adverse impacts on rare or endangered species, flood plains, wetlands, recreational areas, cultural/archaeological sites, or air quality. Population densities and land use trends will not be significantly affected. Appropriate mitigation measures will be implemented for minor impacts, which are expected to be temporal in nature.

This action is taken on the basis of a careful review of the facility plan and supporting documentation on file in the office of the Missouri Department of Natural Resources’ Water Protection Program at 1101 Riverside Drive, Jefferson City, MO 65101. These are available for public review upon request Monday-Friday, 8:00 a.m. to 5:00 p.m. This agency will not take any administrative action on this project for at least 30 calendar days from the date of this document. Persons wishing to comment on the above environmental decision may submit comments to Ms. Cynthia Smith, P.E., of the Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102-0176, during this period. E-mail comments will be accepted at the following address: DNR.SRFPublicNotice@dnr.mo.gov. Please include the project name and number in all comment letters. Thank you.

Sincerely,

WATER PROTECTION PROGRAM

Hannah Humphrey
Director
Financial Assistance Center

Cynthia M. Smith, P.E.
Project Review Engineer

Date

HH:csn

Attachments