



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF WATER

### **Categorical Exclusion**

#### **For the City of Memphis T.E. Maxson WWTF Process and Biosolids Upgrades Program**

#### **Pursuant to 40 CFR § 6.204**

The U.S. Environmental Protection Agency (EPA) is planning to award a loan under the Water Infrastructure Finance and Innovation Act (WIFIA) to the City of Memphis, Tennessee. The EPA intends for this loan to fund the T.E. Maxson Wastewater Treatment Facility (WWTF) Process and Biosolids Upgrades Program.

The EPA's authorization of funding for the proposed project is a federal action requiring compliance with the National Environmental Policy Act (NEPA), 42 USC §§ 4321-4370(f). According to the Council on Environmental Quality's NEPA regulations, 40 CFR § 1508.4, a federal agency may categorically exclude an action from detailed environmental review as long as the action does not individually or cumulatively have a significant effect on the human environment. An action undertaken by the EPA can qualify as a categorical exclusion if it falls under any category within 40 CFR § 6.204(a) and does not exhibit any of the extraordinary circumstances listed in § 6.204(b).

#### **Project Description**

The proposed project consists of the following:

- **GMP 1 - Peri-acetic Acid (PAA) Disinfection Tank and Effluent Piping Structure Upgrades.** A new 300-foot by 160-foot concrete peri-acetic acid (PAA) disinfection process will be installed, including hydraulic improvements to connect the new treatment system and new bulk storage and chemical feed facilities to the existing plant infrastructure. PAA storage and feed systems will be procured from the PAA provider. A new plant electrical service will also be constructed.
- **GMP 2 - Headworks Improvements.** The plant's two existing manual coarse screens will be replaced with new 1-inch mechanical coarse screens and washing presses.
- **GMP 3 - Two Secondary Clarifiers, Odor Control Improvements, and Fine-Bubble Conversion.** Two new 135-foot diameter secondary clarifiers and dedicated return activated sludge (RAS) and scum pump stations, five new bio-trickling filters, and associated ductwork will be installed to replace the on-site odor control system, and conversion of the 14 existing aeration basins from coarse to fine-bubble diffusers.
- **GMP 4 - RAS Re-aeration Basin.** A new 3.5 million-gallon concrete RAS re-aeration basin will be constructed to aerate the plant RAS prior to blending with the trickling filter effluent. This package will also include a new blower building.

- **GMP 5 - Existing Trickling Filter Upgrades.** Six 135-foot diameter trickling filters will be upgraded to replace the red wood media with plastic media, replace the distribution arms, and install dispersion fans to reduce odor.
- **Biosolids Lagoon 5 Renovation Project.** Lagoon 5 will be divided into three lagoons designated as 5A, 5B, and 5C (north to south). Lagoons 5A, 5B, and 5C will process a mixture of primary and secondary sludge pumped from Lagoon 1. The capacities of the subdivided Lagoon 5 will be as follow: Lagoon 5A: 72,510,000 gallons, Lagoon 5B: 88,690,000 gallons, and Lagoon 5C: 89,100,000 gallons.
- **Maxson WWTF Administration Building.** The existing administration building will be demolished, and a new 10,000 square foot administration building will be constructed, including a laboratory space, training rooms, parking for 65 vehicles, offices, a conference room, locker rooms, an electrical room, a control and server room, and a reception area.
- **Lagoon 2A Renovation.** The existing 7 million-gallon Lagoon 2A will be cleaned out. This project will remove the top liner, dewater and dispose of the remaining material and re-cover Lagoon 2A. Repairs to the existing circulation pumps and/or biogas collector piping will also be addressed as needed during construction.
- **Primary Clarifier Pumping.** Clarifier 4 will be repurposed as a thickener to improve solids settling of the sludge from the primary clarifiers. A new large progressive cavity pump, with pump housing and associated piping, instrumentation, and controls, will be designed and installed to pump the primary sludge from Clarifier 4 to the WWTF's sludge lagoons. This will replace the existing 6 smaller progressive cavity pumps that currently pump the sludge out of the primary clarifiers.
- **Belt Filter Press (BFP) Improvements.** Five 2-belt BFPs will be replaced with five 3-belt BFPs to increase the dewatering capacity and achieved dryness of the solids for disposal. This project also includes minor repairs to the existing building infrastructure.

The T.E. Maxson WWTF Process and Biosolids Upgrades program is part of the City's capital improvement plan and will meet multiple objectives for the City of Memphis, including (1) satisfying new National Pollutant Discharge Elimination System (NPDES) permit requirements for effluent disinfection and reduction of total suspended solids and biologic oxygen demand, (2) improving biosolids treatment and processing capacity, efficiency, reliability, and flexibility, and (3) improving plant odor control.

### **Eligibility for Categorical Exclusion**

This project is eligible for a categorical exclusion under 40 CFR § 6.204(a)(1)(ii), which requires that projects be:

“Actions relating to existing infrastructure systems (such as sewer systems; drinking water supply systems; and stormwater systems, including combined sewer overflow systems) that involve minor upgrading, or minor expansion of system capacity or rehabilitation (including functional replacement) of the existing system and system components (such as the sewer collection network and treatment system; the system to collect, treat, store and distribute drinking water; and stormwater systems, including

combined sewer overflow systems) or construction of new minor ancillary facilities adjacent to or on the same property as existing facilities.”

The proposed project affects an existing system, and it constitutes a minor upgrade and capacity expansion to the existing system. This minor upgrade and expansion of an existing system is expressly listed as a permissible categorical exclusion under 40 CFR § 6.204(a)(1)(ii).

Additionally, in order to qualify as a categorical exclusion, a project cannot fall within any of the exceptions listed under 40 CFR § 6.204(a)(1)(ii). Accordingly, projects cannot be designated categorical exclusions if they:

“involve new or relocated discharges to surface or ground water; will likely result in the substantial increase in the volume or the loading of pollutant to the receiving water; will provide capacity to serve a population 30% greater than the existing population; are not supported by the state, or other regional growth plan or strategy; or directly or indirectly involve or relate to upgrading or extending infrastructure systems primarily for the purposes of future development.”

The EPA has determined that these factors do not apply for this project. This project does not involve new or relocated discharges to surface or groundwater and will not result in the substantial increase in volume or loading of pollutants to the receiving water. This project will not be providing capacity to serve a population 30 percent greater than the existing population. The project’s primary purpose is not to upgrade infrastructure for future development; instead, its “primary objective” is to install additional treatment processes to meet NPDES permit requirements and to replace the existing infrastructure, which has exceeded its useful life.<sup>1</sup>

### **Extraordinary Circumstances**

The EPA has determined that none of the following extraordinary circumstances outlined in 40 CFR § 6.204(b) apply to the proposed project:

- 1. The proposed action is not known or expected to have potentially significant environmental impacts on the quality of the human environment either individually or cumulatively over time.*

This project is being developed to optimize wastewater treatment operations at the plant and to replace aging infrastructure that has exceeded its useful life, leading to improved water quality that meets the new NPDES permit requirements at the plant.

- 2. The proposed action is not known or expected to have disproportionately high and adverse human health or environmental effects on any community, including minority communities, low-income communities, or federally-recognized Indian tribal communities.*

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<sup>1</sup> City of Memphis Application, Supporting Narrative, Section 1.1b.

The project is located in a blockgroup that contained zero population.<sup>2</sup> No tribal areas were identified at the project location.

3. *The proposed action is not known or expected to significantly affect federally listed threatened or endangered species or their critical habitat.*

The EPA reviewed the Fish and Wildlife Service – Tennessee Office guidance document for the Clearance to Proceed with Projects, dated April 2, 2018. The project falls within the activities for which no further action is required under the Endangered Species Act Section 7.<sup>3</sup>

4. *The proposed action is not known or expected to significantly affect national landmarks or any property with nationally significant historic, architectural, prehistoric, archaeological, or cultural value, including but not limited to, property listed on or eligible for the National Register of Historic Places.*

The EPA consulted with the Tennessee Historical Commission State Historical Preservation Office (SHPO) on October 11, 2019, providing the project description, area of potential effects, and identification efforts. The EPA did not identify any listed or eligible properties and made a determination of “No Historic Properties Affected.” The SHPO concurred with the EPA’s determination of “No Historic Properties Affected” for the project on October 24, 2019.<sup>4</sup>

5. *The proposed action is not known or expected to significantly affect environmentally important natural resource areas such as wetlands, floodplains, significant agricultural lands, aquifer recharge zones, coastal zones, barrier islands, wild and scenic rivers, and significant fish or wildlife habitat.*

The project area does not contain any jurisdictional wetlands, agricultural lands, coastal zones, barrier islands, federally recognized wild and scenic rivers or significant fish and wildlife habitat, including essential fish habitat.<sup>5</sup> However, the project lagoons were identified as freshwater bodies in the National Wetlands Inventory, for which the City received an approved jurisdictional determination through the U.S. Army Corps of Engineers that the lagoons are not subject to Clean Water Act Section 404 permitting.<sup>6</sup>

6. *The proposed action is not known or expected to cause significant adverse air quality effects.*

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<sup>2</sup> EPA EJScreen data and report (October 2019).

<sup>3</sup> Tennessee Environmental Services Office, FWS Guidance on “Clearance to Proceed with Projects” (April 2018).

<sup>4</sup> SHPO Responses to EPA Section 106 Consultation Letter (October 2019).

<sup>5</sup> NEPAAssist (December 2019).

<sup>6</sup> Updated Jurisdictional Determination on Lagoons 2A and 5 (January 2020).

The project area is designated as either in non-attainment or maintenance for ozone and carbon monoxide; all other criteria pollutants are designated as in attainment. The emissions associated with this project, which are anticipated to derive from construction-related activities such as construction equipment operation and earth-moving, are not predicted to significantly contribute to or adversely impact the area's attainment of air quality standards. The project is not expected to exceed *de minimis* levels under the Clean Air Act General Conformity Rule.<sup>7</sup>

7. *The proposed action is not known or expected to have a significant effect on the pattern and type of land use (industrial, commercial, agricultural, recreational, residential) or growth and distribution of population including altering the character of existing residential areas, and is not expected to be inconsistent with state or local government, or federally-recognized Indian tribe approved land use plans or federal land management plans.*

The proposed project is within the existing treatment plant footprint, and no change in land use is expected as a result of this project. No change in growth or distribution of population is expected. The project is not expected to be inconsistent with approved land use or land management plans.<sup>8</sup>

8. *The proposed action is not known or expected to cause significant public controversy about a potential environmental impact of the proposed action.*

The project would result in beneficial outcomes and is not expected to cause significant public controversy.

9. *The proposed action is not known or expected to be associated with providing financial assistance to a federal agency through an interagency agreement for a project that is known or expected to have potentially significant environmental impacts.*

The proposed action is to provide financial assistance to a municipal entity to construct new and replace aging infrastructure within the treatment plant.

10. *The proposed action is not known or expected to conflict with federal, state, local government, or federally-recognized Indian tribe environmental, resource-protection, or land-use laws or regulations.*

The project will comply with all applicable federal, state, local, or federally-recognized Indian tribal laws and regulations.

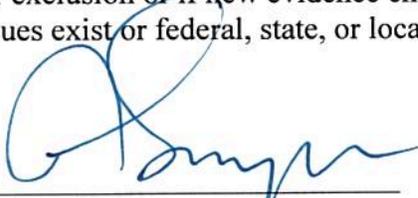
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<sup>7</sup> U.S. EPA Non-Attainment Area data accessed through NEPAassist for project site.

<sup>8</sup> City of Memphis Application, Supporting Narrative (July 2019).

**Finding**

The EPA finds that the proposed action is eligible for exclusion from detailed environmental review under 40 CFR § 6.204(a)(1)(ii) and will not involve any of the extraordinary circumstances delineated under 40 CFR § 6.204(b). Consequently, the EPA will not prepare an environmental impact statement or an environmental assessment for the proposed project. The EPA may revoke this categorical exclusion if changes in the proposed action render it ineligible for exclusion or if new evidence emerges which indicates that serious local or environmental issues exist or federal, state, or local laws would be violated.



Andrew Sawyers  
Director, Office of Wastewater Management

3/2/20

Date