

## **FINAL SCOPE**

### **Orange County Sewer District #1 Harriman Wastewater Treatment Plant Longevity Improvements & Capacity Expansion**

#### *SEQRA Type 1 Action*

Lead Agency:

County of Orange  
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Public Scoping Session:

September 3, 2020; 2:00 PM  
Written Comments Accepted until September 14, 2020

Final Scope Adopted:

February 4, 2021

# **Orange County Sewer District #1 Harriman Wastewater Treatment Plant Longevity Improvements & Capacity Expansion**

## **Environmental Impact Statement**

### **Final Scoping Document**

#### **INTRODUCTION**

The Orange County Sewer District # 1 (OCSD #1) intends to conduct Longevity Improvements as well as Capacity Expansion of the Harriman wastewater treatment plant (WWTP). The project is anticipated to include improvements to extend the useful life of aging equipment and unit processes, and to expand treatment capacity from 6.0 MGD to 9.0 MGD. The project also includes application for variance in accordance with Section 702.17 from effluent limitations for total dissolved solids (TDS) and Chloride.

Part I of the Long Environmental Assessment Form (EAF) was prepared together with a Draft Facility Plan outlining existing conditions, alternative improvement options, and recommendations. Based on a review of 6 NYCRR Part 617.4, the project is an Unlisted Action; however, the County of Orange intends to seek state and federal financing to support project costs and therefore, the project has been determined to be a Type I Action under SEQRA involving more than one agency thus requiring coordinated agency review.

A coordinated review for Lead Agency status was initiated by the County of Orange on May 7, 2020, and on August 6, 2020, the County of Orange, having received no objections from involved agencies, declared itself Lead Agency for this project.

The County of Orange reviewed Part 1 of the Long EAF and the Draft Facility Plan, and completed Part 2 of the EAF resulting in a Positive Declaration as a Determination of Significance embodied in Part 3 of the EAF adopted on August 6, 2020.

Review of Parts 1 and 2 of the Long EAF indicates that small impacts may occur with respect to flooding, plants and animals, energy, and human health. In addition, moderate to large impacts are indicated due to construction lasting for more than one-year, potential water quality impacts, expansion of an existing wastewater treatment facility, and the potential for odors.

With respect to small impacts, the site of the existing treatment plant is located in the 100- and 500-year floodplains and the site is located over or adjoining the principal and sole source Ramapo aquifer. However, the design standards mandate that the vital components of the treatment plant are located above flood levels and that the aquifer is protected from spills or releases of untreated sewage. As a result, no significant impacts on flooding or the aquifer are anticipated. The area in the vicinity of the wastewater treatment plant may host northern long-eared bats; however, the wastewater treatment plant site is clear of all trees and does not provide habitat for bats. As a result, no impacts to plants or animals are anticipated. The improvements and expansion of the treatment plant will increase power use but not to significant thresholds; however, improvements to power supplies may be required. Notwithstanding, such improvements are not anticipated to have a significant impact on existing power generation and supply systems. Lastly with respect to small impacts, the wastewater treatment plant site is within 2000 feet of a site

in the NYSDEC Environmental Site Remediation database; however, ground disturbance for the project will not occur near or within the site; therefore, no significant impacts to human health with respect to existing contamination are expected.

Moderate to large environmental impacts have been identified in Part 2 of the EAF with respect to multi-year construction, potential water quality impacts, expansion of the treatment plant and the potential for odors. Given the scale of the longevity and expansion construction at the treatment plant, construction is anticipated to last at least 18 months, if not two years. The need to maintain operations during construction adds complexity and requires careful consideration. The project as contemplated includes the issuance of a variance to effluent limitations for Total Dissolved Solids (TDS) and Chloride based on standards and guidance values as outlined in 6 NYCRR Part 702.17. Thus, potential water quality impacts may be anticipated and require careful study. The project involves the expansion of an existing wastewater treatment plant as well as improvements to extend the useful life of the existing facilities, considered longevity improvements. The impacts of expansion of the treatment plant requires consideration. Lastly, the existing facility at times has emitted odors as a byproduct of routine operations. An expansion to the treatment plant risks continued or additional odors that must be evaluated and for which mitigation measures must be documented.

As a result of the potential environmental impacts identified as moderate to large, a Positive Declaration was adopted.

The Environmental Impact Statement (EIS) will be prepared in accordance with Article 8 of the New York Environmental Conservation Law, the State Environmental Quality Review Act (SEQRA or SEQR) and the implementing regulations incorporated in 6 NYCRR Part 617. This scoping document outlines the issues to be studied based on those identified in the Positive Declaration and analyzed to identify potential environmental impacts and appropriate mitigation measures.

## **GENERAL CONSIDERATIONS**

The Draft EIS will be prepared to document the environmental review of the proposed action and to seek comments and input from the public and involved and/or interested agencies. The Draft EIS will present analysis of the potentially significant adverse and beneficial environmental impacts of the proposed action, as well as reasonable alternatives and mitigation measures. While alternatives will be identified and evaluated, the emphasis of the Draft EIS is the preferred alternative.

Once a Draft EIS is prepared, SEQRA provides that the lead agency evaluates the Draft EIS and determine if it is complete for public and agency review. With the Draft EIS deemed complete, a comment period extending a minimum of 30 days shall be initiated. During the comment period, the public and involved and/or interested agencies are encouraged to provide comments regarding the Draft EIS. A public hearing may be held to facilitate public comment. At the conclusion of the comment period, the lead agency will prepare a Final EIS which will incorporate the Draft EIS by reference together with responses to the comments. The final step in the process is the issuance of a Findings Statement by the lead agency. The Findings Statement will document the environmental analysis in summary form and set forth specific conditions or criteria under which future actions will be undertaken or approved.

## SCOPE OF EIS

### COVER SHEET

The Draft EIS will contain a document cover that presents a project title, list of document authors and contacts, the name of the Lead Agency and a contact, the project location, SEQRA status and relevant dates (i.e. date of acceptance by the Lead Agency, date by which comments must be received, date of public hearing and final date of acceptance).

### 1.0 EXECUTIVE SUMMARY

This section will describe the environmental review process and will include a brief description of the proposed project and related actions, the potentially required local, County, State, and Federal approvals and permits, project benefits, a summary of short and long term as well as cumulative impacts and mitigation measures as well as a brief comparison of alternatives.

### 2.0 DESCRIPTION OF THE PROPOSED ACTION

#### 2.1 PROJECT PURPOSE AND NEED

##### 2.1.1 *Longevity Improvements*

This section will discuss, in summary, existing conditions of unit processes and equipment with reference to technical appendices incorporating detailed evaluation of the needs to address aging infrastructure.

##### 2.1.2 *Capacity Expansion*

This section will describe the service area including the Sewer District area and outside users. Existing flows, recent trends, and futures flows as described by a user survey will be provided. The user survey documentation will be included as a Technical Appendix.

#### 2.2 BENEFITS

This section of the EIS will outline the benefits of conducting the project including but not limited to continuing to provide wastewater treatment to the existing user base as well as responding to increasing demands for wastewater treatment as well as regulatory compliance with the exception of TDS and Chloride for which a variance is sought.

#### 2.3 PROJECT DESCRIPTION

##### 2.3.1 *Location*

This section will describe in narrative form as well as graphically the location of the WWTP, the County Sewer District, and the service area as well as the Ramapo and Moodna Basins.

##### 2.3.2 Detailed Description of the Proposed Project

This section will describe the conceptual improvements to the WWTP. Technical Appendices will include detailed engineering reports and data. This section will describe:

2.3.2.1 Existing conditions including hydraulic and organic loadings including OCSD #1 trunk sewer conveyance infrastructure based on flow monitoring and hydraulic modeling

2.3.2.2 Regulatory requirements to be achieved based on SPDES issued March 1, 2020

2.3.2.3 Proposed improvements

2.3.2.4 Projected capital and operating costs.

For purposes of scoping, the following project description is provided.

The project is envisioned to include new mechanical screening, vortex grit unit and flow splitter with odor control housed in a new building constructed adjacent to the existing headworks building. A new chemical feed and backwash filter pump buildings will be constructed.

Trains 1 and 2 will be converted to sequencing batch reactors (SBR) capable of treating 7.0 MGD while Train 3 will be subject to aeration basin upgrades to remain at 2.0 MGD for a total of 9.0 MGD treatment capacity. Existing Train 1 and 2 tertiary treatment will be upgraded as needed to meet regulatory requirements.

Existing structures will be demolished or re-purposed as necessary to provide facilities necessary to meet regulatory requirements. Modifications to the sludge holding tanks will be conducted to add blowers, aeration piping, coarse bubble diffusers, tank covers, sludge pumps and odor control. Chlorine contact, post aeration, SCADA and appurtenant upgrades will be conducted.

In addition, the project may include upgrades to the main building supply air, odor control, and HVAC improvements; remote pump station replacement; decommissioning of several collection system pump stations; magnesium hydroxide chemical feed/mixing system; Train 1 air supply line rehabilitation; misc. concrete work; MCC1 switch gear and Train 1 secondary weir replacement and Train 1 & 3 secondary covers.

Improvements to OCSD #1 trunk sewers will be outlined and described based on flow monitoring and hydraulic modeling.

The County of Orange plans to request a variance from State Pollutant Discharge Elimination System (SPDES) limits for TDS and Chloride for the Harriman WWTP. As outlined in §702.17, a variance may be granted if it is demonstrated that achieving the effluent limitation is not feasible because natural background or human-caused conditions or sources of pollution prevent attainment of the standard or guidance value and cannot be remedied or would cause more environmental damage to correct than to leave in place and controls more stringent than those otherwise required would result in substantial and widespread economic and social impact. The application for variance is considered a part of the project and a discussion of the justification for the variance will be provided in a Technical Appendix.

### **3.0 ENVIRONMENTAL SETTING, POTENTIAL IMPACTS AND MITIGATIONS**

This section of the Draft EIS will describe the existing environmental setting in general and specifically regarding the project. Aspects of the environment that may be either adversely or beneficially impacted by the proposed action will be identified and discussed. Where potential negative impacts are identified, mitigation measures will be described to reduce or avoid those impacts. Construction as well as non-construction impacts will be analyzed together with impacts from the operational phase of the project.

#### **3.1 TOPOGRAPHY, GEOLOGY AND SOILS**

##### ***3.1.1 Existing Conditions***

Section 3.1.1 will describe the regional setting of the WWTP as well as the topography, surface and subsurface geology and soils on the WWTP site and provide specifics for the project site.

##### ***3.1.2 Potential Impacts***

Potential impacts to topography, geology and soils may occur as a result of construction of the proposed project. As such, Section 3.1.2. will describe potential impacts of the construction of WWTP improvements with respect to topography, surface and subsurface geology and soils on the WWTP site.

##### ***3.1.3 Mitigation Measures***

It is expected that sediment and erosion controls will be required mitigation measures to reduce or eliminate impacts to topography, geology and soils, and such measures will be described in this section with analysis provided in the Technical Appendices.

#### **3.2 GROUNDWATER RESOURCES**

##### ***3.2.1 Existing Conditions***

This section will describe groundwater resources in the sewershed and the vicinity of the WWTP focusing on current conditions of groundwater as it relates to regulatory standards. Existing levels of TDS and Chloride above typical background levels will be described and documented, and the causes of such elevated levels described to the extent the scientific record provides such data. This section will discuss the widespread use of groundwater as a primary source of drinking water regionally and documentation that naturally occurring concentrations of TDS in groundwater can represent a base loading of 35% to 50% of the water quality- based effluent limit of 500 mg/L prior to the addition of TDS from household uses. Moreover, this section will describe elevated Chloride concentrations (above natural background) that are caused by human activity. Detailed existing studies will be provided in Technical Appendices to support statements in the EIS as appropriate.

##### ***3.2.2 Potential Impacts***

Potential impacts to groundwater may be the result of construction if tanks or other equipment are constructed at or below the water table requiring dewatering during construction and systems to prevent tank movement during operation.

### **3.2.3 Mitigation Measures**

To the extent that construction phase dewatering is anticipated, measures to mitigate temporary impacts to groundwater will be discussed including discharge of dewatering flows to prevent siltation in surface water sources or impacts to groundwater. Design concepts for systems to mitigate the effect of tanks constructed at or below the water table will be described as mitigation for such potential impacts.

## **3.3 SURFACE WATER RESOURCES**

### **3.3.1 Existing Conditions**

Surface water resources in the vicinity of the WWTP will be described including but not limited to the Ramapo River, tributaries and associated wetlands. Classification of the water bodies as well as regulatory concerns will be discussed, including existing levels of TDS and Chloride in the Ramapo River at the discharge locations as well as up and downstream as relevant. To the extent that the sources of TDS and Chloride above expected background levels are present in the Ramapo River in the vicinity of the WWTP, documentation regarding the known or potential causes of the sources will be described in this section, while studies will be included in the Technical Appendices to support the statements in this section. The assumptions underlying the dilution factors utilized in preparing the SPDES permit will be described, with NYSDEC technical guidance and the Permit Fact Sheet provided in the Technical Appendices to support statements in the EIS.

### **3.3.2 Potential Impacts**

Potential impacts to surface waters resulting from the proposed project include increasing the volume of effluent to the Ramapo River as well as the continued discharge of TDS and Chloride above the effluent limits in the SPDES permit, assuming a variance is issued. The impacts of both volume and constituents will be identified and described as supported by studies, calculations and data. Documentation including published studies and data will be included in the Technical Appendices.

### **3.3.3 Mitigation Measures**

The existing concentrations of TDS and Chloride in the Ramapo River are influenced by the geology of the region, the reliance on stressed groundwater for drinking water supplies, and the urbanization of the watershed; these conditions will not change as a result of achieving the new effluent requirements at the Harriman WWTP. The imposition of a TDS and/or Chloride influent limit in an update to the Sewer Use Law of 2008 may be discussed in this section as applicable. This section will also discuss the potential mitigating effect of the future use of the Village of Kiryas Joel of potable water from the NYC Aqueduct which will be documented to the extent information regarding the timing and volume of such use is provided by the Village. This section will also recognize the limited jurisdiction of the OCSD #1 to address regional watershed issues, particularly water taking. A regional, comprehensive study and action plan to be conducted by entities with appropriate regulatory authority and control over the reliance on stressed groundwater as a primary drinking water source and land use decisions that have increased and concentrated urbanization in the Ramapo River Watershed such as local jurisdictions or regional, state or federal agencies will be described as a major mitigation measure to address water quality in the region.

### **3.4 GOVERNANCE**

#### **3.4.1 Existing Conditions**

This section will describe the existing method of governance of the Sewer District and intermunicipal agreements with outside users as well as the present method to allocate flow and distribute the costs of existing debt as well as the operation and maintenance of the sewer system. The governance challenges of consecutive systems and addressing flows including the presence of infiltration and inflow (I&I) in service areas outside the direct jurisdiction of the OCSD #1 will be described.

#### **3.4.2 Potential Impacts**

The proposed longevity improvements will benefit all users of the sewer system, whether located in the OCSD #1 service area or in an outside user area. As a result, the capital costs would be shared by all benefitted parties. The cost and administrative impacts of the longevity aspect of the project will be described. The expansion of the treatment system has a capital cost that must be borne by those benefitted by the expansion. The administrative and cost impacts of the expansion will be described in this section.

#### **3.4.3 Mitigation Measures**

Mitigation measures for the cost impacts of longevity and expansion capital expense will be described in this section including the potential for grant and low-cost financing as well as governance structures to ensure that the costs of the project are properly assessed to the benefitted parties.

### **3.5 NEIGHBORHOOD AND COMMUNITY**

#### **3.5.1 Existing Conditions**

The EIS will describe the existing neighborhood and community in the vicinity of the WWTP and identify existing conditions with respect to noise, light, truck traffic and odor.

#### **3.5.2 Potential Impacts**

The proposed project will result in construction of new facilities at the WWTP that during construction will have an impact on the neighborhood and community with respect to noise, light, truck traffic and odors. Upon completion, the expanded treatment plant has the potential to impact the neighborhood in terms of noise, light, truck traffic and odors. Aspects of the proposed project that could have these impacts will be described in detail.

#### **3.5.3 Mitigation Measures**

Mitigation measures for temporary impacts to the neighborhood during construction in terms of noise, light, truck traffic and odors will be identified and described including the hours of construction daily, weekend and holiday hours, fencing, onsite contractor staging areas to reduce the movement of equipment and materials off site, and temporary odor controls where possible. Permanent mitigation measures such as enclosing noisy equipment in structures or including built-in sound attenuation, ensuring safety lighting is focused inside the site and is down lit (e.g. dark sky compliant), improvements to solids handling and consolidation of consumables deliveries to the extent possible to reduce



truck traffic and housing odorous materials and processes within structures with permanent odor control systems will be identified and described.

#### **4.0 CLIMATE CHANGE**

This section of the EIS will describe to the extent applicable, measures to increase the resiliency of the WWTP project to the effects of climate change due to sea level rise, storm surge, flooding and other climate-based risks.

#### **5.0 UNAVOIDABLE IMPACTS**

This section will identify the unavoidable impacts of the upgrade and expansion of the WWTP. This section will address but is not limited to the unavoidable impacts of an increase in impervious surfaces, additional maintenance demands for expanded and upgraded equipment, increased power consumption related to improved and expanded treatment, additional residuals generation and the need for handling, and increased user costs.

#### **6.0 ALTERNATIVES**

A number of Alternatives to the proposed project will be described in detail in this section together with benefits and drawbacks of each, including:

##### **6.1 *No Action Alternative***

Drawing on the description of existing conditions, this section will describe the impacts of No Action relative to the Harriman WWTP. At a minimum, the existing SPDES permit for the treatment plant cannot be met without improvements, which are mandated in that permit. Additionally, the No Action alternative does not meet the demands of the OCSD #1 for added treatment capacity. As a result, this section will describe that while a No Action Alternative is required for consideration, it is not a viable option.

##### **6.2 *Alternative for Longevity Improvements Only***

In the absence of the need to provide additional treatment capacity, an Alternative exists to invest in the WWTP to meet current permit objectives, with the exception of those for which a variance is sought, without increasing the capacity. This section will describe the Longevity Improvements as a stand-alone alternative without capacity expansion.

##### **6.3 *Alternative Technology Approaches to Achieve 9.0 MGD***

Assuming the objective is to meet near term needs for additional capacity, a review of various alternative technologies that could achieve a 9.0 MGD discharge while maintaining equipment and unit processes designated to be retained by the OCSD #1 in conformance with permit limits, except those for which a variance is sought, will be provided in this section. This section will incorporate a detailed analysis of technologies considered for the expansion of the WWTP, including Integrated Fixed Film Activated Sludge Process (IFAS), Modified Ludzack Ettinger Process (MLE), Membrane Bioreactors (MBR) and Sequencing Batch Reactors (SBR) all of which are proven, viable technologies that in combination with other processes, can achieve permit parameters except TDS and chloride. Capital and operating cost estimates will be described.

#### **6.4 *Alternative Approach to Regulatory Compliance – Reverse Osmosis***

This section of the EIS will describe the approach to regulatory compliance involving the construction and operation of a Reverse Osmosis unit process to reduce TDS and Chloride to achieve regulatory requirements. A conceptual discussion, this section will outline assumptions, technology, operations, and costs. Additionally, this section will describe the limited benefits of compliance against the social, economic and environmental costs of such treatment.

#### **6.5 *Alternative Approaches to Capacity Expansion Greater than 9.0 MGD***

This section will evaluate approaches to expanding the capacity of the Harriman WWTP greater than 9.0 MGD. This analysis will assume that any aspect of the existing WWTP may be modified, changed, demolished, upgraded, reused or replaced to maximize the existing site to achieve an expansion greater than 9.0 MGD to meet permit requirements with the exception of TDS and Chloride for which a variance would be sought. This analysis will include construction and operating cost estimates and be based on proven technologies which may include but is not limited to Integrated Fixed Film Activated Sludge Process (IFAS), Modified Ludzack Ettinger Process (MLE), Membrane Bioreactors (MBR) and Sequencing Batch Reactors (SBR).

#### **6.6 *Regional Alternatives***

This section of the EIS will evaluate a regional alternative to provide at least 9.0 MGD of treatment capacity for the service area. The Draft Facility Plan as well as numerous past studies identify only one potential viable alternative to achieve this objective which is the diversion of all or a substantial portion of the effluent from the Harriman WWTP after upgrade for regulatory compliance except TDS and Chloride limits to the Hudson River for discharge. This alternative will be explored in this section of the EIS including potential routing for conveyance piping and pump stations, Hudson River discharge standards based on potential SPDES permit standards, upgrades to the Harriman WWTP to accommodate expansion and discharge to the Hudson River, likely permitting requirements, impact of reduced flows to the Ramapo River, evaluation of land potential acquisition, projected schedule as well as capital and operating cost estimates.

### **TECHNICAL APPENDICES**

Technical Appendices will incorporate detailed documentation, studies, calculations and similar materials including but are not limited to:

- A. SPDES Permit and Fact Sheet
- B. Facility Plan for the Expansion of the Harriman WWTP
- C. Variance Justification Documentation
- D. Technical Documentation regarding Reverse Osmosis as Compliance for TDS and Chloride effluent limits
- E. User Flow Projections