Hazen and Sawyer
4000 Hollywood Blvd., Suite 750N, North Tower • Hollywood, FL 33021

October 5, 2024

Jeff Jiang, P.E.
CITY OF HOLLYWOOD
Assistant Director
Department of Public Utilities
Engineering and Construction Services Division
Post Office Box 229045
Hollywood, Florida 33022

City of Hollywood SRWWTP
Consent Order I/I AM-CMOM Program

Dear Mr. Jiang:

As requested, Hazen and Sawyer, D.P.C. (Hazen) is pleased to offer services for the management of a Consent Order for the Southern Regional Wastewater Treatment Plant which is being administered by the Florida Department of Environmental Protection.

BACKGROUND

Due to noted violations, the City has been issued draft Consent Order (CO) Number 21-0392 with the Florida Department of Environmental Protection (FDEP) Office of the General Council (OGC) on September 6, 2024. The CO identified various areas where corrective actions are needed along with completion deadlines required to improve sanitary sewer service, treatment and disposal within the Southern Region. The City has acknowledged that corrective actions are needed and it is envisioned that the City will execute the CO after negotiations with FDEP regarding the violations noted and the proposed schedule for correction.

The draft CO requires the City to undertake a series of studies, planning tasks, and potential design and construction projects to improve the wastewater infrastructure within the Southern Region. The City has already commenced some design and construction tasks required by Paragraphs 6(a) through 6(c) of the CO. Completing all CO requirements within the deadlines necessitates the implementation of certain program controls, including a master schedule.

The referenced Consent Order item requires that the City of Hollywood (City) submit, within 180 days of the effective date of the CO, “a plan and schedule to reduce infiltration and inflow (I&I) into the collection system (hereinafter, I&I Plan) to maintain wastewater flows at rates within the constraints of the System, that is, the volume that can be reliably delivered to and fully treated by one or more WWTFs.”

The City is required to begin to implement the I&I Plan within 240 days of the CO effective date. The CO also refers to the EPA *“Quick Guide for Estimating Infiltration and Inflow”* dated June 2014 and states the following:

“The I&I Plan shall reduce Average Dry Weather (ADW) flow to less than 120 gallons per person per day (gppd), reduce gallons per day per inch of diameter per mile of pipe (gpd/idm) to less than 1,500

gpd/idm, and reduce the Average Wet Weather Flow (WWF) to less than 275 gallons per person per day (gppd)."

Alternatively, if upon using the above-mentioned EPA quick guide the City determines that flow rates for dry weather and wet weather are different, the City may submit a report documenting and justifying the use of different numbers. If accepted, such alternative dry weather and wet weather flow rates will be made an enforceable part of the CO and the I&I Plan will be implemented to reduce flow during dry weather and wet weather accordingly.

The CO requires that the I&I Plan provide a schedule with remedies and completion dates for the following:

- Damaged manholes and other points of stormwater entry
- Unsealed manhole covers that are submerged by stormwater
- Public behaviors such as removing cleanout caps or manhole lids
- Structures or equipment that allow substantial I&I, such as broken lateral lines or pump stations subject to flooding
- Measures for the City to implement to reduce rain related peak flow from Volume Sewer Customers, including definition of acceptable peaking factor and subsequent consequences (surcharge and/or moratorium) for excessive peaking factors
- Measures for the Volume Sewer Customers to implement to reduce rain related peak flow including submittal of a Peak Flow Management Plan
- Measures to reduce inflow from illegal connections to the sanitary sewer system and other potential sources

The CO states that the final completion date for the I&I Plan schedule is to be no later than three years after the date the City begins to implement the I&I Plan. Additionally, within one year of completing the I&I Plan, the City is required to submit to the Department an I&I Plan Completion Report, summarizing improvements made and the amount of I&I reduction achieved, based on actual measurements of flows during dry and wet weather periods.

The referenced Consent Order item requires that the City of Hollywood (CITY) submit, within eighteen months of the effective date of the CO, a documented AM and CMOM program for the WCTS in accordance with the following US EPA documents:

- 305-B-05-002, *"Guide for Evaluating Capacity, Management, Operation, and Maintenance Programs at Sanitary Sewer Collection Systems"* (January 2005)
- 816-F-08-014, *"Asset Management: A Best Practices Guide"* (April 2008)

The AM and CMOM Program implementation schedule and the improvements schedule will be incorporated as enforceable parts of the CO.

This Scope of Services addresses preparation of an AM and CMOM Program and Schedule meeting the requirements of the FDEP CO, and will require engineering services to deliver the following:

- CMOM Program: Develop a prioritized CMOM Program that meets the requirements of the CO. The CMOM Program component is focused primarily on overall operations to prevent sewer system spills

- Sanitary Sewer Overflow Response Plan (SSORP): Develop a SSORP that is consistent with the CITY's target Levels of Service (LOS), includes best practices, and protects the water quality and public health
- Grease Trap Ordinance and Program Enforcement Plan: Review and update existing practices to minimize the risk of grease-related blockages in the gravity and pressure sewer system
- Collection System Asset Management Program: Develop a Collection System Asset Management Program consistent with USEPA Guidance. The AM Program Component is primarily focused on efforts to maximize the life of assets at the lowest cost while maintaining the target LOS. The focus of this program component is identifying risk and measures to mitigate the risk throughout the collection system.
- AM-CMOM Program Schedule: Develop a prioritized schedule to implement components of the AM and CMOM Programs including specific timelines to achieve specified milestones
- AM-CMOM Report: Develop a report for submittal to FDEP for review summarizing the above efforts

In addition, the CO contains a calculated penalty which must be paid or offset through an acceptable In-Kind project. Such a project must be reviewed and approved by FDEP. As a result, the City has requested Hazen to provide this scope of work to develop an I&I Plan and an AM-CMOM Program for the Consent Order.

SCOPE OF SERVICES

Task 1 – Corrective Actions to Address Unauthorized Spills – Inflow & Infiltration Plan

Paragraph 7 of the draft CO noted that the Southern Region collection and transmission system experienced unauthorized spills and requires corrective actions to be undertaken. These actions are to include activities related to infiltration and inflow (Task 3), and asset management and capacity, management, operation and maintenance (Task 4).

Hazen will develop a plan meeting the FDEP CO requirements, describing a phased approach to prioritizing and correcting I&I throughout the City's system. The report will incorporate the previously authorized work (City Project No. 23-6021). Hazen will provide a draft report submittal for review by the City, and a final version of the report following discussion of City comments.

Hazen will conduct meetings, prepare an agenda and minutes for each meeting at the following key points throughout the project:

- Project initiation for overall planning, coordination, and discussion of schedule.
- Project midpoint for review and confirmation of I&I Plan content and structure developed to that point.
- Preceding submittal to FDEP of the I&I Plan to discuss the City's review comments.

In addition, Hazen will identify measures for implementation by the City to reduce rain-related peak flow from Volume Sewer Customers (VSCs), including:

- Definition of acceptable peaking factor and subsequent consequences (surcharge and/or moratorium) for excessive peaking factors.

- Measures for implementation by the VSCs to reduce rain related peak flow including submittal of a Peak Flow Management Plan.
- Hazen will meet with City to review and refine proposed measures and prepare an agenda and minutes.

Efforts performed under Task 3 will include assessment of service agreements and associated legal requirements affecting the VSCs, evaluation of historical dry and wet weather flows at VSC connection points to the City system, and a general review of "best practices" related to the reduction and control of rain-related peak flows from satellite systems.

Task 2 – Corrective Actions to Address Unauthorized Spills – AM/CMOM Program

Paragraph 7 of the draft CO noted that the Southern Region collection and transmission system experienced unauthorized spills and requires corrective actions to be undertaken. These actions are to include activities related to infiltration and inflow (Task 3), and asset management and capacity, management, operation and maintenance (Task 4).

Hazen will develop an Asset Management (AM) and Capacity, Management, Operation and Maintenance (CMOM) Program that meets the requirements of the CO and follows USEPA guidance. The overall CMOM Program development will cover the individual CMOM program elements as described in USEPA guidance. The goal is to provide a detailed description and documentation for the status of each of the individual program elements with focus on providing further development of higher priority gaps to be identified for the City's operations. Individual program areas that will require further development to reach their target maturity will be given specific action items along with a target schedule for completion. The schedule for completion of these tasks will be developed under Subtask 4.7. With that noted, it is emphasized that a CMOM Program should be continually updated and improved as part of a continuous improvement cycle. Initial work under this task will consist of a gap analysis to develop priority scores for addressing each individual program element.

Subtask 2.1 – Collection System Management

Hazen will document and, where necessary, further develop, through consultation with the City's staff, the City's Collection System Management Programs. The extent of further development will be based on priorities outlined through the gap analysis. These programs include:

- Organizational Structure and Staffing
- Training
- Internal Communication
- Customer Service
- Legal Authority

Subtask 2.2 – Collection System Operation and Maintenance

Hazen will document, review, and, where necessary, further develop the City's CMOM-related Collection System Operations and Maintenance (O&M) Programs. The documentation and review will include a review of all pertinent Collection System-related Standard Operating Procedures (SOPs). The extent to which each program is enhanced (including changes to SOPs) as part of this

subtask will be based on priorities outlined in the gap analysis. The final AM-CMOM Program will include specific tasks and schedules to address remaining gaps.

The individual O&M program areas covered under this subtask include:

- O&M Budgeting – This will include updated estimates for O&M funding needs as the CMOM program is implemented.
- System Monitoring – This will primarily document existing system monitoring including flow meters, SCADA, SSO events and other sampling or sensors.
- Hydrogen Sulfide Monitoring and Control – This will focus on addressing odors as well as corrosion caused by hydrogen sulfide throughout the collection system and, subsequently, at the WWTP.
- Safety – This will focus on helping maintain a safe work environment for the City's employees through proper training and safety procedures and equipment.
- Emergency Response – A proper emergency response plan is critical to minimizing disruptions and risks to public health when incidents do occur.
- Mapping – This will include a summary and documentation of work done under the City's mapping and GIS initiatives.
- New Design and Construction – This will focus on a documentation and review of current design standards including details and specifications, as well as construction SOPs.
- Pump Station O&M Program – This will focus on helping maximize the reliability of each pump station to meet its target level of service.
- Continuous Sewer Assessment Program – This will include the planning for a comprehensive, system-wide prioritized program detailing how pipes, manholes, and other sewer infrastructure will be selected for testing and inspection for the Sewer System Evaluation Survey (SSES) program, as well as decision logic for "next actions" such as "re-CCTV in 5-years", or "put into rehabilitation program". This effort ties directly to the sewer risk analysis that will be conducted as part of Subtask 4.7. The results of this task will help inform O&M budgeting needs. SSES components will include, but are not limited to the following:
    - Flow monitoring,
    - Smoke testing and selective dyed water flooding,
    - Internal TV inspection,
    - Survey and rehabilitation,
    - Manhole inspection, and
    - Sewer cleaning related to infiltration/inflow reduction
- Sewer Cleaning Program – This will include a description of the existing sewer cleaning program as well as any proposed enhancements such as the use of innovative technologies (for example, SL-RAT). Decision logic for identifying cleaning frequencies and priorities will be developed.
- Force Main and Air Release Valve (ARV) Program – This will include a summary of the force main work being performed currently but will also discuss the program moving forward.

- Equipment and parts inventory – This will include a description of existing practices and programs, as well as any proposed improvements. Proposed improvements will be designed to ensure that operations and maintenance personnel have the spare parts, equipment, and supporting systems to be able to immediately address emergencies, quickly respond to customer calls, and track equipment and parts usage and costs.

Subtask 2.3 – Sewer System Capacity Program

Sewer system capacity was assessed as part of the City's recently completed Wastewater Master Plan. This completed work will be used to address the requirements of CO Paragraphs 7b and 7c. Under this subtask, Hazen will document the results of the capacity assessment as well as the Capacity Assurance Program required under the EPA CMOM guidance.

Subtask 2.4 – Information Management System

Under this task, Hazen will document the current Cityworks Computerized Maintenance Management System (CMMS) along with a description of how it will be used to support the CMOM program. It will also document how the following information will be stored and updated per the CO:

- Mapping
- Capacity
- Force Main Assessment
- Manufacturer O&M Requirements
- Spill Data
- Gravity Sewer Information
- Other Pertinent Sources

Subtask 2.5 – Develop Sanitary Sewer Overflow Response Plan (SSORP)

Hazen will review existing SSORP-related documentation and will recommend changes to reflect current best practices or other gaps that are identified. This task includes a meeting with the City to discuss recommended changes. Hazen will develop a draft SSORP based on the results of the existing plan review. Hazen will incorporate comments from the City into the final SSORP.

Subtask 2.6 – Develop Grease Trap Ordinance and Program Enforcement Plan

Hazen will review the existing documentation and practices related to a Grease Trap Ordinance and Program Enforcement Plan and will recommend changes to reflect current best practices or other gaps that are identified. This task includes a meeting with the City to discuss recommended changes. Hazen will develop a draft Grease Trap Ordinance and Program Enforcement Plan based on the results of Subtask 4.5. Hazen will incorporate comments from the City into the final Plan.

Subtask 2.7 – Develop Collection System Asset Management Program (CSAMP)

Hazen will develop a CSAMP that will be based on meeting the target level of service and gaps identified during the AM-CMOM Program Development Plan.

AM Program Goals and Organization: Hazen will summarize the current goals and organization as it relates to implementing a CSAMP and will provide recommendations for any changes. Hazen will meet with the City in a workshop to discuss and develop consensus on recommended changes.

AM Levels of Service and Performance Measures: Hazen will work with the City to finalize the collection system-related Levels of Service as well as Operational Performance Measures used to support meeting the target Levels of Service. This will be accomplished during two 4-hour workshops with key City staff. Levels of Service and performance indicator descriptions will be developed and documented.

Collection System Risk Assessment: Hazen will conduct a risk assessment for the gravity sewer system, pump stations, and force mains. The risk assessment will include components for Probability of Failure (PoF) and Consequence of Failure (CoF) as well as an overall risk assessment, which will be a combination of PoF and CoF. The PoF component will be based on best available condition data, and inference to other non-inspected assets based on available data. The results of this analysis will inform the development of a prioritized condition assessment program for each asset class, which is included as part of the CMOM program Subtask 4.2.

Collection System Repair, Upgrades, and Replacement Program: Hazen will develop a priority rehabilitation program that will document how collection system repairs, upgrades, and replacements will be:

- Identified
- Prioritized
- Authorized
- Funded

Collection System Asset Valuation: Hazen will develop a high-level sewer asset valuation, which will include gravity pipes, manholes, force mains, pump station, and valves. The asset valuation will be based on current full capital cost replacement value for each asset using Class V cost curve level costs and available attribute information from the GIS.

Collection System Asset Renewal Funding: Hazen will develop a high-level 20-year asset renewal funding needs assessment for all collection system assets based on the risk analysis and target LOS for asset condition. Hazen will develop estimated remaining useful life (RUL) values based on factors such as condition and age and estimated deterioration curves. Hazen will present assumptions for asset renewal and asset deterioration to the City in a workshop to establish consensus prior to implementation. This asset renewal analysis will result in a very high-level assessment of funding needs, due to the lack of accurate condition data at this time. Hazen will outline the possible benefits of using a prediction modelling and optimization tool (such as Assetic Predictor®), to support more robust asset renewal planning as more condition data are collected.

AM-CMOM Program Schedule: Hazen will develop a prioritized schedule to complete action items identified in the AM-CMOM Program Development. The Program Schedule will include both a schedule for each task and a responsible party for completing the task.

Hazen shall finalize the written AM-CMOM Program that will document the CMOM Program, SSORP, Grease Trap Ordinance and Program Enforcement Plan, CSAMP and AM-CMOM Schedule and incorporate the results of the foregoing tasks for City review. The anticipated duration for the City to

provide comments to the Hazen is within 20 calendar days of receiving the submittal. Once all comments are addressed, the Hazen shall submit one electronic and one hard copy file of the Revised AM-CMOM Report for City acceptance. Upon receiving City concurrence, the Hazen shall submit up to four hard copies and one electronic file of the Final AM-CMOM Report to the City. With City's approval, one of the four hard copies will be submitted to FDEP. The Hazen shall also prepare one response to address FDEP comments, and coordinate with the City for submission of the required AM-CMOM Report deliverables to FDEP, as deemed necessary.

KEY ASSUMPTIONS

Key assumptions concerning this scope are:

- Costs and expenses incurred by FDEP as outlined in draft Consent Order (CO) Number 21-0392, paragraph 11 are not included
- Evaluation of specific conditions affecting the VSC collection/transmission systems is not included and a need for VSC participation is not expected
- I&I Plan implementation and associated reporting will be addressed under future authorizations
- The AM and CMOM Program implementation and associated reporting will be addressed under future authorizations
- City shall provide access to plans and data (electronic format), both public and private, that City has record of and provide copies of requested information/documents at no charge.
- City will provide access to all necessary facilities for execution of the work
- Surveying services and underground utility locates are not envisioned
- The extent of design, permitting and management of modifications necessary to correct identified deficiencies are not known at this time and are not included
- This scope does not include any permitting services or negotiations with other agencies, jurisdictions, or parties relative to specific projects. Meetings with these parties may occur relative to general matters and/or conceptual solutions
- As the CO is currently in draft form and as the extent of communications with FDEP cannot be determined in advance, it is assumed that the budget for each task described may be more or less than estimated such that unused funds in one task may supplement another task

PURSUANT TO SECTION 558.0035, FLORIDA STATUTES, A DESIGN PROFESSIONAL WHO IS AN INDIVIDUAL EMPLOYEE OR AGENT OF CONSULTANT MAY NOT BE HELD INDIVIDUALLY LIABLE FOR NEGLIGENCE OCCURRING WITHIN THE COURSE AND SCOPE OF THIS TASK ORDER.

Hazen

COMPENSATION

Engineering services performed under Tasks 1 and 2 of this Authorization will be performed for a Not-to-Exceed fee of $498,954 including other direct costs. A fee breakdown is attached.

SCHEDULE

Projects of this type are heavily dependent upon data gathering from the City, communication with FDEP and, if construction efforts are found to be necessary, from various vendors and manufacturers. Engineering services are estimated to be completed in accordance with the schedule outlined by the CO and presented in the attached schedule. It is noted that, apart from construction projects requiring a permit, and I&I, AM and CMOM related projects, management and reporting for all corrective actions should be completed within 2 years of the effective date of the CO.

Engineering services for the project will be performed as part of our Professional Services Agreement for General Engineering Consultant Services (Agreement) dated October 2023. Services provided by Hazen and Sawyer, D.P.C. shall be limited to those services specifically identified in this work order.

We look forward to your reply. In the meantime, should you have any questions, please contact us.

Very truly yours,

HAZEN AND SAWYER, D.P.C.

J. Philip Cooke, P.E.
Vice President

c: File No. 4321-016/1.0

Attachment

CITY OF HOLLYWOOD
SOUTHERN REGIONAL WASTEWATER TREATMENT PLANT
CONSENT ORDER I/I, AM, AND CMOM PROGRAM
Fee Breakdown

	Labor Hours												
Tasks	***Senior Officer***	***Senior Associate***	***Sr Principal Engineer***	***Principal Engineer***	***Assistant Engineer III***	***Engineer***	***Principal Designer***	***Senior Designer***	***Senior Drafter***	***Admin Assistant***	***Subtotal***		***Fee***
LABOR													
Task 1 - Corrective Actions - I/I Plan	18	60	0	118	40	0	24	0	0	40	300	$	63,540
Task 2 - Corrective Actions - AM/CMOM Program	58	226	0	1106	554	0	54	0	230	68	2296	$	435,214
Subtotal	76	286	0	1,224	594	0	78	0	230	108	2,596	**$**	**498,754**
DIRECT EXPENSES													
Out-of-pocket												$	200
Subtotal												**$**	**200**
Total												**$**	**498,954**
Maximum Hourly Labor Rate	367.20	332.07	207.55	194.77	150.07	130.91	185.19	159.65	105.37	89.40			