

CONSULTANT AGREEMENT

THIS AGREEMENT is made this **27th** day of **July** 2021, by the GARDEN GROVE SANITARY DISTRICT, a California special district ("DISTRICT"), and AKM Consulting Engineers, a California Corporation ("CONSULTANT").

RECITALS

The following recitals are a substantive part of this Agreement:

1. This Agreement is entered into pursuant to Board authorization dated July 27, 2021
2. DISTRICT desires to utilize the services of CONSULTANT to provide **Engineering Consulting Services for Preparation of the 2021 Sewer System Rehabilitation Plan - Phase II**
3. CONSULTANT is qualified by virtue of experience, training, education and expertise to accomplish services.

AGREEMENT

THE PARTIES MUTUALLY AGREE AS FOLLOWS:

1. **Term of Agreement:** This Agreement shall cover services rendered from date of this Agreement until the services are completed, compensation reaches the not to exceed amount, or sooner terminated per Section 3.5
2. **Services to be Provided:** The services to be performed by CONSULTANT shall consist of the services as further specified in CONSULTANT'S proposal attached hereto as Exhibit A and incorporated herein by reference. CONSULTANT agrees that is provision of Services under this agreement shall be within accepted accordance with customary and usual practices in CONSULTANT'S profession. By executing this Agreement, CONSULTANT warrants that it has carefully considered how the work should be performed and fully understands the facilities, difficulties, and restrictions attending performance of the work under this agreement.
3. **Compensation.** CONSULTANT shall be compensated as follows:
 - 3.1 Amount. Compensation under this Agreement shall be per fee schedule included in the Proposal.
 - 3.2 Not to Exceed. Compensation under this Agreement shall not exceed **\$1,018,016.**

- 3.3 Payment. For work under this Agreement, payment shall be made per monthly invoice. For extra work not a part of this Agreement, a written authorization by DISTRICT will be required.
- 3.4 Records of Expenses. CONSULTANT shall keep complete and accurate records of payroll costs, travel and incidental expenses. These records will be made available at reasonable times to DISTRICT.
- 3.5 Termination. DISTRICT and CONSULTANT shall each have the right to terminate this Agreement, without cause, by giving thirty-(30) days written notice of termination to the other party. If DISTRICT terminates the project, then the provisions of paragraph 3 shall apply to that portion of the work completed.

4. **Insurance Requirements**

- 4.1 Commencement of Work CONSULTANT shall not commence work under this Agreement until all certificates and endorsements have been received and approved by the DISTRICT. All insurance required by this Agreement shall require the carrier or agent to notify the DISTRICT of any material change, cancellation, or termination at least thirty (30) days in advance.
- 4.2 Workers Compensation Insurance For the duration of this Agreement, CONSULTANT and all subcontractors shall maintain Workers Compensation Insurance in the amount and type required by law, if applicable. The insurer shall waive its rights of subrogation against the DISTRICT, its officers, officials, agents, employees, and volunteers.
- 4.3 Insurance Amounts CONSULTANT shall maintain the following insurance for the duration of this Agreement:
 - a) Commercial general liability in the amount of \$1,000,000 per occurrence; (claims made and modified occurrence policies are not acceptable); Insurance companies must be admitted and licensed in California and have a Best's Guide Rating of A-, Class VII or better, as approved by the DISTRICT;
 - b) Automobile liability in the amount of \$1,000,000 per occurrence; (claims made and modified occurrence policies are not acceptable) Insurance companies must be admitted and licensed in California and have a Best's Guide Rating of A-, Class VII or better, as approved by the DISTRICT.
 - c) Professional liability in the amount of \$1,000,000 per occurrence; Insurance companies must be acceptable to DISTRICT and have an AM Best's Guide Rating of A-, Class VII or better, as approved by the DISTRICT. If the policy is written on a "claims made" basis, the policy shall be continued in full force and effect at all

times during the term of the agreement, and for a period of three (3) years from the date of the completion of services provided. In the event of termination, cancellation, or material change in the policy, professional/consultant shall obtain continuing insurance coverage for the prior acts or omissions of professional/consultant during the course of performing services under the term of the agreement. The coverage shall be evidenced by either a new policy evidencing no gap in coverage, or by obtaining separate extended "tail" coverage with the present or new carrier.

An Additional Insured Endorsement, **ongoing and completed operations**, for the policy under section 4.3 (a) shall designate DISTRICT, its officers, officials, employees, agents, and volunteers as additional insureds for liability arising out of work or operations performed by or on behalf of the CONSULTANT. CONSULTANT shall provide to DISTRICT proof of insurance and endorsement forms that conform to DISTRICT's requirements, as approved by the DISTRICT.

An Additional Insured Endorsement for the policy under section 4.3 (b) shall designate DISTRICT, its officers, officials, employees, agents, and volunteers as additional insureds for automobiles owned, lease, hired, or borrowed by CONSULTANT. CONSULTANT shall provide to DISTRICT proof of insurance and endorsement forms that conform to DISTRICT's requirements, as approved by the DISTRICT.

For any claims related to this Agreement, CONSULTANT's insurance coverage shall be primary insurance as respects to DISTRICT, its officers, officials, employees, agents, and volunteers. Any insurance or self-insurance maintained by the DISTRICT, its officers, officials, employees, agents, or volunteers shall be excess of the CONSULTANT's insurance and shall not contribute with it.

If CONSULTANT maintains higher insurance limits than the minimums shown above, CONSULTANT shall provide coverage for the higher insurance limits otherwise maintained by the CONSULTANT.

5. **Non-Liability of Officials and Employees of the DISTRICT.** No official or employee of DISTRICT shall be personally liable to CONSULTANT in the event of any default or breach by DISTRICT, or for any amount, which may become due to CONSULTANT.
6. **Non-Discrimination.** CONSULTANT covenants there shall be no discrimination against any person or group due to race, color, creed, religion, sex, marital status, age, handicap, national origin or ancestry, in any activity pursuant to this Agreement.
7. **Independent Contractor.** It is understood and agreed that CONSULTANT, including CONSULTANT's employees, shall act and be independent

contractor(s) and not agent(s) or employee(s) of DISTRICT, and that no relationship of employer-employee exists between the parties. CONSULTANT's assigned personnel shall not obtain or be entitled to any rights or benefits that accrue to, or are payable to, DISTRICT employees, and CONSULTANT shall so inform each employee organization and each employee who is hired or retained under this Agreement. DISTRICT is not required to make any deductions or withholdings from the compensation payable to CONSULTANT under the provisions of this Agreement, and is not required to issue W-2 Forms for income and employment tax purposes for any of CONSULTANT's assigned personnel. CONSULTANT hereby expressly assumes all responsibility and liability for the payment of wages and benefits to its assigned personnel, and all related reporting and withholding obligations. CONSULTANT hereby agrees to indemnify and hold DISTRICT harmless from any and all claims or liabilities that DISTRICT may incur arising from any contention by any third party, including, but not limited to, any employee of CONSULTANT or any federal or state agency or other entity, that an employer-employee relationship exists by reason of this Agreement, including, without limitation, claims that DISTRICT is responsible for retirement or other benefits allegedly accruing to CONSULTANT's assigned personnel.

8. **Compliance With Law.** CONSULTANT shall comply with all applicable laws, ordinances, codes and regulations of the federal, state and local government. CONSULTANT shall comply with, and shall be responsible for causing all contractors and subcontractors performing any of the work pursuant to this Agreement, if any, to comply with, all applicable federal and state labor standards, including, to the extent applicable, the prevailing wage requirements promulgated by the Director of Industrial Relations of the State of California Department of Labor. The DISTRICT makes no warranty or representation concerning whether any of the work performed pursuant to this Agreement constitutes public works subject to the prevailing wage requirements.
9. **Disclosure of Documents.** All documents or other information developed or received by CONSULTANT are confidential and shall not be disclosed without authorization by DISTRICT, unless disclosure is required by law.
10. **Ownership of Work Product.** All documents or other information developed or received by CONSULTANT shall be the property of DISTRICT. CONSULTANT shall provide DISTRICT with copies of these items upon demand or upon termination of this Agreement.
11. **Conflict of Interest and Reporting.** CONSULTANT shall at all times avoid conflict of interest or appearance of conflict of interest in performance of this Agreement.
12. **Notices.** All notices shall be personally delivered or mailed to the below listed addresses, or to such other addresses as may be designated by written notice. These addresses shall be used for delivery of service of process.

(a) Address of CONSULTANT is as follows:

AKM Consulting Engineers
553 Wald
Irvine, California 92618

(b) Address of DISTRICT is as follows (with a copy to):

Engineering:	General Counsel
Garden Grove Sanitary Dist.	Garden Grove Sanitary District
P.O. Box 3070	P.O. Box 3070
Garden Grove, CA 92840	Garden Grove, CA 92840

13. **CONSULTANT'S Proposal.** This Agreement shall include CONSULTANT'S proposal, Exhibit "A" hereto, which shall be incorporated herein. In the event of any inconsistency between the terms of the proposal and this Agreement, this Agreement shall govern.
14. **Licenses, Permits and Fees.** At its sole expense, CONSULTANT shall obtain a **Garden Grove Business License**, all permits and licenses as may be required by this Agreement.
15. **Familiarity With Work.** By executing this Agreement, CONSULTANT warrants that: (1) it has investigated the work to be performed; (2) it has investigated the site of the work and is aware of all conditions there; and (3) it understands the facilities, difficulties and restrictions of the work under this Agreement. Should CONSULTANT discover any latent or unknown conditions materially differing from those inherent in the work or as represented by DISTRICT, it shall immediately inform DISTRICT of this and shall not proceed, except at CONSULTANT's risk, until written instructions are received from DISTRICT.
16. **Time of Essence.** Time is of the essence in the performance of this Agreement.
17. **Limitations Upon Subcontracting and Assignment.** The experience, knowledge, capability and reputation of CONSULTANT, its principals and employees were a substantial inducement for DISTRICT to enter into this Agreement. CONSULTANT shall not contract with any other entity to perform the services required without written approval of the DISTRICT. This Agreement may not be assigned voluntarily or by operation of law, without the prior written approval of DISTRICT. If CONSULTANT is permitted to subcontract any part of this Agreement, CONSULTANT shall be responsible to DISTRICT for the acts and omissions of its subcontractor as it is for persons directly employed. Nothing contained in this Agreement shall create any

contractual relationship between any subcontractor and DISTRICT. All persons engaged in the work will be considered employees of CONSULTANT. DISTRICT will deal directly with and will make all payments to CONSULTANT.

18. **Authority to Execute.** The persons executing this Agreement on behalf of the parties warrant that they are duly authorized to execute this Agreement and that by executing this Agreement, the parties are formally bound.
19. **Indemnification.** To the fullest extent permitted by law, CONSULTANT agrees to protect, defend, and hold harmless DISTRICT and its elective or appointive boards, officers, agents, and employees from any and all claims, liabilities, expenses, or damages of any nature, including attorneys' fees, for injury or death of any person, or damages of any nature, including interference with use of property, arising out of, or in any way connected with the negligence, recklessness and/or intentional wrongful conduct of CONSULTANT, CONSULTANT'S agents, officers, employees, subcontractors, or independent contractors hired by CONSULTANT in the performance of the Agreement. The only exception to CONSULTANT'S responsibility to protect, defend, and hold harmless DISTRICT, is due to the negligence, recklessness and/or wrongful conduct of DISTRICT, or any of its elective or appointive boards, officers, agents, or employees.

This hold harmless agreement shall apply to all liability regardless of whether any insurance policies are applicable. The policy limits do not act as a limitation upon the amount of indemnification to be provided by CONSULTANT.
20. **Modification.** This Agreement constitutes the entire agreement between the parties and supersedes any previous agreements, oral or written. This Agreement may be modified only by subsequent mutual written agreement executed by DISTRICT and CONSULTANT.
21. **Waiver.** All waivers of the provisions of this Agreement must be in writing by the appropriate authorities of the DISTRICT and CONSULTANT.
22. **California Law.** This Agreement shall be construed in accordance with the laws of the State of California. Any action commenced about this Agreement shall be filed in the central branch of the Orange County Superior Court.
23. **Interpretation.** This Agreement shall be interpreted as though prepared by both parties
24. **Preservation of Agreement.** Should any provision of this Agreement be found invalid or unenforceable, the decision shall affect only the provision interpreted, and all remaining provisions shall remain enforceable.

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS THEREOF, these parties hereto have caused this Agreement to be executed as of the date set forth opposite the respective signatures.

**"DISTRICT"
GARDEN GROVE SANITARY DIST.**

Dated: _____, 2021

By:

General Manager

ATTEST

**"CONSULTANT"
AKM Consulting Engineers**

Secretary

By: 
Title: _____ President _____

Dated: _____, 2021

Dated: June 10, 2021

APPROVED AS TO FORM:

If CONSULTANT/CONTRACTOR is a corporation, a Corporate Resolution and/or Corporate Seal is required. If a partnership, Statement of Partnership must be submitted to DISTRICT


General Counsel

Dated: 7-7, 2021

EXHIBIT A

SCOPE OF SERVICES / FEE SCHEDULE



AKM Consulting Engineers
553 Wald
Irvine, CA 92618
Telephone: 949.753.7333 Facsimile: 949.753.7320
www.akmce.com

June 4, 2021

Garden Grove Sanitary District
13802 Newhope Street
Garden Grove, California 92843

Attention: Ms. Liyan Jin, Associate Engineer

Subject: Proposal for 2021 Sewer System Rehabilitation Plan Phase II

Dear Ms. Jin:

AKM Consulting Engineers is pleased to submit this proposal for the subject project in response to your request for proposal dated April 8, 2021. Our proposal is valid for a period of 90 days from the date of this proposal.

Garden Grove Sanitary District (District) completed the previous Sewer System Rehabilitation Plan for Phase II in September 2005, which was over ten years ago. Per The District's criteria, the District would like to reassess the condition of the Phase II sewer mains. Subsequently, the Sewer System Rehabilitation Plan – Phase II will include preliminary project locations, prioritized based on severity and risk, and costs to rehabilitate the sewer system. AKM understands The District's needs and goals for the project, and are willing to adjust and accommodate any necessary deadlines within the schedule to produce cost estimates or recommended projects before the end of 2021.

Important elements of the project include

- CCTV inspection services of 500,000 feet of sewer mains in the Phase II vicinity, ranging from 6-inch to 18-inch in diameter
- Assess all CCTV inspections and provide a detailed evaluation of selected inspections that display significant defects of representative defect types.
- Develop an Inspection Report Database Summary and use this report as the basis for prioritizing and developing future rehabilitation projects, both structural and operation and maintenance recommendations
- A report documenting the assessments, conclusions, and final recommendations

Based upon our understanding of the project's scope of work; our knowledge of Garden Grove Sanitary District's system, resources and needs; and our extensive experience in serving numerous agencies in wastewater system operation and maintenance, we have assembled a Project Team with unsurpassed experience to undertake this project. Ms. Diann Pay, PE, will serve as Project Manager. Ms. Pay has over 24 years of water resources engineering experience, and has completed over 34 wastewater master plans and condition assessment projects. She will be assisted by Mr. Jon Nitta, PE who will serve as Project Engineer, and Ms. Haly Herrera, PE who will serve as Associate Engineer. Mr. Zeki Kayiran will provide QA/QC and he has over 47 years of experience in water resources engineering. He served as Garden Grove Sanitary District's District Engineer for over ten years, and was instrumental in establishing the District's Sewer System Rehabilitation Plan. Our project team includes two specialty sub-consultant. Empire Pipe Cleaning and Inspection, Inc. will perform cleaning and CCTV Inspections and Traffic Control Engineering will prepare traffic control plans, if required by the City of Garden Grove.

Our Project Team has been responsible for successful completion of Sewer Master Plans and Condition Assessment for the Garden Grove Sanitary District, East Orange County Water District, Camarillo Sanitary District, Irvine Ranch Water District, Cities of Brea, Cypress, Fountain Valley, Newport Beach, Stanton, Seal Beach, La Habra, Corona,



Ontario, Alhambra, Manhattan Beach, Redondo Beach, El Segundo, Palos Verdes Estates, Inglewood, Culver City, Claremont, San Clemente and Norwalk. AKM has been assisting the City of Los Angeles with its Settlement Agreement by assessing the condition of its sewers since 2003.

Our staff is very experienced in sewer system condition assessment and risk analysis evaluations. We have four (4) employees who are NASSCO certified pipeline, lateral, and manhole condition assessors.

We appreciate the opportunity to submit our proposal and look forward to being of continued service to the Garden Grove Sanitary District. Should you have any questions or require additional information, please do not hesitate in contacting the undersigned.

Very truly yours,

AKM Consulting Engineers

A handwritten signature in blue ink, appearing to read "Zeki Kayiran", with a long, sweeping underline.

Zeki Kayiran, P.E.
Principal



SECTION

Cover Letter

1	Approach	Approach 1
	General Approach	Approach 1
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2	Scope of Work	Scope 1
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3	Schedule.....	Schedule 1
4	Project Team	Team 1
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6	Project Team Experience.....	Experience 1
7	References.....	References 1
8	Professional Fee Proposal	Fee 1

*** Fee proposal under separate envelope*



Section 1 - Approach

The Garden Grove Sanitary District's (District) Sewer System Rehabilitation Plan was initiated as part of the District's compliance with the Santa Ana Regional Board's Waste Discharge Requirements for Sewage Collection Agencies in Orange County within the Santa Ana Region, Order No. R8-2002-0014. The Santa Ana Regional Board's Order formed the basis of the subsequent Statewide General Waste Discharge Requirements, Order No. 2006-0003. The initial Sewer System Rehabilitation Plan concentrated on the gravity collection system in the central portion of the District's service area between Chapman Avenue and Trask Avenue to the north and south, and Beach Boulevard and Ninth Street to the west and east. AKM Consulting Engineers (AKM) assisted the District in obtaining Cooperative Projects funding for the Orange County Sanitation District (OCSD), which covered a majority of the CCTV inspection work. The District's established program implemented most of the recommendations of its Sewer System Rehabilitation Plan. The District continued closed circuit television (CCTV) inspection of its gravity sewer system in subsequent phases and its rehabilitation and replacement program.

The District's criteria for inspecting the condition of gravity sewers concentrated on the "severe" and "major" defect categories, with sewers ranked as in "fair" and "good" condition being re-inspected every 10 years. Therefore, per its criteria, the District desires to re-inspect the sewers in Phase II, assess their condition, and update its Sewer System Rehabilitation Plan.

PROJECT GENERAL APPROACH

CCTV Inspection Work

There is an estimated 500,000 feet (this value includes a 10% increase to account for any potential additional length found during the field inspections) of gravity sewers in the Phase II area that the District would like to be CCTV inspected and rehabilitation recommendations developed for. AKM anticipates the CCTV inspection work to be completed in about 8 months of starting. In order to complete the required scope of work in a timely manner, AKM proposes to implement the following:

1. Typically, one truck/crew can inspect about 2,500 to 3,000 feet of sewer pipe in one work day. This is equivalent to 267 to 200 work days. There are approximately 150 work days in the months of July, August, September, October, November, December, January, and February excluding weekends and holidays. Empire Pipe Cleaning and Equipment, Inc. (EPCE) plans to use more than one truck/crew at a time, when they have it available, to complete the CCTV inspection work within eight months. If the CCTV inspection work starts at the beginning of July 2021, it is anticipated to be completed by the middle of February 2022.
2. EPCE will provide a "2-Week Look Ahead" map (Figure 1-1) to the District prior to their next work schedule. This will inform the District of where EPCE is planning on cleaning and/or inspecting sewers in the upcoming 2 weeks. This effort will allow the District ample time to notify residents, if needed, and coordinate additional tasks that may be needed to be done in order for EPCE to clean and inspect the locations successfully and efficiently. For example, coordination between EPCE and District staff may be needed for areas that may have access restrictions, specific traffic control needs, or that need to be inspected during night-time hours due to high flows in the sewers or heavy traffic conditions during normal working hours.

**Photograph 1-1
Combination Trucks: Vector, Bucher, and
Vac Con**



**Photograph 1-2
GIS Tracking and Status Reports for CCTV**

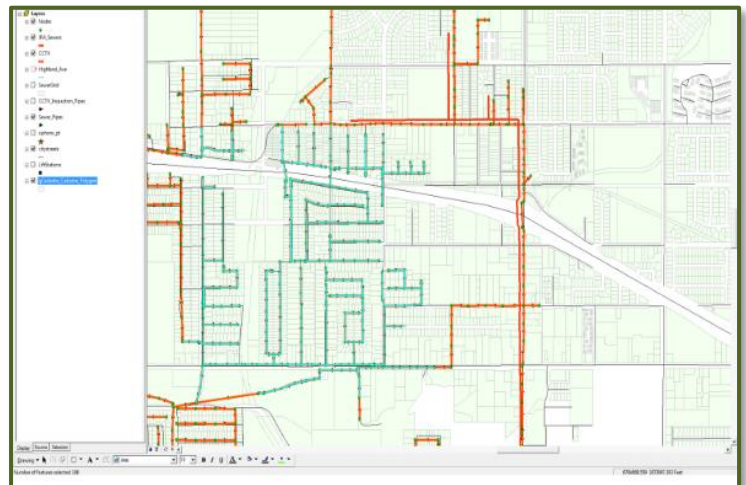
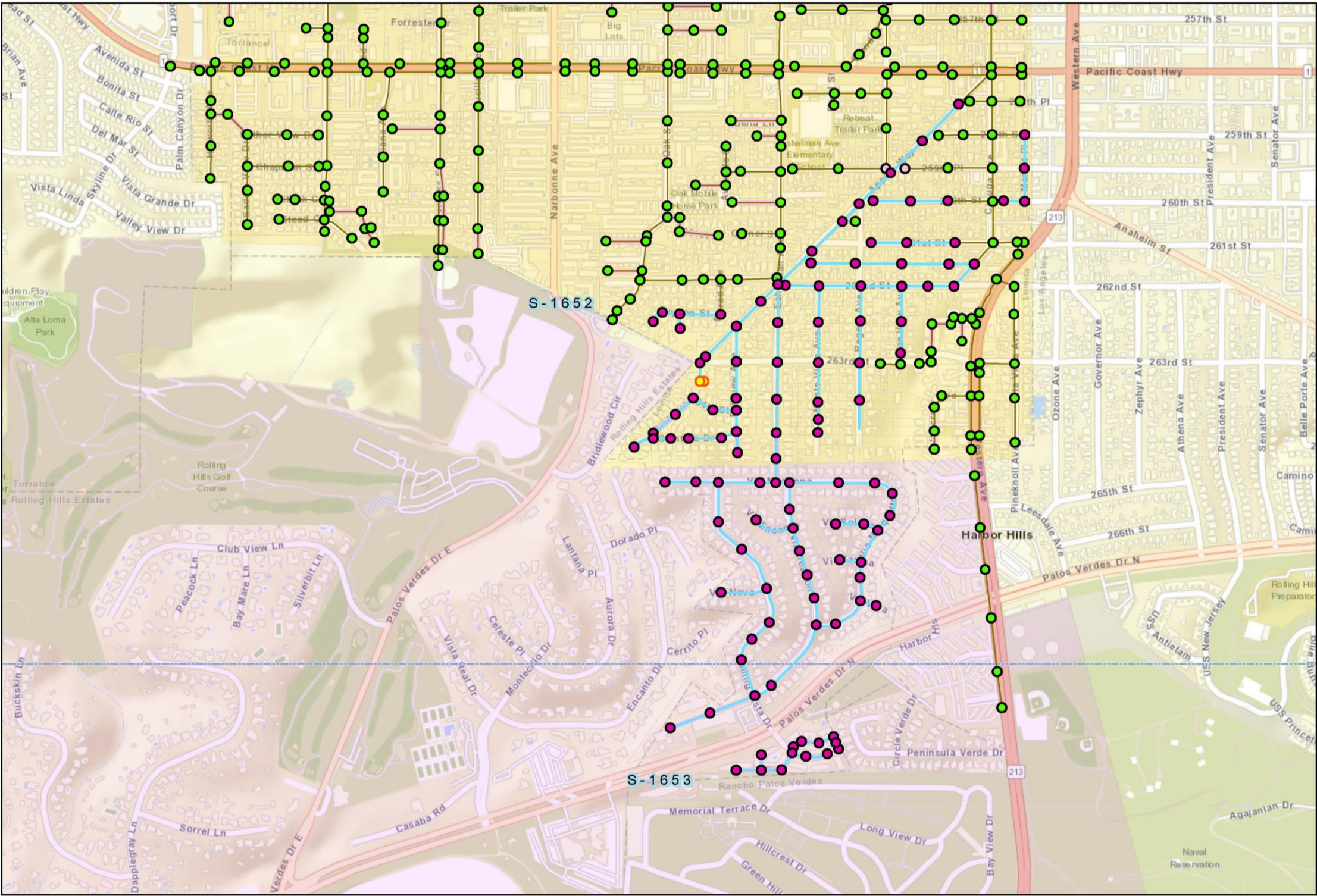




Figure 1-1
Two Week Look Ahead Map



Project Sample
Empire Pipe Cleaning
(714) 639-8352

City of Lomita

- <all other values>
- Measure_Status**
 - Access_Issue
 - Complete
 - ✗ Does_Not_Exist
 - GIS_Map_Issue
 - Pending
- Pipe_Status**
 - Abandon
 - Scheduled CCTV
 - CL_Pending
 - Reclean
 - See_Notes
 - TV_Complete
 - TV_Pending
 - MSA_Complete
 - MSA
 - GIS_Map_Issue
 - Does_Not_Exist
 - Lomita_sPipes_Easements
 - <all other values>
- AGENCYNAME**
 - California Water Service Company - Palos Verdes
 - Lomita City of - Water
 - Grid_Map
 - Parcels
 - World Street Map

Two week look ahead
for April 5th
to April 19th

The sewer pipes South
of PCH are projected
to be cleaned in this
schedule.





3. EPCE will report progress to AKM Consulting Engineers (AKM) on a bi-weekly basis and submit samples of inspections completed. If the progress made indicates that the estimated 8-month schedule will not be met, EPCE and AKM will meet immediately to discuss reasons for the delays and develop action items to resolve them. If it cannot be readily resolved, the team will meet with District staff to discuss.
4. EPCE Project Management Team uses a Cloud based data interface. This is a new tool the EPCE has implemented since the last time they conducted inspections for the District. This tool will allow EPCE to track the project status live as the field crews complete work. Each crew will be assigned a username and specific area of the project. As tasks are completed, the crews will report their findings on a software application and the data will be stored in the cloud. This data will then be able to be retrieved quickly back in the office for EPCE staff to obtain real time updates. Each project can be specifically built to track specific data fields. For this project, EPCE will track the following:
 - a. Date of inspection
 - b. Operator that completed the task – for cleaning and CCTV inspections
 - c. Pipe Diameter
 - d. Footage of inspections
 - e. Truck ID
 - f. Pipe Status:
 - CCTV Inspection Complete
 - CCTV Inspection Pending – The crews tried it inspect the pipe and could not access for any reason. This would be documented in the notes.
 - Reclean – The pipe was not cleaned sufficiently for the inspection. The cleaning crew will come back and clean the pipe again and the pipe will be reinspected later.
 - Abandoned - The pipe is no longer in use.
 - GIS Issue – The map does not match what is in the field.
 - MSA – Inspection could not be completed manhole to manhole and a reverse inspection is not possible.
 - MSA Complete – The inspection was completed going both ways and the overlap point was reached.
 - DNE – Pipe does not exist in the field.
 - CL_Complete – When the pipe is cleaned and ready for CCTV inspection.
 - CL_Pending – If a pipe cannot be cleaned or accessed this will also have a comment in the notes field.
 - See Notes – This is to address all other conditions that are not covered by the other options.
5. An interactive dashboard will be used to track and calculate the project progress with live data. An example of the dashboard is shown in Figure 1-2. The dashboard has 9 key tracking functions:
 - a. Project Percent Completed – Shows the percent of the project completed based on segments attempted.
 - b. Completed Inspection – Tracks the number of completed inspections and compares them to the number of segments assigned to the project.
 - c. Pending Inspection - Tracks the number of pending inspections and compares them to the number of segments assigned to the project. This generates an action item why this is pipe is not inspected.
 - d. Cleaned Pipe – When the pipe is cleaned this lets the CCTV crews know what is ready ahead of them and where to go. If this count starts to drop it lets us know we need to add additional resources or adjust for the project's needs. .



Figure 1-2
Example Dashboard



- e. Pipes Need Recleaning – Pipes that need to be recleaned are flagged here to ensure the CCTV inspections are progressing efficiently. This creates an action item for the cleaning crew to adjust their approach in cleaning this area based on the notes by the CCTV operator.
 - f. MAS Inspections – This counts the number of MSA codes used in the CCTV inspections. If a pipe has an MSA this is a red flag for the Engineers to look at this segment to address why the pipe is not operating properly or does not have proper access to maintain the pipe.
 - g. Completed MSA Inspection - This is a red flag for the Engineers to look at this segment to address why the pipe is not operating properly.
 - h. Date Range
 - i. Pipe Diameter
6. EPCE has also built a client interface program that is ArcGIS compatible and can allow access to the District and/or AKM. Through the interface, AKM or the District can see in real time, the progress EPCE is making throughout the project and see exactly where the CCTV crews are located.

CCTV Inspection Review and Recommendations

After and during the completion of the CCTV Inspections, the following will be implemented to execute the final deliverable of the Sewer Rehabilitation Plan for the Phase II sewer mains:

1. Select inspections will be reviewed by AKM staff to ensure the quality of the work being completed by EPCE’s field staff.
2. AKM will utilize an ArcGIS-based asset integrity management and capital planning program called InfoAsset Planner to compile the CCTV inspection data. This program is compatible with Pipeline Assessment and Certification Program (PACP) software and therefore has the ability to easily upload the CCTV inspection data from a standard PACP exchange database. The use of this program will help to reduce the amount of time AKM spends on compiling and summarizing the data to create the requested Inspection Report Database Summary. It also can provide additional graphics and tables to support the findings in the CCTV data and provides additional quality control for the CCTV inspection task.
3. AKM is capable and willing to vary the project schedule and deliverables to accommodate any project deadlines that need to be met by the District. Some examples are provided below:
 - a. **Alternative 1** – Ideally, AKM will wait to compile all of the CCTV data after all Phase II sewer mains are inspected. We will review, summarize, and build a rehabilitation plan that is fully prioritized based on defect severity, likelihood of failure, and consequence of failure (including the triple bottom line items, social, economic, and environmental factors). One comprehensive report will be provided, including maps, figures, lengths, and preliminary costs for the recommended rehabilitation projects, separated by structural deficiencies and Operation and Maintenance deficiencies. Alternative 1 is the most efficient way for AKM to complete the work.
 - b. **Alternative 2** – AKM is aware that the District may need some rehabilitation recommendation information before the end of the year (December 2021) to provide preliminary budget requirements for sewer rehabilitation for the years 2021-2022 and 2022-2023 and to start planning for the rehabilitation design.
 - i. **Alternative 2A** - If the District needs a budgetary cost estimate developed before the end of 2021, AKM will collect the CCTV inspection data up to the end of about November 2021. This first set of data will be imported to InfoAsset and the “severe” and “major” defects will be mapped. A cost





estimate for rehabilitation and replacement of sewers will be developed based off of the CCTV inspection database information. The cost estimate can then be adjusted for the entire Phase II area by assuming that the same percentage of “severe” and “major” defects will be found in the remaining inspections.

- ii. **Alternative 2B** - If the District needs specific rehabilitation projects developed prior to December 2021, AKM will collect CCTV inspection data up to the end of about September 2021. This will be less than half the data for Phase II. The data will be analyzed in detail (review of CCTV inspection videos) to develop rehabilitation recommendations. A prioritized rehabilitation plan, including maps, figures, and preliminary costs will be developed for this first set of data. The District can then use this information to expedite the design phase of the highest priority sewer mains.

AKM will compile the results from this first set of data with the results from the second set of data into one comprehensive report that includes recommendations for the entire Phase II project.

QUALITY CONTROL PLAN

A key element in the successful completion of any project is the implementation of a quality assurance/quality control program. Success is achieved through the efforts of qualified professionals effectively employing their skills and following a deliberate program of quality assurance to monitor and verify that the project is complete and accurate. For each project, AKM utilizes a project quality control plan that includes the following items:

- Review of project deliverables, and definition of procedures and required standards.
- Description of specific quality control procedures to be followed in specific activities, including the level and frequency of review required.
- Identification of elements of the project requiring special quality control attention or emphasis.
- Identification of technical experts required for review and consultation.
- Estimate of resources required for quality control functions.

To effectively manage the entire team’s work and ensure that all activities are coordinated, AKM will prepare and issue a project procedure protocol to all team personnel. The project procedures will cover communications, documentation, project files and other project specific procedures.

- ✓ **Work Plan** – AKM will develop a detailed work plan identifying all tasks, activities, reports and other documents to be produced, the required work-hours and the start and completion dates for each.
- ✓ **Budget** – Based on the work plan, a detailed budget will be developed covering labor and other expenses for each task group or work breakdown component. The budget will be time-phased to provide the base for financial control.
- ✓ **Schedule** – The schedule will be a time-phased critical path network showing the interdependencies between various activities and designating project performance milestones.

Examples of Quality Control and Cost Control Implementation

Some key examples of how quality control and cost control has been implemented include:

- **City of Brea** – AKM was hired by the City of Brea to complete a Sewer Master Plan in 2019. The scope of work included the review of CCTV records, condition assessment, and development of replacement/rehabilitation projects to be included in the Capital Improvement Program. The CCTV inspection was conducted by a CCTV inspection contractor hired by the City under a separate contract.

To ensure the quality of the CCTV inspection contractor’s work, AKM reviewed the first 1,000 feet of CCTV inspections and provided comments prior to the continuation of inspections. This allowed AKM to verify that the NASSCO PACP standards were being adhered to such as appropriate speed of camera and lighting, use of NASSCO defect codes, development of a proper PACP exchange database, and appropriate labels on videos. Providing this feedback at the beginning of the project allowed for more accurate and organized CCTV data throughout the project and dramatically improved the overall quality of the final deliverable.



- **Garden Grove Sanitation District** – AKM was hired by Garden Grove Sanitary District to complete the Sewer Rehabilitation Plan, Phase 1 sewer mains in 2017. To control the cost of the project, InfoAsset Planner was heavily used to check CCTV data, summarize and correct defect information, and provide rehabilitation recommendations. This software allowed AKM to efficiently and effectively create Capital Improvement Projects and develop a complete Sewer Rehabilitation Plan about \$70,000 under the proposed fee estimate. It has been utilized in multiple projects since to continue to ascertain any cost concerns from our clients and act as another source of quality control by ingesting the CCTV data creating a user-friendly environment for the end user.



Section 2 - Scope of Work

This section of the proposal describes the proposed scope of work for the development of the Garden Grove Sanitary District's (District) 2021 Sewer System Rehabilitation Plan – Phase II.

Task 1: Project Management

We will submit an initial project schedule with pertinent milestones for the major tasks involved in the project, particularly the Closed Circuit Television (CCTV) inspection work conducted in the field and the development of the Sewer System Rehabilitation Plan. The schedule shall be updated monthly or as required when there are major changes.

We will complete the CCTV inspection work within a time frame of about 8 months (July 2021 through February 2022). Analysis and development of the Sewer System Rehabilitation Plan will be completed following the completion of the CCTV inspection work and will continue into the second quarter of 2022, unless a different schedule is requested by the District (as explained in The Approach Section). Please see attached project schedule in Section 3 of this proposal.

A monthly update of the project schedule and a project status report will be submitted with our monthly invoice for the project.

Task 2: Meetings

AKM and Empire Pipe Cleaning and Equipment, Inc. (EPCE) staff will attend a kick-off meeting with Garden Grove Sanitary District (District) staff prior to the start of field work. At this meeting, we will discuss project objectives and the logistics of the field work, such as contact information, traffic control requirements, work hour limitations, and work plan.

We will meet to review the draft report submittal and discuss any comments District staff may have. The comments will be addressed in the final report submittal.

Draft meeting minutes will be sent to the District for review via email within five working days after the meeting. Final meeting minutes will be submitted via email in PDF format within two working days following receipt of the final District comments.

Task 3: Data Collection and Review

We will review all records made available by District staff, including but not limited to

- Previous Sewer System Rehabilitation Plans (including Phase I, conducted in 2017)
- Field notes related to the access of specified manholes in the Phase II area
- Any other data or information that may affect CCTV logistics

Task 4: Preparation of the Condition Assessment

Task 4A: CCTV Inspection of 500,000 feet of Sewer

Closed Circuit Television (CCTV) inspections will be conducted of the 500,000 feet of sewer identified by the Garden Grove Sanitary District (District) as shown in Exhibit A of the RFP. The inspections will be performed by Empire Pipe Cleaning and Equipment, Inc. (EPCE) utilizing the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) guidelines. Situations that require entry into manholes will follow EPCE protocol and CAL OSHA Standards for confined space. EPCE will follow safe practices while working on the project.

We will obtain the District's most current Sewer GIS to use as the base data of this project. The pipe and manhole IDs will be uploaded to EPCE's



Photograph 2-1
Envirosight CCTV Inspection and Pipeline Scanning Truck

software before any field work is started. This will ensure that the same naming conventions are used for the CCTV recordings and that they will ultimately be compatible with the City’s GIS system. We will initially work with the City of Garden Grove Information Technology (IT) staff to obtain the GIS data and clarify what IDs should be utilized.

The sewer lines will be CCTV inspected in accordance with the NASSCO PACP Standard for CCTV Assessment and scope of work outlined in the RFP. EPCE uses Pipeline Observation System Management (POSM) as the primary software collection system for CCTV inspections.



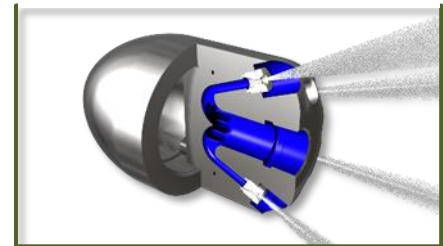
All the CCTV Operators are NASSCO PACP (pipe), MACP (manhole), and LACP (lateral) Certified. POSM and NASSCO PACP Standards creates the database that rates both the structural and maintenance severity of the pipeline segments utilizing a 1 to 5 defect rating system for each assessment. POSM allows for easy integration with many GIS Platforms. POSM Digital Software Collection System allows the user to choose various settings for video recording. This includes the resolution, MPEG Format, and type of video file. Normally we record in MPEG 4 format since this produces the best quality for the given storage size. Resolution will be a minimum of 352 x 240 but can be changed if storage size dictates differently. The CCTV inspection data will be delivered in the following manner:

- Summary of all inspections with indexing
- Video and Images associated with each inspection
- The plot of the pipe with the defects shown with distance in the pipe
- NASSCO PACP Defect report for Structural and Maintenance with ratings
- Observation Reports with images
- PACP Exchange Database

EPCE will provide personnel and equipment to clean approximately 500,000 LF of sewer lines as shown in the map provided as Exhibit A of the RFP. The following will be reported for all cleaning services:

- The cleaning crew will document the cleaning process and a cleaning log will be documented for District Staff Review. Any additional information will be shown in the comments section and any potential “Red Flag” conditions will be immediately reported to the District Staff
- If EPCE’s crews discover any overflow or blockage situations, immediate action to mitigate the conditions will be taken and we will provide additional support if needed. We will notify the appropriate District Staff of the situation immediately. Standards for Sewer Overflow Response will follow the the District’s Standards. Follow up reports will be submitted.
- EPCE will use City GIS data to track the segments completed and those which have not been completed. This data will be used to generate visual maps showing the progress of the project.

**Photograph 2-2
Cleaning Nozzle**



The sewer system will be cleaned using high velocity water pressure and vacuum to remove the debris from the line. Standard cleaning will be from the downstream manhole toward the upstream manhole, utilizing water flow to bring back the debris to the downstream manhole at which time will be vacuumed. In the event the nozzle cannot make it to the next manhole a reverse setup will be attempted to clean the line. Any manholes not accessible will be noted on the cleaning reports. The sewer pipes will be cleaned to ensure that a quality inspection can be completed. Cleaning Crews will document their findings on a cleaning log. EPCE will require access to hydrants for water and all manholes shall be accessible. The District will be responsible for locating and raising any manholes that are buried. Manholes that are buried, locked, or paved over will be referred to the District for assistance. EPCE will use the proper cleaning tools based on the types of debris/solids that need to be removed. Traffic Control will be implemented based on the requirements outlined in the Manual of Uniform Traffic Control Devices (MUTCD) Guidelines.



EPCE will provide sufficient crews to complete the inspections within an 8-month time frame and is available to start in July 2021.

Task 4B: Compile, Review, and Prepare Inspection Report Summary

We propose to utilize Innovyze’s InfoAsset Planner software program to compile the CCTV inspection data. The InfoAsset Planner program is an ArcGIS-based asset integrity management and capital planning software for water and wastewater networks. It is a powerful tool that assists in characterizing the likelihood and consequence of failure for individual pipes in a network. InfoAsset Planner is a National Association of Sewer Service Companies (NASSCO) certified product.

The inspection data collected for this project will follow the Pipeline Assessment and Certification Program (PACP) standards and can therefore be easily imported into the InfoAsset Planner software, which already identifies with the same coding system that is required by PACP. InfoAsset Planner is a GIS based software and has the capability to incorporate any asset data that is in the District’s Sewer GIS as well as the CCTV inspection data.

Importing the CCTV inspection data into InfoAsset Planner will allow us to plot the locations of the identified defects graphically on the Sewer GIS. We will also be able to more easily filter through the data to find the locations of the most severe defects or operations and maintenance issues. We will also be able to link the recorded video locations to the map, making it easier and more efficient for us to review them during the course of the project.

We will prepare a database summarizing the findings of CCTV reports and recordings. At a minimum, the database will include the following:

- Inspection Number
- Inspection Location
- Inspection Date
- Manhole Identification Numbers
- Pipe Identification Numbers
- Direction of Camera during Inspection
- Size of Pipe
- Material of Pipe
- Length of Pipe
- Number of Occurrences of Each Structural and Operation and Maintenance Deficiency



The InfoAsset Planner Program will allow us to easily account for the reverse inspections that are recorded. InfoAsset Planner will combine the data for these reaches to create a comprehensive summary table.

Task 4C – 4E: Review CCTV Recordings for Significant Defect Locations and Update CCTV Inspection Data

The CCTV recordings will be prioritized per the database summary. Although each reach is given a condition grade per the PACP standards, we will also base our prioritization on the type and number of defects identified in each recording. The pipes that are believed to be at higher risk of collapse and blockages, and therefore have a greater potential for causing a sanitary sewer overflow will be given the highest priority. For example, a pipe with a severe structural defect such as broken pipe, a hole in the pipe, or a large joint offset might be given a higher priority than a pipe with many other less severe defects such as cracks or fractures.

Based on the prioritized database, we will select representative reaches of the system to review the CCTV recordings in detail to ensure compliance with CCTV standards and procedures and further prioritize the sewers for replacement and/or repair. We do not anticipate that all the CCTV recordings will have to be reviewed in detail. Based on our experience, we expect to review up to 20 percent of the pipe reaches inspected. This amount may increase or decrease following review of the CCTV database.

We will review the CCTV recordings for those reaches identified as a high priority. We will verify the completeness of the inspection recordings and reports, and update the inspection database as necessary.

If additional deficiencies or discrepancies are found, we will make note of them and modify the summary database to include the changes. The inspection summary report will be updated accordingly.



Task 4F – 4H: Rehabilitation Recommendations

Rank and Prioritize CCTV Data

We will identify and prioritize the condition deficiencies, therefore identifying the critical sewer mains in need of replacement, rehabilitation and/or repair. The focus will be on sewer pipes that are at risk of collapse or prone to more frequent blockages.

We will utilize the same ranking and prioritization system as the District’s previous Sewer System Rehabilitation Plans. This will provide the District with the ability to determine the changes in condition in any particular pipe more easily. The priority categories used previously are as follows:

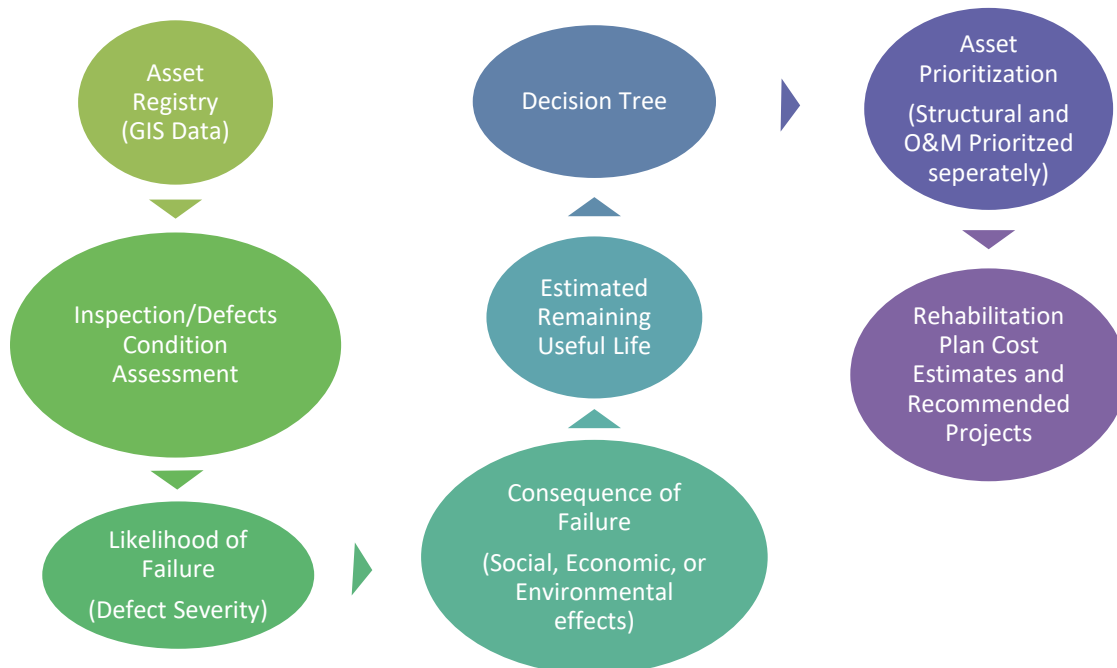


- **Severe Condition** – This category primarily includes structural defects of deformed pipe, hole in pipe, broken pipe, and large joint offsets.
- **Major Condition** – This category primarily includes structural defects of multiple fractures, medium joint offsets and major sags. Pipes with a large number of cracks are also included.
- **Moderate Condition** – Pipes in this category have fractures, cracks, small and medium joint offsets, and sags.
- **Minor Condition** – Pipes in this category have slight sags, cracks, and small joint offsets.
- **O&M** – This condition is for operational and maintenance problems and construction feature defects. There are no structural defects.
- **No Defects** – This condition is for pipes with no structural, operation and maintenance or construction feature defects.

Develop Replacement and Rehabilitation Recommendations

Pipe reaches and structures determined to fall in the “Severe” or “Major” categories will form the basis of rehabilitation and replacement recommendations. Cost estimates will be developed to remedy the condition

Figure 2-1
General Work Flow for CCTV Assessments and Rehabilitation Plan





deficiencies identified. We will review any recent project bids that the District has collected and use this as the basis for estimating the cost of the future improvements. A general work flow for preparing the Sewer Rehabilitation Plan is shown in Figure 2-1.

Identify Operation and Maintenance Deficiencies

Operation and maintenance (O&M) defects such as grease accumulation, root intrusion, and debris/deposits will be considered separately. Often times, these defects will require additional cleaning or root cutting, but will not necessarily need replacement. Maps of each type of O&M issue will be prepared showing the locations in which they are identified. Recommendations for additional cleaning or root cutting will be made as needed.

Task 4I: Prepare Sewer System Rehabilitation Plan – Phase II Report

We will prepare the District’s 2021 Sewer System Rehabilitation Plan, Phase II Report. The report will summarize all work completed, documenting the CCTV inspections, the condition assessment, and the rehabilitation and replacement recommendations.

Deliverables:

Deliverables will include:

- Four (4) hard-bound copies of the draft assessment report
- Four (4) hard-bound copies of the final assessment report
- External portable hard drive of all the CCTV inspection data, including video recordings, CCTV inspection reports in PDF, PACP exchange database, and jpg images

All work will be completed at AKM Consulting Engineers office in Irvine, California.

Task 5 (Optional): Traffic Control Design

Based on discussions with District staff, it is unknown if traffic control design will be required by the City. We have therefore included traffic control design as an optional item. If needed, Traffic Control Engineering, Inc. (TCE) will be responsible for the development of traffic control strategies in coordination with the City of Garden Grove. TCE will develop final traffic control plans consistent with City and Caltrans standards including signing, legends, and other construction detour standards.

The assumptions to complete the traffic control design are as follow:

- Traffic and all roadways to be restored during non-working hours.
- No temporary striping or traffic signal design included.
- Detailed location specific traffic control plans will be prepared at all signalized intersections on arterial streets.
- Typical lane closure plans will be prepared for mid-block lane closures on arterial streets.
- All other project side streets shall follow MUTCD Guidelines for lane closure traffic control.



The proposed project area consists of a total of 57 signalized intersections that may need traffic control. The fee estimate assumes 40 of these locations will need to have traffic control plans developed.

Typical mid-block lane closure plans will be prepared for the following locations:

Street	Location
Century Blvd.	Garden Grove Bl. to Euclid St.
Trask Ave.	Taft Ave. to Fairview St.
Westminster Bl.	Euclid Ave. to Fairview St.
Garden Grove Bl.	Century Bl. to Lewis St.



Lampson Ave.	9th St. to Lewis St.
Chapman Ave.	9th St. to Lewis St.
Orange Ave.	9th St. to West St.
Euclid Ave.	Garden Grove Bl. to Westminster Ave.
9th St.	Orangewood Ave. to Garden Grove Bl.
West St.	Orangewood Ave. to Garden Grove Bl.
Street	Location
Newhope Ave.	Garden Grove Bl. to Westminster Ave.
Harbor Blvd.	Chapman Ave. to Westminster Ave.
Haster St.	Chapman Ave. to Garden Grove Bl.
Fairview St.	Garden Grove Bl. to Trask Ave.
Lewis St.	Chapman Ave. to Garden Grove Bl.

If the aforementioned traffic control plans will be required by the City of Garden Grove, the start date of the CCTV inspections will be impacted. Traffic control plans will be developed and submitted to the City for approval prior to the start date of the field work.



Section 3 - Project Schedule

AKM's proposed project schedule is illustrated on the following page. It has been prepared to properly address the requirements of the scope of work. AKM Consulting Engineers has the resources to accomplish the anticipated work within the schedule shown. The schedule is contingent upon implementation of the scope of work as contained within this proposal and the receipt of requested information in a timely manner. Depending on the City of Garden Grove requirements, traffic control plans may have to be prepared and submitted to the City for approval prior to the start of CCTV inspections. It should be noted that this will impact the start date of the field work. It will not extend the time it will take to complete the inspections. The optional traffic control design task is not indicated on the provided schedule.

Changes to the scope may affect the project schedule. However, it is acknowledged that time is and will remain of the essence throughout the course of the work. Correspondingly, all schedule modifications will be treated in a manner reflecting this consideration.

PROJECT SCHEDULE
Garden Grove Sanitary District
2021 Sewer System Rehabilitation Plan
Phase 2
June 2021

ID	Task Name	Duration	Start	Finish	Month																																								
					6/27	7/4	7/11	7/18	7/25	8/1	8/8	8/15	8/22	8/29	9/5	9/12	9/19	9/26	10/3	10/10	10/17	10/24	10/31	11/7	11/14	11/21	11/28	12/5	12/12	12/19	12/26	1/2	1/9	1/16	1/23	1/30	2/6	2/13	2/20	2/27	3/6	3/13	3/20	3/27	4/3
1	Task 1 - Project Management	222 days	Thu 7/1/21	Fri 5/6/22																																									
2	Task 2 - Meetings	222 days	Thu 7/1/21	Fri 5/6/22																																									
3	Task 3 - Data Collection and Review	7 days	Thu 7/1/21	Fri 7/9/21																																									
4	Task 4 - Preparation of Condition Assessment	222 days	Thu 7/1/21	Fri 5/6/22																																									
5	4A CCTV Inspection of 500,000 Feet of Sewer	162 days	Thu 7/1/21	Fri 2/11/22																																									
6	4B Compile, Review, and Prepare Inspection Reports	10 days	Mon 2/14/22	Fri 2/25/22																																									
7	4C-E Review CCTV Recordings for Significant Defect Locations and Update CCTV Inspection Data	24 days	Mon 2/28/22	Thu 3/31/22																																									
8	4F-H Rehabilitation Recommendations	25 days	Mon 3/21/22	Fri 4/22/22																																									
9	4I Prepare Sewer System Rehabilitation Plan - Phase II Report	15 days	Mon 4/18/22	Fri 5/6/22																																									

AKM Proposal No. 21-1035

Task		Summary		External MileTask		Inactive Summary		Manual Summary Rollup		Finish-only	
Split		Project Summary		Inactive Task		Manual Task		Manual Summary		Progress	
Milestone		External Tasks		Inactive Milestone		Duration-only		Start-only		Split	



Section 4- Project Team

PROJECT MANAGEMENT STRUCTURE

AKM Consulting Engineers (AKM) utilizes a project management approach that focuses on completing technically outstanding projects on time, and within budget. Our methodology is described below.

PROJECT MANAGEMENT

The engineering organization and the Project Teams proposed by AKM are structured to respond to the technical and managerial requirements of the project by assigning very senior, highly qualified personnel. They will function in a simple organization with clear lines of delegated authority and responsibility. Our Project Manager will be the principal point of contact with Garden Grove Sanitary District (District), and will have full technical and administrative responsibility for the project. The team assembled for the project includes all of the major disciplines required to expeditiously complete the assignment.

PROJECT SCHEDULE

The schedule for the project is developed to provide a reasonable performance period in line with the client’s schedule. The schedule will be updated monthly, or more frequently if needed, and reviewed at progress meetings so that the District and AKM are aware of and can respond to critical items. In effect, they will become the master project control tools.

PROGRESS REPORTING

AKM recognizes the District’s need for comprehensive, up-to-date information on project status. Monthly reports will be prepared in a format to be agreed upon with the District and will contain the following, as a minimum.

- **Contract Fact Sheet** – Summarizing key contract data and status.
- **Progress Narrative** – Describing the key accomplishment during the reporting period, with charts and diagrams.
- **Schedule Status** – A discussion of the progress achieved during the month and to date as compared to the scheduled progress, and a discussion of factors affecting the schedule, accompanied by the updated schedule.
- **Cost Status** – Narrative discussion of events occurring during the month which affect the estimate at completion.
- **Problems and Issues** – Including discussion of potential cost and schedule impacts, actions being taken to mitigate the problems, and action required by the District.

PROJECT TEAM ORGANIZATIONAL CHART

The Project Team organization is illustrated on the Project Organizational Chart in this section, along with detailed resumes describing specific experience of the Project Team members. In addition to the key personnel shown on the following project organizational chart, AKM has additional support personnel available to assist on the project, as necessary.

AKM’S INTEGRATED PROJECT MANAGEMENT

PROJECT IDENTIFICATION

- Listen to Client/User
- Ascertain Project Needs
- Identify Problems/Constraints
- Review Schedule and Budget
- Review Site and Data
- Determine Expectations
- Determine Approval Process and Permitting Agencies
- Establish Scope of Technical Services

WORK PROGRAM

- Establish Work Plan and Schedule
- Establish Work Breakdown Structure (WBS)
- Determine Resources
- Review and Adjust the Work Plan and Schedule
- Establish Project Milestones

TECHNICAL EXECUTION

- Project Execution
- Concept and Criteria Review by AKM Principal Engineer not directly involved with any day to day project details
- Discipline Check
- Internal QC and Constructability Review by QA/QC Team

PROJECT MANAGEMENT

- Technical Review
- Progress Reporting
- Comparison of Progress with WBS and Resource Loaded Schedule
- Resolution of Discrepancies
- Identification of Sources and Impacts
- Development of Mitigation
- Continuous Coordination
- QA/QC Completion

Garden Grove Sanitary District

PROJECT MANAGER

Diann Pay, P.E.

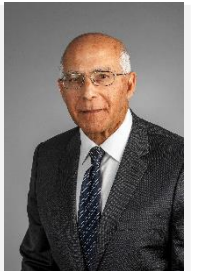
Registration: RCE CA C60298
NASCCO PACP, MACP, LACP U-1003-947
Education: M.S. Environmental Water Resources (UC Berkeley); BS Civil Engineering (UCLA)
Years of Experience: 24 Years with AKM: 24



PRINCIPAL IN CHARGE / QA/QC

Zeki Kayiran, P.E.

Registration: RCE CA C29330
Education: M.S. Civil Engineering (CSULB); B.S. Civil Engineering (Robert College)
Years of Experience: 47 Years with AKM: 31



PROJECT ENGINEER

Jon Nitta, P.E.

Registration: RCE CA 69987
NASCCO PACP, MACP, LACP U-1106-4046
Education: B.S. Civil Engineering (UCLA)
Years of Experience: 19 Years with AKM: 19



ASSOCIATE ENGINEER

Haly Herrera, P.E.

Registration: RCE CA C92354
NASCCO PACP, MACP, LACP U-1014-06022537
Education: B.S. Environmental Engineering (UC Irvine)
Years of Experience: 7 Years with AKM: 7



CCTV INSPECTION

EMPIRE PIPE CLEANING AND EQUIPMENT

Craig Van Thyne

Registration: NASSCO Certified CCTV Inspection Operator; California State Contractor License C36 and C42 (363528)
Education: M.S., Metallurgical Engineering (Colorado School of Mines) B.S. Metallurgical Engineering (Iowa State University)

TRAFFIC CONTROL

TRAFFIC CONTROL ENGINEERING

David Kuan, P.E., R.T.E.

Registration: RTE California (1429) RCE California (C57387)
Education: M.S. Civil Engineering (UC Berkeley); B.S. Civil Engineering (UC Irvine)



PROJECT TEAM

The engineering organization and the project team proposed by AKM are structured to respond to the technical and managerial requirements of the project by assigning very senior, highly qualified personnel to the work. They will function in a simple organization with clear lines of delegated authority and responsibility.

Our project manager will be the principal point of contact with the District, and will have full technical and administrative responsibility for the work. All identified personnel will be assigned to the project. All project team members have long tenure with AKM, and we do not reassign or substitute staff assigned to specific projects. The following provides brief descriptions of their roles and experience. Our project team organization is also illustrated in this section.

Diann Pay, P.E. | Project Manager
Registration: RCE, CA, C60298 (2002) ; NASCCO PACP, MACP, and LACP Certified [U-1003-947] 50% Available

Ms. Diann Pay, P.E., a certified pipeline assessor by the NASSCO Pipeline Assessment and Certification Program, will be Project Manager. Ms. Pay has served in this capacity during the preparation of thirty four (34) sewer master plans and sewer system management plans, all of which included sewer system evaluation and capacity assurance plans, system condition assessment, and the preparation of sewer system rehabilitation plans. She is intimately familiar with the Statewide Waste Discharge Requirements because of her involvement in the preparation of master plans and sewer system management plans in accordance with the Statewide General Waste Discharge Requirements. Ms. Pay has overseen the condition assessment and project prioritization of over 7.6-million feet of sewer pipes.



Zeki Kayiran, P.E. | Principal-in-Charge and QA/QC
Registration: RCE, CA (C29330) 20% Available

Mr. Zeki Kayiran, P.E. will be in charge of QA/QC. Mr. Kayiran’s experience includes the completion of thirty nine (39) sewer master plans and sewer system management plans, that all included the development of sewer system rehabilitation plans. Many of the Master Plans and Sewer System Management Plans included a financial evaluation of the sewer utility and a rate study as a part of the scope of work. He was actively involved in the development of the Statewide Waste Discharge Requirements, and was instrumental in having a separate Sewer System Rehabilitation Plan under the Operation and Maintenance Plan. He has served as the District Engineer for the Garden Grove Sanitary District, and provides expert services to the City of Los Angeles Bureau of Sanitation in wastewater planning.



Jon Nitta, P.E. | Project Engineer
Registration: RCE, CA [2006] C69987; NASCCO PACP, MACP and LACP Certified [U-1106-4046] 50% Available

Mr. John Nitta, P.E. will be the project engineer responsible for reviewing the inspection reports and recordings, conducting condition assessments, and making replacement/rehabilitation recommendations. Mr. Nitta is a NASSCO certified pipeline, lateral and manhole assessor. He served for 3 years on an assignment to the City of Los Angeles Bureau of Sanitation where he developed the Secondary System Capacity Evaluation Procedures and prepared the first one for Sewershed W15. He was also responsible for condition assessment of over 1.8 million feet of sewers, as well as the condition assessment for the City of Seal Beach, Irvine Ranch Water District, and Garden Grove Sanitary District.



Haly Herrera, P.E. | Associate Engineer
Registration: Registered Civil Engineer, California C92354; NASCCO PACP, MACP and LACP Certified [U-1014-06022537] 80% Available

Ms. Haly Herrera is a staff engineer for AKM Consulting Engineers. She specializes in planning and design of water, recycled water, and wastewater systems. Ms. Herrera has completed 6 sewer master plan and condition assessment projects. She is a NASSCO certified pipeline, lateral and manhole assessor. She was the staff engineer responsible for conducting the reliability and redundancy analyses in InfoMaster for the Irvine Ranch Water District’s sewer collection system. She was also responsible for the development of alternative repair,



replacement, and/or rehabilitation recommendations along with cost estimates for identified sewer reaches with severe structural defects for the City of Redondo Beach. Segment repair/replacement action drawings were created for over 170 sewer reaches. The action drawings showed the locations of the defects found by CCTV inspections and the limits of recommendations such as spot repair, lining, or full replacement. Haly worked on The District's Phase I Sewer Rehabilitation Plan (2017-2018) – Used InfoAsset, reviewed data and videos, developed recommendations, developed project locations and cost estimates.



Empire Pipe Cleaning and Equipment | CCTV Inspection

Contact: Craig Van Thyne

Registration: NASSCO Certified CCTV Inspection Operator; California State Contractor License C36 and C42 (363528)

The AKM Consulting Engineers Project Team includes Empire Pipe Cleaning and Equipment, Inc. (EPCE) under the direction of Mr. Craig Van Thyne. Mr. Van Thyne is the Vice President and Co-owner of EPCE. EPCE will provide services for CCTV cleaning and inspections. EPCE field crew and Project Managers are NASSCO certified Pipeline CCTV Inspection Operators. EPCE performed the CCTV inspection services on several projects, either as a sub-consultant to AKM or as a separate consultant to an agency that AKM was also working for. Projects AKM and EPCE have collaborated on include work for the Cities of Manhattan Beach, Alhambra, the Garden Grove Sanitary District, Fountain Valley, Palos Verdes Estates, Cypress, Newport Beach, Norwalk, and Stanton. In 2017-2018, EPCE completed the cleaning and inspection work for the Garden Grove Sanitary District's Sewer System Rehabilitation Plan, Phase I as a sub-consultant to AKM.

Traffic Control Engineering | Traffic Control

Contact: David Kuan, P.E., R.T.E.

Registration: RTE California (1429) RCE California (C57387)

If required by the City of Garden Grove, David Kuan, P.E., R.T.E., will oversee the preparation of traffic control plans. He has a substantial track record in preparing traffic management plans and construction traffic control plans. Traffic Control Engineering's familiarity with local government requirements will be a great asset in assuring timely project completion.

RESUMES

Brief resumes of our proposed project team members are located on the following pages.

DIANN PAY, P.E.

PROJECT MANAGER

24 YEARS OF EXPERIENCE
24 YEARS WITH AKM



PROFESSIONAL REGISTRATION

Registered Civil Engineer, California (C60298)
NASCCO PACP, MACP, LACP (U-1003-947)

EDUCATION

M.S., Environmental Water Resources (UC Berkeley)
B.S., Civil Engineering (UCLA)

Mr. Pay is the Director of Planning for AKM Consulting Engineers. In this capacity she specializes in planning and design of potable water, recycled water and wastewater systems. She is a certified pipeline, manhole, and lateral assessor by the NASSCO Pipeline Assessment and Certification Program. She has been responsible for condition assessment of over 10 million feet of sewer pipe. She has served as Project Manager, Project Engineer or Lead Engineer during the preparation of thirty-three (34) sewer master plans/updates. Ms. Pay's previous sewer collection system calibrated model development, master planning, condition assessment, and sewer system rehabilitation plan experience includes the following:

- Sewer Condition Assessment (over 7 million feet of sewer pipe)
- Sewer Master Plans and Sewer System Management Plans (34)
- Development of Sewer Models
- Rain Dependent Inflow and Infiltration Analyses
- Sewer Risk Assessment
- Sewer Pump Station Condition Assessment
- Sewer Feasibility Studies (31)
- Septic Tank Conversion Evaluations
- Overflow Emergency Response Plans (5)
- Operation and Maintenance Programs (21)
- FOG Discharge Manuals (4)
- Regional Connection Studies (BOD5 and TSS Loads)
- Interagency Shared Facility Studies

RELATED EXPERIENCE

- Sewer Collection System Master Plan for the Irvine Ranch Water District – Project Manager - 11 pump stations, diversion facilities and siphons; and conducted reliability and redundancy analyses in InfoMaster.
- Sewer Condition Assessment for the City of Redondo Beach – Project Engineer - 170 sewer reaches
- System Evaluation and Capacity Assurance Plan, Rehabilitation and Replacement Program, Wastewater System Operation and Maintenance Program for the City of Redondo Beach - Project Engineer -110 miles of sewers; an operation and maintenance program that includes a root control program; capacity analysis, and the preparation of a prioritized CIP.
- Sewer Master Plan for the City of Manhattan Beach - Lead Engineer - 223,000 feet of gravity system pipe and 1075 manholes, capacity analysis, additional 102,000 feet of gravity pipe and 416 manholes was inspected and evaluated under a separate contract.
- Sewer Master Plan for the City of Newport Beach - Project Engineer - 349,000 feet of pipe, preparing a prioritized CIP for system

replacement and rehabilitation, and operation and maintenance recommendations.

- Sewer System Rehabilitation Plan for the City of Alhambra – Project Engineer - 665,798 feet of gravity system pipe
- Sewer Master Plan Update for the City of Seal Beach – Project Engineer - entire collection system and the pump stations
- Sewer Master Plan for the City of Cypress (2) - Project Engineer - 523,000 feet of pipe and provided detailed recommendations for rehabilitation and replacement, as well as operation and maintenance.
- Sewer Master Plan for the City of Fountain Valley (2) - Project Engineer - 702,000 feet of pipe, preparation of a prioritized replacement/rehabilitation plan, and operation and maintenance recommendations.
- Sewer Master Plan for the City of Seal Beach (2) - Staff Engineer - 170,000 feet of pipe, and developing a prioritized capital improvement program for elimination of the condition deficiencies as part of the Sewer System Rehabilitation Plan.
- Sewer Master Plan for the City of La Habra – Project Engineer - 662,000 feet of pipe with the use of CCTV inspection reports and recordings; preparation of rehabilitation and replacement recommendations as well as operation and maintenance recommendations; prioritized CIP; and cost estimates.
- Sewer Master Plan for the City of Palos Verdes Estates (2) – Project Engineer - 329,000 feet of the gravity sewers through review of CCTV inspection reports and recordings, and developing a prioritized capital improvement program for elimination of the deficiencies.
- Waste Discharge Requirements Compliance for the Garden Grove Sanitary District – Project Engineer - 1,800,000 feet of gravity system pipe, and preparation of a detailed rehabilitation/replacement CIP, as well as operation and maintenance recommendations to be added to the existing program.
- Waste Discharge Requirements Compliance for the City of Brea (2) - Project Engineer -580,000 feet of pipe through CCTV inspection reports and recordings, preparation of a CIP for system rehabilitation and replacement.

ZEKI KAYIRAN, P.E.

Principal - in - Charge
QA/QC Manager

46 YEARS OF EXPERIENCE
30 YEARS WITH AKM



PROFESSIONAL REGISTRATION

Registered Civil Engineer, California (C29330)

EDUCATION

M.S., Civil Engineering (CSU Long Beach)

B.S., Civil Engineering (Robert College)

Mr. Kayiran provides comprehensive technical and management expertise in the planning and design of a wide variety of water resources engineering projects. His professional background includes a blend of consulting engineering and academic experience, including a part-time instruction in the field of fluid mechanics and hydraulic design at California State University, Long Beach. He has been responsible for planning, design, and construction management/inspection services for over 1,000,000 feet of pipelines, 60 sewer pump stations, as well as evaluation of over 120. He has provided expert witness services to Garden Grove Sanitary District and Costa Mesa Sanitary District, as well as to the Cities of Alhambra and Huntington Beach involving their sewer systems. Mr. Kayiran's previous sewer planning and sewer design experience includes:

- Contract Sanitary District Engineer
- Wastewater Pipeline Design (over 500,000 feet)
- Sewer Master Plans and Sewer System Management Plans (39)
- Wastewater Water Pump Stations (60)
- Preliminary Design Reports, Alignment Studies, Plan Preparation, Specifications, Estimates, Construction Management and Inspection, and Construction Support
- Expert Witness Services to Public Agency Clients
- Sewer Hydraulic Models
- Flow Monitoring Studies
- Rain Dependent Inflow and Infiltration Analyses
- Gravity Sewer Condition Assessment (CCTV)
- Sewer Risk Assessment
- Sewer Pump Station Condition Assessment
- Overflow Emergency Response Plans (7)
- Operation and Maintenance Programs (27)
- FOG Discharge Manuals (8)
- Regional Connection Studies (BOD5 and TSS Loads)
- Sewer Rate Studies

RELATED EXPERIENCE

- Waste Discharge Requirements Compliance for the Garden Grove Sanitary District - Project Manager - 1,800,000 feet of gravity system pipe and development of rehabilitation/replacement projects and operation and maintenance recommendations
- Sewer System Management Plan and Rate Study for the City of Brea (3) - Project Manager - 580,000 feet of pipe procured by the City, and developing rehabilitation/replacement as well as operation and maintenance recommendations
- Sewer Collection System Master Plan for the Irvine Ranch Water District - Principal in Charge - 11 pump stations, diversion facilities

and siphons; and conducted reliability and redundancy analyses in InfoMaster

- Wastewater Master Plan for the City of Manhattan Beach - Project Manager - 223,000 feet of gravity system pipe, 1075 manholes, and 8 pump stations; capacity analysis, and preparation of a prioritized CIP. An additional 102,000 feet of gravity pipe and 416 manholes
- Sewer Master Plan for the City of Newport Beach - Project Manager - 20 pump stations and review of CCTV inspection reports and recordings of 349,000 feet of pipe, preparing a prioritized CIP
- Sewer Master Plan and Rate Study for the City of Fountain Valley (2) - Project Manager - 50 percent of the system, and development of a capital improvement program
- Sewer Master Plan Update for City of Seal Beach - Principal in Charge
- Sewer Condition Assessment for the City of Redondo Beach - Principal in Charge
- Sewer System CCTV Inspection, Condition Assessment, and Design of Replacement and Rehabilitation Projects at Various Locations for the City of Redondo Beach - Principal in Charge
- Sewer System Master Plan and Rate Study for the City of El Segundo (2) - Project Manager
- Sewer Master Plan for Culver City - Principal in Charge
- Sewer Master Plan for the City of Claremont - Principal in Charge
- System Evaluation and Capacity Assurance Plan for the City of El Segundo - Principal in Charge
- Sewer Master Plan and Update for the City of Stanton - Principal-in-Charge Rehabilitation Plan elements of the Sewer System Management Plan.
- Sewer Master Plan for the City of Ontario Old Model Colony - Project Manager
- Waste Discharge Requirements Compliance for the City of Newport Beach - Project Manager
- Sewer System Management Plan for the City of Norwalk - Project Manager

JON NITTA, P.E.

PROJECT ENGINEER

19 YEARS OF EXPERIENCE

19 YEARS WITH AKM



PROFESSIONAL REGISTRATION

Registered Civil Engineer, California (C69987)
NASCCO PACP, MACP, LACP (U-1106-4046)

EDUCATION

Bachelor of Science, Civil Engineering (UCLA)

Mr. Nitta is a Senior Engineer with AKM Consulting Engineers. In this capacity, he has been responsible for pipeline, pump station and master planning assignments and rehabilitation plans. He is a certified pipeline and manhole assessor (certified in 2007) by the NASSCO Pipeline Assessment and Certification Program. His previous experience encompasses a range of water resources projects including developing calibrated hydraulic models, conducting condition assessments, preparing master plans, and preparation of plans and specifications. His experience includes:

- Sewer Pump Station Condition Assessment (CCTV)
- Sewer Master Plans and Sewer System Management Plans
- Sewer Rate Studies
- Sewer Hydraulic Models
 - Sewer Geodatabase and Model Geometry
 - Flow Monitoring, Sewer Unit Flow Factors, Sewer Return Ratios, Peaking Relationships
 - Model Calibration
 - System Analysis
 - Capital Improvement Program
- Flow Monitoring Studies
- Rain Dependent Inflow and Infiltration Analyses
- Experienced in Innovyze InfoSewer and InfoSWMM
- Wastewater Pipeline Design
- Sewer Pump Station Plan Preparation, Specifications and Estimates
- Coordination of design and drafting team members
- Preliminary Design Reports and Alignment Studies for sewer and water pipeline projects.
- Water Pipeline Plan Preparation, Specification and Estimates

RELATED EXPERIENCE

- Sewer System Planning for the Garden Grove Sanitary District – Project Engineer - 1,300,000 feet of the system, provided rehabilitation/replacement recommendations, as well as operation and maintenance recommendations
- Sewer Collection System Master Plan for the Irvine Ranch Water District – Project Engineer
- Sewer Master Plan for East Orange County Water District – Project Engineer – 700,000 feet (70 percent) of the system through reviews of CCTV inspection reports and recordings
- System Evaluation and Capacity Assurance Plan, Rehabilitation and Replacement Program, Wastewater System Operation and Maintenance Program for the City of Redondo Beach - Project Engineer - 110 miles of sewers, an operation and maintenance program that

includes a root control program, capacity analysis, and the preparation of a prioritized CIP

- Condition Assessment of the City of Brea Sewer System - Project Engineer - 580,000 feet of pipe through reviews of CCTV inspection reports and recordings
- City of Seal Beach Sewer System Condition Assessment – Project Engineer - 170,000 feet of pipe, and developing a prioritized capital improvement program for elimination of the condition deficiencies
- Sewer Master Plan for the City of Stanton – Project Engineer
- City of Norwalk Sewer System Management Plan – Project Engineer
- Sewer Master Plan for the City of Cypress - Staff Engineer - 523,000 feet of pipe.
- Sewer Master Plan for the City of Fountain Valley - Staff Engineer - 302,000 feet (43 percent) of the system through reviews of the CCTV inspection reports and recordings
- Sewer Master Plan for the City of Palos Verdes Estates – Staff Engineer - 329,000 feet of the gravity sewers through review of CCTV inspection reports and recordings, and developing a prioritized capital improvement program
- Sewer Master Plan for the City of El Segundo – Staff Engineer - 264,000 feet of pipe through review of CCTV reports and recordings, identifying hydraulic and condition deficiencies; and preparation of a capital improvement plan
- City of Los Angeles Sewer Pipe Inventory Corrections - Staff Engineer responsible for identifying the discrepancies between multiple sewer pipe databases, maps, and plans, and implementing corrections.
- City of Los Angeles Sewershed Planning Reports - Staff Engineer - 1,300,000 feet of pipe and provided rehabilitation/replacement
- Sewer Master Plan and Waste Discharge Requirements Compliance for the City of Newport Beach - Staff Engineer
- Camarillo Sanitary District Sewer System Management Plan – Staff Engineer

Haly Herrera, P.E..

Associate Engineer

7 YEARS OF EXPERIENCE
7 YEARS WITH AKM



PROFESSIONAL REGISTRATION

Registered Civil Engineer California (C92354)
NASSCO PACP, MACP, LACP (U-1014-06022537)

EDUCATION

Bachelor of Science, Environmental Engineering -
University of California, Irvine

Ms. Herrera is a staff engineer for AKM Consulting Engineers. In this capacity she has specialized in the planning of water, recycled/non-domestic water, and wastewater systems. She is a certified pipeline and manhole assessor by the NASSCO Pipeline Assessment and Certification Program and has her Professional Engineering Certification for the State of California. Her related experience includes:

- Sewer Master Plans (8)
- Sewer Hydraulic Model
 - Sewer Geodatabase and Model Geometry
 - Flow Monitoring, Sewer Unit Flow Factors, Sewer Return Ratios, Peaking Relationships
 - Model Calibration
 - System Analysis
 - Capital Improvement Program
- Flow Monitoring Studies
- Sewer Feasibility Studies
- Gravity Sewer Condition Assessment (CCTV)
- Septic Tank Conversion Evaluations
- Sewer Risk Assessment
- Familiar with Innovyze InfoSewer and InfoSWMM
- Familiar with Innovyze Info Asset Planner (formally InfoMaster)
- Operation and Maintenance Program
- Sewer System Management Plan Audits
- Sewer Pump Station Condition Assessment
- Vertical Asset Register Population

RELATED EXPERIENCE

- **Rehabilitation and Replacement Program - Phase 1 for Garden Grove Sanitary District** - Staff Engineer responsible for the review of 300,000 feet of CCTV inspections, development of prioritization of projects, and creation of a comprehensive replacement and rehabilitation improvement program.
- **Sewer Collection System Master Plan for the Irvine Ranch Water District** - Associate Engineer for the work which created a dynamic hydraulic model of the entire system; conducted extensive flow monitoring for use in model calibration; calibrated the model with dry and wet weather flows; conducted capacity analyses of the existing and future system; assessed 11 pump stations, diversion facilities and siphons; and conducted reliability and redundancy analyses in InfoMaster.
- **Sewer Master Plan for Culver City** - Associate Engineer responsible for the development of a calibrated hydraulic model, conducting

hydraulic analyses, evaluation of four lift stations, and a preliminary evaluation of the SCADA system.

- **Sewer Master Plan Update for the City of Seal Beach** Associate Engineer responsible for updating and calibrating of the hydraulic model, conducting hydraulic analyses, condition assessment of the entire collection system and the pump stations, formulating a short and long term capital improvement plans, preparation of a detailed Overflow Emergency Response Plan, and updating of the Sewer System Management Plan.
- **Sewer Condition Assessment for the City of Redondo Beach** - Staff Engineer responsible for developing alternative repair, replacement, and/or rehabilitation recommendations along with cost estimates for identified sewer reaches with severe structural defects. Segment repair/replacement action drawings were created for over 150 sewer reaches. The action drawings showed the locations of the defects found by CCTV inspections and the limits of recommendations such as spot repair, lining, or full replacement.
- **City of Claremont Sewer Master Plan** - Staff Engineer responsible for developing a calibrated system hydraulic model based upon the City's existing Sewer GIS, flow monitoring data, and water use data. Also responsible for capacity analysis and preparation of a prioritized capacity CIP.
- **System Evaluation and Capacity Assurance Plan for the City of El Segundo** - Staff Engineer responsible for update of City's hydraulic model using InfoSewer software. The model update encompassed a review of as-built plans and adding the facilities constructed since the completion of the last master plan, the development of unit flow factors based on water use data, the assignment of sewer loads to manholes, the development of dry weather peaking formulas based on pump station SCADA data (influent flows), and confirming the normal flow paths at diversion structures.

CRAIG VAN THYNE

EMPIRE PIPE CLEANING AND EQUIPMENT

CCTV Inspection



PROFESSIONAL REGISTRATION

NASSCO Certified CCTV Inspection Operator
California State Contractor License C36 and C42 #363528

EDUCATION

M.S. Metallurgical Engineering, Colorado School of Mines
B.S. in Metallurgical Engineering, Iowa State University

Mr. Van Thyne is the Vice-President and co-owner of Empire Pipe Cleaning and Equipment, Inc. In this capacity, he coordinates the field operations of the cleaning and television inspection project leaders; interfaces with customers and software/hardware development of television inspection equipment. Mr. Van Thyne's experience includes the following:

- ***CCTV Inspection for the Garden Grove Sanitary District*** – System cleaning, CCTV inspection, and development of inspection reports, recordings, and databases of 699,400 feet of gravity sewers in accordance with NASSCO PACP standards in three phases as part of the District's Sewer System Rehabilitation Plan
 - ***Cleaning and CCTV Inspection for Condition Assessment for LACDPW*** – System cleaning, CCTV Inspection and development of inspection reports and databases. EPCE completed 12 projects from the period of 2005 to 2016 with various JOC General Contractors. EPCE completed over 5,000,000 lineal feet of assessments in Accordance with NASSCO PACP Standards All projects were completed 100% without delays. 2005-2015
 - ***CCTV Inspection and Manhole Inspection for the City of Hermosa Beach*** – System cleaning, CCTV inspection, and development of inspection reports, recordings, and databases of approximately 200,000 Lineal Feet in accordance with NASSCO PACP/MACP standards as part of the City's Sewer Master Plan 2016-2018
 - ***CCTV Inspection and Manhole Inspection for the City of La Palma*** – System cleaning, CCTV inspection, Manhole Inspections, and reporting approximately 180,000 Lineal Feet and associated Manholes in accordance with NASSCO PACP/MACP standards as part of the City's Sewer Master Plan 2015 to present.
 - ***CCTV Inspection and Manhole Inspection for the City of Manhattan Beach*** – System cleaning, CCTV inspection, and development of inspection reports, recordings, and databases of approximately 44 miles of gravity sewers and 743 manholes in accordance with NASSCO PACP and MACP standards as part of the City's Sewer Master Plan (Phase I). Empire Pipe completed inspection of an additional 19 miles of gravity sewers and 416 manholes for Phase II of the City's condition assessment program.
 - ***CCTV Inspection for the City of Alhambra*** - System cleaning, CCTV inspection, and development of inspection reports, recordings, and databases of 665,798 feet of gravity sewers in accordance with NASSCO PACP standards as part of the City's Sewer Rehabilitation Plan.
 - ***CCTV Inspection for the City of Newport Beach*** - System cleaning, CCTV inspection, and development of inspection reports, recordings,
- and databases of 349,000 feet of pipe in accordance with NASSCO PACP standards as part of the City's Sewer Master Plan.
- ***CCTV Inspection for the City of Fountain Valley*** – System cleaning and development of inspection reports, recordings, and databases of 702,000 feet of gravity system in accordance with NASSCO PACP standards as part of the City's Sewer Master Plan.
 - ***CCTV Inspection for the City of Palos Verdes Estates*** – System cleaning and development of inspection reports, recordings, and databases of 329,000 feet of gravity system in accordance with NASSCO PACP standards as part of the City's Sewer Master Plan.
 - ***CCTV Inspection for the City of Cypress*** – System cleaning and development of inspection reports, recordings, and databases of 100,000 feet of gravity system in accordance with NASSCO PACP standards as part of the City's Sewer Master Plan.
 - ***CCTV Inspection for the City of Cerritos*** – System cleaning and development of inspection reports, recordings, and databases of 250,000 feet of gravity system in accordance with NASSCO PACP standards as part of the City's annual maintenance program.
 - ***CCTV Inspection for the City of Norwalk*** – System cleaning and development of inspection reports, recordings, and databases of 475,000 feet of gravity system in accordance with NASSCO PACP standards as part of the City's maintenance program.
 - ***CCTV Inspection for the City of San Diego Metropolitan Wastewater Department*** – System cleaning and development of inspection reports, recordings, and databases of 400,000 feet of gravity system in accordance with NASSCO PACP standards as part of the City's WDR compliance.
 - ***CCTV Inspection for the Midway City Sanitary District*** – System cleaning and development of inspection reports, recordings, and databases of 750,000 feet of gravity system in accordance with NASSCO PACP standards as part of the District's Sewer Master Plan.

DAVID KUAN, P.E., R.T.E

TRAFFIC CONTROL ENGINEERING

Role: Traffic Control

PROFESSIONAL REGISTRATION

Traffic Engineering, California 1986 RTE1429
Civil Engineering, California 1997, C57387

EDUCATION

Master of Science, Civil Engineering - University of California, Berkeley
Bachelor of Arts, Civil Engineering - University of California, Irvine

Mr. Kuan is President of the firm Traffic Control Engineering, Inc. which was organized in 1989. During the years with Traffic Control Engineering, Inc.,

Prior to organizing his own consulting firm, he served the City of Orange as the City Transportation Engineer from 1984 to 1989. During his tenure with the City, he conducted a wide variety of traffic and transportation projects, both at local and regional levels. He was directly in charge of developing the City's General Plan Circulation Element as well as a new circulation master plan for a 7100 acre planning area. He later gained new responsibility of serving the City's Transportation Planning Committee, responsible for a broad range of traffic and transportation projects.

Mr. Kuan was also the City of Orange's Transportation Demand Management Coordinator, responsible for formulating and implementing traffic reduction measures for the City and major employers in the City. Mr. Kuan has worked on numerous state and federal grants and funding programs, including OTS, HES, OCUTT, FETSIM, AHFP, and FAU. While with the City of Orange, Mr. Kuan had a close working relationship with Caltrans and other governmental transportation agencies including OCTA, OCTD, Transportation Corridor Agency, etc.. He represented the City working with Caltrans in developing I-5 widening/interchange alternatives, Has also served on the Rt. 55 Car-Pool Lane Technical Advisory Committee. Mr. Kuan's experience and familiarity with various governmental agencies is a valuable asset in providing expedient project approval process.

Prior to 1984, Mr. Kuan was engaged by the firm of PRC Voorhees. During the years he was with that firm, he was responsible for numerous traffic/transportation projects including impact analysis, access studies, parking studies, traffic signal coordination, circulation master plan and general plan throughout Southern California.

Mr. David Kuan holds a Master's Degree in Transportation Engineering from the University of California at Berkeley, served as Chairperson of Orange County Traffic Engineering Council (OCTEC), is a member of the Institute of Transportation Engineer (ITE), WATCH committee and also registered as a Professional Engineer (Traffic and Civil) in the State of California.

Mr. Kuan has conducted traffic engineering designs for numerous major construction projects as follows:

- Harbor Area Recycled Water Conveyance Pipeline for West Basin Municipal Water District
- SR 243 - Strawberry Creek Bridge Improvement
- SR 55 - HOV Lane Widening Project
- SR 39 - Beach Blvd. Super Street Project
- Los Angeles County Jail Expansion Project
- City of Los Angeles Figueroa St. Sewer Relief Project
- Mobil Oil M-70 West Coast Pipeline Replacement Project
- Orange County Water District Green Acre Project
- North Outfall Sewer Rehab. in Vista Del Mar in LA
- Figueroa St. Sewer Relief Project in L.A
- NCOS-NOS Maze Rehab. for City of Los Angeles
- Halladay St. Sewer Rehab. in City of Santa Ana
- LA County Sanitation Moneta Extension Trunk Sewer in Gardena
- LA County Sanitation Anaheim St. Trunk Sewer in Long Beach
- Manchester Ave. Relief Trunk Sewer in City of Los Angeles
- Irvine Ave. Water Main Replacement for Newport Beach
- South Coast Water District Annual Valve Replacement in Dana Point
- Irvine Ranch Water District Turtle Rock Pressure Improvement in Irvine
- South Coast Water District Water Importation Project in of San Clemente, Dana Point and San Juan Capistrano
- Badillo-Grand Transmission Water Line for Walnut Valley Water Dist. in Cities of Walnut, West Covina, Covina and Los Angeles County
- City of Escondido Citywide Reclaimed Water Distribution System
- Verdugo Canyon Reclaimed Water in City of Glendale
- LA Water & Power Council St. Area Cement Lining Project and 7th St. Cement Lining Project



Section 5 - Work Hour Estimate

AKM's proposed project staff hour is presented on the following page. Our rate schedule and fee is presented in separate envelope, as requested in the RFP. It has been prepared to properly address the project scope of work contained in our proposal. The proposed fee reflects our understanding of the scope of work based upon the District's Request for Proposal, and information provided. We will be happy to refine the scope of work as desired by the Garden Grove Sanitary District, and make changes to the fee proposal to correspond to the final scope of work.

2021 Sewer System Rehabilitation Plan – Phase II



STAFF HOUR & FEE ESTIMATE Garden Grove Sanitary District 2021 Sewer System Rehabilitation Phase II June 4, 2021						
	Project Manager	Project Engineer	Associate Engineer	QA/QC	Office Support	Total Hours
Task 1 - Project Management						
Project Management	16	12				28
Task 2 - Meetings						
Meetings	8	8		4		20
Task 3 - Data Collection and Review						
Data Collection and Review	4	8	8			20
Task 4 - Preparation of the Condition Assessment						
A ¹ CCTV Inspection of 500,000 feet of Sewer	8	16	16			40
B Compile, Review, and Prepare Inspection Reports	4	12	40			56
C-E Review CCTV Recordings for Significant Defect Locations and Update CCTV Inspection Data	16	24	260	4		304
F-H Rehabilitation Recommendations	16	44	140	12		212
I Prepare Sewer System Rehabilitation Plan - Phase II Report	16	24	80	12	24	156
Total Hours	104	172	544	32	24	836
Task 5 - Traffic Control Design (Optional)						
Traffic Control Design (Optional)	16	24				40

¹ The total length shown in the GIS plus 10%



Section 6 - Project Team Experience

AKM Consulting Engineers has a long and distinguished track record (over 30 years) of providing quality engineering services, especially with respect to planning and design of wastewater, potable water, and recycled water systems. Specific examples of AKM's related experience are listed below. These projects are representative of the types of work that AKM staff members have completed and are similar in nature to those projects proposed by the City.

	<p>SEWER MASTER REHABILITATION PLAN, PHASE I (2018) GARDEN GROVE SANITARY DISTRICT - 13802 NEWHOPE ST, GARDEN GROVE, CA 92843 CONTACT: MR. BRENT HAYES, SANITATION SUPERVISOR (714) 741-5976 BRENTH@CH.CI.GARDEN-GROVE.CA.US AKM STAFF: Z. KAYIRAN, (PIC), D. PAY (PM), H. HERRERA (CONDITION ASSESSMENT)</p>
<p>Garden Grove Sanitary District's wastewater collection system consists of 1,698,223 feet (321.6 miles) of gravity sewers ranging in size from 4-inch to 24-inch in diameter, and three (3) pump stations. It serves most of the areas within the City of Garden Grove boundaries, as well as portions of the Cities of Anaheim, Stanton, and Orange, and unincorporated Orange County territories, and conveys the tributary wastewater flows to Orange County Sanitation District trunk and interceptor sewers. The service area population is 180,000. AKM Consulting Engineers has been performing the sewer system planning work for the Garden Grove Sanitary District since 1999. AKM completed the District's System Evaluation and Capacity Assurance Plan, and the Operation and Maintenance Plan of the SSMP, and recommended replacement, repair, and rehabilitation project. The Operation and Maintenance Plan included CCTV inspection and condition assessment of 1,800,000 feet of gravity sewers, and three sewer pump stations, and preparation of the Sewer System Rehabilitation Plan.</p> <p>As a follow up to the initial inspections, AKM and Empire Pipe Cleaning and Equipment, Inc. conducted CCTV inspection of the first 300,000 feet of gravity sewers, conducted condition assessment, and provided a new Sewer System Rehabilitation Plan in 2018. The plan included detailed repair, rehabilitation, and replacement projects.</p>	
	<p>SEWER SYSTEM MANAGEMENT PLAN; MASTER PLAN (2003, 2005, 2008, 2020) CITY OF CYPRESS - 5275 ORANGE AVENUE, CYPRESS, CA 90630 CONTACT: MR. DOUG DANCS, PUBLIC WORKS DIRECTOR (714) 229-6744 DDANCS@CI.CYPRESS.CA.US AKM STAFF: Z. KAYIRAN (PM), D. PAY (PE), M. YING (HYDRAULIC ANALYSIS), J. NITTA (HYDRAULIC ANALYSIS/CONDITION ASSESSMENT), J. LOAGUE (QA/QC)</p>
<p>AKM prepared the original Master Plan in 2003, and completed updates in 2005 and 2008 in accordance with the Statewide Waste Discharge Requirements (WDR). The scope of work included collection of sewer system data, preparation of a sewer GIS, a complete calibrated hydraulic model; flow monitoring for the purpose of developing unit wastewater flow factors, peaking criteria, model calibration and a detailed I&I study; condition assessment of 535,000 feet of pipe; capacity evaluation of the system with the existing and ultimate land use in the service area; evaluation of the condition and capacity of the City's sewer pump station; and formulation of a prioritized 10-year capital improvement program. AKM also prepared the City's Design and Performance Provisions.</p> <p>AKM is currently finalizing the City's SSMP documents update, as required by the WDR. This project included the development of an SSMP audit, SSMP update, and development of comprehensive Sewer Overflow Emergency Response Plan.</p>	
	<p>SEWER SYSTEM MASTER PLAN, RATE STUDY, AND SSMP UPDATE (2000, 2008, 2018) CITY OF SEAL BEACH - 211 8TH STREET, SEAL BEACH, CA 90740 CONTACT: MR. DARRICK ESCOBEDO, WATER SERVICES SUPERVISOR (562) 431-2527 x1409 AKM STAFF: Z. KAYIRAN (PM), D. PAY (PE), J. NITTA (HYDRAULIC ANALYSIS/CONDITION ASSESSMENT), J. LOAGUE (QA/QC)</p>
<p>AKM Consulting Engineers has been providing sewer planning work for the City of Seal Beach since 1998. AKM completed the system inventory, developed a hydraulic model of the system, and completed the Sewer Master Plan in 1999. Sewer Master Plan updates were performed in 2005 and 2018. Unit flow factors for various land uses were developed from flow monitoring. Water meter records for high water users were obtained for accurate model development. The model was calibrated with the dry weather flows and adjusted for full occupancy of the tributary areas based upon General Plan land uses. AKM developed criteria for the gravity system, as well as for the pump</p>	



stations, and analyzed the capacity of the existing system. Condition of the system was assessed based upon field reviews of existing pump stations, sample manholes and review of CCTV recordings/reports that covered over 95 percent of the system. A 15-year capital improvement program, as well as a subsequent system upgrade/replacement program were established. AKM made recommendations on system operations and maintenance, and recommended appropriate staffing levels to carry out these tasks.



CONDITION ASSESSMENT AND CAPACITY EVALUATION (2018)
Los Angeles Sanitation (LASAN) - 2714 Media Center Drive, Los Angeles, CA 90065
AKM Staff: J. Nitta (PE), M. Sangare (PE)

Since 2003, AKM has been in contract with the City of Los Angeles Bureau of Sanitation assisting with condition assessment and capacity evaluation as part of the City's effort to comply with the terms of a settlement agreement resulting from a third party lawsuit. AKM established procedures for developing hydraulic models of Los Angeles' over 230 secondary systems by preparing the first such model for the City utilizing Innovyze InfoSewer software. Currently, this assignment has been extended from 2006 to the present, and AKM will continue to serve the Bureau of Sanitation on these planning tasks.



SEWER MASTER PLAN AND SEPTIC TO SEWER CONVERSION STUDY (2018, 2019)
EAST ORANGE COUNTY WATER DISTRICT - 185 N. MCPHERSON RD, ORANGE, CA 92869
CONTACT: LISA OHLUND, FORMER GENERAL MANAGER (949) 842-3351 L.OHLUND@ME.COM
AKM STAFF: Z. KAYIRAN (PIC), D. PAY (PM), J. NITTA (PE), H. HERRERA (CONDITION ASSESSMENT)

East Orange County Water District provides sewer service to an area of 10,000 acres and 18,000 customers. The gravity sewer system consists of 171 miles of pipe, ranging in size from 4-inches to 27-inches.

The scope of work included the development of a calibrated hydraulic model, development of system evaluation criteria, determination of future development areas and loads, hydraulic capacity analysis, condition assessment of pipes and 500 manholes, and a risk analysis to prioritize gravity pipes and develop recommendations for future inspection, rehabilitation, and/or replacement work.



The gravity sewer risk analysis was conducted utilizing Innovyze's InfoMaster program (InfoAsset Planner), an ArcGIS based asset integrity management and capital planning software package. AKM compiled 7 years of historical CCTV data and used it along with the hydraulic model results to develop a likelihood of failure (LoF) for each pipe. The proximity to waterways and maximum rate of flow were utilized to develop the consequence of failure (CoF) for each pipe. The LoF and CoF were then used to assign each pipe a risk category/priority and a decision tree was created to also assign each pipe with an associated action item for future inspection and/or maintenance.

It is estimated that there are about 500 parcels in the EOCWD service area that currently have septic systems in place. In the future, EOCWD may have to provide sewer service to these parcels. AKM completed a Septic to Sewer Connection Study. The study identified the location of septic systems in the service area and then planned out how sewer service could be provided to these properties in the future. This may involve the construction of gravity sewers, grinder pumps at individual properties discharging to common force mains, lift stations, and force mains. It also may require easements to be obtained and/or other properties to be purchased. Cost estimates were developed for proposed sewer facilities as well as for the conversion of septic systems and connection to EOCWD's sewer system.



SEWER MASTER PLAN (2017)

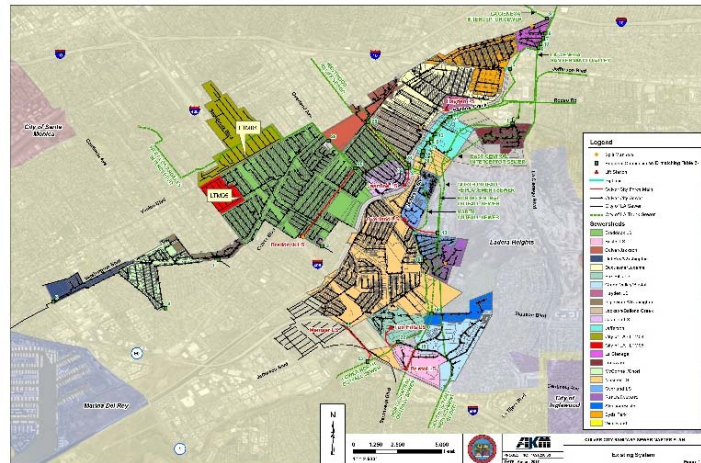
CITY OF CULVER CITY - 9770 CULVER BLVD, CULVER CITY, CA 90232

CONTACT: MATE GASPAR, ENGINEERING SERVICES MANAGER (310) 253-5602

MATE.GASPAR@CULVERCITY.ORG

AKM STAFF: Z. KAYIRAN (PIC), D. PAY (PM), J. NITTA (PE), J. LOAGUE (PE), H. HERRERA (HYDRAULIC ANALYSIS/CONDITION ASSESSMENT)

The City of Culver City’s existing sewage collection system is made up of a network of gravity sewers and seven (7) sewer lift stations. The gravity system consists of approximately 87 miles (457,617 feet) of pipe with sizes ranging from 4-inches to 24-inches in diameter, and 2,000 manholes. Sewage from a portion of the City of Los Angeles territories enters Culver City’s sewer system. This sewage, along with all of the sewage generated within Culver City’s service area, is transported to one of the City of Los Angeles Outfall Sewers for further conveyance to the Hyperion Water Reclamation Plant. The City is under contract with the City of Los Angeles to treat an average of 6.7 mgd. At the time of the Master Plan study, the total sewage generation within the City’s service area was estimated at 3.77 mgd.



In 2016, Culver City had an estimated resident population of 40,448, and a daytime population estimated at about 100,000 due to the industries located within the City. The City encompasses approximately 5 square miles of residential, commercial, and industrial land.

The scope of work of the Sewer Master Plan included the development of a calibrated hydraulic model, development of system evaluation criteria, hydraulic capacity analysis, assessment of lift stations, evaluation of the SCADA system, and the development of a comprehensive capital improvement program. The City previously conducted CCTV inspections of its gravity sewer system. Inspections were reviewed by City staff, who then assessed the condition of the pipes and planned rehabilitation and replacement projects. AKM inspected four (4) of the City owned lift stations and made detailed improvement recommendations for these facilities. The City opted not to inspect the remaining lift stations due to the fact that they were planned to be abandoned or replaced in the near future.

AKM completed a preliminary evaluation of the City’s SCADA system as a part of the Master Plan work. It was found that the City’s SCADA system had numerous limitations and restrictions that did not allow information to be conveyed to operators in an easy and understandable way. It was concluded that the data monitored and collected from four different systems should be integrated into a single software platform. A detailed equipment study was recommended for each lift station and of the four existing SCADA systems.



SEWER MASTER PLAN (2017)

CITY OF CLAREMONT - 207 HARVARD AVE, CLAREMONT, CA 91711

CONTACT: VINCENT RAMOS, ASSOCIATE ENGINEER (909) 399-5395 VRAMOS@CI.CLAREMONT.CA.US

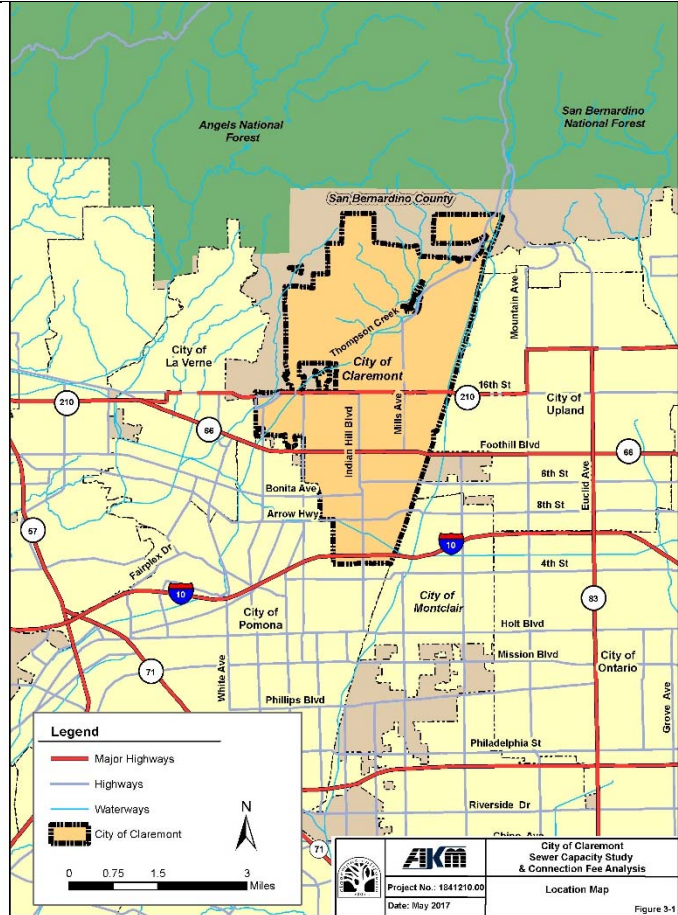
AKM STAFF: Z. KAYIRAN (PIC), D. PAY (PM), J. NITTA (PE), H. HERRERA (HYDRAULIC ANALYSIS/CONDITION ASSESSMENT)

The City of Claremont’s existing wastewater collection system service area is approximately 7,484 acres. The system is made up of 638,048 feet of gravity pipe, ranging in size from 4-inches to 18-inches. The system also includes one pump station and 374 feet of 6-inch ACP force main. There is approximately 2,643 manholes and cleanouts. All of the wastewater collected by the City is transported to one of the County Sanitation Districts of Los Angeles County’s (CSDL) trunk sewers. The wastewater eventually is treated at the CSDL San Jose Creek Water Reclamation Plant (SJCWRP).



The objective of this study was to evaluate the capacity of the City’s sewer collection system and provide a framework for undertaking the construction of new and replacement facilities for serving the wastewater collection needs in an efficient and cost effective manner, as well as evaluate and update the sewer connection fees. AKM verified sewer system geometry/mapping, delineated tributary areas, conducted flow monitoring, developed sewage unit flow factors and peaking relationships, and ultimately developed a calibrated hydraulic model. The model was then used to evaluate the capacity of the collection system pipes and identify existing and future capacity deficiencies. Capital improvement project recommendations with cost estimates were included in the Master Plan document.

The total buy-in cost was calculated based upon the replacement value of the existing facilities and the recommended improvement project costs for the next 5 years. Sewer connection fees for an equivalent residential unit (ERU) was then determined based upon the ratio of the buy-in cost and the total number of ERUs.



SEWER MASTER PLAN (2016)

IRVINE RANCH WATER DISTRICT - 15600 SAND CANYON AVE, IRVINE, CA 92618

CONTACT: MR. BARKEV MESERLIAN, CURRENTLY EXECUTIVE MANAGER OF ENGINEERING AND OPERATIONS FOR WEST BASIN MUNICIPAL WATER DISTRICT (310) 660-6223 BARKEVM@WESTBASIN.ORG

AKM STAFF: Z. KAYIRAN (PIC), D. PAY (PM), J. NITTA (PE), J. LOAGUE (PE), H. HERRERA (HYDRAULIC ANALYSIS/CONDITION ASSESSMENT)

Irvine Ranch Water District provides sewer service to 97,000 service connections and a daytime population of approximately 530,000 people. The sewer collection system service area is approximately 92.5 square miles and includes portions or all of the Cities of Irvine, Lake Forest, Tustin, Newport Beach, and Orange and unincorporated Orange County. The sewer collection system is made up of 1,009 miles of gravity sewer mains, 2 water recycling plants, 23 lift stations and associated force mains, 19 siphons, and 7 diversion structures. At the time of the study, approximately 20.3 mgd and 3.4 mgd of sewage was being conveyed to Michelson Water Recycling Plant and Los Alisos Water Recycling Plant, respectively.



The scope of services for the Master Plan consisted of a flow monitoring plan; development of sewer flow generation factors; update of sewer flow projections; development of existing and future dynamic hydraulic models; update of sewer system design and performance criteria; existing and future system capacity analyses; condition assessment of 11 lift stations, diversion structures, and siphons; development of prioritized capital improvement program; and a reliability and redundancy analysis.

The hydraulic simulations were performed utilizing **Innovyze’s InfoSWMM**, which is a fully dynamic geospatial wastewater and stormwater modeling and management software application. It is a fully ArcGIS integrated program that is capable of calculating backwater effects throughout a collection system.



Field reviews of 11 lift stations, 19 siphons, and 7 diversion structures were conducted. Summary assessment reports with detailed rehabilitation and replacement recommendations were developed for each facility.

InfoMaster, an ArcGIS based asset integrity management and capital planning software package, was utilized to conduct a risk and reliability analysis of IRWD's system. It was used to assist in characterizing the likelihood and consequence of failure for individual pipes in the network. Likelihood of failure and consequence of failure elements were selected and weighted. The overall risk associated with a failure event is a function of the likelihood of failure and consequence of failure. A risk matrix was utilized to develop a gravity system risk profile. A decision tree was created and used to formulate recommended action items.



WDR COMPLIANCE (SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN, REHABILITATION AND REPLACEMENT PROGRAM, O&M PROGRAM, AND DESIGN AND PERFORMANCE PROVISIONS) (2015)

CITY OF REDONDO BEACH - 415 DIAMOND STREET, REDONDO BEACH, CA 90277

**CONTACT: MS. GERALDINE TRIVEDI ASSOCIATE CIVIL ENGINEER (310) 318-0661 X2036 GERALDINE.TRIVEDI@REDONDO.ORG
AKM STAFF: Z. KAYIRAN (PM), D. PAY (PE), J. NITTA (HYDRAULIC ANALYSIS/CONDITION ASSESSMENT), J. LOAGUE (QA/QC)**

The City of Redondo Beach's wastewater collection system serves a tributary area of about 6.4 square miles, and a population of about 69,000. The gravity system consists of 107.4 miles (566,854 ft) of pipe and 2,482 manholes and cleanouts. The system also includes sixteen (16) pump stations and 6,578 feet of associated forcemains. All sewage generated within the City (5.99 mgd average dry weather flow) is conveyed to the Los Angeles County Sanitation District system, including two small areas (8 acres and 11 acres) that drain through the City of Torrance system.



The scope of work included preparation of a System Evaluation and Capacity Assurance Plan and Rehabilitation and Replacement Program. This work entailed the development of a calibrated hydraulic model in InfoSewer utilizing the City's existing sewer GIS data; flow monitoring and review of water use information for the purpose of developing unit wastewater flow factors, peaking criteria, and model calibration; condition assessment of approximately 495,000 feet of sewer pipe previously CCTV inspected by the City; capacity evaluation of the system with the existing and future land use in the service area; evaluation of the condition and capacity of the City's 16 sewer pump stations; development of recommendations to improve the operation and maintenance program; development of a root control program; and formulation of a prioritized capital improvement program. At this time, AKM also completed Sewer Design and Performance Provisions for the City.

AKM prepared the City's Wastewater System Operation and Maintenance Program document to comply with the Statewide Waste Discharge Requirements. This document contained recommendations for preventative maintenance activities for the collection system and pump stations, recommendations for pipe and manhole inspections with inspection schedules, and recommendations for a root control program. In 2015, AKM completed CCTV inspection of 98% of the entire system (556,100 feet), assessed its condition, and provided rehabilitation and repair project design services. We also performed a third party review of the City's sewer division's organization structure and workflow, and identified the City's strengths and opportunities. Recommendations were made to increase their operation and maintenance staff.



SEWER MASTER PLAN (2014)

CITY OF MANHATTAN BEACH - 3621 BELL AVENUE, MANHATTAN BEACH, CA 90266

CONTACT: MR. JUSTIN GERVAIS, WASTEWATER SUPERVISOR (310) 802-5320 JGERVAIS@CITYMB.INFO

AKM STAFF: Z. KAYIRAN (PM), D. PAY (PE), J. NITTA (HYDRAULIC ANALYSIS/CONDITION ASSESSMENT), J. LOAGUE (QA/QC)

The City of Manhattan Beach has a population of 36,718. The City provides sewer service to approximately 3.9 square miles of land located within its corporate boundaries through a system that consists of 81.6 miles (430,784 ft) of pipe and 2,086 manholes and cleanouts. The system also includes eight (8) pump stations and 5,114 feet of associated forcemains.



The scope of services for the Master Plan included collection of sewer system data, preparation of the sewer GIS, review of water use records and flow monitoring for purposes of developing unit wastewater flow factors, peaking criteria, and model calibration; development of a calibrated system hydraulic model, capacity analysis, service criteria; CCTV inspection and condition assessment of 228,000 feet of pipe and 1,075 manholes, and development of a prioritized CIP with cost estimates. As part of this project, AKM evaluated the condition and capacity of the eight (8) sewer pump stations. AKM also prepared the City’s stand-alone FOG Control Program document to comply with the SWRCB WDR.



AKM continued with the condition assessment work for the City to in 2010, 2011, and 2012, to complete CCTV inspections and evaluations of its entire system. AKM assessed the conditions of these sewers and manholes and made recommendations for facility improvements.

In 2015, AKM updated the City’s emergency overflow response plan, which included site-specific operating procedures to respond to sewer system overflows at each of the City’s eight (8) pump stations and/or forcemain failure. AKM developed weekday and weekend diurnal curves for each pump station based upon SCADA data for use in developing the response recommendations. AKM also developed procedures to respond to a SSO that extends to the Los Angeles County Department of Public Works storm water pump stations, and detention basins.



SEWER MASTER PLAN, AND SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN UPDATE (2004, 2015)

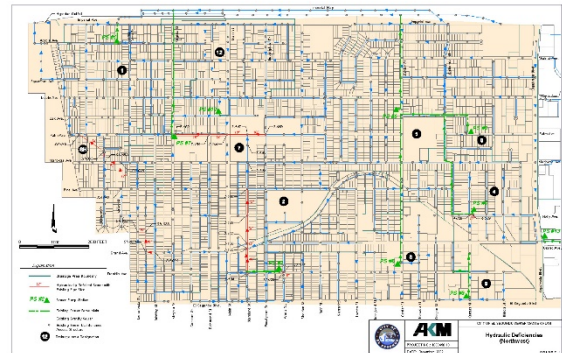
CITY OF EL SEGUNDO - 350 MAIN ST, EL SEGUNDO, CA 90245

CONTACT: MR. LIFAN XU PRINCIPAL CIVIL ENGINEER (310) 524-2368 LXU@ELSEGUNDO.ORG

AKM STAFF: Z. KAYIRAN (PIC), D. PAY (PM), J. NITTA (PE), J. LOAGUE (QA/QC), H. HERRERA (HYDRAULIC ANALYSIS/CONDITION ASSESSMENT)

AKM completed the City of El Segundo’s Sewer Master Plan in 2002, and completed the update to the System Evaluation and Capacity Assurance Plan in 2014.

The City encompasses approximately 5.5 square miles of residential, commercial, and industrial land. The nighttime population is approximately 17,000, while the daytime population is over 85,000. The wastewater collection system was made up of a network of gravity sewers and ten (10) sewer pump stations. The gravity system consists of 50 miles of pipe and 1,038 maintenance access structures. The portion of the City west of Sepulveda Boulevard drains to the City of Los Angeles facilities at two locations, for treatment at the Hyperion Treatment Plant. The areas east of Sepulveda Boulevard drain to the Los Angeles County Sanitation District facilities.



The scope of services for the Master Plan consisted of a comprehensive condition assessment, as well as capacity evaluation of the entire system. Information for the system hydraulic model and inventory were developed from record drawings of the existing facilities. The City had the portion of its system west of Sepulveda Boulevard (761 segments of gravity sewer with a total length of 192,300 feet), which drains to the Hyperion Plant, CCTV inspected prior to the commencement of the Master Plan study. AKM reviewed the CCTV summary reports, and representative recordings to determine the condition of the collection system. AKM inspected nine of the ten sewer pump stations (AKM had designed the improvements to Pump Station 13 in 1999), as part of the condition assessment. The results of this effort were documented in a database for subsequent use in prioritizing the improvement projects.

AKM prepared a hydraulic model of the entire system, and evaluated its hydraulic capacity. As part of this effort, AKM procured flow monitoring at key locations for developing unit flow factors, peaking relationships, and model calibration. As a supplement to the project, AKM completed the sewer GIS.

AKM developed a capital improvement program with alternative implementation schedules, and presented the final study in a Master Plan report. Subsequently, AKM conducted a financial study, worked with a Council established advisory committee, and established a sewer enterprise fund as well as sewer service charges to fully fund the CIP, operation and maintenance, and compliance with the upcoming regulations.



SEWER SYSTEM MANAGEMENT PLAN AND FINANCIAL ANALYSIS (2013)

CAMARILLO SANITARY DISTRICT – 601 CARMEN DRIVE, CAMARILLO, CA 93010

CONTACT: MS. LUCIA MCGOVERN, DEPUTY DIRECTOR OR PUBLIC WORKS (805) 388-5334

LMCGOVERN@CI.CAMARILLO.CA.US

AKM STAFF: Z. KAYIRAN (PM), D. PAY (PE), J. NITTA (HYDRAULIC ANALYSIS/CONDITION ASSESSMENT), J. LOAGUE (QA/QC)

AKM completed nearly all elements of the District’s Sewer System Management Plan, including the City’s Goals, Organization, Legal Authority, Operation and Maintenance Program, Design and Performance Provisions, FOG Control Program, System Evaluation and Capacity Assurance Plan, and Communications Program; and updated the Overflow Emergency Response Plan. As required by the SWRCB WDR, AKM conducted SSMP Audits for the District in 2011 and 2013. The System Evaluation and Capacity Assurance Plan was based on the existing GIS, reviewed by AKM, and updated to reflect the missing information. The model was calibrated based on extensive flow monitoring and water meter data tied to parcels. As part of this project, AKM evaluated the condition and capacity of the four sewer pump stations. A prioritized list of improvements was prepared for implementation. AKM later designed the improvements to Pump Stations No.6, and No.2, which had recurring ragging problems.



SEWER SYSTEM MANAGEMENT PLAN AND RATE STUDY (2009, 2012)

CITY OF NORWALK – 12700 NORWALK BOULEVARD, NORWALK, CA 90650

CONTACT: MS. ADRIANA FIGUEROA, ADMINISTRATIVE SERVICES MANAGER (Currently Public Works Director for the City of Paramount 562-220-2020)

AKM STAFF: Z. KAYIRAN (PM), D. PAY (PE), J. NITTA (HYDRAULIC ANALYSIS/CONDITION ASSESSMENT), J. LOAGUE (QA/QC)

The City of Norwalk sewer system serves the area consisting of all lands within its corporate boundaries (9.35 square miles) as well as a portion of the City of Santa Fe Springs (148 acres) at the northern and southeastern abutment to the City. The City provides sewer service to a population of approximately 109,700. The existing sewer collection system consists of 865,000 feet (164 miles) of gravity sewers ranging in size from 6-inches to 18-inches in diameter, including 16 siphons. The City also owns three (3) lift stations with approximately 162 feet of force main.



AKM completed all elements of the City’s Sewer System Management Plan, including the Goals, Organization, Legal Authority, Operation and Maintenance Program, Design and Performance Provisions, FOG Control Program, Overflow Emergency Response Plan, System Evaluation and Capacity Assurance Plan, and Communications Program.

For the System Evaluation and Capacity Assurance Plan, AKM prepared the sewer GIS, which includes all system pipes, from as-built plans. The geometric model was developed from the GIS in H2OMap Sewer. Unit flow factors and peaking criteria were developed based on low demand period water use records and flow monitoring. Model was calibrated utilizing the flow monitoring information. Hydraulic analyses indicated minimal capacity related deficiencies.

For the Operation and Maintenance Program, AKM prepared a map of the storm drain system in addition to the sewer system, which was then used in preparation of the Overflow Emergency Response Plan; assessed the condition of 100,000 feet of the system through reviews of the CCTV inspection records and the pump stations; prepared the Rehabilitation and Replacement Program, including a prioritized CIP; provided operation and maintenance recommendations, including training of the staff.

AKM conducted a financial evaluation of the Sewer Utility in 2012, and recommended a rate structure to adequately fund the proper operation and maintenance of the system, implement the CIP, and comply with regulatory compliance obligations. AKM assisted with preparation of the presentation materials, and participated in the study sessions and council meetings to support the City staff.



WATER, SEWER, AND RECYCLED WATER MASTER PLAN UPDATES (2005, 2009)

CITY OF CORONA – 755 CORPORATION YARD WAY, CORONA, CA 92880

CONTACT: MR. TOM MOODY, GENERAL MANAGER (951) 736-2477 TOM.MOODY@CI.CORONA.CA.US

AKM STAFF: Z. KAYIRAN (PM), D. PAY (PE), J. NITTA (HYDRAULIC ANALYSIS/CONDITION ASSESSMENT), G. HOBSON (QA/QC)

AKM Consulting Engineers prepared the City of Corona’s water, sewer, and recycled water master plan updates. The City serves 42,000 customers with an average demand of 40,000 acre-feet per year (49,500 acre-feet per year ultimate). The demand is supplied through potable groundwater, a 15 mgd desalter that treats groundwater for nitrates and TDS, imported potable water from the MWD of Southern California, two potable treatment plants that treat raw water from MWD, three wastewater reclamation plants, and a recycled water system.

AKM prepared a users manual and trained the City staff in construction of the model, developing scenarios, conducting analyses used for the Master Plan, creating new scenarios, and adding new facilities to the model.

The total estimated existing average demand for the recycled water system is 3,570 AFY, which represents approximately 25% of the wastewater treated. The existing wastewater system consists of approximately 368 miles of pipe ranging in size from 6 to 42 inches; and the recycled water system consists of 195,000 feet of 4 to 24 inch pipe, with 121,500 feet of pipe is expected to be added to the recycled water system in the future to serve the identified future customers.



SEWER MASTER PLAN AND WDR COMPLIANCE, FINANCIAL EVALUATION, AND RATE STUDY (2001, 2009)

CITY OF BREA – 1 CIVIC CENTER CIRCLE, BREA, CA 92821

AKM STAFF: Z. KAYIRAN (PM), D. PAY (PE), J. NITTA (HYDRAULIC ANALYSIS/CONDITION ASSESSMENT), J. LOAGUE (QA/QC)

AKM prepared the original Sewer Master Plan in 2003, and updates in 2005 and 2009 in accordance with WDRs. The scope of work included preparation of a complete hydraulic model and GIS of the collection system, review of CCTV records to assess the condition of the existing system (580,000 feet); flow monitoring for the purpose of developing unit wastewater flow factors, peaking criteria, model calibration and a detailed I&I study; and Communication Program elements of the Sewer System Management Plan.

AKM developed recommendations for new connection fees and a low period water use (wastewater generation) based rate structure based upon the capital improvement and replacement program formulated by the Master Plan in accordance with GASB 34 and Prop 218. AKM conducted a cost of service analysis to determine the appropriate rates for each customer class and meter size, in accordance with Proposition 218. The analysis also included evaluating a pay-as-you-go rate structure versus issuing bonded indebtedness. Ultimately, a pay-as-you-go rate structure was recommended. AKM compared the proposed rates to the existing rate structure, and provided recommendations for a rate increase for implementing the Capital Improvement Program within an eight-year schedule, and the recommended facility replacement program as predicted by the study.



SEWER MASTER PLAN AND REHABILITATION & REPLACEMENT PROGRAM (2004-2007)

CITY OF ALHAMBRA – 111 SOUTH FIRST STREET, ALHAMBRA, CA 91801

CONTACT: MR. DENNIS AHLEN, DEPUTY DIRECTOR OF UTILITIES (626) 570-3274

DAHLEN@CITYOFALHAMBRA.ORG

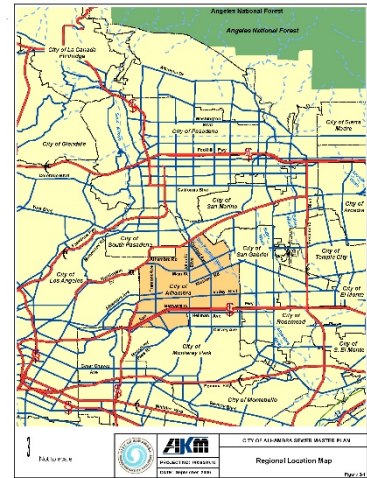
AKM STAFF: Z. KAYIRAN (PM), D. PAY (PE), M. YING (HYDRAULIC ANALYSIS), J. NITTA (HYDRAULIC ANALYSIS/CONDITION ASSESSMENT), J. LOAGUE (QA/QC)

The scope of services for the Master Plan included preparation of a sewer GIS, calibrated system hydraulic model, capacity analysis, a prioritized capital improvement program, and a financial/rate study. Also included in the scope of work was the evaluation of the condition and capacity of the City’s seven pump stations. AKM developed the



City's Design and Performance Provisions, including the Standard Plans, and Design Standards for Sewer Facilities. AKM completed the Master Plan in 2007. As a subsequent phase, AKM completed the CCTV inspection and condition assessment of 666,000 feet of pipe and the Sewer System Rehabilitation Plan for the entire system, which was completed in 2009. AKM prepared plans, specifications, and estimates, and provided construction inspection services for the construction of the highest priority condition deficiency mitigation projects, consisting of spot repairs, pipe replacements, and manhole replacements.

AKM conducted a financial evaluation of the sewer enterprise, and developed a sewage generation based rate structure to fund the proper operation and maintenance of the sewer utility, implementing the recommended capital improvement plan, and regulatory compliance in accordance with GASB 34 and Prop 218. AKM presented the study and recommended rates to the City Council at several study sessions and a public hearing. The City approved a new rate, as well as increases for the next five years.



EMPIRE PIPE CLEANING AND EQUIPMENT EXPERIENCE

City of Norwalk (2010-2018)

12650 Imperial Highway, Norwalk CA. 90650

Contact: Julian Lee/ Utilities and Project Manager 562-929-5599 JLee@norwalkca.gov

Annual contract Value of \$325,000.00

Description: EPCE was the service provider for sewer mainline cleaning, lift station cleaning, and frequent trouble spot cleaning for the City of Norwalk. A five-year sewer master plan was developed and used POSM Collection Software for the CCTV Inspection. Plan was updated over a 5-year program. Cleaned 400,000 Feet of Sewer Line annually 2010 to 2017; CCTV Inspection of 250,000 lineal Feet per year 2012- to 2017.

City of La Palma (2010-Current)

7822 Walker Street , La Palma, CA. 90623

Contact: Carlo Nafarette / Public Works Director, City Engineer 714-690-3312 CarloN@cityoflapalma.org

Annual Contract Value \$125,000.00

Description: Citywide Sewer Cleaning, Quarterly Hot Spots, Manhole and CCTV Inspections

City of Cerritos (2010-Current)

18125 S. Bloomfield Ave., Cerritos CA. 90703

Contact: Mary Anne Wozniak 310-603-0220 mwozniak@cerritos.us

Annual Contract Value of \$265,000.00

Description: Annual Cleaning and maintenance of 320,000 Feet of Sewer Line Annual Sewer Cleaning, On Call, Trouble spots, and lift station services.

City of Hermosa Beach (2003-Current)

1315 Valley Drive , Hermosa Beach CA. 90254

Contact: Eells Freeman 310-629-1954 efreeman@hermosabch.org

Annual Contract Value of \$155,000.00

Description: Annual Cleaning and Video Inspection of Sewer Lines

City of Redondo Beach (2016-Current)

531 N Gertruda Avenue, Redondo Beach, CA. 90277

Contact: Mario Carranza / Public Works Supervisor 310-318-0686

Total Value of \$375,000.00

Description: Sewer Cleaning and Video Inspection of Sanitary Sewers 400,000 lineal feet / Citywide CCTV Inspection



Section 7 - References

AKM Consulting Engineers has completed, and/or is currently working on water resources assignments for the following clients. Contacts are listed for your reference to confirm the quality of our work and responsiveness provided by AKM. Other related project experience and descriptions are listed in Section 6 of our proposal.

References:

City of Cypress – 5275 Orange Avenue, Cypress, CA 90630

Contact: Doug Dancs, Community Development Director (714) 229-6744 ddancs@ci.cypress.ca.us

City of Redondo Beach – 415 Diamond Street, Redondo Beach, CA 90277

Contact: Geraldine Trivedi, Associate Civil Engineer (310) 318-0661 x2036 geraldine.trivedi@redondo.org

City of El Segundo – 350 Main Street, El Segundo, CA 90245

Contact: Floriza Rivera, Principal Engineer (310) 524-2361 frivera@elsegundo.org

City of Seal Beach – 211 Eighth Street, Seal Beach, CA 90740

Contact: David Spitz, Associate Civil Engineer (562) 431-2527 dspitz@sealbeachca.gov

East Orange County Water District – 185 N. McPherson Road, Orange, CA 92869

Contact: Lisa Ohlund, Former General Manager (949) 842-3351 lohlund@me.com

Garden Grove Sanitary District – 13802 Newhope Street, Garden Grove, CA 92843

Contact: Rebecca Li, Senior Civil Engineer (714) 714-5562 rebeccal@ggcity.org



Section 8 - Professional Fee Proposal

AKM's Fee Proposal is presented in a separate sealed envelope, as requested in the RFP. It has been prepared to properly address the project's detailed scope of services and assumptions contained in our proposal. Should the scope of services significantly change, we will be happy to discuss the necessary changes in services with the District and make any required adjustments to our budget and schedule.



AKM Consulting Engineers
553 Wald
Irvine, CA 92618
Telephone: 949.753.7333 Facsimile: 949.753.7320
www.akmce.com

June 4, 2021

Garden Grove Sanitary District
13802 Newhope Street
Garden Grove, California 92843

Attention: Ms. Liyan Jin, Associate Engineer

Subject: Proposal for 2021 Sewer System Rehabilitation Plan Phase II

Dear Ms. Jin:

AKM Consulting Engineers is pleased to submit this proposal for the subject project in response to your request for proposal dated April 8, 2021.

Sub-consultant services and out of pocket expenses (blue printing, reproduction and printing, delivery, etc.) will be invoiced at cost plus 10% in order to cover costs associated with administration, coordination and management of subcontractors. Mileage will be invoiced at \$0.65 per mile.

We appreciate the opportunity to submit this fee proposal and look forward to working with the Garden Grove Sanitary District on this most important and challenging project. If you have any questions or require any additional information, please do not hesitate to contact the undersigned.

Very truly yours,
AKM Consulting Engineers

A handwritten signature in blue ink, appearing to read 'Zeki Kayiran', written in a cursive style.

Zeki Kayiran, PE
Principal



**AKM CONSULTING ENGINEERS
RATE SCHEDULE**

Labor Classification	Hourly Rate 2021
Principal	\$232
Principal Engineer	\$232
Project Manager	\$225
Project Engineer	\$214
Senior Construction Manager	\$213
QA/QC Manager	\$213
Senior Engineer	\$197
Senior Field Engineer / Inspector	\$180
Field Engineer / Inspector	\$158
Associate Engineer	\$153
Staff Engineer	\$135
Financial Analyst	\$125
Senior Designer / Senior CADD Technician	\$107
Designer / CADD Technician	\$99
Assistant Engineer	\$98
Engineering Technician	\$91
Engineering Aide	\$76
Office Support	\$76
Data or Word Processing	\$74

Out of pocket expenses (blueprinting, reproduction and printing, delivery, etc.) will be invoiced at cost plus 10%. Subcontracted services will be marked up 10% in order to cover costs associated with administration, coordination and management of subcontractors. Mileage will be invoiced at \$0.65/mile. This schedule of rates is in effect until December 31, 2021, at which time it may be adjusted.

STAFF HOUR & FEE ESTIMATE
Garden Grove Sanitary District
2021 Sewer System Rehabilitation Phase II
June 4, 2021

	Project Manager	Project Engineer	Associate Engineer	QA/QC	Office Support	Subconsultant	Total Hours	Expenses	Total Cost
Task 1 - Project Management									
Project Management	16	12					28		\$6,168
Task 2 - Meetings									
Meetings	8	8		4			20	\$100	\$4,540
Task 3 - Data Collection and Review									
Data Collection and Review	4	8	8				20	\$100	\$3,936
Task 4 - Preparation of the Condition Assessment									
A ¹ CCTV Inspection of 500,000 feet of Sewer	8	16	16			\$ 701,822	40		\$709,494
B Compile, Review, and Prepare Inspection Reports	4	12	40				56		\$9,564
C-E Review CCTV Recordings for Significant Defect Locations and Update CCTV Inspection Data	16	24	260	4			304		\$49,444
F-H Rehabilitation Recommendations	16	44	140	12			212		\$37,220
I Prepare Sewer System Rehabilitation Plan - Phase II Report	16	24	80	12	24		156	\$1,500	\$27,084
	104	172	544	32	24		836		
<i>Rate (\$/Hr)</i>	<i>\$225</i>	<i>\$214</i>	<i>\$153</i>	<i>\$232</i>	<i>\$76</i>				
Grand Total	\$23,400	\$36,722	\$83,293	\$7,424	\$1,824	\$701,822		\$1,700	\$856,185
Task 5 - Traffic Control Design (Optional)									
Traffic Control Design (Optional)	16	24				\$153,094	40		\$161,830
Grand Total with Optional Item	\$3,600	\$5,136	\$0	\$0	\$0	\$854,916		\$1,700	\$1,018,016

¹ The total length shown in the GIS plus 10%