ENGINEERING SERVICES AGREEMENT

This Engineering Services Agreement ("Agreement") is dated _________ ("Effective Date") and is between County Sanitation District No. 2 of Los Angeles County, a county sanitation district organized and existing under the County Sanitation District Act, Health and Safety Code Section 4700 *et seq.*, (the "District") and AECOM Technical Services, Inc. ("Engineer"). The District and the Engineer are collectively referred to in this Agreement as the "Parties."

The District requested proposals for consulting firms to provide engineering services on an on-call basis for various existing and future projects (the "Project"). Engineer's proposal to provide such services under this Agreement is set forth in Exhibit "A" to this Agreement (the "Proposal"). The services to be provided by Engineer pursuant to the Proposal are set forth in the District's Request for Proposals ("RFP") for the Project (Exhibit "B" to this Agreement) and constitute the "Work."

The Parties therefore agree as follows:

1. Agreement

The RFP and the Proposal are incorporated into this Agreement. In the event that there is any conflict or inconsistency between the provisions of the RFP, the Proposal and/or this Agreement, the provisions of this Agreement will prevail.

This Agreement may be executed in any number of counterparts and all such counterparts shall constitute a single instrument. Delivery of an executed counterpart by facsimile or electronic transmission (in .pdf format or other electronic imaging) shall have the same force and effect as delivery of an original counterpart.

2. Engineer's Services

2.1 Scope of Services by Engineer. The Engineer shall provide engineering services as described in this Agreement. In performance of the Work, Engineer shall comply with all applicable Federal, State and local laws, rules, regulations, ordinances, and industry practices.

2.2 Engineer's Standard of Care. The standard of care applicable to Engineer's Work under the Agreement will be the degree of skill and diligence ordinarily employed by engineers performing the same or similar services, under the same or similar circumstances, in the State of California. The Engineer shall re-perform any Work not meeting this standard without additional compensation.

2.3 Engineer's Estimates and Projections. Engineer's opinions regarding the potential cost, financial analyses, economic feasibility projections, and schedules for potential future construction of the project are projections only and do not reflect: the ultimate cost or price of labor and material; unknown or latent conditions of existing equipment or structures that may affect operation and maintenance costs; competitive bidding procedures and market conditions; time or quality of performance of third parties; quality, type, management, or direction of operating personnel; and other economic and operational factors that may materially affect the ultimate project cost or schedule. Engineer does not warrant that the District's actual project costs, financial aspects, economic feasibility, or schedules will not vary from Engineer's opinions, analyses, projections, or estimates, but Engineer shall provide such projections in accordance with the standard of care set forth in Section 2.2 of this Agreement.

3. District's Obligations

3.1 District-Provided Information and Services. The District shall furnish the Engineer available drawings, studies, reports and other data pertinent to Engineer's services and obtain or authorize Engineer to obtain additional reports and data as required. The Engineer is entitled to use and rely upon all such information and services provided by the District or others in performing Engineer's services under the Agreement except as otherwise stated by the District in connection with the information and services provided.

3.2 **Access**. The District shall arrange for access to and make all provisions for Engineer to enter upon public and private property as required for Engineer to perform services hereunder. Engineer shall comply with all applicable laws and with the District's requirements for persons on the District's premises.

4. **<u>Compensation and Payment for Engineering Services</u>**

4.1 **Engineer's Compensation**: The Task Authorization Form (TAF) system shall be used to issue the Work under this Agreement. When engineering services are required, Engineer will be presented with the project scope and will be asked to prepare a detailed Project Plan indicating the Project Manager, key personnel, and the time and expenses required to complete the Work. Once the Project Plan is approved by the District, the Engineer will be issued a TAF that details the agreed-upon scope, budget, schedule, deliverables and associated progress payments. The compensation payable by the District for the engineering services performed by the Engineer shall be per the final signed TAF for the Work. The total not-to-exceed budget for all Work performed by the Engineer is $1,000,000. The breakdown of expenses for each TAF shall be as follows.

a. **Direct Costs.** Direct Costs will be the hourly rates paid by the Engineer to its employees for time directly chargeable to the Project, exclusive of the costs for fringe benefits for those employees and other payroll costs. Engineer shall ensure that its employees maintain accurate records of the time chargeable to the Project.

b. **Overhead Costs.** Overhead Costs will be all business expenses allocated by the Engineer for rendering engineering services for the Project, including the fringe benefits for the employees who will be utilized on the Project. The Engineer's overhead cost will be charged to the District as a fixed percentage of the Direct Costs.

c. **Indirect Costs.** Indirect Costs will be all other identifiable costs of the Engineer directly chargeable to the Project, including, but not limited to, reproduction of reports, plans, specifications and other documents; preparation for meetings; travel costs; computer services; supplies used in the work; and communication expenses, that are necessary for the Engineer to fulfill its responsibilities for the Project.

d. **Subconsultant Costs.** Subconsultant Costs will be the costs paid by the Engineer to Subconsultants for providing services as required to assist the Engineer in the design and preparation of the deliverables for this Project.

e. **Fixed Fee.** The Fixed Fee shall be the profit of the Consultant and shall be a fixed percentage of the direct and overhead cost for each component of the Project.

4.2 **Payment to Engineer**. Engineer shall be compensated in accordance with Section 9 (D) of the RFP.

5. **<u>Duration, Schedule and Delay</u>**

5.1 **Duration**. Engineer's performance of the Work shall commence on the date identified in the District's Notice to Proceed. Engineer shall complete the Work in accordance with the agreed-upon schedule defined in each TAF (TAF Project Schedule).

5.2 **Delay**. The Engineer shall perform its services with due diligence and agrees to use its best efforts to complete the work involved in the Project in accordance with the TAF Project Schedule. The Engineer shall immediately advise the District of any delay in the TAF Project Schedule resulting from causes within or beyond its control. In the event of any such delay by causes within the Engineer's control, the Engineer shall promptly outline and implement appropriate actions required to overcome such delay, including, but not limited to, one or more of the following:

- Assignment of additional personnel to the Project;
- Utilization of overtime at no increase in compensation by the District; and
- Change in management structure or approach.

The foregoing is not intended to relieve the Engineer of responsibility for delay for which it would be responsible under this Agreement.

In the event of delay by causes beyond its control, the Engineer shall promptly provide the District with written notice of the delay and take all reasonable action to mitigate the effect of such delay. If the delay is beyond Engineer's control and without its fault or negligence, the time for the performance of its services may be equitably adjusted by written amendment subject to the District's approval of the extent of such delay. If the District determines that the Engineer has suffered additional costs that could not reasonably have been avoided, the District will compensate the Engineer for those additional costs.

Neither of the Parties will be responsible for delays in the performance of their obligations hereunder caused by strikes, action of the elements, acts and/or decisions of any governmental agency or by third parties, other than either Parties' consultants or subconsultants, which could not reasonably have been foreseen, or by civil disturbances, or any other cause beyond its reasonable control. Engineer will not be responsible for any delay by the District in supplying information and reviewing submittals by the Engineer.

6. <u>Changes and Extra Work</u>

The District may make changes within the general scope of this Agreement and may request the Engineer to perform additional services not covered by the original scope of work defined in a TAF. If the Engineer believes that any proposed change or direction given by the District causes an increase or decrease in the cost and/or the time required for the performance of the Work defined in a TAF or this Agreement, the Engineer shall so notify the District no later than five days after the date of receiving notification of a proposed change or the changed direction. The Engineer shall perform such services and will be paid for such services pursuant to a negotiated and mutually agreed change order signed by the Parties to this Agreement. If the Engineer determines that any work beyond the Work is necessary for completion of the Project, the Engineer shall notify the District and receive written approval prior to starting that work. If the Parties do not agree whether the Engineer is entitled to additional compensation or the extent of such compensation for work the Engineer determines is extra or changed work, the Engineer shall proceed with the work and the issue of the compensation shall be reserved for later determination as provided in Section 9 of this Agreement.

7. <u>Personnel Assignment</u>

Engineer agrees to utilize the key personnel as submitted to the District in its Project Plan, including its Project Manager. The Project Manager will be the primary contact for the District and should have a thorough knowledge of all aspects of the Project and its status. During the term of this Agreement, no replacement of the Project Manager or any of the key personnel of Engineer's Project team or its sub-consultants may be made without the written approval of the District, which approval will not be unreasonably withheld. Nothing in this Section is intended to or may be construed to prevent Engineer from employing or hiring as many employees as Engineer deems necessary for the proper and efficient performance of its services.

The District may request a change in the assignment of the key personnel. Engineer shall change key personnel to the satisfaction of the District within 30 days following written direction to change by the District.

8. Notices

All notices or other communications regarding this Agreement to either party by the other shall be deemed given when made in writing and delivered or mailed (not e-mailed) to such party at their respective addresses as follows:

Los Angeles County Sanitation Districts
1955 Workman Mill Road
Whittier, California 90601
ATTN: Samuel Espinoza

AECOM Technical Services, Inc.
300 S. Grand Avenue
Los Angeles, CA 90071
ATTN: Surendra Thakral

Either party may change its address or representative for such purpose by giving notice thereof to the other in the same manner.

9. Governing Law, Dispute Resolution and Litigation

Engineer's performance of this Agreement shall be governed and construed in accordance with the laws of the State of California. Except as provided with respect to termination in Section 9 (O) of the RFP, if any dispute arises between the Parties with respect to the Work, compensation for the Work, or any other matter with respect to this Agreement, the Parties shall, if both agree, submit the matter to non-binding mediation. If the mediation does not resolve the dispute, the dispute shall be resolved through litigation. Venue for any action relating to this Agreement will be in the County of Los Angeles, State of California.

10. Third Parties

The services to be performed by Engineer are intended solely for the benefit of the District. No person or entity not a signatory to the Agreement may rely on Engineer's performance of its Work under this Agreement, and no third party will obtain any right to assert a claim against the Engineer by assignment of indemnity rights or otherwise accrue to that party as a result of this Agreement or Engineer's performance of the Work.

11. Entire Agreement

This Agreement represents the entire understanding between District and Engineer as to those matters contained herein. No prior oral or written understanding is of any force or effect with respect to those matters covered in this Agreement.

12. Action by Chief Engineer

Except as otherwise provided in this Agreement, the Chief Engineer and General Manager of the District ("Chief Engineer") may take all actions on behalf of the District in connection with any approvals or actions required of or by the District under this Agreement, and Engineer may rely on any such actions by the Chief Engineer as having been approved or required by the District under all applicable laws.

AECOM Technical Services, Inc.

______________________________________ ___________________________
Signature Dated

____
Name

____
Title

County Sanitation District No. 2
of Los Angeles County

By: __________________________________ ___________________________
Chairperson Dated

Attest:

____
Secretary

Approved as to Form:

Lewis Brisbois Bisgaard & Smith LLP

By: ______________________________
District Counsel

EXHIBIT A - PROPOSAL

Los Angeles County
Sanitation Districts

June 10, 2021

AECOM

Technical Proposal (SOQ)

ON-CALL ENGINEERING SERVICES

Bid No.
03956

5.4. Solicitation Form

FAILURE TO SIGN AND SUBMIT THIS PAGE WITH PROPOSAL WILL DISQUALIFY YOUR RESPONSE

The Consultant shall identify which general scope(s) of work the firm is agreeing to provide engineering services for by checking the appropriate box(es) below. Failure to identify which scopes(s) are being proposed will disqualify your response.

☒ Sewer Rehabilitation and new sewer construction projects
☒ Miscellaneous design support tasks, including but not limited to hydraulic modeling and specialized studies/reports

If awarded, the undersigned offers and agrees to furnish the services listed in this RFP at the prices and terms stated, subject to mutually agreed upon terms and conditions. Additionally, the undersigned warrants and represents their authority to bind the firm into an agreement subject to the terms and conditions of this Request for Proposal.

Company Name: AECOM Technical Services, Inc.
Street Address: 300 S. Grand Avenue
City, State Zip: Los Angeles, CA 90071
Email: jagadish.gundarlahalli@aecom.com
Telephone: 562.843.4183

By (Authorized Signature):	Date Signed:
J. Gundarlahalli	6/9/21
Print name and title of Authorized Signatory Jagadish Gundarlahalli, Project Manager – authorized signatory	

ALL SPECIFICATIONS, TERMS, AND CONDITIONS OF THIS PROPOSAL WILL BE INCORPORATED INTO ANY RESULTING AGREEMENT.

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DOC 6171158

Table of Contents

SECTION 1
COVER LETTER

1

Section 1 - Cover Letter

AECOM
300 S. Grand Avenue
Los Angeles, CA 90071
www.aecom.com
213.593.8100 Tel

June 10, 2021

Via: QuestCDN.com – QUESTCDN No. 7825153

Attn: Maribeth Tan, Senior Buyer
Los Angeles County Sanitation Districts
Purchasing Section
1955 Workman Mill Road
Whittier, CA 90601

Subject: Proposal for On-Call Engineering Services (RFP No. 03956)

Dear Ms. Tan and Members of the Selection Committee:

We understand that due to the large number of projects that need to be completed in the next few years, Los Angeles County Sanitation Districts (Districts) need to augment the work of the Engineering Department through use of this on-call contract. AECOM is perfectly suited to help the Districts maximize efficiency and reduce costs while working cooperatively within the Engineering Department at the Districts. AECOM has qualified individuals with the right expertise in the required areas of work needed. We are well versed in managing and implementing on-call contracts and are poised to augment the work of the Sewer Design Section at the Districts on an as needed basis.

Respondent / Authorized Signatory:
AECOM Technical Services, Inc. (AECOM)
Jagadish (Jack) Gundarlahalli, PE
Project Manager
300 S. Grand Avenue
Los Angeles, CA 90071
562.843.4183
jagadish.gundarlahalli@aecom.com

Executive:
Surendra Thakral, PE, BCEE
Principal-in-Charge
300 S. Grand Avenue
Los Angeles, CA 90071
626.483.3171
surendra.thakral@aecom.com

With a proven track record of delivering creative, comprehensive, and quality engineering designs on schedule and within budget for water and wastewater agencies, AECOM is pleased to submit our Statement of Qualifications for the following categories:

- *Sewer Rehabilitation and new sewer construction projects*
- *Miscellaneous design support tasks, including but not limited to hydraulic modeling and specialized studies/reports*

We offer the Districts the following benefits:

Proven Task Authorization Management Approach. As Project Manager, Jagadish (Jack) Gundarlahalli, PE, with 31 years of environmental engineering experience, has a 16-year history overseeing a variety of on-call engineering projects for Southern California area clients such as Orange County Sanitation District (OC San), Orange County Water District (OCWD) and Los Angeles County Metropolitan Transportation Authority. Jack's approach to executing Task Orders is centered on providing the most qualified team and making them available to meet project technical requirements, budgets and schedules; communicating frequently with the Districts; conducting effective internal technical reviews; and submitting deliverables on time. We have successfully managed a variety of Task Order Contracts in Southern California for municipal clients, such as OC San, OCWD, Orange County Public Works, City of Huntington Beach, City of Irvine, City of Anaheim, Los Angeles Department of Public Works, Los Angeles County Metropolitan Transportation Authority, and Metropolitan Water District of Southern California. This extensive local experience will help us efficiently execute the task orders within budget and schedule assigned by the Sewer Design Section of the Engineering Department. AECOM was recently selected for the Districts On-Call Engineering Services for Wastewater Treatment Plant/Pumping Plant Upgrades and Rehabilitation and other services (RFP No. 03916).

Local In-house Technical Expertise. Supporting Jack, our Project Manager, and our Task Managers, are 274 wastewater/water professionals, including pipeline experts, in California and over 3,300 in North America. These engineering specialists offer a broad range of experience in sewer rehabilitation and new sewer construction projects. We use in-house staff on nearly all our sewer and pipeline projects that cover a variety of support disciplines. The AECOM team has experts with the breadth and depth of experience to address the Districts' needs as given in the RFP. All work for the scope identified in the RFP will be executed by AECOM in-house staff.

We are invested in serving the Los Angeles Metropolitan Area as our headquarters is in Los Angeles and many of our staff members live in the areas served by the Districts. The Districts are a pillar of the community where we live and do business and we want to find more partnering opportunities. To this end, AECOM corporate management has given Jack Gundarlahalli the authority to allocate resources to these on-call engineering services for the execution of this contract to your satisfaction. Should you have any questions during your review of our submittal, please contact Jack at 562.843.4183 or jagadish.gundarlahalli@aecom.com or Surendra Thakral at 626.483.3171 or surendra.thakral@aecom.com.

We look forward to the opportunity to work with you, and to serve as your most reliable and trusted partner on current projects/programs to meet your initiatives and goals.

Sincerely,

J. Gundarlahalli

Jagadish (Jack) Gundarlahalli, PE
Project Manager
Authorized Signatory

Surendra Thakral, PE, BCEE
Principal-in-Charge

SECTION 2

GENERAL COMPANY/TEAM INFORMATION

2

Section 2 - General Company/Team Information

Firm Ownership, Organization and Background

AECOM is a worldwide, full-service engineering and environmental consulting, and construction services company. Founded in 1990 as AECOM and headquartered in Los Angeles, AECOM is one of the world's largest engineering firms, employing more than 48,000 people across the world.

Our local roots in Los Angeles date back to 1938. AECOM and our legacy companies have provided wastewater engineering services for over 100 years and on-call services to a large number of municipal agencies in Southern California including Los Angeles County, covering a variety of wastewater collection and treatment, recycled water, biosolids management, municipal solid waste management, renewal energy recovery, environmental, and geotechnical engineering services.

Most of our Southern California staff members live in Los Angeles County and are an integral part of the community in the Los Angeles Metropolitan area. We are dedicated to continuing support the rehabilitation, upgrade and modernization of infrastructures in our community.

Names of Partners or Officers:
Chief Executive Officer - Karl Jensen
President - Karl Jensen
Treasurer - Keenan Edward Driscoll
Secretary - Manav Kumar

The Earth Technology Corporation (USA) owns AECOM Technical Services, Inc. at 100%.

Project Manager / Principal Contact:
Jagadish (Jack) Gundarlahalli, PE
Vice President
Project Manager
AECOM Technical Services, Inc.
300 S. Grand Avenue
Los Angeles, CA 90071
562.843.4183
jagadish.gundarlahalli@aecom.com

All names under which the proposing firm has conducted business during the preceding five (5) years:

Legal Entity Name
AECOM Technical Services, Inc. (AECOM)
One California Plaza
300 South Grand Avenue, Suite 1100
Los Angeles, CA 90071

What portions of the services, if any, will be subcontracted to sub-consultants:
None – AECOM can self-perform all services listed in this RFP.

Team Organization

The AECOM team is organized to be responsive, flexible, and to provide the highest level of technical expertise. The proposed team will have access to AECOM's highly qualified 3,300 water, wastewater, recycled water and solid waste professionals in Northern America to cover the Districts' engineering requirements under this contract. We understand that our primary asset is our staff — professionals who are experts in their respective fields and experienced in delivering quality services on time and budget and adding value to a project. As such, we have assembled a team of professionals who offer a diverse and highly specialized combination of skills and experience to support the Districts. AECOM's Los Angeles and Orange offices, as well as our offices in other Southern California locations, have the multi-disciplinary staff and resources to complete required tasks in a manner that will meet and exceed the Districts' expectations. When forming our team, we selected professionals who have built their careers serving our clients on a variety of projects, many in Southern California, covering all your service areas potentially required under this project. Key members of our team offer local expertise and technically sound planning, design, and construction experience to ensure the success of each Task Authorization assigned by the Districts. Our team structure (including Task Managers and support engineers) is illustrated in Exhibit 2-1, an overarching organization chart for the execution of the On-Call Engineering services contract. AECOM will develop task tailored organization chart(s) using this overarching chart for the specific services required under the task orders.

Key Personnel on the organization chart are shown with a "key symbol" next to their names and we have provided their resumes in Appendix A.

More detailed discussions on the team organization and team members qualifications and experience are provided under Section 3 – Qualifications and sub section – Key Project Staff Experience.

Project Management

The AECOM team is organized to support each of the RFP technical discipline/service areas under the management of **Jack Gundarlahalli, PE,** (Project Manager) who has been managing on-call contracts for over 16 years. Jack is currently managing AECOM's team for Districts' Engineering On-Call Services (RFP No. 03916). He will be backed by our Senior Executive **Surendra Thakral, PE, BCEE,** (Principal-in-Charge) with AECOM's corporate commitment of resources. Surendra has been managing very similar on-call services contracts for the City of Los Angeles Bureau of Engineering (LABOE) and Los Angeles Bureau of Sanitation (LASAN) since 2002.

Jack will be the primary point of contact with the Districts and will be responsible for overall contract management, supported by a team of Task Managers. Upon issuance of a Task Authorization, Jack will identify a technical team and provide the Districts' Project Manager with a scope, schedule, and budget. For many years, Jack has been successfully managing various similar on-call contracts with OC San, and more recently on-call design services contract for the Orange County Water District (OCWD) and the Districts (RFP No.03916).

Project Manager

Jagadish (Jack) Gundarlahalli, PE

Jack is managing several on-call contracts for OC San. He is well versed in setting up and managing Task Authorizations from a few thousand to multimillion dollars. His projects have met client expectations for quality technical work, responsiveness and cost-effectiveness. He is a performance-oriented leader and has managed many multi-disciplinary infrastructure engineering projects.

Jack has 31 years of civil and environmental engineering experience involving sewer collection and rehabilitation, wastewater treatment, recycled water and stormwater infrastructure projects and environmental restoration. He has served a variety of municipal agencies in Los Angeles, Orange, and San Bernardino counties. As an Engineer and Project Manager, Jack's experience encompasses planning, design, construction quality management and construction quality control. He is experienced in developing work plans; preparing technical and cost proposals; conducting and supervising field activities; performing engineering analyses; preparing drawings, construction specifications, and test plans; and supervising construction activities. Jack is knowledgeable in the regulatory process of federal, state and local agencies, including the U.S. Environmental Protection Agency (EPA), California Regional Water Quality Control Board, Cal-EPA Department of Toxic Substances Control, and southern California air quality management agencies. He has served as Project Manager for several on-call engineering contracts for municipalities including OC San and OCWD. He is also the Project Manager for the recently awarded Districts On-Call Engineering Services contract (RFP No. 03916).

QA/QC Management

Glen Hille, PE, is AECOM's national QA/QC Manager. He will lead the QA/QC efforts on each task. Glenn has over 30 years of pipelines, wastewater and solids waste projects planning and design experience. He manages a dedicated QA/QC team of AECOM for all the wastewater, water and solids waste projects. Glen has been a member of quality control and assurance programs for more than 20 years. As a primary Delivery Excellence team member for AECOM's ISO 9001 compliant project delivery system (PDS), his responsibilities include training, monitoring, and auditing the implementation of AECOM's PDS system across the water, transportation, environmental, energy, and PDD business lines. He also services as Chief Engineer and Office of Risk Management team member for AECOM's Water Business Line in the western United States. His responsibilities include involvement from the proposal phase through final deliverable for all major projects with special/unique issues.

Technical Experts Services

Andy Romer, PE, is AECOM's national collection system advisor. He will lead the technical expert services team for various task orders. AECOM strongly believes in the delivery of quality projects and we have a large pool of seasoned technical experts to serve as Technical Advisors. Many of these individuals are international experts in their related fields and will be available to the Districts and our team as needed to lend their knowledge and expertise in specific areas of design and construction considering the unique nature of each project category. During the past 100 years of engineering services, AECOM in-house experts have written the engineering textbooks and presented thousands of technical papers and delivered highest quality of projects and will bring that expertise to the Districts.

Task Management

Task Managers will function as leaders for individual Task Authorizations and be responsible for day-to-day project activities. They will also be responsible for ensuring each assignment remains on schedule and within budget. The Task Managers will work with Jack, our proposed Project Manager, to secure as-necessary resources and any technical/management reviews associated with interdisciplinary coordination and quality assurance/quality control activities.

AECOM has the available resources locally in our Los Angeles and Orange offices to respond to multiple tasks and provide the highest level of technical expertise and management. If needed, we have a deep bench of additional water engineering resources through the Western United States and the rest of the country.

Subconsultants

AECOM can provide all the services using our in-house staff for both the categories listed in this RFP and will not be adding any subconsultants to our team at this time. Due to the on-call nature of this RFP, if a Task Authorization request arises that needs a specialty subconsultant, AECOM has a pool of local qualified subconsultants that can be added at that time.

Exhibit 2-1 – Team Organization Chart

LOS ANGELES COUNTY SANITATION DISTRICTS
Converting Waste Into Resources

On-Call Engineering Services BID No. 03956

PRINCIPAL-IN-CHARGE
Surendra Thakral, PE, BCEE 🔑

TECHNICAL ADVISOR
Andy Romer, PE 🔑

PROJECT MANAGER
Jack Gundarlahalli, PE 🔑

QA/QC MANAGER
Glen Hille, PE

SAFETY
Devon Molitor, CSP, CET, STS-C

CATEGORY 1: SEWER REHAB AND CONSTRUCTION PROJECTS (RFP TASK 3.1)

Keith Campbell, PE – Task Lead 🔑

- **Jesus Lopez, PE** – Gravity Collection/Open Trench Construction 🔑
- **Andy Romer, PE** – Force Mains 🔑
- **Matthew Francis, PE** – Trenchless Technology/Tunneling 🔑
- **Joseph Marcos, PE** – Sewer Flow Studies 🔑
- **Mark Webb, PhD, PE, Pr.Eng, F.ASCE** * – CIPP/Sliplining 🔑
- **Dan Lee, PE, QSD, CQCM** – Constructability Review 🔑
- **Jerry Flores** – Environmental Documentation
- **Martin Hammer** – Cost Estimating
- **Bob Stallings, PE** – Odor Control 🔑
- **Robert Vail, NACE** – Corrosion

CATEGORY 2: MISCELLANEOUS DESIGN SUPPORT AND ENGINEERING TASKS (RFP TASK 3.2)

Bryan Paine, PE, QSD, ENV SP – Task Lead 🔑

- **Dylan LaFrance, PE** – Hydraulic Modeling 🔑
- **Jerry Flores** – Environmental/Planning
- **Robert Stein, PE** – Construction Management Support 🔑
- **Jesus Lopez, PE** – Engineering Studies/Reports 🔑
- **Bob Stallings, PE** – Review Design Manuals & Procedures 🔑
- **Andy Romer, PE** – Presentation & Training 🔑
- **Derrick Wong, PE** – Condition Assessment 🔑
- **Bryan Paine, PE** – Alternatives Evaluation 🔑
- **George Dore, PE** – Traffic Control Plans
- **Teddy Hioe, PE** – Civil 🔑
- **Dale Wah, PE, SE** – Structural
- **Matthew Pyon, PE** – Mechanical
- **Allen Randall, PE** – Electrical

OTHER EXPERT SERVICES

- **Charles Randolph** Oracle Unifier
- **Carolyn Stegon** Bluebeam
- **Paul Tonkin** MicroStation
- **Daniel Cronquist** Surveying
- **Blaine Stone** Flow Monitoring

🔑 Key Personnel resumes provided * Registered in other states

HIGHLIGHTS OF TEAM STRUCTURE

- Comprehensive in-house team to cater to all kinds of planning, studies, design and CM support needs for the Districts wastewater collection systems
- Local Project Manager with 31 years of dedicated wastewater experience including managing on-call contracts for over a decade
- Average experience of the team member over 20 years
- More than 90 of the percent team located in Orange and/or Los Angeles, California
- Team's work experience with over 15 similar on-call contracts for municipal agencies in Southern California
- All AECOM in-house team
- QA/QC and Technical Advisors are AECOM's national QA/QC Manager and Collection Systems Expert based in Southern California
- Pool of National Technical Experts available to the team

The Districts will benefit from AECOM's quality in-house comprehensive team supported by the 2000+ water and wastewater professional resources in the US.

AECOM
One California Plaza
300 South Grand Avenue
Los Angeles, CA 90071

T: +1 (213) 593 8100
F: +1 (213) 593 8178
aecom.com

August 6, 2021

Your Reference
QUESTCDN No. 7825153

Maribeth Tan, Senior Buyer
Los Angeles County Sanitation Districts
Purchasing Section
1955 Workman Mill Road
Whittier, CA 90601

Proposal for On-Call Engineering Services - RFP 03956 – Proposed addition of New Staff

Dear Ms. Tan and Members of the Selection Committee:

As AECOM's commitment to provide the Los Angeles County Sanitation Districts (Districts) with outstanding engineering services, we respectfully request the addition of Mr. Luis R. León as Deputy Project Manager on our team. Mr. León recently joined AECOM and brings excellent and relevant expertise to our team. Luis has 36 years of wastewater collection system experience delivering wastewater infrastructure projects for large utilities in California, the U.S. and internationally. Luis is recognized by WEF and NASSCO as an industry leader in collection systems design, condition assessment, and trenchless rehabilitation.

Luis understands the important service the Districts provide to the community and is committed to make every task order successful. He also brings solid management skills to this assignment. Luis has participated in sewer design and rehabilitation projects throughout the U.S. and internationally, including implementing condition assessment and trenchless rehabilitation projects of large sewers in Los Angeles, Omaha, Honolulu and Medellin, Colombia, among others. Luis has managed also on-call projects for clients such as the City of Los Angeles Sanitation and Environment (LASAN) and the California Department of Transportation.

We thank you for the opportunity to add Luis to our proposed team and hope that you will recognize the great asset that he will be to the Districts. We look forward to the opportunity to work with you, and to serve as your most reliable and trusted partner on current projects/programs to meet your initiatives and goals.

Yours sincerely,

J. Gundarlahalli

Jagadish (Jack) Gundarlahalli, PE
Project Manager
AECOM
T: 562.843.4183
E: jagadish.gundarlahalli@aecom.com

Surendra Thakral, PE, BCEE
Principal-in-Charge
AECOM
T: 626.483.3171
E: surendra.thakral@aecom.com

enclosures: Resume - Luis R. León, PE, BCEE, ENV SP

AECOM

Luis León, PE, BCEE, ENV SP

Deputy Project Manager

Key Skills
Contract/Project Management
Wastewater Collection Systems
Master Planning
Pipeline Condition Assessment
Trenchless Technologies
Engineering and Design
Asset Management

Years of Experience
36

Years with AECOM
< 1

International Experience
United States
Argentina
Chile
Colombia
Egypt
Mexico
Peru

Education
BS, Civil Engineering, Northrop University, 1985

Registrations

Professional Engineer (Civil)
California, #49330
Arizona, #66287;
Minnesota, #56334;
Nevada, #013624;
Texas, #130263;
Washington, #45744
Board Certified Environmental Engineer, #10-20005
ISI Envision Sustainability Professional, #24070

Honors / Awards
WEF Collection Systems Award Sep. 2019
WEF Volunteer Service Recognition Award, Oct. 2017
WEF Collection Systems Committee National Golden Manhole Award, Oct. 2016

Professional Associations
American Public Works Association
American Water Works Association
American Society of Civil Engineers
Water Environment Federation (WEF)
Inland Empire Council of Engineers & Scientists – President, 1999-2003, 2006-Present
WEF Collection Systems Committee – Chair-Elect 2015-2016, Vice-Chair, 2013-2015
NASSCO Board of Directors, 2012-2016

Trainings and Certifications
Trainer and User –NASSCO
Pipeline Assessment Certification Program (PACP®)
Manhole Assessment Certification Program (MACP®)
Lateral Assessment Certification Program (LACP®)
Inspector Training and Certification Program for Cured-In-Place Pipe Installation (ITCP® - CIPP)
Qualified SWPPP Developer, California SWRCB

Office Location:
Ontario, CA

Luis is dedicated to delivering quality products that accomplish projects' goals and meet or exceed client expectations. Luis strives for collaboration and transparency with clients. He will maintain open communication with the Districts and the AECOM team, and will engage the right people to offer effective solutions to deliver the best experience for the Districts.

Professional history

Luis León has 36 years of U.S. and international engineering and management experience in the areas of master planning, feasibility studies, asset management, design (plans, specifications, and estimates), permitting, and construction management of public and private infrastructure projects. These projects have included wastewater collection systems, water distribution facilities, storm drainage, transportation systems, and land development. Luis has also managed projects for the assessment, rehabilitation, expansion, and reconstruction of numerous utility systems for diverse and complex commercial, residential, and governmental projects. He has expertise in pipeline condition assessment, design and rehabilitation using innovative applications of trenchless technologies, and is recognized as a national leader in sewer collection systems by the Water Environment Federation (WEF.)

Selected project experience

Project Manager, Los Angeles Sanitation and Environment, Structural Condition Assessment of the North Outfall Sewer Pipes, Los Angeles, California

Luis was the Project Manager for the inspection and assessment of 8.77 miles of the NOS sewer (units 9, 10, 11, 14, 15, 16, 23, 24, 25 and 26) composed of clay tile lined concrete pipe, and brick pipes ranging in sizes from 30-in to 84-in and shapes varying from circular to arch. Inspection technologies employed were robotic closed-circuit television (CCTV), sonar on a floating platform and laser profiling. Following the inspections, Mr. León reviewed the data obtained and provided structural condition assessment of the NOS to determine the section or sections of pipe that may need to be replaced with entirely new pipe and others that may be able to be repaired/rehabilitated using trenchless installation methods. The project will develop renewal plans that contain information that LASAN could provide to a contractor to execute emergency rehabilitation of the segments of the NOS.

Technical Lead, San Antonio Water System, SSO Reduction Program including Condition Assessment and Capacity Assessment and Condition Remedial Measure Planning, San Antonio, Texas

Performed risk analysis to identify gravity sewers with elevated risk of SSOs and structural deterioration; developed a multi-year prioritized sewer inspection program including the use of CCTV, pole cameras, sonar and laser imaging systems; managed CCTV inspection contractors and led the assessment of over 2,000 miles of sewer inspection data in an integrated team with SAWS staff; and identified high priority structural remediation projects. Mr. León provided technical input and quality control of condition assessment and rehabilitation technologies applied to projects.

Technical Lead, City/County Utility Commission, Collection System Improvements Program Management including Condition and Capacity Assessment, Winston Salem, North Carolina

Under this program, performed a comprehensive collection system optimization program for 1,800-mile collection system including operations review and 5-year optimization roadmap, condition and capacity assessments, and delivery of capital projects via traditional and alternative methods. The project accomplished prioritization of SSES evaluations to address highest risk assets first and has completed immediate delivery of high priority projects via alternate delivery approaches. Mr. León provided input and quality control of several projects.

Project Manager, City of Thousand Oaks, Unit Y2 Interceptor Sewer Rehabilitation, Thousand Oaks, California

The Unit Y Wastewater Interceptor (Unit Y) conveys a large volume of wastewater through a rugged, environmentally sensitive canyon in Wildwood Park, where road access is challenging. Most of Unit Y had been addressed except the final reach, Unit Y2, approximately 2,200 feet (ft) in length, and composed of two (2) partially pressurized 18-inch reinforced plastic mortar (RPM) “Techite” pipes that start at the inlet structure (Facility ID R10-NS101) located in the Sycamore Flats Camp Grounds. Luis successfully managed the team that developed field investigations (surveying and geotechnical), analysis of alternatives for rehabilitation and replacement, recommendation of most applicable alternative, preliminary design report, final design and bidding support services for the rehabilitation of the Unit Y2 interceptor using cured-in-place pipe (CIPP) to rehabilitate the pipes. The design also included three pressure manholes and modifications to the existing inlet structure and meter vault.

Technical Lead, City of Phoenix, Lift Station 40 Barrel 1 Force Main Condition Assessment and Rehabilitation, Phoenix, Arizona

Lift Station 40 (LS 40) Force Main, which conveys wastewater from LS 40 at Ray Road and I-10 approximately 3.1 miles north to a discharge structure located at Guadalupe Road and I-10. After completing an internal inspection using electromagnetic inspection technology with select external inspections, recommended structural renewal of Barrel 1 of the 24-inch LS40 force main. The 3.1-mile ductile iron pipe was reported to have widespread external corrosion with through-wall pitting in multiple locations. After completing analysis of rehabilitation alternatives, including CIPP, the recommended renewal method was loose-fit HDPE sliplining, which was determined to be the lowest cost option but also reduced diameter by 4 inches; however, due to an improved C factor, HDPE sliplining was able to maintain sufficient hydraulic capacity. The design project required selecting and locating access pits along the alignment. To plan for and reduce public impacts, facilitated coordination with stakeholders, especially ADOT and the Arizona Grand Resort, which owns a golf course along 2,000 feet of the alignment. Mr. León provided analysis of rehabilitation options, including CIPP, and in the design for rehabilitation of the existing 3.1 miles of existing 24-inch ductile iron force main via sliplining using a 20-in DIPS, DR17 PE4710 HDPE pipe structural liner.

Project Manager, Coachella Valley Water District, Design-Build for the Rehabilitation and Construction of the Improvement District No 53 and the Avenue 62 Trunk Sewers, California

Mr. León headed the design-build team for the repair, rehabilitation, and construction of approximately 3.5 miles of the ID53 Trunk Sewer. The Construction of the ID53 trunk sewer was completed in late 2007, with vitrified clay pipe (VCP) with diameters of 33-inch and 36-inch pipe. In September of 2013, a segment of the sewer in Cook Street collapsed, creating a large sinkhole, and prompting CVWD to promptly execute emergency bypass plans. Coachella Valley Water District (CVWD) contracted a consultant to perform an investigation of the potential pipe failure, status of the rest of the trunk sewer, and preliminary recommendations for the repair and/or rehabilitation of the collapsed segment and adjacent segments. As part of the investigations, Mr. León headed the cleaning and CCTV inspection of the pipeline, pipe penetrating radar, and petrographic analysis of segments of the VCP, which was observed to have efflorescence-type issues and pieces of pipe spalling from the interior surface of the pipe. CVWD then executed a design-build agreement to develop the design for the emergency repair/replacement of 1,400 feet of 33-inch VCP with 33-inch fiberglass reinforced pipe, rehabilitate a 400 feet of the existing pipe with cured-in-place pipe (CIPP), and rehabilitation of the remaining 3 miles of the ID53 trunk sewer; project led by Mr. León. Mr. León also led the design-build team for the repair, construction and rehabilitation of approximately 3.5 miles of the Avenue 62 Trunk Sewer, designed and constructed by others in 2010-2011, under challenging soil and high groundwater conditions, with vitrified clay pipe (VCP) with diameters ranging from 33 to 48 inches. Construction included one mile of new 42-inch fiberglass reinforced pipe (FRP). Rehabilitation included grout injection to stop infiltration, installation of cured-in-place pipe, repair and/or replacement of existing PVC-lined manholes and existing pipe. The project also included replacement of 1-mile of an existing 80+ year old 20-inch diameter unreinforced concrete irrigation line.

Project Manager and Lead Project Engineer, Pierce County, Condition Assessment and Rehabilitation for Chambers Creek Wastewater Tunnel, Pierce County, Washington

Mr. León was the Project Manager and Lead Project Engineer for the condition assessment and design of rehabilitation for 15,000 linear feet of the 72-inch Chambers Creek Interceptor Tunnel. The condition assessment used an advanced remote robotic inspection platform with laser and sonar profiling technology to develop a 3D profile of the tunnel, in addition to CCTV and hydrogen sulfide gas monitoring. The technology helped to clearly identify tunnel lining defects with minimum man entry and provided detailed dimensioning of the tunnel, which was crucial to selection of the most suitable rehabilitation method. Rehabilitation was complicated by the presence of a poured concrete low flow channel (cunette) installed on the bottom of the 72-inch diameter pre-cast concrete pipe; in addition, the tunnel is 60 to 90 feet underground and existing access portals are 5,000 feet apart. The project included an in-depth analysis of multiple rehabilitation methods including cured in place pipe (CIPP), glass-reinforced plastic pipe (GRP) sliplining, Ribline™ lining, and PVC sliplining. Following the study, Mr. León led the development of final plans, specifications and estimates for the rehabilitation of a portion of the tunnel using segmental sliplining with an arched-shape GRP. Bid alternates were added to the contract documents in order to allow the county to select based on the total of the base bid for 2,500-feet of rehabilitation and additive bid(s) that would add up to three sections of 1,000-feet each; this would allow for the county to provide as much rehabilitation within their overall budget and also provide for additional modifications to the existing drop structure. A total of 3,500-feet were successfully rehabilitated.

Technical Lead, Pittsburgh Water and Sewer Authority, 2021 Large Diameter Sewer Rehabilitation, Pittsburgh, Pennsylvania

Mr. León was the technical lead for this large diameter sewer rehabilitation. Pittsburgh Water and Sewer Authority (PWSA) selected to rehabilitate approximately 1,245 linear feet of 72-inch brick and stone combined sewer within S. 21st St and the South Side Park. This project was initiated due to its proximity to the South Side Park Improvements Project, which will begin construction in 2021, will reduce cover over the existing sewer in several locations, and will have heavy construction vehicle loads overtop of the sewer during construction. The 72-inch brick and stone combined sewer was constructed circa 1898 with three rings of brick and a Ligonier stone invert. The sewer has a minimum cover of 1.3' and a maximum cover of 12.5' in the pipe sections to be rehabilitated. When the South Side Park Improvements project is complete, the existing sewer will have a minimum cover of 1.6' and a maximum cover of 17'. Due to the sewer's large service area and current condition, it is important to rehabilitate this section of the sewer before access is reduced by new park facilities. The Preliminary Design Report recommended structural rehabilitation of the existing brick and stone sewer pipe using centrifugally cast-in-place pipe liner (CCCPL).

Technical Advisor, North East Ohio Regional Sewer District, Doan Valley Regulator/ Relief Sewers (DVRRS), Cleveland, Ohio

Provided design and construction-related professional engineering services for the DVRRS project in order to meet specific CSO control requirements for the Doan Valley combined sewer system, as part of their long-term control plan. System component improvements reduce overflow events to 2 or less at priority outfalls and 3 or less at other outfalls in a typical year by 2021. Alternative evaluations eliminated the greatest construction risks on the project and decreased capital cost, by eliminating sewer alignments and re-using and/or re-rerouting to existing sewers that have excess capacity, as well as evaluating the hydraulic acceptable level of service performance. Mr. León provided technical assistance for sewer rehabilitation, which included the rehabilitation of approximately 2,045 LF of existing 12”, 15”, 18”, 20”, 21”, and 30”, sewers and 460 feet of No. 5 egg (3.74’H x 2.95’W) brick sewer using cured-in-place pipe (CIPP) lining.

Project Manager/Technical Specialist, Consorcio Integral Aquaterra, Empresas Públicas de Medellín (EPM), Centro Parrilla Water and Wastewater Systems Rehabilitation, Medellin, Colombia, South America

Mr. León was the project manager and technical specialist providing project management and technical support to the Integral- Aquaterra joint venture. The joint venture’s client was Empresas Públicas de Medellín (EPM), a public works agency that provides utility services to a population of over 3.3 million. The project involved hydraulic modeling for 112 km of water and 93 km of sewer lines, condition assessment and planning and design of rehabilitation and replacement of sewer collection lines and water distribution lines in downtown Medellín, which contains the oldest portions of the water and wastewater collection pipelines with challenges such as old age, varying materials (including brick sewer pipes), unknown utility crossings, below ground channeled creeks, more than 200 bus routes and environmentally sensitive areas, among others. Mr. León provided training to local engineers in Colombia in the planning and design of various trenchless rehabilitation technologies for a total of 33 Km of sewer collection lines and 40 Km of water distribution lines. He also provided support in the development of technical specifications and performing quality control of the rehabilitation design. The designs included application of technologies such as cured-in place pipe, pipe bursting, sliplining with fold and-formed pipe, horizontal directional drilling, micro-tunneling, and open trench construction.

SECTION 3

QUALIFICATIONS

3

Section 3 - Qualifications

Company Experience and Past Performance

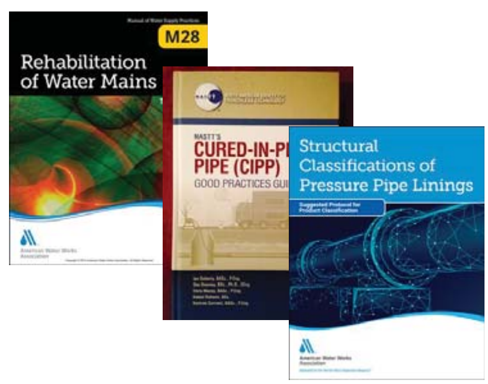
AECOM is a premier, fully integrated professional and technical services firm positioned to design, build, finance and operate infrastructure assets around the world for public- and private-sector clients. With nearly 48,000 employees — including architects, engineers, designers, planners, scientists and management and construction services professionals — serving clients in over 120 countries around the world, the company is a leader in all of the key markets that it serves, including water, wastewater, recycled water, transportation, facilities, environmental, energy, oil and gas, high-rise buildings and government. AECOM provides a blend of global reach, local knowledge, innovation and technical excellence in delivering customized and creative solutions that meet the needs of clients' projects.

Our industry recognized experts in collection systems are the authors of numerous manuals issued by ASCE, AWWA, Water Research Foundation, NASTT, etc. These manuals are used by engineers in their jobs and university courses throughout the world (see below).

AECOM has all the required disciplines in-house to perform the scope of work as outlined in the RFP, including civil, structural, mechanical, and electrical engineering and design, and construction management support (responding to submittals, RFIs, etc.), for all the project types listed in the RFP. We can provide engineering services in conformance with Districts' standards and in compliance with applicable laws, standards, and codes, including the Standard Specifications for Public Works Construction (Greenbook), latest edition, and the Districts' amendments thereto.

Condition Assessment and Corrosion Control

- AWWA Manual M77 First Edition, "Manual of Practice: Condition Assessment of Water Mains" – 1st Edition *(Andy Romer - 2019)*
- AWWA Manual M27 Third Edition, "External Corrosion Control for Infrastructure Sustainability" *(Romer - 2014)*
- AWWA's "Corrosion Control for Buried Water Mains - Pocket Field Guide," *(Romer - 2009)*
- AwwaRF's "External Corrosion and Corrosion Control of Buried Water Mains," *(Romer - 2005)*
- AwwaRF "Failure of Prestressed Cylinder Pipe" *(Romer - 2008)*



Rehabilitation of Pressure Pipes

- AWWA's Manual M28 "Rehabilitation of Water Mains" – Third Edition *(Romer – 2014)* and Fourth Edition (*Chris Macey – in production for 2020 release)*
- AWWA White Paper on Structural Classification for Pressure Pipe Linings - Protocol for Product Classification *(Macey - 2019)*
- NASTT Best Practice Guidelines for CIPP *(Macey - 2015)*
- AWWA Rehab Standards *(Romer - 2009)*
- ASCE Manual of Practice 117: "Inspecting Pipeline

Section 3 is organized to address the requirements of the RFP with the following subsections:

- Company Recent Experience with On-Call Contracts
- AECOM Serving Spectrum of Municipal Agencies in California
- An Overview of AECOM Experience/Expertise for both Project Categories
- Key Project Staff Experience
- Project Management Overview
- Financial Condition

Company Recent Experience with On-Call Contracts

AECOM has extensive experience with on-call, as-needed type contracts (**Exhibit 3-1**). We are built for this type of contract – with the right management skills, depth of resources, and ability to respond to simultaneous Task Authorizations quickly and efficiently. Below we have listed a select list of on-call contracts in Southern California that are similar in nature to the work required by the Districts.

The majority of our proposed team members have worked or are working on these on-call engineering services contracts and they are very experienced with the task order contract administration steps.

Exhibit 3-1 - AECOM's Select List of Relevant On-Call Contracts with Public Agencies in Southern California and Central Valley

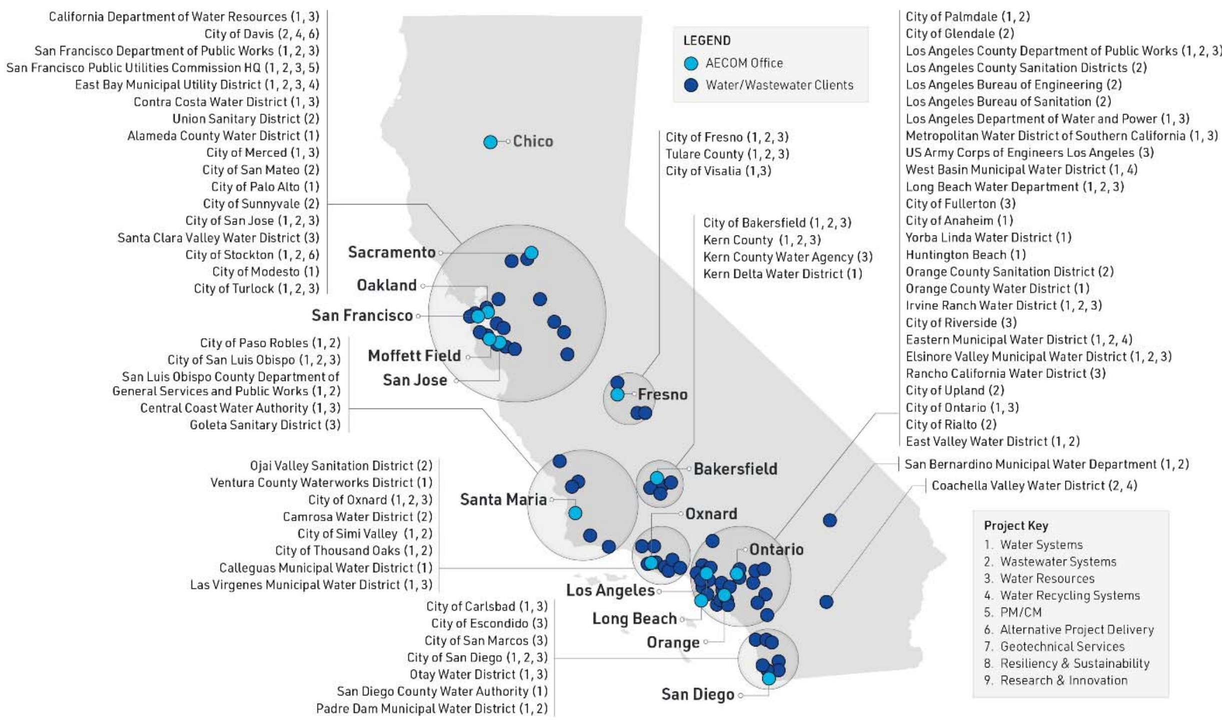
Client Name	Contract Name
Los Angeles County Sanitation Districts	On-Call Engineering Services #03916
City of Los Angeles, Department of Public Works, Bureau of Engineering (BOE)	On-Call Contract for Design and CM Support Services for Wastewater, Stormwater and Solid Resources Program
	On-Call Geotechnical and Environmental Services
	On-Call Wastewater & Environmental Engineering Consultant's List
	On-Call Civil Design Services
	On-Call Environmental Documentation
	On-Call Environmental Specialty Studies
	On-Call Landscape Architectural Consultant
	As-Needed Cultural Resources and Paleontological
City of Los Angeles, Department of Public Works, Bureau of Sanitation (LASAN)	On-Call Contract for Planning and Technical Services for Wastewater, Stormwater and Solid Resources Program
City of Los Angeles Department of Water and Power (LADWP)	As-Needed Professional and Technical Engineering and Architectural Design Services (selected)
County of Los Angeles Department of Parks and Recreation	As-Needed Environmental Assessment Services
County of Los Angeles Department of Public Works	As-Needed Geotechnical Engineering, Materials Testing & Inspection Services
	As-Needed Environmental Compliance Services
	Multiple Task Authorizations including: Seismic assessments of Los Angeles County-owned or leased office buildings, structural evaluation, design, and retrofit of LA County hospital buildings
Los Angeles County Department of Regional Planning	On-Call Environmental/CEQA Services
	On-Call Environmental Compliance Services

Client Name	Contract Name
Los Angeles County Metropolitan Transportation Authority HQ	On-Call CEQA/NEPA Consultation for Crenshaw/LAX
	On-Call Archaeological, Paleontological and Native American Monitoring of Construction
Los Angeles World Airports	On-Call Environmental Technical and Expert Consulting Services
Los Angeles Department of Transportation	On-Call Transportation and Traffic Engineering
	On-Call Professional Consultant Services
Port of Los Angeles	On-Call Audit & Design Services
	On-Call Engineering Services
	On-Call City of Los Angeles Harbor Department
	As-Needed CEQA/NEPA Consultant Services
	On-Call Professional Services
Orange County Sanitation District (OC San)	Facilities Engineering (FE) 21-00 Annual Professional Design Services Agreement
	On-Call Planning Studies - Collection and Wastewater Treatment Systems
Orange County Water District	On-Call Consulting Services for PFAS Treatment Systems Design
Metropolitan Water District of Southern California	On-Call Structural Engineering Services for Seismic and Pipeline Rehabilitation
	On-Call Environmental Planning Services
	On-Call Engineering for Water Treatment, Conveyance, Storage, Distribution & Large Rotating Equipment Facilities
	On-Call Agreement 184520 (R1)
	On-Call Geotechnical Services
	On-Call Tunnelling Services
	On-Call NPDES Support Services
	As-Needed Environmental Site Assessments
	Seismic Evaluations and Assessments/Geotechnical Engineering
	Etiwanda Pipeline Lining Failure
City of Anaheim	Public Utilities Department Consulting and Engineering Services
City of Irvine	On-Call Environmental Services
	Water Quality Technical Services
City of Oxnard	Oxnard On-Call Civil Engineering Services
City of Thousand Oaks	On-Call As-Needed Engineering Services
City of San Diego	Consultant Rotation List 2019-2020
	City County Port of San Diego
Imperial Irrigation District	As Needed PI Geotech Engineering Canals & Drains
Riverside County Flood Control & Water Conservation District	As Needed Wastewater and Stormwater Technical Services – Wastewater Enterprise
Kern County General Services Division	Kern County Architectural/Engineering Services
Kern County Public Works Department	Kern County On-Call Consultant Services
Kern Sanitation Authority	On-Call Wastewater Engineering Services
Bakersfield Public Works Department	On-Call General Civil Engineering & Survey
Yorba Linda Water District	On-Call Services

AECOM Serves the Spectrum of Municipal Agencies in California

Over the decades, AECOM has been providing quality engineering services to over 100 clients in California (**Exhibit 3-2**). This list demonstrates AECOM's capability and flexibility to serve very small to very large municipal agencies in California with a wide variety of sewer rehab and new sewer construction and miscellaneous engineering design project needs.

Exhibit 3-2 - AECOM Water/Wastewater Clients in California



An Overview of AECOM Experience/Expertise for Key Elements of Project Categories

AECOM has successfully completed numerous municipal conveyance systems planning and design projects (rehabilitation and new) ranging from 6-inch-diameter to in excess of 108 inches in diameter.

All over the world AECOM's engineers help our municipal and state clients fulfill their prime social responsibility: to ensure the safe transport of wastewater away from its source and to a location for treatment prior to ultimate disposal. Dealing with collection system capacity issues and minimizing overflows during excessive rainfall events are AECOM specialties.

Our wastewater clients need to do more with less. New regulatory and service demands often conflict with the constraints of aging wastewater infrastructure, outdated technologies and tightening budgets. Industries, municipalities, and regional authorities ask AECOM's engineers to help them maximize collection system capacity and integrity, improve treatment levels and efficiencies and even transform treated wastewater and solids into reusable resources.

RFP Section 3 – Scope of Work generalized potential projects for consultants to support in the following two broader categories.

Category 1- Sewer Rehabilitation and Construction Support (RFP Task 3.1)

Category 2- Miscellaneous Design Support and Engineering Tasks (RFP Task 3.2)

AECOM took the liberty to provide brief description of our expertise and approach for the following key elements of Category 1 & 2 projects to further highlights our qualifications. Reference projects summary matrix and descriptions are provided following the discussions on the key expertise and approach elements.

Technically Reliable, Affordable Solutions

Big or small, AECOM's engineers have provided planning and design for sewer pipeline projects from a few hundred feet to more than hundreds of miles. Our projects have included open cut, horizontal directional drilling and tunnels. AECOM's engineers also have extensive experience with the development of sewer master plans and the evaluation of alternatives to convert areas served by septic tanks to a central-sewer system. AECOM's expertise extends to pipe-fabrication inspection, condition assessments, construction management, and overall program management.

Of particular urgency is the problem of overflows from urban sewer systems during periods of heavy rainfall, particularly from combined systems that also include stormwater flows. AECOM's expertise with highly detailed system modeling, demonstrated by our Sewer System Improvement Collection System Project for the San Francisco Public Utilities Department, allows us to more accurately predict system performance and help clients prioritize improvements.

Full In-house Collection System Technical Expertise

AECOM has full in-house technical expertise to respond to any of your conveyance system challenges. We have specific experience with the design of both small and large diameter sewer pipelines and other appurtenant conveyance system structures. Our projects have included complex rights-of-way and permitting requirements in congested urban and suburban areas, river crossings, and wetlands. AECOM engineers and technical experts have designed many sewer rehabilitation projects and evaluated existing gravity and force main pipeline conditions, capacities, risk and failure potential, rehabilitation options, and estimated costs, resulting in effective and affordable system designs and rehabilitation programs.

AECOM's services also include feasibility studies and master plans, condition assessment, infiltration/inflow studies, hydraulic modeling, preliminary and final design, GIS, public outreach, construction management, third-party review, and value engineering. Projects have included:

- Bored tunnels
- Open and closed-face TBM tunneling
- Drill and blast tunnels
- Cut-and-cover tunneling
- Microtunneling
- Preliminary and final design reports, plans, specifications
- Cured-in-place and fold and form liners
- Partial liners (cured-in-place etc.)
- Sliplining
- Cementitious coatings
- Epoxy coatings
- PVC Liners
- Robotic crack repair
- Mechanical joint seals
- Joint grouting
- Excavated spot repairs
- Open cut sewers
- Pump stations

AECOM has designed, permitted, and supervised construction of sanitary sewers and force mains involving deep excavation, tunneling, wetlands, highway and railroad crossings, river and stream crossings, narrow streets, hillside neighborhoods, and high-traffic areas.

Keith Campbell, PE, will serve as the Task Lead for Category 1, Sewer Rehabilitation and Construction Support. Keith, based in our Los Angeles office, offers a successful project delivery record and will provide the critical task management that the Districts values. He has managed and directed some of the largest and most complex projects throughout California involving large interdisciplinary teams focused on pipelines, pump stations, and critical infrastructure rehabilitation and improvements. Keith has successfully delivered large-scale, multi-million dollar projects for the Metropolitan Water District, Orange County Sanitation District (OC San), cities of Los Angeles and Fresno, San Luis Obispo and Imperial Counties, and State of California, to name a few, during his 31-year tenure with our firm.

Bryan Paine, PE, QSD, ENV SP, will serve as the Task Lead for Category 2, Miscellaneous Design Support and Engineering Tasks. Bryan, based in our Orange office, specializes in project management, planning, infrastructure design, and construction support services. He is an active member of the WaterReuse Association, American Society of Civil Engineers, and Society of American Military Engineers. He has experience in a wide-range of projects in his field, including condition assessments, alternatives evaluations, pump stations, water/wastewater treatment, groundwater extraction and injection wells, dams and levees, water storage reservoirs, hydrology and hydraulic studies, civil site improvements, roadways, pipelines, construction management, and permitting. Bryan has successfully delivered projects for the Districts, Orange County Sanitation District (OC San), Orange County Water District, and Irvine Ranch Water District, to name a few, during his 19-year tenure with our firm.

Mr. Paine, PE, QSD, ENV SP, and his team are currently completing work on the Colorado Lagoon Sewer Siphon for the Districts Sewer Design Section and is very familiar with the Districts design standards and procedures.

Condition Assessment

AECOM's experience in forensic investigations and condition assessments of large-diameter sanitary sewers and force main conveyance systems cannot be understated. Our team routinely utilize state-of-the-art equipment and methodologies to evaluate the integrity of pipelines and force mains, such as digital and optical scanning closed circuit television (CCTV), sonar profiling, 2D and 3D laser imaging, and pipe- and ground-penetrating radar. Our services also incorporate piloting inspection techniques (person-entry, robotic inspection, and desktop analyses), structural evaluations, and conceptual alternatives for replacement and/or rehabilitation. Our staff is trained in the NASSCO pipe and manhole assessment and certification programs for standardized evaluation and reporting procedures.

Derrick Wong, PE, AECOM's California Condition Assessment Practice Leader and our proposed Condition Assessment Lead, served as the lead conditional assessment expert on the Sewer System Improvement Program Collection System Condition Assessment Program for the San Francisco Public Utilities Commission. This program developed a methodology and long-term condition assessment plan for large collection system assets, including tunnels, large pipelines, interceptor boxes and combined sewer discharge structures.

Pipeline Rehabilitation

For many older communities, rehabilitation is often necessary to repair deteriorating pipe sections and maintain collection system capacity and performance. AECOM engineers have assessed hundreds of miles of sewer pipe, and where necessary, produced designs for rehabilitation.

Our project manager, task manager and engineers are also experienced in a wide-range of sewer rehabilitation methods, including trenchless techniques such as relining with cured-in-place pipe, sliplining, spiral winding, resurfacing, and spot repair. Extensive product research, along with our continued involvement in the rehabilitation industry and ongoing design work, provides our clients with a thorough and up-to-date knowledge of rehabilitation products and methodologies.

Frequently, AECOM's rehabilitation services follow comprehensive inspection or evaluation of a client's sewer system. Other related services include permitting and construction oversight. We mitigate construction impacts in established urban areas and protect sensitive environmental habitats.

Trenchless Technology

Trenchless technology is a general term used for the installation or rehabilitation of conduits / pipelines underground with minimal excavation from the ground surface. Trenchless technology installation is used for circular pipes from a few inches to 144-inch diameter, with limitations on length based on the method and pipe size used. Trenchless technology for new construction includes horizontal directional drilling (HDD), microtunneling (MT), direct pipe (DP) also jacking, boring and ramming methods. Traditional tunnel boring machines (TBM) can also be configured smaller than 144-inch diameter so there is a natural progression of the technology applications transitioning from microtunneling boring machines (MTBM) into conventional TBM tunneling. Pipe jacking and auger boring are generally less sophisticated methods applicable only for shorter lengths in unsaturated ground conditions above the groundwater table. Pipe bursting is also considered for sensitive project areas.

To reduce traffic disruption during construction, trenchless technology is reviewed for site-specific suitability where applicable and where ground conditions may make open-cut a higher risk and potentially more costly method.

AECOM's team includes in-house trenchless technology specialists that believe the selection of appropriate trenchless applications depends on the specific site subsurface conditions, as well as the available construction footprint for each method. **Matt Francis, PE,** is a member of AECOM's trenchless leadership with 28 years of experience in geotechnical engineering and prime design of trenchless conveyances, pipelines and tunneling and in water, energy, transport and communications. He has led subsurface investigations for dozens of conveyance installations and geologic hazard evaluations with drilling, CPT, geophysics, geo-statistics & GIS applications around the world.

Mr. Francis has authored a PRCI Microtunneling Design Guide, ASCE MOP 117 Inspecting Pipeline Construction Revision - new Trenchless Inspection Chapter; an AECOM authored ExxonMobil Microtunneling Design Standard and Hawaiian Electric Co (HECO) HDD Design Guide, as well as providing content and peer review for the Piedmont Natural Gas HDD Design Standard manual.

Odor Control

Controlling odor during construction is one of the top challenges agencies face when replacing and/or rehabilitating large sewer systems in active communities. By evaluating and preparing an appropriate odor control mitigation plan early in the design process, our clients are prepared for an odor-free construction project with minimal community disturbances. **Bob Stallings, PE,** our proposed Odor Control Task Lead, brings nearly four decades of experience planning, designing, and operating wastewater treatment plants throughout the U.S., including an emphasis in odor control management.

Mr. Stallings, PE, has contributed to several Water Environment Federation (WEF) design guidelines including MOP-25, Odor Emissions and Control for Collection Systems and Water Resource Recovery Facilities, Ultraviolet Disinfection for Wastewater, MOP FD8 – Clarifier Design, MOP 8 - Design of Municipal Wastewater Treatment Plants (5th Edition), and Operation of Municipal Wastewater Treatment Plants Study Guide.

AECOM design teams include odor control experts with specialized experience developing and implementing mitigation measures that reduce or eliminate potential odor impacts during sewer condition assessment work and pipeline replacement, cleaning, and rehabilitation activities. Our teams have developed baseline sampling and monitoring programs to establish background odor levels and mitigation strategies; identified and established sensitive receptors and acceptable odor concentrations; and monitored odor emissions during construction for compliance. During design, temporary odor controls are also considered, such as chemical addition and the use of trailer-mounted odor scrubbers, to treat air exhausted from sewer ventilation equipment.

Hydraulic Modeling

Hydraulic modeling is a vital tool that can be used to help the Districts optimize the operation and replacement of its existing facilities as well as the engineering design of its new capital improvements. Applying accurate hydraulic models can save the Districts millions of dollars by helping to correctly size capital improvement efforts and determine the best operating and control strategy for existing facilities. Calibrating models to make sure they truly reflect the “real world” is key to the success of any model. AECOM has developed industry best practices for the calibration of our models, providing the Districts with the ability to make important monetary decisions based on our analyses. Our local team delivers comprehensive expertise that incorporates modeling, mapping, engineering and scientific investigation to meet the Districts’ needs and regulatory standards. AECOM has extensive capabilities and experience in the various types of modeling relevant to water and wastewater facilities, including wastewater pump stations, treatment plants, and conveyance systems. Our local modeling experts are skilled in a broad range of hydraulic modeling software, and can not only successfully navigate and run models, but also effectively analyze the results, which saves the Districts money and helps them make the right decisions.

Our full-service modeling capabilities include:

- Conveyance system modeling
- Pump station modeling and evaluation
- Odor modeling

The key to delivering successful hydraulic models is to accurately reflect the system being modeled. AECOM has a systematic approach to achieve this and it results in a calibrated model that the Districts can rely on to make key decisions. Our systematic approach focuses on:

- Data collection and integration with geographic information systems (GIS)
- Extensive field testing to support model calibration

- Model verification and calibration
- Validation of the model

AECOM provides computer modeling for hydraulic systems, odor control systems, structures, and other related facilities. We have experts familiar with all types of computer modeling, including:

- Hydraulic models (DHI's MIKE Urban, MOUSE, Infoworks CS)
- Odor control models (EPA Water9, CALPUFF)
- Stormwater models (DHI's MIKE Urban, SWMM, HEC-RAS, Bentley StormCAD, WINNSLAM, HEC, FLO-2D, WSPG)

AECOM uses hydraulic modeling throughout the master planning and design process. In master plans, we evaluate existing capacity and compare to projected growth and need. We also examine existing infrastructure and look for potential improvements. These master plans often lead to engineering design and construction management as individual projects are implemented.

Our dynamic-flow sewerage modeling capabilities pinpoint and quantify infiltration and inflow (I/I), hydraulic restrictions, overflows, and unused storage capacity within collection systems. This includes evaluating relief sewers, collection system storage, and I/I reduction in the system.

Environmental Documentation/Planning

It is critical to the California Environmental Quality Act (CEQA) planning process that we clearly coordinate Section 15124, CEQA Guidelines and all project related components, as it will set the foundation for the preparation of environmental documents. For this reason, we have identified a Senior Environmental Planner, **Jerry Flores,** who will work closely with our engineering team and Districts staff to facilitate the necessary coordination and ensure seamless and efficient integration between the engineering effort and environmental/planning effort. Jerry and our support staff have worked regularly with our engineers to capture realistic perspective of the effort needed to implement various infrastructure projects, including wastewater conveyance system projects. We will bring our experience and creativity to Districts to: 1) identify potential impacts, and 2) develop mitigation measures. We will collaborate to identify impact avoidance and minimization options and opportunities in order to streamline the planning/permitting process.

As part of our role to support environmental documentation/planning, we would coordinate upfront with Districts staff to fully understand the project and identify specific project needs which would then lead to determination of the appropriate environmental clearance. Our team will provide the environmental data needs along with other relevant engineering information that will need to be addressed in the environmental document. We understand the importance of clear/detailed project information that will assist with the preparation of an environmentally defensible document.

As projects are identified, we will work with the Districts staff to determine the level of required documentation. CEQA clearly defines the type of document required, based on the project and /or anticipated impacts. For any given project, the appropriate CEQA document could be one of the following:

- Categorical Exemption (CE): For projects that do not result in adverse impacts and which are, therefore, exempt from the preparation of environmental documentation, as described in the CEQA Guidelines.
- Negative Declaration (ND): For projects that are not exempt, but may result in adverse impacts but which would be below a level of significance.

- Mitigated Negative Declaration (MND): For a project which may result in significant adverse impacts but which can be mitigated to below a level of significance based on mitigation included in the MND or changes incorporated in the description of the proposed project.
- Environmental Impact Report (EIR): For a project which may result in significant adverse impacts when it is not known at project initiation whether those impacts can be mitigated to below level of significance. EIRs already certified by the Districts may be amended using an Addendum, Supplemental or Subsequent EIR, depending on the potential impacts of the proposed modifications to the project.

Once the appropriate environmental document is determined, AECOM will work with Districts staff to develop a detailed scope which could include the preparation of technical studies. The information/data we generate will be critical for the environmental documents, but it will also provide a general foundation for engagement with the general public, regulatory entities, and stakeholders. In addition, we will review with Districts staff the potential need for National Environmental Policy Act documentation, if applicable, including any federal agency approvals or permits required for each project.

Construction Management Support

AECOM delivers extraordinary program and construction management solutions that maximize return on capital investment, unlock opportunities for clients and communities, protect our environment, and improve lives. Our extensively experienced management teams make a positive, lasting impact by applying best-in-class technology with our global best management practices, processes, and procedures. AECOM brings expertise and delivery excellence to every phase of the most complex and challenging water and wastewater programs. AECOM has over 5,000 construction management personnel in the nation and provide construction support services to simple as well as very complex construction projects. To support the Districts on the construction Management needs, we will draw from our huge construction management pool.

Our CM practice has specialized in construction and our ability to undertake CM work is best demonstrated by our track record of successfully providing, on a consistent basis, highly qualified individuals in a timely manner for numerous past and current statewide and nationwide “on-call” construction services contracts. Our CM division has successfully performed professional construction services for many projects.

Constructability review is another speciality of AECOM. Being a nation’s large design-build contractor, we have huge capabilities to provide quality constructability review from our construction professionals. AECOM constructability reviews on numerous wastewater collection system projects have saved millions of dollars in construction costs, avoided schedule delays and conflicts with existing utilities.

Construction Cost Estimate

AECOM’s over 200 construction cost estimation professionals provide cost estimation services unless directed by the client or contract to use external services. Estimators get involved at the 30 percent design level and they eventually develop Engineer’s estimate for the bid document. These specialized professionals have access to all the required software/program and market update to develop a quality estimate. These professionals also develop estimate/pricing for our design-build projects.

Engineering/Planning Studies

AECOM provides a broad range of engineering planning services relating to wastewater, recycled water, stormwater and solid waste projects, including:

- Field investigation
- Water quality analysis

- Bench scale and pilot studies
- Hydraulics laboratory services to conduct physical modeling
- CEQA documentation development
- Design criteria development
- Land use studies
- Feasibility studies
- Master planning
- Corrosion protection and condition assessment
- Funding support & financial studies
- Cost estimation and life cycle cost estimation
- Permitting and regulatory coordination
- Development of O&M manuals
- Testing and staff training

Through engineering and planning studies, AECOM has provided Technically Reliable, Affordable Solutions to its clients throughout the nation and world. The end result has been always to optimize the client's capital expenditures.

Other Miscellaneous & Specialty Engineering Services

AECOM being one of the world's largest environmental engineering firms, has tremendous in-house capabilities to provide all kinds of miscellaneous and specialty engineering services. In this section, we describe our capabilities for Asset Management and Value Engineering Services that we think could be valuable to the District under this On-Call Program.

Asset Management Services

AECOM offers comprehensive services pertaining to asset management program development and implementation for our clients across the United States. Currently we hold an on-call contract for San Francisco Public Utilities Commission for their Sewer System Improvement Program - Condition Assessment Program and Asset Management Support.

Our services for managing asset data incorporates:

- CIPs
- Condition assessments
- Refurbishment and replacement planning
- Asset management
- Financial analyses

AECOM is assisting Colorado Springs Utilities to manage wastewater facility better via condition assessment. AECOM leveraged its vast expertise in field condition assessment and inventory for the Clear Springs Ranch Resource and Recovery Facility.

Value Engineering (VE)

AECOM has conducted value engineering workshops to improve design functionality, optimize costs, and improve the operating efficiency of constructed facilities. The value management technique, which can be used on any Districts project, is based on a systematic and creative approach that incorporates these key characteristics:

- A multidisciplinary team of design professionals. Senior-level discipline specialists who are not involved in the project's design are assigned to the VE team.
- Evaluation of cost and function relationships. Our VE team reviews and evaluates available project data and identifies component functions to isolate specific high-cost areas.
- Identification and focus on high-cost areas. Lower cost and/or higher value alternative solutions are identified for the selected high-cost areas.
- Development and evaluation of alternatives

The VE team then summarizes its findings in a report that includes a project description, a listing of advantages and/or disadvantages, sketches, calculations, and cost analyses of proposed designs. The team's goal is to generate value improvements without loss of quality or reliability.

As part of its value engineering studies, the AECOM team conducts life-cycle cost analyses, which evaluate all costs over the entire life of a proposed facility, including operations and maintenance. These analyses can assess proposed alternative facilities on the basis of present worth or annual cost. Costs of alternative facilities can be compared with different initial costs, annual costs, and periods of expected service. The AECOM team often achieves a return of 10:1 (Savings: Cost) or more. Our team has provided value engineering reviews as a specific service or within the context of a program management effort. In the latter case, the AECOM team provides an independent subcontractor to perform a third-party review, and then implement those selected changes that offer substantial benefits in quality or cost.

AECOM Reference Project Descriptions for Project Categories

In the following pages of this section, we have provided project descriptions for 11 projects for the project categories. The AECOM proposed team members have provided similar design and other engineering services for numerous sewer collection system projects in the past 10 years.

Exhibit 3-3 on the following page provides a summary of relevant features for the projects associated for Category 1 and 2. The following reference projects qualify for both categories considering their extended scope of services.

Exhibit 3-3 AECOM'S Selected Relevant Sewer Rehab & Construction Experience and Relevant Miscellaneous Design Support Tasks Experience (Project Category 3.1 and 3.2)

			Category 3.1 Category - Sewer Rehabilitation and New Construction (Key Elements)											Category 3.2 – Misc. Design Support Services (Key Elements)					
Client Name/Owner	Project Name	Project Category (R FP 3.1 and/or 3.2)	Sewer Upgrade / Rehabilitation Design	New Sewer Design	Small Diameter Sewer Rehabilitation	Large Diameter Sewer Rehabilitation	Design, Plans, Specifications	Cost Estimates	Contract Documents	Force Mains Design	Sewer Flow Studies	Environmental Documentation	Constructability Reviews	Engineering Studies/Reports	Hydraulic Modeling	Environmental /Planning Support	Construction Management Support	Design Manuals and Procedures Reviews	Presentation and Training
City of Los Angeles Bureau of Engineering	TOS 5 – Engineering Services for the Wastewater Conveyance System Program)	3.1 & 3.2	●	●			●	●			●	●	●	●	●	●	●		●
Orange County Sanitation District (OC San)	Western Regional Sewers Rehabilitation (Project No. 3-64A & 3-64B)	3.1 & 3.2	●	●	●	●	●	●	●		●	●	●	●	●	●		●	●
Orange County Sanitation District (OC San)	Magnolia Trunk Sewer Rehabilitation (Project No. 3-58)	3.1 & 3.2	●			●	●	●	●		●	●	●	●	●	●	●	●	●
Orange County Sanitation District (OC San)	Balboa Trunk Sewer Rehabilitation (Project No. 5-47)	3.1 & 3.2	●		●		●	●	●		●	●	●		●	●	●		●
City of San Diego	Pure Water Program – Phase 1 Sewer Conveyance Pipeline and Moreno Pump Station	3.1 & 3.2		●		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Los Angeles County Sanitation District	Colorado Lagoon Open Channel Sewage Handling System Study	3.1 & 3.2	●		●			●					●	●	●	●			
San Francisco Public Utilities Commission	Sewer System Improvement Program, Collection System Condition Assessment Program	3.1 & 3.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●
City of Los Angles, Bureau of Sanitation (LASAN)	San Fernando Relief Sewer Concept Report (TOS SN-81)	3.2				●							●	●	●				●
City of Fresno	Blackstone and Shields Avenues Sewer Rehabilitation Project	3.1 & 3.2	●		●		●	●	●		●		●	●	●		●	●	●
City of Fresno	South Third Street Sewer Rehabilitation Project	3.1 & 3.2	●		●		●	●	●		●		●	●	●		●	●	●
City of Fresno	North Fresno Street and North College Avenues Sewer Rehabilitation Project	3.1 & 3.2	●		●		●	●	●		●		●	●	●		●	●	●

City of Los Angeles – On-Call Engineering and Environmetal Services (Task Order Solicitation [TOS] - 5 – Engineering Services for the Wastewater Conveyance System Program)

Category 3.1 & 3.2
Sewer Rehab & Misc.
Design Support

Client
City of Los Angeles, Bureau of Engineering, Wastewater Conveyance Engineering Division

Services
Various Engineering Design Support Services and Staff Augmentation

Dates
2017 – 2022. Various end dates for subtasks

Status of Project
Various end dates per subtask order

Change order rate of project, as a percentage
0%

Key Personnel - Specific Duties
Keith Campbell – TOS #5 Manager; Surendra Thakral – Client Service/Contract Manager

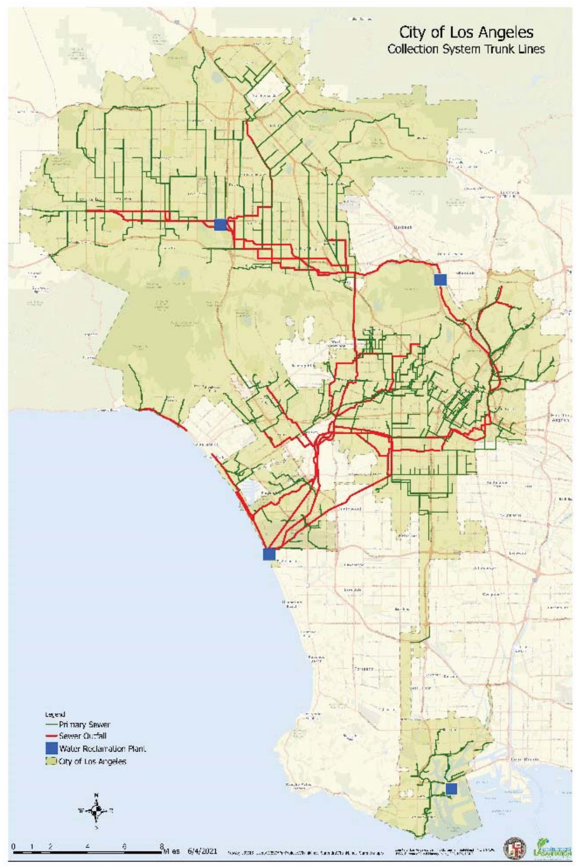
Client Reference
Edward Arrington,
S.E., ENV SP
Division Manager
Bureau of Engineering
Department of Public Works
1149 S. Broadway, Suite 635
Los Angeles, CA 90015
T: 213 485 1694
edward.arrington@lacity.org

General Description of Project:
In 2017, the City of Los Angeles (City) awarded a 5 year on-call services contract to AECOM to provide planning, design and construction management services for the entire City's wastewater, recycled water, stormwater and municipal solid waste systems.

Under this blanket on-call services contract, AECOM has been awarded multiple tasks for a variety of services. One such task order solicitation is **TOS-5 – Engineering Services for the Wastewater Conveyance System Program ($8M fee)**.

TOS-5 scope of services includes providing all kinds of conveyance system (sewer and pump stations) design, engineering support and staff augmentation services. The City authorizes subtasks under TOS-5 for each activity. So far, over 30 subtasks worth over $5M in fees have been authorized by the City. Key sub task orders issued within this TOS-5 include:

- Structural Engineering Design for the Cochran Adams Relief Sewer **(Completed)**
- Sewer and Maintenance Hole Inspection Support for North Outfall Sewer (NOS) Rehabilitation for Unit 10 **(Completed)**



Relevant Key Features:

- Large diameter pipeline and force mains rehabilitation in heavily populated urban area
- Major street crossing/traffic control plans
- Multi-city, multi-agency coordination
- Condition assessment
- Pipeline and manhole inspections
- Preliminary rehabilitation design
- Environmental documentation
- Cost estimates
- Construction management support
- Tunnel design plans and specifications

- Maintenance Hole Inspection Support for Central Business District (CBD) Rehabilitation for Unit 12 **(Completed)**
- Traffic Control Study for Cochran Adams Relief Sewer project **(Completed)**
- Traffic Control Study for NOS Rehabilitation for Unit 9 **(Completed)**
- Potholing for North Central Outfall Sewer (NCOS) Jefferson/Holdrege Condensate Vault Repair and Rehabilitation **(Completed)**
- Essential Fish Habitat Report for the Venice Auxiliary Pumping Plant Project **(Completed)**
- Phase II Environmental Site Assessment (including Remedial Plan) of Lot at 128 Hurricane Street **(Completed)**
- Wastewater Conveyance Engineering Division Staff Augmentation for CADD **(Completed)**
- Real Estate Division Staff Augmentation for Real Estate Officer **(Completed)**
- LA Sanitation Staff Augmentation for Public Relations Specialist **(Completed)**
- Contract Administration Staff Augmentation for Computer Programmer **(Completed)**.
- Aerial Imaging for NOS Rehabilitation for Unit 10 **(Completed)**
- Main Sewer Line and Maintenance Hole Inspection Support during Pre-design for CBD Unit 13 and CBD Unit 14 **(Ongoing)**
- Railroad Permit Design & Construction Support for NOS Rehabilitation for Unit 10 **(Ongoing)**
- Traffic Control Study for NOS Rehabilitation for Unit 10 **(Ongoing)**
- Technical Support for Tunnel Design plans and Specifications for San Fernando Relief Sewer and Naomi Ave. Sewer Upsizing **(Ongoing)**

Western Regional Sewer Rehabilitation Program, Orange-Western Sub-Trunk Rehabilitation Project, Los Alamitos Trunk Sewer Rehabilitation Project (Project Nos. 3-64A & 3-64B) Orange County, California

Category 3.1 & 3. 2
Sewer Rehab & Misc.
Design Support

Client
OC San (formerly OC Sanitation District)

Services
Condition Assessment
Modeling
Sewer Flow Studies
Predesign Evaluation
Design
Permitting
Traffic Control Plans
Public Outreach
Bid Support

Dates
2016 – 2020

Status of Project
Completed

Change order rate of project, as a percentage
<1.5%

Key Personnel - Specific Duties
Jack Gundarlahalli – Principal-in-Charge; Keith Campbell – Project Manager; Andy Romer – Project Engineer; Teddy Hioe – Project Engineer; Jesus Lopez – Pipeline Engineer; Joseph Marcos – Staff Engineer, Glen Hille – QA/QC Director; Robert Stallings – Condition Assessment; Dale Wah-Structural Engineer; Martin Hammer – Cost Estimating

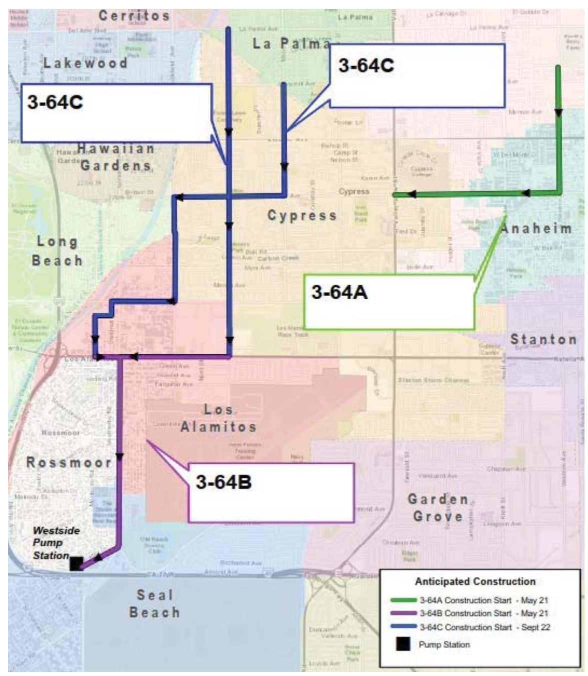
Client Reference
Hardat Khublall, PE, BCEE, PMP
CIP Project Manager
OC San
10844 Ellis Ave.
Fountain Valley, CA 92708
T: 714.593.7377
hkhublall@ocsan.gov

General Description of Project:

OC San's 2006 Strategic Plan Update identified a portion of their sewer collection system as being unable to handle projected peak weather flows. Additionally, OC San wanted to achieve an additional 50 years of reliable service, conforming to OC San's current standards, and maintaining a high level of safety and accessibility for maintenance, odor control, and spill prevention. As such, OC San embarked on a significant program to improve wet weather capacity and rehabilitate and reconstruct, where necessary, the Western Regional Sewers. The 3-64 program consists of three projects:

- 3-64A – Orange-Western Sub-Trunk Rehabilitation **(Design Completed)**
- 3-64B – Los Alamitos Trunk Sewer Rehabilitation **(Design Completed)**
- 3-64C - Los Alamitos Sub-Trunk and Westside Relief Interceptor Rehabilitation **(Design in Progress)**

Collectively, the program consists of approximately 87,000 linear feet of sewer pipeline (18-in to 51-in. diameter), 217 manholes (up to 74-in. diameter), and a pump station facility (approximately 18.8 MGD). AECOM completed design on 3-64A and 3-64B, both of which are currently



advertised for bid. 3-64A and 3-64B are the subject of this project description.

3-64A and 3-64B Scope:

Over a four-year period, AECOM provided comprehensive design services related to the rehabilitation and replacement of approximately 9-mile long, 21- to 39-inch diameter VCP pipeline with 100 manholes. AECOM provided services throughout the entire design life ranging from predesign evaluation studies, preliminary design, detailed/final design, and bid support services.

AECOM prepared a comprehensive predesign evaluation studies report that summarized AECOM's pipeline and manhole condition assessment investigation program and results; hydraulic modeling, sewer flow, and local sewer area analysis for capacity deficiencies; a review of pipeline and manhole's conformance to OC San's design guidelines; and an environmental analysis based on the Environmental Impact Report.

AECOM then evaluated various pipeline technologies including, but not limited to, CIPP lining, spiral wound PVC, sliplining, pipe bursting, microtunneling, and open cut. AECOM collaborated with OC San to determine a weighted scoring criteria for each alternative and identify key considerations including cost, traffic control, pumped bypass requirements, duration, impacts to public, etc. Various evaluation memorandums, design memorandums, and technical studies were submitted to help aid OC San in selecting the preferred design. The final design ultimately included a combination of CIPP lining, pipe replacement via open cut, and chemical grout injection. AECOM performed an internal, independent constructability review on the selected technologies, taking into account project specific site constraints.

OC San emphasized transparency to stakeholders and its policy of "being a good neighbor". AECOM coordinated with six cities, and three additional jurisdictional agencies, including Caltrans. AECOM facilitated presentations and workshops to ensure all agencies were in agreement with the proposed design. Key topics that required significant collaboration include:

- Construction work hours
- Scheduling and sequencing
- Traffic mitigation
- Noise mitigation

Relevant Key Features:

- Small and large diameter pipeline rehabilitation in heavily populated urban area
- Major street crossing
- Multi-city, multi-agency coordination
- Pipeline and manhole inspections
- Condition assessment
- Rehabilitation and/or replacement design
- Plans and specifications
- Hydraulic modeling
- Sewer flow studies
- Detailed traffic control plans
- Detailed bypass plans
- Constructability review
- Cost Estimates
- Environmental documentation
- Contract documentation
- Design manual and procedures review
- Presentations

Magnolia Trunk Sewer Rehabilitation (Project No. 3-58) Orange County, California

Category 3.1 & 3.2 Sewer Rehab & Misc. Design Support

Client
OC San (formerly Orange County Sanitation District)

Services
Hydraulic Modeling
Condition Assessment
Preliminary Engineering
Owner's Representative (Construction Management Support)

Dates
2006 – 2012

Status of Project
Completed

Change order rate of project, as a percentage
<1%

Key Personnel - Specific Duties
Jack Gundarlahalli – Project Manager; Robert Stallings – Condition Assessment/ Odor Control & Design Manuals; Martin Hammer – Cost Estimating

Client Reference
Dean Fisher
Engineering Manager
OC San
10844 Ellis Avenue
Fountain Valley, CA 92708
T: 714.593.7370
dfisher@ocsan.gov

Sliplining of Magnolia Trunk Sewer

General Description of Project:
Installed in 1950, the Magnolia Trunk Sewer was one of the first polyvinyl chloride (PVC) liner projects built, with PVC installed in sheets that required extensive seam welding. Over the past 60 years, many of these seams failed, causing considerable deterioration. OCSD embarked upon an improvement program to avoid future failures of this vital asset.

Over a five-year period, AECOM provided a variety of services related to the rehabilitation of the 12-mile-long, 38- to 78-inch diameter Magnolia Trunk Sewer, including condition assessment, project phasing, and owner's representative services.

AECOM prepared a pipeline condition assessment report for this project. The latest CCTV technologies were used to

Relevant Key Features:

- Large diameter pipeline rehabilitation in heavily populated urban area
- Major street crossing
- Multi-city, multi-agency coordination
- Pipeline and manhole inspections
- Condition assessment
- Preliminary engineering and owner's representative
- Contract documents
- Cost estimates
- Hydraulic modeling
- Construction management support
- Design manuals and procedures review
- Constructability review

identify and classify sewer defects. Our team assessed the existing CCTV tapes and documents in accordance with NASSCO guidelines for eight miles of pipeline; performed an additional four miles of CCTV work; conducted preliminary manned entry inspection; and prepared a pipeline condition assessment report.

The final pipeline condition assessment report identified sewer rehabilitation techniques; prioritized work; and recommended contract packaging. The phased rehabilitation program was based on the type, extent, and severity and/or urgency of repairs.

AECOM prepared and used the template procurement documents as owner representative for the DB “best value” procurement and execution of the Magnolia Trunk Sewer Rehabilitation project. The DB contractor installed approximately five miles of Hobas pipe using sliplining methods (trenchless technology). Sliplining minimized traffic interruption to residents, schools, and businesses. The job was finished ahead of schedule.

In addition, the team developed Project Criteria and Performance Requirements.

Balboa Trunk Sewer Rehabilitation (Project No. 5-47)
Newport Beach, California

Category 3.1 & 3.2
Sewer Rehab & Misc.
Design Support

Client
OC San (formerly Orange County Sanitation District)

Services
Hydraulic Modeling
Design, Plans, and Specifications
Permitting
Traffic Control Plans
Construction Support Services

Dates
2009 – 2014

Status of Project
Completed

Change order rate of project, as a percentage
<1%

Key Personnel - Specific Duties
Jack Gundarlahalli – Project Manager/ Construction Support Services; Jerry Flores – CEQA; Martin Hammer – Cost Estimator

Client Reference
Eros Yong
Project Manager
OC San
10844 Ellis Avenue
Fountain Valley, CA 92708
T: 714.593.7305
Eyong@ocsan.gov

General Description of Project:

The Balboa trunk sewer was inspected via closed-circuit television (CCTV) in 2006 and showed multiple cracks, fractures, and infiltration. Since the sewer is located at an elevation below mean sea level and is submerged during high tide, this results in a large amount of infiltration into the system.

AECOM provided pre-design, design, and construction support services for the rehabilitation of the Balboa trunk sewer along Newport Boulevard and Balboa Boulevard between A Street and Via Lido in the City of Newport Beach, California. The project consisted of approximately 12,200 linear feet of 15-, 18-, 21-, and 24-inch-diameter trenchless, cured-in-place pipe lining and rehabilitation of 33 manholes along Newport and Balboa Boulevards. Major services provided include manhole inspection; surveying; sewer inspection; NAASCO sewer condition assessment; rehabilitation alternatives evaluation; odor control; hydraulic modeling; a pre-design report; public outreach support; plan (including traffic control plans) and specification preparation; construction RFI review; and construction submittal review. Due to its congested and sensitive location, the project required extensive coordination with the City of Newport Beach and the local community.

Relevant Key Features:

- Large diameter pipeline rehabilitation in heavily populated urban area
- Major street crossing
- Multi-city, multi-agency coordination
- Pipeline and manhole inspections
- Condition assessment
- Design, plans, and specifications
- Hydraulic Modeling
- Cost Estimates
- Construction management support
- Traffic control plans
- Presentation and training
- Public outreach support
- Constructability review

Pure Water Program – Phase 1 Sewer Conveyance Pipeline and Moreno Pump Station San Diego, California

Category 3.1 & 3.2
Sewer Rehab & Misc.
Design Support

Client
City of San Diego

Services
Pump Station Design
Pipeline Design
Sewer Diversion
Permitting
Traffic Control
Geotechnical Engineering and Analysis

Dates
2015 – 2021

Status of Project
100% Design Complete

Change order rate of project, as a percentage
0%

Key Personnel - Specific Duties
Dan Lee – Project Manager; Bryan Paine – Quality Control

Client Reference
John Stufflebean
Program Manager
City of San Diego
Public Utilities Department
9192 Topaz Way
San Diego, CA 92123
T: 408-807-9824
JStufflebean@sandiego.gov

General Description of Project:
Pure Water is the City of San Diego's 20-year program to provide a safe, reliable and cost-effective drinking water supply for San Diego. At full implementation in 2035, the Pure Water Program will provide one third of San Diego's water supply locally and will reduce the City's ocean wastewater discharges by 50 percent. The Program is envisioned as a $3.5B capital investment over 20 years.

The City of San Diego retained AECOM to perform all necessary studies, conduct environmental reviews, and secure all necessary approvals and finalize the project design for the Morena Pump Station and Conveyance Pipeline project. During the 30 percent design development phase, the AECOM team built upon the City's pre-work to identify critical path issues and solutions that are advantageous to expediting and implementing the 14-month, fast-track project.

The project includes five distinct elements: (1) sewer diversion/influent conveyance; (2) pump station and odor control systems; (3) a 10.2-mile, 48-inch-diameter sewer force main pipeline; (4) a 10.2-mile, 24-inch-diameter gravity brine return line; and (5) a new/replacement potable water transmission/distribution system along Morena Boulevard. Each project element has similar yet unique challenges, including tight utility corridors, high groundwater and/or geotechnical considerations, potential conflicts with competing

Relevant Key Features:

- New large diameter pipeline and force mains in heavily populated urban area
- Major street crossing
- Multi-city, multi-agency coordination
- Design, plans, and specifications
- Hydraulic modeling
- Contract documents
- Cost estimates
- Construction management support
- Environmental documentation
- Constructability review
- Permitting
- Traffic control plans
- Design manuals and procedures review
- Presentations

construction projects, operating hydraulic conditions, and extreme traffic congestion pinch points throughout the entire project alignment.

To meet the accelerated 14-month schedule, the conveyance system design was prepared by four distinct teams focusing on unique issues associated with each specific reach and/or project element to simultaneously advance the entire project in a timely manner. Overarching issues, such as permitting, adjacent project coordination, and traffic management, was developed for the project and applied to each specific design package to maintain consistency and continuity. This also allowed each team to remain focused on the unique technical aspects of their assignment. This parallel design approach proved advantageous to the City in the planning and expediting of project reviews, environmental document preparation, and permitting.

The identified preferred force main alignment traverses through differing geological conditions, as well as mature communities and major commercial areas that required differing tunneling methods. AECOM refined the proposed alignment to reduce the number of tunneling locations identified in the City’s design report. The potential to reduce tunneling proved to have considerable cost-saving impacts to the project.

Colorado Lagoon Inverted Sewer Siphon
Long Beach, California

Category 3.1 & 3.2
Sewer Rehab & Misc. Design Support

Client
Los Angeles County Sanitation Districts

Services
Hydraulic Modeling
Hydraulic Design
Sewer Siphon Design
Cost-Benefit Analysis
Cost Estimation
Utility Investigation

Dates
2017 – 2021

Status of Project
100% Design Complete

Change order rate of project, as a percentage
0%

Key Personnel - Specific Duties
Bryan Paine – Project Engineer; Dylan LaFrance – Hydraulic Analysis / Collection System Modeling; Dale Wah – Structural Engineer

Client Reference
Rosann Paracuelles, PE
Supervising Engineer
Los Angeles County Sanitation Districts
1955 Workman Mill Road
Whittier, CA 90601
T: 562.908.4288
rparacuelles@lacsd.org

General Description of Project:
The project involved preparation of a sewage handling report, a trenchless sewer siphon installation technical memorandum, and the preliminary and final design of a double barrel inverted sewer siphon with air jumper line. The project was needed to accommodate a proposed concrete triple-box culvert and bridge that will connect the Colorado Lagoon in Long Beach, CA to the ocean bay for improved water circulation and quality. The existing 21-inch gravity sewer that is owned and operated by the Districts needs to be relocated to avoid conflicting with the proposed triple box culvert.

During the planning phase of the project, AECOM performed a hydraulic and cost-benefit analysis for the replacement of the existing Districts trunk sewer. AECOM analyzed the implementation of either an inverted siphon or lift station for the proposed replacement of the gravity sewer. A hydraulic model of the system was

developed to size the proposed facilities to ensure the capacity of the Districts collection system was maintained. Current wastewater flows were conservatively estimated, and future flows were projected using the latest industry references and standards. Each proposed alternative was integrated into the hydraulic model to determine the effect on the Districts collection system and to optimize the selected alternative. The inverted siphon was selected because it was determined that the Districts would save approximately $1.2M compared to the lift station option over a 30-year design life.

AECOM developed the preliminary design of the preferred inverted siphon alternative, which included utility research and mapping, horizontal and vertical alignment design, inlet/outlet junction structure design, conceptual construction cost estimate, constructability assessment, and operation and maintenance procedures. AECOM also prepared construction plans, technical

Relevant Key Features:

- Large diameter pipeline replacement
- Major street crossing
- Preliminary design
- Hydraulic modeling
- Alternative and cost benefit analysis
- Cost estimates
- Constructability review

specifications, and structural calculations for the final design phase. The inverted siphon will be constructed using an open cut trenching with dewatering and will be placed within a 78-inch RCP casing beneath the box culverts. There will be two 24-inch VCP siphon lines and one 14-inch PVC air jumper line. AECOM prepared civil and structural plans for the siphon and air lines, which included manholes and custom junction structures with stop logs. The project is currently bidding and will go into construction later this year

SFPUC, Sewer System Improvement Program, Collection System Condition Assessment Program San Francisco, California

Category 3.1 & 3.2 Sewer Rehab & Misc. Design Support

Client
San Francisco Public Utilities Commission

Services
Wastewater
Stormwater
Operational Strategy
Asset Management
Branding Strategy and Marketing
Emergency Planning, Technical Assistance and Training Support
Wastewater Operations, Hazardous Materials and Waste

Dates
2014 – 2023

Status of Project
Various Projects in Progress

Change order rate of project, as a percentage
0%

Key Personnel - Specific Duties
Derrick Wong – Condition Assessment; Andy Romer – Technical Advisor/Sewer Pipeline Technical Expert; Allen Randall – Electrical

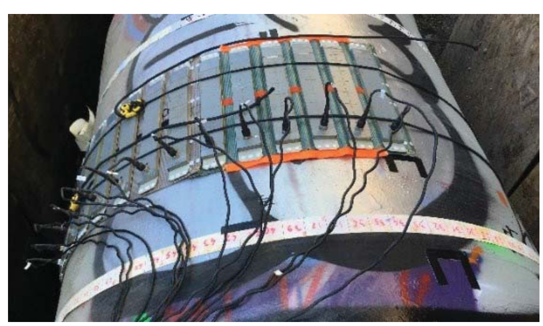
Client Reference
San Francisco Public Utilities Commission (SFPUC)
525 Golden Gate Ave.
San Francisco, CA
Kathryn How
AGM Infrastructure
T: 415.551.4354
KHow@sfwater.org

General Description of Project:
AECOM (in a joint venture) is providing program management services to the SFPUC on one of the nation's largest infrastructure renewal programs. The Sewer System Improvement Program is a 20-year citywide investment to upgrade its wastewater infrastructure, to ensure a reliable, sustainable, and a seismically safe system.

AECOM developed a risk-based condition assessment program for the entirety of San Francisco's collection system—including all wastewater force mains—providing the basis for developing planning and CIP decisions, including establishment of key levels of service, risk, and life-cycle management indicators. A tiered program was developed, allowing the most efficient, cost-effective, and targeted data collection for use in understanding pipe condition. An advanced desktop loading model was developed that considered other factors in conjunction with a pipe's material type/estimated condition, such as the type of soil, surface loads, internal operating pressures, operational hydraulics, method of construction, groundwater condition, and applied internal and external stress. In addition, in-depth knowledge of design standards by historical era was instrumental in helping to define loading risks. The pipe's available structural capacity was compared against actual loading/environmental conditions to assess whether the pipe would have an

Relevant Key Features:

- Large diameter gravity and force mains (new, rehabilitation, and replacement) in heavily populated urban area
- Major street crossing
- Multi-city, multi-agency coordination
- Pipeline inspections
- Condition assessment
- Preliminary rehabilitation design
- Hydraulic modeling
- Owner's representative
- Cost estimates
- Contract documents
- Presentation and training
- Constructability reviews
- Environmental documentation
- Sewer flow studies
- Environmental/Planning support
- Design manuals and procedures review



adequate factor of safety. Deterioration curves were developed to project the time frame in which estimated deteriorated conditions (e.g., wall loss) would result in inadequate safety factors, thus defining the pipe's remaining useful life within confidence limits. Deterioration curves and the results were compared against thousands of data points in AECOM's national database, gathered from projects performed for numerous agencies.

Based on the loading model results, selective field testing was performed to most cost-effectively collect pipe condition data, considering material, operational constraints, pipe system importance/risks, level of detail, and ability to extrapolate results throughout the rest of the inventory for pipes not able to be tested. Innovative advanced techniques were employed, such as broadband electromagnetics and pipe penetrating radar.

Each inspection technology has unique requirements. Issues such as access, operational, and deployment challenges may make specific vendor technologies infeasible or prohibitively expensive. Leveraging our depth of experience and careful coordination with the client has led to developing the best field data collection technique. These efforts have resulted in a significantly improved understanding of pipe condition, evaluating each pipe's ability to withstand loads based on estimate current condition, identifying recommendations for next steps/field condition techniques, and selectively performing advanced and detailed condition field work for the most suitable pipelines.

San Fernando Relief Sewer Concept Report (TOS SN-81)
Los Angeles, CA

Category 3.2- Misc.

Client
City of Los Angeles, Bureau of Sanitation (LASAN)

Services
Alignment Analysis
Hydraulic Evaluation
Environmental Impact Assessment
Constructability Review
Risk Assessment
Cost-Benefit Analysis

Dates
2017 – 2018

Status of Project
Completed

Change order rate of project, as a percentage
0%

Key Personnel - Specific Duties
Keith Campbell – Project Manager

Client Reference
Ali Poosti, PE
Division Manager
LA Sanitation and Environment
Wastewater Engineering Services Division
2714 Media Center Drive
Los Angeles, CA 90065
T: 323.342.6228
ali.poosti@lacity.org

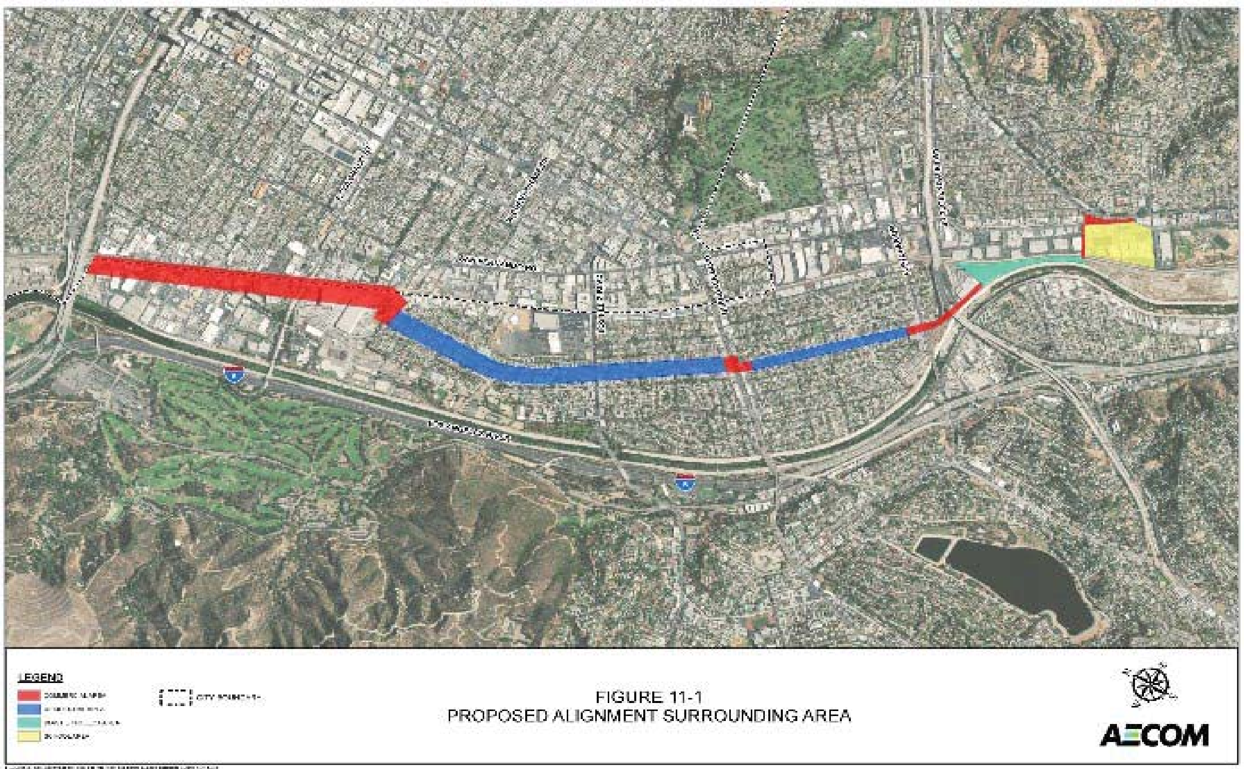


FIGURE 11-1
PROPOSED ALIGNMENT SURROUNDING AREA

General Description of Project:
AECOM was retained by the City of Los Angeles Bureau of Sanitation (LASAN) in December 2017 to develop a conceptual study report for the proposed San Fernando Relief Sewer with the goal of identifying a more practical expenditure of capital funding while providing the hydraulic relief to the North Outfall Sewer (NOS). Based on LASAN's NOS Relief Study in 2013, where they evaluated existing and future sanitary sewer average dry weather flows (ADWF), the existing conveyance system did not meet current design standards regarding maximum depth of flow to inside pipe diameter (d/D) criteria for peak dry weather flow (PDWF) and peak wet weather flow (PWWF) for service year of 2015. The objective of the concept study was to provide a recommendation for the proposed alignment for the NOS Relief Sewer based on field analysis findings, evaluating four alternate alignments, and conducting risk assessment and cost benefit analysis.

In evaluating the alternative alignments, constructability, community and traffic impacts, and overhead and underground utilities were considered in selecting the best alternative to move forward. A detailed hydraulic evaluation for two scenarios was conducted for the proposed alignment. Additionally, the study also included assessment of construction methods and a concept level construction cost estimate for the proposed alignment. A recommendation was made to further investigate two of the four alignments to determine the feasibility. Recently, City of Los Angeles, Bureau of Engineering requested AECOM to provide tunnel design plans and specifications support services for the San Fernando Relief Sewer through the existing on-call contract, TOS-5.

Relevant Key Features:

- Large diameter replacement/relief sewer in heavily populated urban area
- Major street crossing
- Multi-city, multi-agency coordination
- Field investigations
- Hydraulic evaluation
- Alternative evaluations
- Constructability review
- Risk assessment and cost benefit analysis
- Presentations

Blackstone and Shields Avenues Sewer Rehabilitation Project
Fresno, California

Category 3.1 & 3.2 Sewer Rehab & Misc. Design Support

Client
City of Fresno

Services
Sewer Rehabilitation
Condition Assessment
Design
Bid Support
Construction Support

Dates
2012 – 2014

Status of Project
Completed

Change order rate of project, as a percentage
0%

Key Personnel - Specific Duties
Teddy Hioe – Project Manager

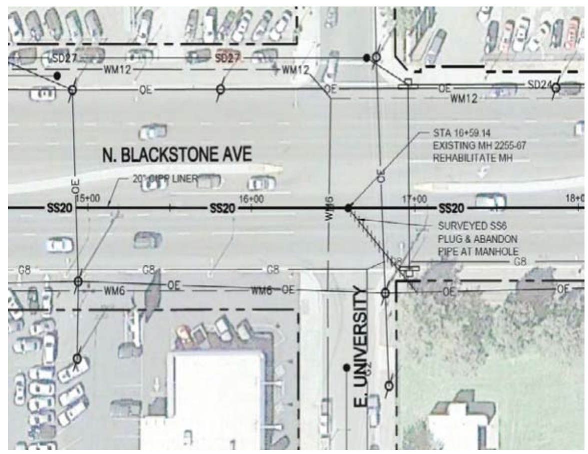
Client Reference
Patricia Diep
City of Fresno
Department of Public Utilities - Utilities Planning & Engineering
2101 G Street, Building A
Fresno, CA 93706
T: 559.621.1609
Patricia.diep@fresno.gov

General Description of Project:
The City of Fresno Department of Public Utilities retained AECOM to provide design, bidding, and construction-phase engineering for the rehabilitation of sewer lines along Blackstone Avenue from Peralta to Clinton and Shields Avenue from Claremont to Fordham.

The existing sewer lines showed structural deficiencies and sewer rehabilitation is intended to restore the structural integrity and prevent further corrosion caused by hydrogen sulfide. The project consisted of 3,300 linear feet of 15- to 20-inch-diameter sewer lines. Rehabilitation using CIPP lining was selected.

Bypass piping was a critical component that the client emphasized which cannot be entirely left to the bidders. A clear understanding such as identifying and strategically placing temporary trenching for bypass piping that may be required was considered in the AECOM design. AECOM also identified several potential issues at several intersections that need to be carefully considered including lane closures, signal patterns, and available use of detours during construction.

AECOM completed the final design of the sewer lines within the City's allotted schedule and within the projected budget.



Relevant Key Features

- Small diameter pipeline rehabilitation in heavily populated urban area
- Major street crossing
- Pipeline and manhole inspections
- Condition assessment
- Design, plans, and specifications
- Hydraulic modeling
- Cost estimates
- Contract documents
- Construction management support
- Design manuals and procedures review

South Third Street Sewer Rehabilitation Project
Fresno, California

Category 3.1 & 3.2
Sewer Rehab & Misc.
Design Support

Client
City of Fresno

Services
Sewer Rehabilitation
Condition Assessment
Design
Bid Support
Construction Support

Dates
2011 – 2013

Status of Project
Completed

Change order rate of project, as a percentage
0%

Key Personnel - Specific Duties
Teddy Hioe – Principal Engineer; Andy Romer – Quality Management/ Quality Assurance

Client Reference
Patricia Diep
City of Fresno
Department of Public Utilities - Utilities Planning & Engineering
2101 G Street, Building A
Fresno, CA 93706
T: 559.621.1609
Patricia.diep@fresno.gov

General Description of Project:
The City of Fresno Department of Public Utilities retained AECOM to provide design, bidding, and construction-phase engineering for the rehabilitation of sewer lines along South Third Street. The existing sewer lines showed structural deficiencies and sewer rehabilitation is intended to restore the structural integrity and prevent further corrosion caused by hydrogen sulfide. The project consisted of 2,000 linear feet of 16-inch-diameter, sewer concrete pipe that was rehabilitated using CIPP lining.

AECOM approached the design of the project with the following in mind per conversations with client: bypass system, traffic control, permit compliance, site cleanup, customer service, and public responsiveness. The City staff expressed concerns about past issues with Contractors. As such, AECOM and the City collaboratively worked together and provided alternatives that increased the likelihood of getting the best contractor; furnished plans and specifications that protected the City's interest and assure works goes smoothly; helped motivate the contractor to make the City's residents and businesses a top priority; and reduced the risk of contract headaches from schedule delays and costly claims.

AECOM completed the design of the sewer lines within the City's allotted schedule and within the projected budget.

AECOM also provided engineering support during construction where the sewer rehabilitation was completed with the allotted schedule.

Relevant Key Features:

- Small diameter pipeline rehabilitation in residential area
- Major street crossing
- Condition assessment
- Pipeline and manhole inspections
- Design, plans, and specifications
- Hydraulic modeling
- Cost estimates
- Contract documents
- Construction management support
- Design manuals and procedures review

North Fresno Street and North College Avenues Sewer Rehabilitation Projects
Fresno, California

Category 3.1 & 3.2
Sewer Rehab & Misc.
Design Support

Client
City of Fresno

Services
Sewer Rehabilitation
Condition Assessment
Design
Bid Support
Construction Support

Dates
2011 – 2012

Status of Project
Completed

Change order rate of project, as a percentage
0%

Key Personnel - Specific Duties
Teddy Hioe – Project Manager

Client Reference
Patricia Diep
City of Fresno
Department of Public Utilities - Utilities Planning & Engineering
2101 G Street, Building A
Fresno, CA 93706
T: 559.621.1609
Patricia.diep@fresno.gov

General Description of Project:
The City of Fresno Department of Public Utilities retained AECOM to provide design, bidding, and construction-phase engineering for the rehabilitation of sewer lines along Fresno Street between San Gabriel and Dakota Avenues, and along College Avenue between Andrews and Clinton Avenues. The existing sewer lines showed structural deficiencies according to the 2006 Wastewater Collection System Master Plan (WCSMP). The sewer rehabilitation project was intended to restore the structural integrity and prevent further corrosion caused by hydro- gen sulfide.

The Fresno Street alignment consisted of 6,836 linear feet of 12-, 15-, 18- and 21-inch-diameter sewer concrete pipe and the College Avenue alignment consisted of 2,817 linear feet of 12-inch-diameter sewer concrete pipe. Rehabilitation using CIPP lining was selected. During its field review, AECOM also discovered moderate structural deterioration of manholes along Fresno Street. Rehabilitation of manholes was subsequently added to the scope of the project. Unlike earlier sewer rehab projects performed in Fresno, AECOM's drawings provided concepts for bypass system layout, including streets where shallow trenching would be required. This provided a basis for bidders to determine traffic control and paving requirements. It also painted a clear picture of construction for other City departments, facilitating the issuance of permits. AECOM completed the design of the sewer lines within the City's allotted schedule and within the projected budget.

AECOM also provided engineering support during construction where the sewer rehabilitation was completed with the allotted schedule.

Relevant Key Features:

- Small diameter pipeline rehabilitation in residential area
- Major street crossing
- Condition assessment
- Pipeline and manhole inspections
- Design, plans, and specifications
- Hydraulic modeling
- Cost estimates
- Contract documents
- Construction management support
- Design manuals and procedures review

Key Project Staff Experience

By selecting AECOM, the Districts will gain access to staff members that have driven our company to become a top tier firm, as ranked by *Engineering News-Record*.

Overall Team Organization and Key Team Members

In Section 2 - General Company/Team Information, we have included an organization chart (**Exhibit 2-1)**, and identified a Project Manager, Task Order Managers for Sewer Rehabilitation and Construction Projects (RFP Task 3.1) and Miscellaneous Design Support and Engineering Tasks (RFP Task 3.2), and technical experts as key team members for the two project types/categories as identified in Section 3 of the RFP. A summary of qualifications and expertise for our proposed Project Manager, Jack Gundarlahalli, P.E, was provided in Section 2. The proposed Task Managers have the required experience and qualifications to lead tasks in their field of expertise. **Exhibit 3-4** summarizes the qualifications, location, registration, expertise relevant to both categories for Key Team members and their resumes are provided in **Appendix A - Resumes.**

Qualifications and Benefits of AECOM Team

- Hand-picked project manager and key team members with expertise in planning and design of all elements of wastewater collection system including rehabilitation, new and replacement gravity main, and force mains up to 108-inch diameter
- Majority of team members relevant experience with the design of similar nature projects in LA metro's heavily populated urban area
- Comprehensive all in-house local team will deliver quality projects
- The team is supported by a pool of National Conveyance System technical Experts and over 2000 water and wastewater professional resources in the US to ensure quality, staffing, and schedule compliance
- Gundarlahalli, a local project manager with 31 years of dedicated wastewater experience including managing several on-call contracts for over a decade
- Accomplished team members with over 20 years' experience in delivering quality collection system design projects

AECOM has the right people to deliver the variety of assignments under both categories required under this on-call contract. The AECOM team is comprised of industry experts, local experienced staff, with the breadth and depth of experience to address the Districts' needs for achieving for the project technical support of the most qualified people. The AECOM team's deep technical ability, coupled with our design sensibility, rigorous cost control, accounting, and project management allow us to deliver task order projects successfully under On-Call contracts. We believe this holistic design process affords our clients an efficiency and a better coordinated, better designed project.

A Typical Task Order Team Development and Execution

Once scope and schedule of a task is defined, we will develop a tailored and focused task organization chart out of the overarching organization chart as provided in **Exhibit 2-1**. If a task needs a Task Manager and supporting staff different than included in our overarching organization chart, we will immediately identify an alternative qualified Task Manager and supporting staff from the AECOM's vast pool of engineers and scientists. AECOM is flexible to engage a subconsultant to bring additional specialty staff if needed to strengthen the team for a task.

We are ready to meet your design challenges with an extraordinary team of experts and specialists. All key personnel on our organization chart will be made available and remain committed for the duration of this contract.

Exhibit 3-4 AECOM Personnel Qualifications & Relevant Expertise

								Category 3.1 Category - Sewer Rehabilitation and New Construction (Key Elements)											Category 3.2 – Misc. Design Support Services (Key Elements)					
Name	Role on this Contract	Labor Category	Office Location	Years of Technical Experience	Years with Firm	Highest Degree	Registration	Sewer Upgrade / Rehabilitation Design	New Sewer Design	Small Diameter Sewer Rehabilitation	Large Diameter Sewer Rehabilitation	Design, Plans, Specifications	Cost Estimates	Contract Documents	Force Mains Design	Sewer Flow Studies	Environmental Documentation	Constructability Reviews	Engineering Studies/Reports	Hydraulic Modeling	Environmental /Planning Support	Construction Management Support	Design Manuals and Procedures Reviews	Presentation and Training
Jack Gundarlahalli	Project Manager	Project Manager	Orange/Los Angeles	31	31	MS	PE	●		●	●	●		●		●	●	●	●		●	●	●	●
Surendra Thakral	Principal-in-Charge	Principal-in-Charge	Los Angeles	47	1	MS	PE, BCEE	●	●	●	●	●	●	●	●			●	●			●	●	●
Glen Hille	QA/QC Officer	QA/QC Manager	Camarillo	38	30	BS	PE	●	●	●	●	●	●	●	●			●	●			●	●	●
Keith Campbell	Task Lead	Task Manager 1	Los Angeles	34	34	BS	PE	●	●	●	●	●	●	●	●	●		●	●	●		●	●	●
Jesus Lopez	Gravity Collection/ Engineering Studies/ Open Trench Construction	Registered Civil Engineer 2	Orange	31	31	BS	PE	●	●	●	●	●	●	●	●	●		●	●	●		●	●	●
Andy Romer	Technical Advisor/Force Mains/ Presentation and Training	Principal Engineer 1	Orange	42	34	BS	PE	●	●	●	●	●		●	●	●		●	●			●	●	●
Mathew Francis	Trenchless Technology/ Tunneling	Registered Civil Engineer 1	Murray, UT	28	25	MS	PE	●	●	●	●	●		●	●			●	●			●	●	●
Joseph Marcos	Sewer Flow Studies	Registered Civil Engineer 2	Los Angeles	7	5	MS	PE	●	●	●	●	●	●	●		●			●	●	●	●	●	●
Mark Webb	CIPP/Sliplining	Principal Engineer 1	Chelmsford , MA	22	1	MS	PE, Pr.Eng, F.ASCE	●	●	●	●	●	●	●	●			●	●			●	●	●
Dan Lee	Constructability Review	Principal Engineer 2	San Diego	41	16	BS	PE, QSD, CQCM	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Dale Wah	Structural	Registered Structural Engineer 1	Los Angeles	46	5	BS	PE, SE	●	●	●	●	●		●	●			●	●			●	●	●
Bob Stallings	Odor Control/ Review Design Manuals and Procedures	Principal Engineer 1	Honolulu, HI	42	32	BS	PE	●	●	●	●	●	●	●	●	●		●	●			●	●	●
Bryan Paine	Task Lead/ Alternatives Analysis	Task Manager 1	Orange/Los Angeles	22	18	BS	PE, QSD, ENV SP	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Dylan LaFrance	Hydraulic Modeling	Registered Civil Engineer 3	Orange	8	6	BS	PE	●	●	●		●	●	●	●	●	●		●	●		●	●	●

Exhibit 3-4 AECOM Personnel Qualifications & Relevant Expertise

								Category 3.1 Category - Sewer Rehabilitation and New Construction (Key Elements)											Category 3.2 – Misc. Design Support Services (Key Elements)					
Name	Role on this Contract	Labor Category	Office Location	Years of Technical Experience	Years with Firm	Highest Degree	Registration	Sewer Upgrade / Rehabilitation Design	New Sewer Design	Small Diameter Sewer Rehabilitation	Large Diameter Sewer Rehabilitation	Design, Plans, Specifications	Cost Estimates	Contract Documents	Force Mains Design	Sewer Flow Studies	Environmental Documentation	Constructability Reviews	Engineering Studies/Reports	Hydraulic Modeling	Environmental /Planning Support	Construction Management Support	Design Manuals and Procedures Reviews	Presentation and Training
Robert Stein	Construction Management Support	Registered Civil Engineer 2	Bakersfield	38	33	BS	PE			●	●		●	●				●				●		
Teddy Hioe	Civil	Registered Civil Engineer 1	Fresno	29	29	BS	PE	●	●	●	●	●	●	●	●	●		●	●			●	●	●
Derrick Wong	Condition Assessment	Registered Civil Engineer 1	Oakland	27	22	MS	PE			●	●	●	●	●		●	●	●	●	●	●		●	●
Jerry Flores	Environmental Planning/ Documentation	Environmental Planner 1	Orange	22	19	BS											●				●			
Martin Hammer	Cost Estimate	Cost Estimator 1	Glen Allen, VA	36	22	BS							●											

Project Management Method

We have the proven internal processes in place for over 30 years with multiple on-call contracts to initiate, conduct, and finalize Task Authorizations in a cost-effective, high-quality manner to achieve the Districts' requirements and expectations.

AECOM provides on-call services to many large municipalities and water districts across the country. With our rich history of successfully delivering on-call services for local municipalities – coupled with the in-depth experience of our Project Manager and team leaders – we are confident in our ability to promptly initiate and successfully complete any Task Authorization request by the Districts, on time and within budget. To facilitate this, we will employ a proven delivery approach developed for on-call services that focuses on a comprehensive Task Authorization development process, continuous communication, and reliable implementation.

Project Management Overview

The Districts has an ongoing and growing list of infrastructure needs. Our team brings the experience and expertise to address the Districts' project needs under this on-call program. AECOM's management team is focused on providing outstanding professional services to the Districts. AECOM offers:

- A pool of locally based project and task managers with the background and experience to effectively deliver your projects
- Current experience overseeing and managing on-call program support with other similar large municipalities
- A multidisciplinary team of qualified local and national engineering experts to serve as the Districts' choice consultant to solve infrastructure challenges
- Local staff with proven experience, available to augment Districts staff when needed
- A broad project basis of lessons learned and innovations to help solve the Districts' engineering challenges
- Competitive rates for our experts and engineering staff
- Proven management of on-call programs

Selecting AECOM to assist with these efforts will provide the Districts with ready access to comprehensive and proactive support services. **Exhibit 3-1** is representative of our successful achievements with on-call contracts with other large municipalities.

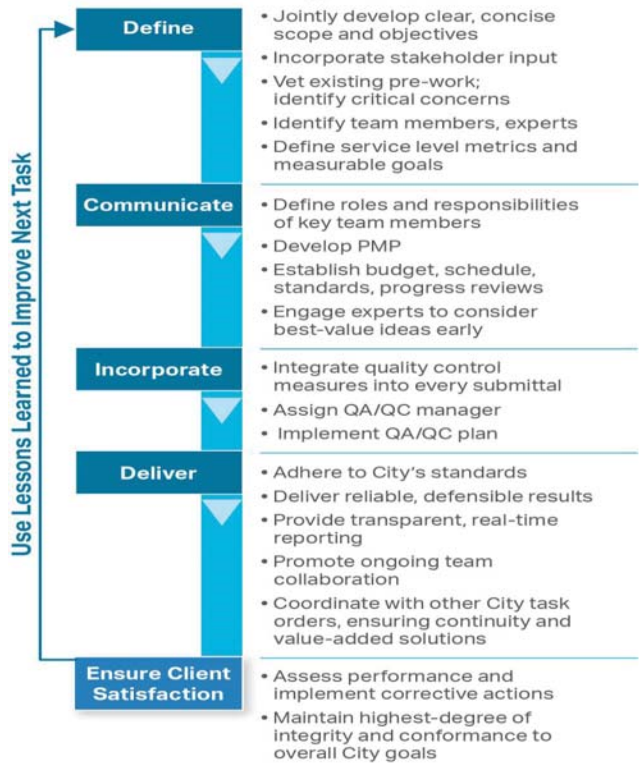
AECOM'S Project Management Team

Districts are seeking to identify and prequalify firms with the technical expertise and resources to perform the project management, process design, and/or civil, architectural, structural, mechanical, electrical and instrumentation. We have the resources to meet the Districts' needs with a team that is organized to be responsive, flexible, and to provide the best technical expertise to the Districts. Our Principal-in-Charge, **Surendra Thakral, PE, BCEE,** and Project Manager, **Jack Gundarlahalli, PE,** are located at our Los Angeles and Orange offices respectively. They are supported by other local technical specialists and national experts as required. AECOM's Los Angeles and Orange offices have the engineering disciplines available on-site to immediately respond to your technical needs. The experience and capabilities of our team are detailed in this section and highlighted in their brief resumes.

Approach to Task Authorization Solicitations and Delivery

Successful contract management of multiple, concurrent task orders requires a proven, comprehensive process that meets the Districts' goals and objectives. From day-to-day communication through project reporting, our job is to make your job easier.

Exhibit 3-5 Task Authorization Delivery Process



Illustrated on **Exhibit 3-5**, our typical Task Authorization development, execution and management approach is a four-step process — define, communicate, incorporate, and deliver to the client's satisfaction.

At the core of this process is the management of schedule, resources, and costs as well as frequent and effective communication. These areas are further described below.

Monitoring and Controlling Schedule, Resources, and Costs. At the onset of a task order, AECOM will prepare a baseline Critical Path Method Schedule for approval by the Districts' Project Manager. The schedule will include the following:

- Start and finish dates for each activity
- Milestones for each task
- Submittal dates
- Meeting and workshop dates
- Districts review periods

Once established, the schedule will be tracked weekly by staff-hours and costs, and monthly by milestones. If scope changes due to unexpected site conditions, our team will work with Districts to re-adjust or revise to best fit Districts' needs.

The Districts will benefit from this linear approach as we will keep the Districts informed of changes as soon as they arise to allow timely adjustments and avoid unauthorized work, budget overrun, and costly surprises.

Ensuring Job Safety. Safety on any project is paramount. Every member of the AECOM team—from administrative staff to construction managers—is responsible for safety on the job. We will work closely with the Districts throughout the contract to assure worker safety meets the protocols of both the Districts and AECOM.

Exhibit 3-6 Safety Principles

For every project, we perform an initial evaluation of the safety requirements for the project to develop a Safe Work Plan (SWP) that is tailored to the specific needs of the work to be performed. The SWP identifies all activities to be conducted during the project and any training needs for the project team. The SWP is reviewed with each of the project team members and is continually updated throughout the project as changes occur. AECOM performs in-house safety training and maintains OSHA standards and requirements for all of its employees. Staff training safeguards against hazards and increase workplace morale and productivity.

The Districts will benefit from the upfront safety planning and quality planning. It is a wise investment that pays great schedule and budget dividends over the course of projects and programs.

Quality Control

AECOM's Quality Program
AECOM's overarching Quality Management System (QMS) is certified to the ISO 9001:2008 standard and will serve as the foundation for our detailed, project specific quality management plan for each Task Order. Similar QA/QC plans previously developed by AECOM include the development of a submittal checklist prior to project scoping and negotiations, utilization of a color coding system for plan and specification reviews, standardized submittal forms for reviewers and back checkers, performance rating and scoring systems for subconsultants with interim reviews, and opportunity for feedback. AECOM's approach to project quality management, the parties responsible, and development of the Quality Management Plan (QMP) are described below.

Initiating Quality. Quality begins with AECOM and all subconsultants having a thorough understanding of project goals and objectives, emphasizing communication and a thorough review of project inputs. AECOM will develop a project-specific checklist concurrent with the development of the scope of work.

Producing Quality. AECOM requires a Project Management Plan (PMP) on all projects. As part of the PMP, the project-specific Quality Management Plan (QMP) will provide the foundation and guidance for the critical technical activities undertaken.

Confirming Quality. While it is important to build quality into the work, formal checking and reviews are also critical QMS activities. Quality checking activities, which are documented with the previously developed checklists requiring two level approvals, will be customary and a part of each submittal's permanent records.

Delivering Quality. All deliverables undergo a final verification check before submission. An independent reviewer evaluates the deliverable for completeness and consistency, adherence to quality requirements, and resolution of comments. The reviewer then signs a Deliverable Release form and transmits it to our project manager who is responsible for the final overlook, approval, and submittal. This final independent evaluation assesses the submittal's state of readiness, without diminishing the project manager's accountability for quality of work being released. As a check-and-balance activity, this review pairing helps AECOM consistently deliver quality and value to our clients.

Improving Quality. A key component of AECOM's quality programming and ISO 9001 is continuous improvement, learning from our experiences, soliciting client feedback, documenting lessons learned, and applying those lessons to future work through a formal, iterative process. This focused process is to generate client satisfaction, one of AECOM's core values.

Districts Benefit: Specification review per ISO 9001 highlights shortcomings and allows mitigation measures to be conducted prior to construction, thus minimizing impacts.

AECOM has a quality management process and procedures in place that will be applied to each Districts Task Authorization, ensuring high quality deliverables each and every time.

Location of Project Staff

All our proposed project staff are physically located within the United States of America and will be during the course of the project.

We will manage this project out of AECOM's Los Angeles office, our Corporate headquarters and utilize appropriate resources from our offices in Los Angeles, Orange, Long Beach, Ontario, San Diego and other Southern California locations. (**Exhibit 3-7**) This combined team has the multi-disciplinary staff and resources to complete required tasks in a manner that will meet and exceed the Districts' expectations.

Regional Business Enterprise (RBE) Incentive

AECOM has maintained an office in Los Angeles for over 70 years. In addition, we have offices in all the other counties that qualify as a Regional Business Enterprise as well, including Orange and San Diego. AECOM headquarters is in Los Angeles.

Exhibit 3-7 California Resources and Offices

Financial Condition

We have included a copy of our most recent Annual Report via this Link 2020. In addition, we provide links to our previous two years financial statements. 2019 and 2018.

Additional financial information such as the Financial Tear sheet, independent auditors, AECOM's 10-K and other forms filed with the U.S. Securities and Exchange Commission can be found at http://www.sec.gov and at http://investors.aecom.com.

AECOM has no unpaid judgements.

AECOM Technical Services, Inc. ("ATS") is a large design, engineering, planning and related professional services company that executes thousands of projects annually. As with any large services company, from time to time, ATS is involved in claims and

litigation, many of which involve third party personal injury and property damage claims. However, we strive to avoid litigation and have a risk management program in place that includes early recognition of situations that might give rise to a claim, open lines of communication and proactive dispute resolution.

Upon knowledge and belief, formed after reasonable inquiry, ATS has been involved in the disclosed litigation over the past five (5) years related to the performance of professional engineering, design, and construction services in the U.S. **(Exhibit 3-8)** None of our current claims could reasonably be expected to have a material adverse effect on ATS or its ability to perform under the contract contemplated by the proposal.

If you require additional information, please contact Armond Tatevossian, Region Chief Counsel, DCS Americas, at armond.tatevossian@aecom.com.

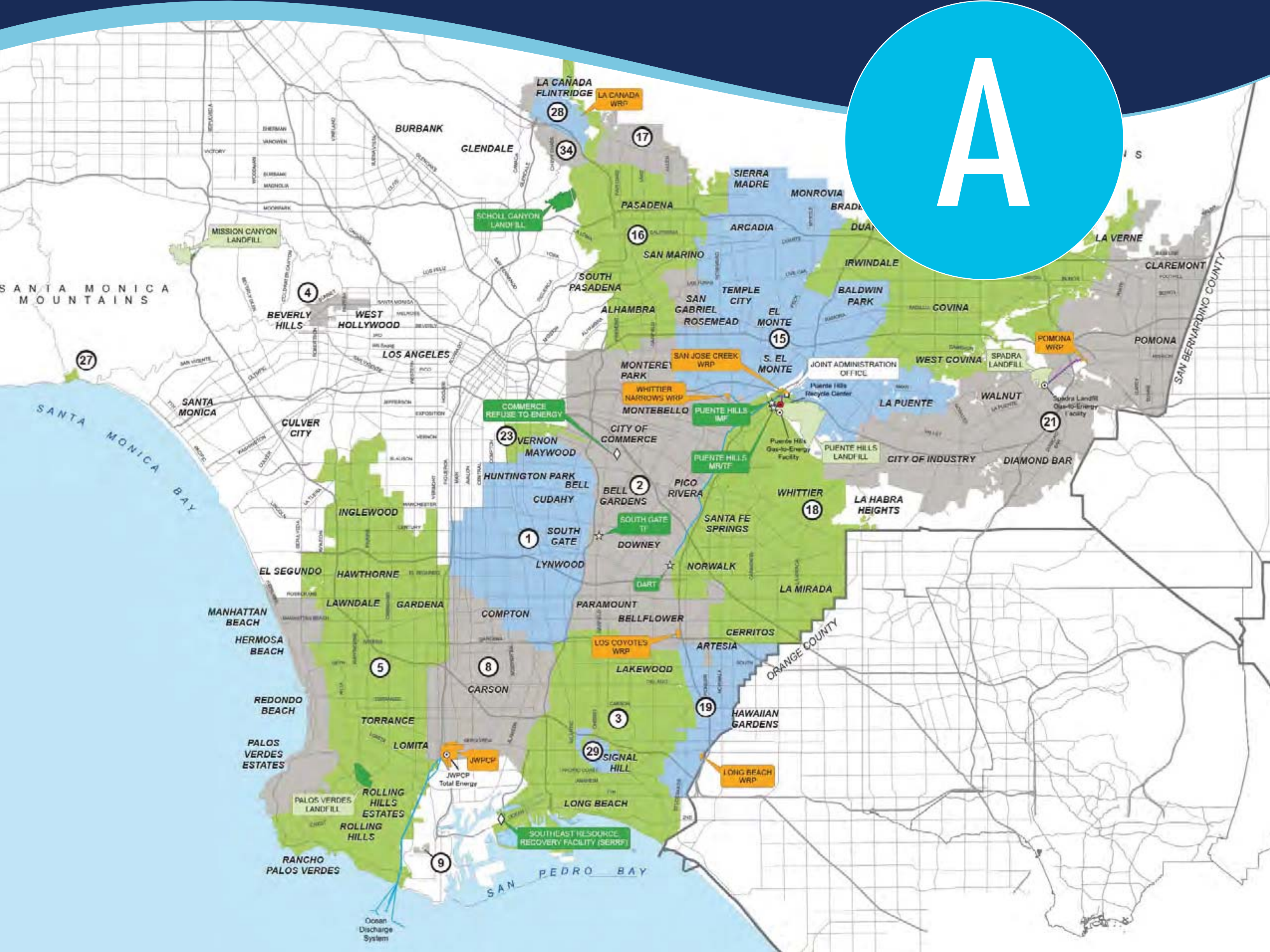
Exhibit 3-8 AECOM Technical Services, Inc. – Litigation History (5 Years) Claims over $5,000,000

Claimant Name & Case Number	Date Filed & Venue	Status	Claim Description
AECOM Technical Services, Inc. v. Flatiron | AECOM LLC **Case No. 1:19-CV-02811-WJM-KLM**	October 2, 2019 District of Colorado	Pending	Contract and professional negligence dispute.
LM Heavy Civil Construction, LLC v. Port of Palm Beach District **Case No. 50217CA005376**	May 10, 2019 Palm Beach County, Florida	Pending	Port received claim from its contractor alleging delays and disruptions due to errors in design. Port denies the contractor's allegations but to the extent it if found liable alleges that AECOM should be liable.
JH Kelly, LLC v. AECOM Technical Services, Inc. **Case No. 192600**	January 29, 2019 Shasta County Superior Court, California	Pending	Claims for cost overruns and delays arising out of an EPC project to replace compressor station on PG&E's gas transmission line.
The Association of Apartment Owners of the Hawaii Kai Peninsula and Board of Directors of the Association of Apartment Owners of the Hawaii Kai Peninsula, etc., v. Peninsula Hawaii Kai, LLC et al., including AECOM Technology Corporation Case No. 101175108JHC	December 28, 2015 Circuit Court of the First Circuit, State of Hawaii	Settled August 2017	Complaint against multiple parties alleging negligence and breach of implied warranty in connection with the construction of a condominium project known as the Hawaii Kai Peninsula.

**The above table was comprised from identifiable and retrievable corporate records for AECOM Technical Services, Inc. and excludes (i) claims involving personal injury and property damage claims not otherwise connected with the claims identified, (ii) employment-related matters, and (iii) subsidiaries and affiliates of AECOM Technical Services, Inc.* September 11, 2020

APPENDIX A
RESUMES

A



Key Personnel Resumes

Jagadish (Jack) Gundarlahalli, PE	Project Manager
Surendra Thakral, PE, BCEE	Principal-In-Charge
Keith Campbell, PE	Task Lead: Sewer Rehab & Construction Projects (RFP Task 3.1)
Bryan Paine, PE, QSD, ENV SP	Task Lead: Miscellaneous Design Support & Engineering/Alternatives Evaluation (RFP Task 3.2)
Andrew E. Romer, PE	Technical Advisor / Force Mains / Presentation and Training
Jesus Lopez, PE	Gravity Collection/ Engineering Studies/Open Trench Construction
Mathew Francis, PE	Trenchless Technology / Tunneling
Joseph Marcos, PE	Sewer Flow Studies
Mark Webb, PhD, PE, Pr.Eng, F.ASCE	CIPP / Sliplining
Daniel Lee, PE, QSD,CQCM	Constructability Review
Robert Stallings, PE	Odor Control / Design Manuals and Procedures Review
Dylan LaFrance, PE	Hydraulic Modeling
Robert Stein, PE	Construction Management Support
Teddy Hioe, PE	Civil
Derrick Wong, PE	Condition Assessment

Jagadish (Jack) Gundarlahalli, PE

Project Manager

Key Skills
Contract/Project Management
Wastewater Collection Systems
Water Treatment/Water Resources
Remedial Design

Years of Experience
31

Years with AECOM
31

Education
MS, Environmental Engineering, South Dakota School of Mines and Technology, 1990
BS, Civil Engineering, National Institute of Engineering, 1987

Registrations
Professional Engineer (Civil), CA #54171

Professional Associations
California Association of Sanitation Agencies
Association of California Water Agencies
American Society of Civil Engineers
Water Environment Federation

Office Location:
Orange

Jack has served as Program Manager and Project Manager on numerous CIPs for municipalities in Los Angeles and Orange counties and is sensitive to the needs of the clients. He delivers on their expectations for quality technical work, responsiveness and cost-effectiveness. He is a performance-oriented leader and has managed many multidisciplinary infrastructure engineering projects.

Professional history

Jack has 31 years of civil and environmental engineering experience involving water/wastewater infrastructure projects and environmental restoration. As an environmental engineer and project manager, Jack's experience encompasses design, construction quality management and construction quality control. He is experienced in developing work plans; preparing technical and cost proposals; conducting and supervising field activities; performing engineering analyses; preparing drawings, construction specifications, and test plans; and, supervising construction activities. Jack is knowledgeable in the regulatory process of federal, state and local agencies, including the U.S. Environmental Protection Agency (EPA), California Regional Water Quality Control Board, Cal-EPA Department of Toxic Substances Control, and southern California air quality management agencies.

Selected project experience

Program/Contract Manager, Orange County Sanitation District (OC San), On-Call Contracts – Planning Studies (2017 – 2020; 2020 – Present); Facilities Engineering Design Contract (2015 – 2018; 2018 – Present; 2021 – Present), Fountain Valley, California

Responsible for coordination and execution of On-Call Task orders under these existing contracts for the planning and engineering departments. Under each On-call contract, the task order fee limit is 600,000 dollars per year. Some of the task orders executed over the last several years is listed below:

- **FE19-02 Plant Water Piping Replacement at Plant No. 1, Fountain Valley, California**
  Responsible for preparing plans and specifications for replacement of plant water piping, valves, and appurtenances for the CenGen facility. As part of the design, we are preparing a preliminary design report, final design documents, and cost estimates. We will also be providing bid support and construction support services.
- **Prepared guidelines document to add to existing OC San guidelines PS16-05 Guidelines for the Development in the Area of OC San Facilities, Fountain Valley, California**
  Prepared guidelines document to add to existing OC San guidelines for developments near and around OC San facilities, fee properties, and easements. The proposed guidelines are intended to be suitable for distribution by OC San to public agencies, land developers, contractors, and other entities who propose external work that could affect OC San facilities.
- **MP-512 Trickling Filter Waste Sludge Pump Room Exhaust Fan Relocation at Plant No. 2, Huntington Beach, California**

Existing exhaust fan that served waste sludge pump room was located high above a basement space where access for maintenance was a safety concern. The purpose of this project was to remove the existing exhaust fan and provide a new exhaust fan located on the exterior wall for easier access for staff. A temporary ventilation system needed to be incorporated into design to allow for proper exhaust in the space during construction. AECOM is providing both design and construction support services.

- **Plant 1 Control Center Renovation, Fountain Valley, California**
  Provided services that included both architecture and engineering for the Control Center first floor remodel, day room, and supervisor area. The scope of work included an interior remodel of open and private office space. New work included flooring, ceiling, electrical and HVAC relocation. Coordinated with OC San staff to ensure the Furniture, Fixtures and Equipment (FF&E) and interior space planning met OC San needs. Coordinated with City of Fountain Valley to obtain the building permit. Prepared construction cost estimates.

Principal-in-Charge, OC San, 3-64 Western Regional Sewers Rehabilitation, OC San, Orange County, California

Responsible for Predesign Evaluation Studies, preliminary and final design of more than 16-miles of sewer lining and replacement and reconstruction of the Westside Pump Station wetwell. The work involves extensive geotechnical and CCTV field investigations, pipeline and manhole condition assessments, hydraulic modeling, alignment studies, evaluation and design of bypassing systems, and extensive use of cured-in-place pipe (CIPP) lining for one of the largest sewer rehabilitation projects ever undertaken by OC San.

Project Manager, OC San, 3-58 Magnolia Trunk Sewer Rehabilitation, Orange County, California

Prepared pipeline condition assessment report for the Magnolia Trunk Sewer project. The project consisted of the assessment of 12 miles of 38- to 76-in-diameter trunk sewer pipe. The scope of work included CCTV, physical inspections, odor control, permitting, hydraulic modeling, testing and NASSCO sewer defect classification. Delivered a condition assessment report that recommended appropriate rehabilitation techniques, contract packaging, and cost estimates. AECOM's contract was amended to prepare the project design-build bid documents. AECOM was also the Owner's Representative for the project. The project was completed within budget and ahead of schedule.

Program Manager, Los Angeles County Metropolitan Transportation Authority, On-Call Environmental Compliance Contract, Los Angeles, California

Under this contract executed 75 task orders ranging from 5,000 dollars to 1 million dollars. The contract duration was for five years and I was responsible for assigning staff and coordination with the client on each task order.

Project Manager, San Bernardino Municipal Water Department (SBMWD), 21-inch Secondary Effluent Pipeline Design (part of Tertiary Treatment System project), San Bernardino, California

Provided full condition assessment of the entire 1400 feet of pipeline, including manholes and connections to other structures. A portion of the 21-inch pipeline was determined to be vulnerable to collapse. Developed a plan for rehabilitating the pipeline through Cured in Place Pipe (CIPP) methodology.

Client Services Manager, OC San, 1-2-4 Bushard Trunk Sewer, Huntington Beach and Fountain Valley, California

Provide construction management services for the $33M Bushard Trunk Sewer replacement and $13M intersection contract. Worked closely with OC San, the contractor, suppliers, cities, utilities, residents, and other stakeholders during construction and maintain efficient production, with close attention to quality, safety, and schedule. The Bushard Trunk sewer project involved 20,920-ft of 108-in diameter trunk RCP sewer pipe.

Principal-in-Charge/Quality Control Reviewer, Orange County Sanitation District, 5-47 Balboa Trunk Sewer Rehabilitation, Newport Beach, California

Prepared pre-design, design, and construction support services for the rehabilitation of the Balboa Trunk Sewer. The project consisted of 12,200-ft of 15-, 18-, 21-, and 24-indiameter trenchless, cured-in-place pipe lining and rehabilitation of 33 manholes along Newport and Balboa Boulevards. Key project features included hydraulic modeling; sewer and manhole inspections, including CCTV tape reviews and manned-entry inspections to determine structural conditions; alternatives evaluation and rehabilitation recommendations; permitting and agencies coordination; and, preparation of construction drawings and specifications.

Surendra Thakral, PE, BCEE

Principal-In-Charge

Key Skills
client and commitment focused
Alternative Analysis
Quality Control
Innovative Thinking/Approach
Quality Team Development
Responsive & Communicator

Years of Experience
47

Years with AECOM
1.5 (18 months)
Over 34 years in CA

Education
Master of Environmental Science, Miami University, Ohio, 1987
Bachelor of Civil Engineering, Indian Institute of Technology, Roorkee, India, 1969

Registrations
Professional Engineer(Civil), CA #44599

Professional Associations
Published over 20 technical papers and activity active in WEF/WEFTEC, AAEE, CASA, ACQA, CWEA, AWWA, WateReuse, etc.

Trainings and Certifications
Board Certified Environmental Engineer (BCEE) - Water Supply and Wastewater Engineering, American Academy of Environmental Engineers
Several Leadership and Management Programs,

Office Location:
Los Angeles

Surendra is a client and commitment focused professional. He has served as Principal-In-Charge on over 24 small to very large wastewater conveyance and/or treatment projects/programs in CA, NV, NM, and HI. He has been recognized by the clients and professional organizations for providing innovative out-of-the-box solutions for cost savings and project quality enhancement. He has managed multiple on-call services contracts including for the City of Los Angeles, Bureau of Engineering (BOE) and Bureau of Sanitation (LASAN) since 2002. His technical experience encompasses research, planning, design, construction management, design-build, project management, and large program management for water, wastewater, recycled water, stormwater, and advanced purification systems. He gets actively involved in each project’s development, selection of technologies, and development of creative ideas and innovative solutions. He has proven track record of exceeding expectations of clients from him and his team’s services

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Professional history

Surendra’s entire career has been focused on developing creative and innovative solutions for engineering projects and programs associated with all phases of water, wastewater, recycled water, and advanced purification systems in the United States for over 34 years and in India for over 14 years. Since 1987, he has served progressively as manager, program manager, client service manager, business development manager for over 30 municipal agencies in Southern and Central Valley regions of California, Hawaii, Nevada, and New Mexico. Surendra provided innovative and cost saving solutions for the conveyance and treatment systems ranging from 1.5 to 450 mgd. **Surendra is a client and technology-focused person and has earned an excellent reputation and strong working relationship with all his clients.**

Surendra’s other experience includes working for World Bank on UNDP Resource Recovery Project; US Environmental Protection Agency’s Test and Evaluation Facility in Cincinnati, Ohio, and UP Water Corporation in India. he was certified for providing exemplary service on the World Bank project.

Selected project experience

Principal-In-Charge/Contract Manager, City of Los Angeles, Bureau of Engineering (BOE) and Bureau of Sanitation (LASAN)– Contract Manager for four On-Call Engineering Services contracts, California

Since 2002 continuously provided staff augmentation, in- house planning and design services and CM support services to various projects for four water reclamation facilities (20 to 450 mgd capacity) and hundreds of mile sewer system including Central Outfall Sewer Rehab (Phase I & II), Workman- Mozart Sewer Design, and Hyperion biosolids system upgrade for food-waste co-digestion, Hyperion Ocean Outfall and Effluent Pumping Station evaluation for discharge of brine only (49 mgd) during full water reclamation.

Principal-In-Charge Stone Canyon Large Diameter Water Pipeline Project, Los Angeles Department of Water and Power (LADWP), California

Served as PIC for Stone Canyon Large Diameter Water Pipeline Project and staff augmentation under previous contracts.

Principal-In-Charge, Southern CA Municipal Water District (MWD) Iron Mountain and Gene Pump stations Water and Wastewater Pipelines Upgrade and Perris Valley Pipeline Projects

Served as a PIC for the upgrade of existing and semi-functional water and wastewater pipelines for the Iron Mountain and Gene raw water Pump stations (largest in the nation) also for the Perris Valley Pipeline project which included large diameter water pipeline crossing under FWY 215 in CA.

Principal-In-Charge, Orange County Sanitation District (OC San), Supplemental Engineering and CM Services, Orange, California

Provided conveyance and treatment design on as-needed basis staff to support OC San team.

Principal-In-Charge, LA County Public Works Department, On-Call Engineering Services, Los Angeles, California

Served as a PIC for the On-Call Engineering Services contract for sewer line design, staff augmentation and dams automation upgrade.

Principal-In-Charge, City of Ontario, Pipeline and Drinking Water Reservoirs, Ontario, California

Served as PIC for pipeline and drinking water reservoirs.

Principal-In-Charge, Beaumont Cherry Valley Water District

Served as PIC on long term contract for design of large number of task orders related to pipelines, reservoirs, pump stations, etc.

Project Manager, City of Corona, Corona, California

Served as a Project Manager for Water Recycling Project A for design of 28 miles of recycled water pipelines, reservoirs, pump stations and treatment plant upgrades.

Principal-In-Charge, City of Long Beach, Long Beach, California

Served as PIC for several pipeline design projects

Principal-In-Charge, Yorba Linda Municipal Water District, Yorba Linda, California

Served as a PIC for various pipeline and reservoir projects.

Principal-In-Charge, LA County Sanitation Districts, Los Angeles, California

Served as a PIC for the On-Call engineering services contract for staff augmentation.

<u>Water/Wastewater Treatment Design Projects Management Experience Summary</u>

Surendra served as project manager or PIC for several treatment design/program management projects during last 34 years of experience in the nation.

Inland Empire Utilities Agencies (IEUA), Chino, California

IEUA Facility Plan, Renewable Energy Recovery Project (REEP), Regional Plants (RP-1 & RP-5) Upgrade and Expansion Predesign Project and Design for RP-5 expansion to 30 mgd liquid stream project ($285M construction cost).

Elsinore Valley Municipal Water District (EVMWD), Lake Elsinore, California

Regional Water Reclamation Plant condition assessment, major upgrade, and expansion to 12 mgd using MBR and UV technologies.

City of Banning, Banning, California

Design of 1.5 mgd water reclamation facility using MBR and UV technology

City of Bakersfield, Bakersfield, California

Upgrade and Expansion of Regional Plant 3 (Plant 3) to 32 mgd expansion and upgrade, new

McCutchen and Gosford Pump Station and various upgrades to Plant 2.

City of Fresno, Fresno, California

5 mgd Tertiary treatment and Disinfection Facility using MBR, and Fresno Airport Indirect Potable Reuse Project. City of Redlands – Primarily responsible for winning of condition assessment and design of upgrade and expansion of 9.5 mgd water reclamation facility using MBR technology.

City of Visalia, Visalia, California

Upgrade and expansion of 22 mgd water reclamation facility using MBR and UV technologies

City of Tulare, Tulare, California

Industrial Wastewater Treatment Facility using SBR and upgrade of Municipal Wastewater Treatment Facility.

City and County of Honolulu, Honolulu, Hawaii

Wahiawa Wastewater Treatment Plant

City of Los Angeles, Los Angeles, California

Doland C Tillman Water Reclamation Plant 80 mgd Expansion, LA Glendale WRP Upgrade (20 mgd); Terminal Island WRP (30 mgd) and Hyperion WRP (80 mgd)

City of Riverside, Riverside, Riverside, California

Regional Water Quality Control Plant, Riverside, CA Master Plan Update, Capacity Analysis, Nitrogen Removal Study, Plant-Wide Automation, Aeration System Upgrade, Multipurpose Laboratory Expansion Project, Pierce Street Pump Station Upgrade Project, and Hidden Valley Wetlands Enhancement Project, etc.

Coachella Valley Water District (CVWD), Coachella, California

WRP - 10 Biosolids Upgrade Feasibility Study, Sewer Pump Station and Force Main, and Biosolids Upgrade and Expansion; Calpine Corporation Title 22 Water Recycling Feasibility Study for a 650-MW Power Plant in Mecca and WRP-10 Aeration and standby power system upgrade project.

County of Ventura Public Works Agency, Moorpark Wastewater Treatment Plant Expansion Project, Ventura, California

Primarily responsible for winning and execution of wastewater treatment plant upgrade using Biolac system.

City of Simi Valley, Simi Valley, California

Arroyo Simi Characterization Study and wastewater flow equalization and backwash ponds upgrade design.

City of Henderson, Henderson, Nevada

Henderson Water Reclamation Master Plan.

City of Las Cruces, Las Cruces, New Mexico
Las Cruces Wastewater Treatment Plant.

Keith Campbell, PE

Task Lead: Sewer Rehab & Construction Projects (RFP Task 3.1)

Key Skills
On-Call Engineering Services Program Management Experience
Project Management
Planning, Design, Construction
Water Conveyance Systems
Pipeline Engineering

Years of Experience
34

Years with AECOM
34

Education
BS, Civil Engineering, California State University, Fresno, 1984

Registrations
Professional Engineer (Civil), CA #41863
Surveyor-in-Training, CA #2546

Professional Associations
American Society of Civil Engineers
American Water Works Association

Office Location:
Los Angeles

One of Keith's key strengths is the determination of cost-efficient and effective design solutions for pipeline routing, temporary bypassing of sewage flows, and/or use of parallel replacement systems and tie-ins as a more cost-efficient means of allowing existing systems to remain active while replacement systems are constructed.

Professional history

Keith has directed several billion dollars in planning, design, and construction projects in his 34-year tenure with AECOM, specializing in management of coordinated project planning, design and construction management interdisciplinary teams. Projects under his direction have included open-channel and pressure pipeline water conveyance systems, urban water distribution systems, pump stations, storage reservoirs, dams and spillways, river diversions, and water treatment and wastewater treatment facilities. Wastewater projects under his direction have included new construction and rehabilitation of trunk sewers; sewage and treated effluent pump stations; new wastewater treatment plant headworks, including Archimedes screw and submersible pump systems; new wastewater treatment plants and effluent reuse facilities; expansion of existing wastewater treatment plants; and force mains and sewage collection system master plans, including modeling and preparation of all master plan documents. He managed AECOM's design consulting and construction management-focused Central California District of more than 100 employees for 10 years, responsible for execution of hundreds of projects exceeding $200 million in construction value annually.

Selected project experience

Project Manager, Orange County Sanitation District (OC San), 3-64 Western Regional Sewers Rehabilitation, Orange County, California

Responsible for Predesign Evaluation Studies, preliminary and final design of more than 16-miles of sewer lining and replacement and reconstruction of the Westside Pump Station wetwell. The work involves extensive geotechnical and CCTV field investigations, pipeline and manhole condition assessments, hydraulic modeling, alignment studies, evaluation and design of bypassing systems, and extensive use of cured-in-place pipe (CIPP) lining for one of the largest sewer rehabilitation projects ever undertaken by OC San.

Project Manager, Metropolitan Water District of Southern California (Metropolitan), Bay Delta (California WaterFix) Related Engineering Services Task Orders, Los Angeles, California

Keith has managed a variety of task orders related to WaterFix, including the following tasks that involved significant site development and power needs:

Bouldin Island Site Preparation Planning and Design. Planning and logistics to identify components and options for a site preparation contract for Bouldin

Island. Identified alternative tunnel launch site locations, elevations and dimensions. Work is currently underway for geotechnical exploration / investigation services, aerial geophysical surveys, design of on-site access roads and barge landing site, and preparation of a conceptual design and design feasibility analysis memorandum for a proposed SR 12 tight diamond interchange including coordination with Caltrans.

Temporary Power Transmission Estimate. Provided estimated loads for TBMs including EPB and slurry based machines, estimated power consumption, peak power required and alternatives for transmission points of connections with PG&E, WAPA and SMUD.

North Delta Road Assessment. Analyzed costs and rankings to provide improved road access to north delta roads. Analyzed funding opportunities/ mechanisms used by local and state agencies, working with north delta stakeholders to identify alternatives and rank projects.

Shaft Site Layouts. Provided shaft site layout alternatives and reusable tunnel material conveyance system analysis for launch shaft site to accommodate four, 40-foot-inside-diameter tunnel TBMs.

Project Manager, Fresno County, Del Rio Sewer, Fresno County, California

Project Manager for preparation of PS&E for the sewer project including $1-million of gravity sewer, lift station and force main design. Project was funded through the State of California Small Communities Grant Program administered through the State Water Resources Control Board.

Project Manager, City of Visalia, Sewer System Master Plan, Visalia, California

Responsible for preparation of complete sewage collection system master plans for existing and full build-out service areas within the sphere of influence for each city. Work included extensive computer modeling, flow metering/calibration, evaluation of pump stations and identification and preliminary design of replacement and new sewers required to serve the build-out areas.

Project Manager, City of Selma, City of Fowler, City of Kingsburg, Three Separate Sewage Collection System Master Plans, Various Locations, California

Responsible for managing preparation of complete sewage collection system master plans for existing and full build- out service areas within the sphere of influence for each city. Work included extensive computer modeling, flow metering and calibration evaluation of more than 15 pump stations and identification and preliminary design of replacement and new sewers required to serve the build-out areas.

Principal-in-Charge, Madera Wastewater Treatment Plant Expansion, Madera, California

Responsible for an expansion of an existing treatment plant to add digesters, clarifiers, replace headworks, and return activated sludge systems. Work involved extensive coordination with plant operators to determine phased construction within the existing operating treatment facility to minimize disruption.

Project Engineer, City of Clovis, Armstrong Trunk Sewer, Clovis, California

Design of a two-mile, 25- to 30-foot deep, 30-inch diameter trunk sewer within an urban arterial roadway. The work involved extensive utility relocation, roadway reconstruction and traffic handling.

Project Manager, Delano Wastewater Treatment Plant Expansion, Delano, California

Responsible for an expansion of the City's WWTP to provide additional treatment capacity to serve a new state prison being constructed nearby. Project involved plant expansion and construction of an offsite screening and pumping facility and force main connecting the prison to the expanded plant. Extensive coordination with the City's operations and engineering staff was required to retrofit and add new facilities to minimize impacts and disruption to the existing plant operation during construction.

Project Manager, City of Fresno, CIPP Projects, Fresno, California

CCTV video inspection, condition assessments, design, preparation of construction documents, bidding and construction phase services for five bid packages for sewer pipelines ranging in size from 6-inch to 21-inch and for a total length of four miles. The rehabilitation was necessary due to hydrogen sulfide corrosion and loss of structural integrity of the existing pipelines. CIPP lining was performed to restore the structural integrity of the pipelines and manholes and prevent further corrosion.

Bryan Paine, PE, QSD, ENV SP

Task Lead: Miscellaneous Design Support & Engineering/Alternatives Evaluation (RFP Task 3.2)

Key Skills
Pump Station Design
Groundwater Wells
Pipeline Design
Reservoir Design
Water/Wastewater Infrastructure
Water/Wastewater Treatment
Hydrology and Hydraulic Analysis
Construction Support Services
Flood Control Facilities

Years of Experience
22

Years with AECOM
18

Education
BS, Civil Engineering, University of California, Irvine, 2000
BS, Environmental Engineering University of California, Irvine, 2000

Registrations
Professional Engineer (Civil), CA #64334

Professional Associations
WaterReuse Association
American Society of Civil Engineers
Society of American Military Engineers

Trainings and Certifications
AECOM Certified Project Manager
Envision® Sustainability Professional Credential
California Qualified Storm Water Pollution Plan Developer (QSD)

Office Location:
Orange

Bryan has experience in planning (e.g. alternatives analysis) and design of pump stations, lift stations, reservoirs, wastewater collection systems, pipelines, and wastewater treatment systems. He has managed numerous task orders under on-call contracts and prepared planning reports and final design documents.

Professional history

Bryan has 22 years of civil and environmental engineering experience and specializes in infrastructure design, water/wastewater systems, and water resources. He is a Project Manager, Principal Engineer, and Department Manager that supervises a diverse engineering team of wastewater engineers, electrical engineers, mechanical engineers, structural engineers, and instrumentation and controls engineers in Southern California.

Selected project experience

Task Lead, Los Angeles County Sanitation Districts, Colorado Lagoon Sewer Siphon, Long Beach, California

Responsible for the planning and design of a double barrel sewer siphon with air jumper line. The project involved preparation of a sewage handling report with alternatives analysis for a lift station vs. a siphon, construction plans, specifications, and hydraulic and structural calculations. The 24-inch VCP siphon lines and 14-inch PVC air line will have manholes, custom junction structures, and a 78-inch RCP casing.

Project Manager, Orange County Sanitation District (OC San) and Orange County Water District, Groundwater Replenishment System Unit III Pipeline, Anaheim, California

Responsibilities included preparing plans, specifications, calculations, design reports, and cost estimates for 25,000 linear feet of 66-inch to 60-inch steel pipeline, percolation basin discharge facilities, diversion structures, isolation valve vaults, blow-off and air and vacuum valve assemblies, and tunneling underneath several major streets, a railway, and interstate highway. This project delivered treated water to groundwater recharge ponds.

Project Manager, OC San, Plant Water Piping Replacement at Plant No. 1 CenGen Facility, Fountain Valley, California

Responsibilities on this project included preparing plans, specifications, calculations, and preliminary design tech memo with piping materials alternatives analysis for replacing approximately several thousand linear feet of plant water piping within the CenGen facility at Plant No. 1 and adjacent utility tunnels. The project involved complex temporary bypass piping and connections to multiple pumps, engines, heat exchangers, meters, and various valves and instruments.

Project Manager, OC San, Wastehauler Facility Upgrades at Plant No. 1, Fountain Valley, California

Responsible for the preliminary design, final design, and construction support services for upgrades to a wastehauler facility. The upgrades included new entry and exit gates, autosamplers for the sewage receiving system, utility upgrades, and a new trailer.

Project Manager, Irvine Ranch Water District (IRWD), Bayview Sewer Lift Station Improvements, Newport Beach, California

Responsible for pre-design, design, and construction support services for improvements to the Bayview Sewage Lift Station, a 700 gpm lift station with two submersible pumps. Improvements included installation of new non-clog centrifugal pumps with slide rails, replacement of the valve vault, rehabilitating and relining of the concrete wet well with a new Sancon spray-applied polyurethane coating, replacing gravity piping and forcemain, adding a flow meter vault, upgrading electrical and control systems, and temporary bypass pumping.

Project Manager, City of Hercules Department of Public Works, Victoria by the Bay Ultimate Lift Station, Hercules, California

Responsible for the pre-design, design, and construction support services for a triplex dry-well solid handling pump station and 3,000 linear feet of 6-inch sanitary force main serving 685 domestic dwellings, a corporate center, and a school.

Project Manager, Garden Grove Sanitary District, Partridge Street Lift Station and Sewer Relocation, Garden Grove, California

Provided preliminary design, final design, and construction phase services for a new sewer lift station and relocation of an 8-inch diameter gravity sewer for the SR-22 Freeway Widening Project. The project involved construction of a new lift station, complete with wet well, valve vault, emergency generator and control enclosure; construction of a new PVC sewer collection system; constructing of a new PVC force main from the new lift station to a new manhole in Partridge Street; and construction of a new 8-inch VCP sewer from the new manhole to an existing manhole at the sewer in Garden Grove Boulevard.

Project Engineer, Moulton Niguel Water District, Sewer Lift Station and Domestic Water Pump Station Evaluations, Laguna Niguel, California

Responsible for the evaluation of the existing mechanical and electrical conditions of five sewage lift stations and five domestic water pump stations throughout the District. The goals for these projects were to increase reliability of the sewage collection system and to increase flow capacity of the domestic water pump stations. Improvements include wet well expansions, pipe and valve replacement, electrical and lighting improvements, added standby generators, and replacing and adding new pumps.

Project Manager, City of San Diego - Transportation and Stormwater Department, Stormwater Pump Stations G and N Upgrade Analysis, San Diego, California

Conducted condition assessments of fifteen stormwater pumping stations located throughout the city. The assessments were requested following a series of rain events which caused flooding especially in the Mission Beach area. The stormwater pumping stations range from relatively small sized or canned type underpass lift stations to large stations. Lead the effort to hydrology studies and preparation of improvements plans for emergency repairs for to all stations.

Project Manager, IRWD, Eastwood Recycled Water Pump Station, Irvine, California

Responsible for the preliminary design, final design, and construction phase services for a multi-zone recycled water booster pump station with a capacity of 46,500-gpm with fourteen pumps. Design tasks included preparation of a design report, plans, specifications, estimates and hydraulic calculations, surge analysis, network modeling analysis, noise study, building architectural design, structural engineering, and landscape architecture.

Project Manager, Alameda Corridor-East Construction Authority, Flood Control Pump Station, Durfee Grade Separation Project, Pico Rivera, California

Managed the preliminary and final design of a 20 CFS storm water pump station, drainage collection and force main system, and stormwater treatment BMPs for the Durfee Avenue Grade Separation Project. The pump station was designed per County of L.A. Department of Public Works standards with two 10 CFS mixed flow vertical pumps and one submersible pump. The pump station also included a standby electrical generator, restroom, control room, and storm water treatment system for re-use as landscape irrigation water.

AECOM Imagine it. Delivered.

Andrew E. Romer, PE

Technical Advisor / Force Mains / Presentation and Training

Key Skills
Water transmission pipelines
Pumping stations
Tunneling
Trenchless installations
Trunk Sewers and Force Mains
Treatment plants

Years of experience
41

Years with AECOM
34

Education
BS, Civil Engineering, University of Arizona, 1979
BS, Business Administration, University of Arizona, 1974

Active Registration
Professional Engineer (Civil), CA #37116

Professional Awards
Stephen D. Bechtel Pipeline Engineering Award by the American Society of Civil Engineers, 2012
AWWA Peak Performance Award, October 2014
ACEC 2003 Honor Award

Office Location:
Orange

Andy maintains a considerable interest in protecting the client’s interests above the pipe manufacturer’s and contractors. In order to do that, he has been an active member of American Water Works Association’s Steel Pipe and Concrete Pressure Pipe Committees for over 25 years, as well as chairing the AWWA Corrosion Committee and providing edits to Manuals M9, M11, M27, M28, and M77. Andy is also an active member of three different pipeline committees for the American Society of Civil Engineers (ASCE). He’s literally helped to “write the book” on current pipeline design.

Professional history

Andy’s qualifications include more than three decades of design and management experience in civil and structural engineering for sanitary and water supply facilities. Andy has been responsible for design of more than $1 billion in major water transmission pipelines and associated facilities, pumping stations, treatment plants, tunnels, and trenchless installations. He has designed award-winning and innovative large diameter reclaimed waterlines, trunk sewers, outfalls, and force mains. Andy provides quality control reviews and functions as a project advisor to a significant number of AECOM projects throughout North America. Andy is a well-published author (nine books and over 40 peer-reviewed professional papers) and is active on many national standards committees.

Selected Recent Project Experience

Project Manager, Orange County Sanitation District, 3-64 Western Regional Sewers Rehabilitation, Orange County Sanitation District (OC San), California

Responsible for Predesign Evaluation Studies, preliminary and final design of more than 16-miles of sewer lining and replacement and reconstruction of the Westside Pump Station wetwell. The work involves extensive geotechnical and CCTV field investigations, pipeline and manhole condition assessments, hydraulic modeling, alignment studies, evaluation and design of bypassing systems, and extensive use of cured-in-place pipe (CIPP) lining for one of the largest sewer rehabilitation projects ever undertaken by OC San.

Technical Expert, San Francisco Public Utilities Commission (SFPUC), Sewer System Improvement Program Collection System Condition Assessment Program, San Francisco, California

AECOM, in joint venture, provided program management support in implementing the sewer system improvement program (SSIP) through a 15-year contract. This program developed a methodology and long-term condition assessment plan for large collection system assets, including tunnels, large pipelines, interceptor boxes and combined sewer discharge structures. Work included piloting inspection techniques (person-entry, robotic inspection and desktop evaluation). The project also included inspection, structural evaluation and development of conceptual alternatives for rehabilitation of a severely deteriorated 9-foot box sewer in San Francisco's busy downtown area.

Project Technical Advisor, Metro Vancouver, Second Narrows Water Supply Tunnel Project, Vancouver, BC

Advisor for the surface works associated with a new water supply tunnel under Burrard Inlet including alternative alignments to accommodate three (3) watermains (2 x 2400mm and 1x 1500mm diameter) complete with shafts and valve chambers downstream of the shafts prior to connection into the existing water system (Capilano No 7, Seymour 2 and Seymour 5). The design criteria requires the system to withstand a 1:10,000 year seismic event. The surface works design package includes the tie-ins, piping, valve design and equipment selections and valve chambers at both the north and south shaft locations.

Project Manager and Design Lead/Engineer-of-Record, Los Angeles Department of Water and Power, River Supply Conduit Improvement, Units 5 and 6, Los Angeles, California

Led the design of the 78-inch-diameter steel pipelines within North Hollywood, California. Unit 5 is approximately 3,900 feet in length, of which approximately 3,700 feet is tunneled. Unit 6 is approximately 11,500 feet in length, with approximately half tunneled. Design also included 78-inch butterfly valves and valve vaults, appurtenances, jacked casings, access manholes, asphalt concrete (AC) pavement replacement, walkways, curb and gutters replacements, several utilities relocations, and landscaping.

Engineer-of-Record, Nipomo Community Services District, Supplemental Water Project, Santa Maria, California

Responsible for design of the Santa Maria River Crossing. The Supplemental Water Project is designed to transport up to 3,000 acre-feet-per year of water from the City of Santa Maria to the NCSD, and also includes more than 27,000 linear feet of waterline, a 500,000 gallon reservoir, a 2,000 gpm pump station, and chloramination facilities. The Supplemental Water Project Bid Package #1 includes installation of more than 2,000 linear feet of 24-inch-diameter waterline constructed by multiple pass Horizontal Directional Drilling (HDD) using a mid-path intercept installation for the pilot bore. Located in and across the Santa Maria River, the project was conducted amid sensitive habitats.

Project Manager and Engineer-of-Record, San Luis Obispo County Flood Control & Water Conservation District, Nacimiento Water Pipeline Project, San Luis Obispo, California

Design of 45 miles of pipeline ranging in size from 36-inch-diameter down to 12-inch-diameter to convey up to 17,500 acre-feet per year of untreated water from Lake Nacimiento as far south as San Luis Obispo. Additional services included establishing a basis of design; performing steady-state and transient hydraulics analyses; developing environmental program compliance plans; assisting in the acquisition of permits; preparing traffic management/control plans; closely coordinating pipeline design with other project consultants; and, developing a GIS model. This project was a national finalist for the ASCE 2012 OPAL Award.

Project Engineer, City of Fresno, Raw Water Pipeline, Fresno, California

Responsible for the design of a 5-mile-long, 60-inch-diameter raw water pipeline between the Friant-Kern Canal and the City of Fresno Surface Water Treatment Facility. The project included flow control facilities and additional appurtenances and structures for draining the pipeline. Performed computerized hydraulic and transient analysis, prepared PS&E for the pipeline, specialized large diameter pipeline appurtenances and connection details to the treatment plant.

Project Technical Advisor, McLoughlin Point WWTP Cross Harbour Force Main, Capital regional District, City of Victoria, BC, Canada

AECOM is the design-build lead and designer in the Harbour Resource Partners (HRP) JV to deliver McLoughlin Point WWTP, a new facility on a point of land at the mouth of Victoria Harbour in Esquimalt, across from the city of Victoria. Consulted on the design bore path, pipe and coatings and procurement for a 3,100-ft long 42-in diameter (1-inch thick) steel pipeline across Victoria Harbour. Between Ogden Point and the WWTP site, the force main was installed under Victoria Harbour using Horizontal Directional Drilling (HDD). Completed April 2018 for $29.9M (Can).

Project Technical Advisor 72-inch PCCP Redundant Main at Preston WTP, Miami-Dade Water and Sewer Department, Miami, Florida

A 1200 linear feet of 72-inch PCECP main along West 2nd Avenue, between 11th and 13th Streets, and the associated water, sewer, and drainage relocations. The project entailed four complex (4) interconnections to an existing active Interpace-era pipe with provisions for mitigating risks and contingency plans.

Publications and Presentations

Books

AWWA Manual M77 First Edition, *"Manual of Practice: Condition Assessment of Water Mains"* (Chapter 14 author) published by AWWA, 2019, softcover

"Answers to Challenging Infrastructure Management Questions," Water Works Research Foundation, 2014, Denver, Colorado ISBN 1978-1-60573-204-6; Dan Ellison, Graham Bell, Stephen Reiber, David Spencer, Andrew Romer, John C. Matthews, Ray Sterling, and Samuel T Ariaratnam

AWWA Manual M27 Third Edition*, "External Corrosion Control for Infrastructure Sustainability"* (Chairman and Editor) Published by AWWA, 2013, softcover, 110 pp., ISBN: 978-1-58321-966-9, (Chair of the committee that developed the Manual)

ASCE Manual of Practice 117: *"Inspecting Pipeline Installation"* (Major Contributor) ISBN 978-0-7044-1054-7 (2009)

"Failure of Prestressed Concrete Cylinder Pipe," Awwa Research Foundation, 2008, Denver, Colorado. ISBN 978-1-60573-013-4 (with Dan Ellison, Graham E. C. Bell, and Brien Clark)

"Corrosion Control for Buried Water Mains - Pocket Field Guide," American Water Works Association, 2009, ISBN 1-58321-725-8 (with Bayard Bosserman II)

"No-Dig and Low-Dig Service Connections After Pipeline Rehabilitation," American Water Works Association Research Foundation, 2007, Denver, Colorado. ISBN 1-58321-xx-x, (with Dan Ellison, Ray Sterling, David Hall, and Michael Graheck)

"External Corrosion and Corrosion Control of Buried Water Mains," American Water Works Association Research Foundation, 2004, Denver, Colorado. ISBN 1-58321-347-3 (with Graham E. C. Bell, Steve Duranceau, and Scot Foreman). The AwwaRF report number is 90987

"Distribution Infrastructure Management: Answers to Common Questions," American Water Works Association Research Foundation, 2001, Denver, Colorado ISBN 1-58321-118-7 (with Dan Ellison, Graham Bell, Alan O'Brien).

Peer-Reviewed Professional Papers

"Making Connections to Concrete Pressure Pipe" Andrew E. Romer and Richard I. Mueller (Conference paper #930914) to be presented at ASCE Pipelines Conference, Calgary, Canada , August 3-6, 2021 (now virtual).

"Simplified Design Guidelines for Sizing Air Release Valves" (Conference paper #12) presented at ASCE Pipelines Conference, Phoenix, AZ, August 8, 2017

"Design of Mid-Path Intercept HDD Crossing of the Santa Maria River", (Conference paper #13) Jon Hanlon, Andrew E. Romer, et. al., presented at ASCE Pipelines Conference, Phoenix, AZ, August 8, 2017

"Design and Construction Case History – South Catamount Transfer Pipeline Float-Sink" Bob Bass, Holly Link, Andrew Romer, and Theresa Wiedemann. Presented at the ASCE Pipelines Conference, August 23-26, 2015, Baltimore, MD

"Pressure Pipeline Design for Water and Wastewater Workshop" Moderator. Based upon draft ASCE Manual of the same name. Presented at ASCE Pipelines Conference, August 23, 2015, Baltimore, MD.

"Optimizing Small Water Main Renewal Using Non-Destructive Examinations", Dan Ellison, Jonathan Leung, Sam Ariaratnam, Andy Romer, and Roy Brander, presented at the ASCE Pipelines Conference, Portland, OR August 4, 2014.

"Design of Supplementary Intake from Lake Sakakawea for the Southwest Pipeline Project" Jim Lennington and Andrew E. Romer, ASCE Pipelines Conference, Portland, OR August 4, 2014.

"Using In-Pipe Condition Assessment to Optimize Small Water Main Renewal" (Dan Ellison, Jonathan Leung, Sam Ariaratnam, Andy Romer, and Roy Brander).presented at NASTT's 2014 No-Dig Show, Orlando, FL Paper MA-T1-02

"The Assess-and-Fix Approach to Water Main Rehabilitation" Dan Ellison, Samuel Ariaratnam, Andy Romer & Graham Bell, Presented at the NASTT 2013 No-Dig Conference, Sacramento, CA, March 4, 2013

"Evaluation of 72-in Steel Pipeline for Reverse Flow" Mike Conner, Doug Gillingham, and Andrew E. Romer, ASCE Pipelines Conference Ft Worth, TX, June 24, 2013

"American Society of Civil Engineers (ASCE) Pipeline Division" – Stephen D. Bechtel Memorial Pipeline Lecture, presented at the ASCE Pipelines Conference in Miami, FL, August 21, 2012.

"Common and Challenging Questions in Water System Infrastructure Management" Dan Ellison, Graham Bell, and Andy Romer, ASCE Pipelines Conference Miami, Florida, August 22, 2012.

"Who Says You Need Multiple Wire Breaks for a PCCP Pipe to Fail?" John J. Galleher, Jr., and Andrew E.

Romer, ASCE Pipelines Conference Miami, Florida, August 20, 2012.

"Integrity Testing of Critical Water Mains, Case Studies Involving Remote Field NDE and Controlled Destructive Examination" R. Dan Ellison, David Lippman, and Andrew Romer, 2011 AWWA Annual Conference & Exposition, Washington, DC, June 14, 2011.

"Failure of Cement Mortar Lining in 144-inch Diameter Pipeline" Mike McReynolds, Tao Peng, and Andrew Romer, presented at ASCE Pipelines Conference, August 30, 2010, Keystone, Colorado.

"Alternatives for Condition Assessment of Small Diameter Force Mains" David Lippman, Dan Ellison, and Andrew Romer, presented at ASCE Pipelines Conference, August 30, 2010, Keystone, Colorado.

"Line Stopping for Line Valve Installations on 55-Year-Old Aqueduct," presented at ASCE Pipelines Conference, August 2009 at San Diego, California (with Brett Gray).

"Several Failures of a 16-inch PVC Transmission Main within 12 Years," presented at AWWA Annual Conference, June 2009 and at ASCE Pipelines Conference, August 2009 at San Diego, California (with Robert E. Beamer, Donald R. Kendall).

"Nacimiento Water Project – Design and Hydraulics," presented at ASCE Pipelines Conference, August 2009 at San Diego, CA (with John R. Hollenbeck, Paul R. Kneitz, Steve Foellmi).

"Welding Considerations for Stainless Steel Pipe" presented at 2008 ASCE Pipelines Conference, July 23, 2008 at Atlanta, GA.

"Pipeline Risk Management for Utility System Managers, City Managers, Engineers et al." workshop presented by the ASCE Pipeline Risk Management Committee as part of 2008 ASCE Pipelines Conference, July 22, 2008 at Atlanta, GA.

"Risk Management of Pipeline Corrosion in the Water and Wastewater Industries," presented at the 2007 ASCE Pipeline Conference, August 2007, Boston, Massachusetts (with Paul J. Passaro).

"Failure of Prestressed Concrete Cylinder Pipe," presented at the 2007 ASCE Pipeline Conference, August 2007, Boston, Massachusetts (Graham E. C. Bell, and R. Dan Ellison).

"Risk Perception of External Corrosion on Buried Water Mains," panel discussion at 2006 ASCE Pipeline Conference, August 2006, Chicago, Illinois.

"Direct Comparison of Two Electromagnetic Techniques to Determine the Physical Condition of PCCP" presented at the ASCE Pipelines 2005 Conference, August 2005, at Houston, Texas (with John J. Galleher, Jr.; Graham E. C. Bell, PhD).

"Making 'Baggies' Work for Ductile Iron Pipe," presented at the ASCE Pipelines 2004 Conference, August 2004, at San Diego, California (with Graham Bell).

"Fiberglass Pipe Design for Water Mains," presented at the ASCE Pipelines 2004 Conference, August 2004, at San Diego, California (with Glen Hille).

"Rubber Gasket Concrete Pipe Joints…Eliminating the Smoke and Mirrors," presented at the ASCE Pipelines 2004 Conference, August 2004, at San Diego, California (with Kenneth Keinow).

"Solutions to External Corrosion of Buried Water Mains," presented at the ASCE Pipelines 2001 Conference, July 17, 2001, at San Diego, California (Graham Bell).

"69-Inch PCCP Aqueduct Relocation," presented at the ASCE Pipelines 2001 Conference, July 17, 2001, at San Diego, California.

"Causes of External Corrosion on Buried Water Mains," presented at the ASCE Pipelines 2001 Conference, July 16, 2001, at San Diego, California (with Graham Bell).

"Causes of and Solutions to External Corrosion on Buried Water Mains – An AwwaRF Study Update," presented at the American Water Works Association Annual Conference, June 20, 2001, at Washington, DC (with Graham E. C. Bell, PhD, PE).

"Identify Causes and Solutions to External Corrosion on Buried Water Mains – An AwwaRF Study Interim Report," presented at the American Water Works Association Annual Conference, June 14, 2000, at Denver, Colorado (with Graham E. C. Bell, PhD, PE).

"Rethinking the Approach to Engineering Pipelines," presented at the ASCE Pipelines in the Constructed Environment Specialty Conference, August 25, 1998, at San Diego, California.

"Avoiding Common Thrust Restraint Mistakes," presented at the ASCE Pipelines in the Constructed Environment Specialty Conference, August 24, 1998, at San Diego, California.

"PVC-Lined Steel Pipe Bridges for Gravity Sewers," presented at the ASCE Pipeline Crossings 1996 Specialty Conference on June 19, 1996, at Burlington, Vermont.

Jesus Lopez, PE

Gravity Collection/ Engineering Studies/Open Trench Construction

Key Skills
Wastewater Infrastructure
Hydraulic Analysis
Pipeline Design
Pipeline Rehabilitation
Construction Support Services

Years of Experience
31

Years with AECOM
31

Education
BS, Civil Engineering, California State University, Long Beach, 1989

Registrations
Professional Civil Engineer, CA, #C052517

Professional Associations
American Society of Civil Engineers
Society of Hispanic Engineers

Trainings and Certifications
Water and Sewer Modelling (Water/Sewer CAD)

Office Location:
Orange

Jesus has spent his career inspecting, designing, and constructing pipeline projects, including rehabilitation of corroding and aging trunk sewers and waterlines. A skilled design engineer and project manager, Jesus has worked with clients designing sewer systems, temporary sewer bypass systems, assessment/alignments of sewer systems, removing and replacing appurtenances, sewer/water relocations, and sewer/water line connections to meet service requirements to other agencies. He also has experience designing valves and vaults for interconnections. Jesus was selected for this role based on his ability to design and oversee complex, multi-disciplined conveyance teams to successfully develop consistent, on-time PDRs, and final construction documents

Professional history

Jesus has more than 31 years of experience, with responsibilities that have included project management; specifications preparation, design tasks for numerous water/recycled water pipelines and sewer/storm drain projects. He has been involved in underground utility searches, alignment route studies, horizontal and vertical alignments, utility relocations, hydraulic system analysis, public agency coordination, permit applications, and PS&E. He has also prepared more than a dozen modeling studies for reclaimed water facilities and for sewer and water master plans using various computer applications for engineering, economic analysis, planning, alternatives, identification and ranking of pipeline deficiencies, and CIPs.

Selected project experience

Project Engineer, Orange County Sanitation District (OC San), 5-67 Bay Bridge Sewer Force Main and Pump Station Replacement Project, Newport Beach, California

Services included a preliminary draft report, final plans and specifications for 1,500 feet of a dual 32-inch HDPE pipe for the sewer force main. AECOM provided planning and geotechnical exploration for the proposed force main pipelines across Newport Bay using trenchless techniques such as horizontal directional drilling, microtunneling and jack and bore. The project also includes replacement of the existing OCSD Bay bridge pump station (by others) and relocate to a new location to increase accessibility to OCSD maintenance staff. Completed planning and execution of geotechnical investigation in the Newport Bay on a barge for design, analyses and provided recommendations for geologic and geotechnical parameters such as groundwater level, open trenching, shoring, construction dewatering system design, aquifer testing and excavability of soils.

Project Engineer, OC San, 3-64 Western Regional Sewers Rehabilitation, Orange County, California

Project 3-64 is a rehabilitation and reconstruction where necessary the entire lengths of the Orange Western Sub-Trunk, the Los Alamitos Sub-Trunk, the Westside Relief Interceptor, and the Seal Beach Boulevard Interceptor. The OCSD's 2006 Strategic Plan Update identified these trunk sewers as deficient from a capacity perspective. As one of the project engineers of the projects, I assisted in the preparation of the design memorandum, preparation of the 30% preliminary drawings indicating the replacement/relining recommendations and evaluated the trunk sewer and manhole conditions/assessments. The project also includes preparation/managing of design plans, details, and specifications for replacements/relining of the trunk sewer, manhole reconstructions, access pit installations, sewer bypassing, construction phasing, traffic control, extensive permitting, and coordination with other utilities.

Project Engineer, OC San, PS16-05, Guidelines for the Development in the Area of OCSD Facilities, Orange County, California

Project PS16-05 is the preparation of a document (guidelines) for the construction of other facilities that could potential impact existing OCSD trunk sewers. The OCSD currently does not have any guidelines or standard which developers, contractors, or other public entities can comply with when working in the vicinity of OCSD trunk sewers. AECOM has developed this guideline for development around facilities, easements and/or fee properties of the OCSD. The purpose of these guidelines will be to distribute to developers, contractors, and other entities that propose external work that could impact OCSD facilities.

Project Manager/Engineer, Long Beach Water Department, Pacific Coast Highway Sanitary Sewer Rehabilitation Project, Long Beach Water Department, Long Beach, California

As project manager, prepared design plans and specifications for the rehabilitation of a 12-inch concrete sewer pipe by the pipe bursting construction method. The new replacement pipe diameter was an 18" high density polyethylene pipeline. Installations included several manhole reconstructions, access pit installations, sewer lateral connections, extensive sewer bypassing, traffic control, and Caltrans permitting. Responsible for managing the project, budget, schedule, review of existing utilities, preparation of plans and details, specifications, obtaining permits, coordination with other utilities, manage sub-consultants, bidding, awarding.

Project Engineer, County of Orange Public Works, Force Main Relocation, Edinger Avenue Bridge at Bolsa Chica Channel, Seal Beach, California

As project engineer, prepared sewer force main design plans and specifications for the relocation of an existing force main during the reconstruction of the bridge. Responsible for managing the project budget, review of existing utilities, preparation of plans and details, specifications, and coordination of relocation with bridge construction.

Project Manager, Rossmoor/Los Alamitos Area Sewer District, General Engineering Services, Los Alamitos, California

As the manager/design engineer for the RLASD, responsibilities include the following: provide general engineering advice relating to the operation of Client's facilities, review sewer connection plans for permitting, coordinate and review closed circuit televised data, maintain records of sewer laterals, provide utility data information to other agencies, prepare flow capacity analysis for new developments, provide field inspections, attend District meetings as required, prepare and review of general correspondence, review and document sewer maintenance records, preparation of reports or analysis when required by other agencies, and preparation of plans and specifications for District projects.

Project Engineer, Long Beach Water Department, Naples Sewer Lift Station S-10 Sewer Force Main, Long Beach, California

The LBWD requested on-site engineering services from AECOM. This work was executed as part of AECOM's on-call engineering services agreement with the LBWD. The work requested includes the on-site visit and discussions with LBWD Engineering staff, preparation of an alignment and profile, and memorandum to address the sewer force main (SFM) failure. The force main segment of concern is located in the City of Long Beach within North Ravenna Drive between the Rivo Alto Canal and Campo Walk. At this general location an SFM rupture has apparently occurred; the exact location of the rupture is unknown. As project engineer prepared the report and was responsible for managing the project budget, schedule, and review of existing utilities.

Project Manager/Engineer/Inspector, Rossmoor/Los Alamitos Area Sewer District, Orangewood Avenue Sewer Relocation Project, Los Alamitos, California

As project manager/engineer, prepared design plans and specifications for a sewer relocation to avoid a future County of Orange storm channel improvement. Responsible for managing the project budget, schedule, review of existing utilities, preparation of plans and details, specifications, obtaining permits, coordination with other utilities, bidding, awarding, and providing complete construction services for the project.

Project Manager/Engineer/Inspector, Rossmoor/Los Alamitos Area Sewer District, Sewer Repair Project, Los Alamitos, California

As project manager/engineer, prepared design plans for 9 sewer repairs, a relining portion of sewer pipe, and lifting 7 manholes to grade. Responsibilities included managing the project budget and schedule, review of existing utilities, preparation of plans and details, specifications, obtaining permits, coordination with other utilities, and provide complete construction services.

Project Engineer, City of Thousand Oaks, Wastewater Pipeline Improvements Project Phase 2, Thousand Oaks, California

This project consisted of construction of 4,520 linear feet of new 24-inch sewer while abandoning an old 10-inch adjacent sewer. The work also includes rehabilitation of 2,170 linear feet of sewer ranging in size from 15 to 30-inch diameter and rehabilitation of the existing sewer manholes. The sewer segment is part of the Unit E sewer system serving the County of Ventura. The workspace was limited due to narrow streets and nearby residences as well as construction within the flood control channel. The depth of the new sewer line varies from 12 to 20 feet.

Project Engineer, City of Buena Park, Beach Boulevard Siphon Sewer and Western Avenue Sewer Reviews, Buena Park, California

The project involves plans, specification, and preliminary design report peer reviews for the City of Buena Park. These improvements are based on recommendations in the master plan, and the City has retained AECOM to provide plan checks. This work is under an on-call contract with the City.

Project Engineer, OC San, Armstrong Subtrunk Sewer, Orange County, California

The Orange County Sanitation District selected AECOM to design the Armstrong Subtrunk Sewer in the cities of Tustin and Irvine. The project serves the planned redevelopment of the Marine Corps Air Station, Tustin, which will become a multi-use urban complex. The project consists of 9,000 feet of 27-inch diameter gravity trunk sewer. AECOM produced the preliminary and final design, plans, and specifications and provided construction services.

Project Engineer, City of Ontario, Sewer Improvement Project – Ontario Town Center, Ontario, California

The project includes analyzing the existing sewer system along Holt Avenue in the City of Ontario and identifying the system's existing and future deficiencies. The project also includes recommendations that address these deficiencies. Jesus assisted with modeling the existing system and recommendations for the design of a new trunk sewer.

Project Engineer, Olivenhain Municipal Water District, Cielo Sewer Force Main Pipeline, San Diego, California

Services included final plans and specifications and construction support for 4,500 feet of 12-inch PVC pipe for the sewer force main.

Project Engineer, Santa Ana Watershed Project Authority, Temescal Valley Regional Interceptor Reach 1, Riverside County, California

As project engineer, prepared designs for PVC and HDPE alternatives for 28,545 feet of industrial and non-recyclable waste force main. Responsibilities included review of existing utilities, preparation of pipeline plans, details, and specifications.

Project Engineer, OC San, Orange Park Acres Sewer, Orange County, California

This project consisted of construction 3110 linear feet of new 21-inch sewer while abandoning an old 12-inch adjacent sewer. The sewer segment connects the two OCSD trunks through the Orange Park Acres area. The workspace was limited due to narrow streets and nearby residences. The construction work was staged to maintain access to the adjacent residences. Since the depth of the new sewer line varied from 8 to 30 feet, several types of pipe bedding were required to complete the project.

Mathew Francis, PE

Trenchless Technology / Tunneling

Key Skills
HDD, Microtunneling
Ground Improvement
Geohazards & Earthquakes
Resilient Infrastructure Design
Design-Build
Construction Management

Years of Experience
28

Years with AECOM
25

Education
BS & MS, Civil Engineering, BYU, 1991 and 1996
EERI Fellowship, Ocean Engineering, Oregon St. University, 2006

Registrations
Professional Engineer (Civil), UT #98-183522-2202

Professional Associations
ASCE- GI, SEI, COPRI, IRD
EERI
NASTT
SME UCA

Trainings and Certifications
USACE CQC Management
Pile Dynamics Inc PDA Certificate
Crane Safety – Advanced
High Voltage Safety
Red Cross Certification
FEMA Level I, TAC
CalEMA/ATC 20-45

Office Location:
Murray, UT

Mathew is a member of AECOM's trenchless leadership with 28 years of experience in geotechnical engineering and prime design of trenchless conveyances, pipelines and tunneling and in water, energy, transport, and communications.

Professional history

Mathew's expertise includes HDD lead for AECOM, plus micro tunneling, jack and bore, large diameter pipelines, fabrication and handling QC, tunnel rehabilitation, jet grout, chemical grout, compaction grout, coatings, soil mixing ground treatments and hazard mitigations. His experience includes managing multi-discipline design projects, developing trenchless technology combinations, design build/ EPC and performance contracts covering all of the infrastructure lifeline systems and siting solutions with specialty construction in congested urban sites. He has led subsurface investigations for dozens of conveyance crossings and geologic hazard evaluations and performed large diameter pipeline design, cost estimates & CM in RCP, HOBAS, HDPE, FPVC, ductile iron and steel pipe. He has led pipeline and conduit design-build trenchless work as prime contractor, construction manager and as a DB specialty subcontractor. Includes eight projects winning national awards.

Selected project experience

Microtunnel & HDD Advisor, Orange County Sanitation District, 5-67 Bay Bridge Sewer Force Main and Pump Station Replacement, Newport Beach, California

Services included a preliminary draft report, final plans and specifications for 1,500 feet of a dual 32-inch HDPE pipe for the sewer force main. Provided scoping and oversight of 1,500 feet crossing of Newport Harbor and Pacific Coast Highway in mixed sand/rock at congested sensitive coastal site.

Trenchless Rehab Advisor, Hyperion Water Reclamation Plant Outfall Tunnel, LA City Sanitation, California

Trenchless Rehab Advisor for structural repairs, point repairs, grouting and new lining. Included seismic strengthening and compaction grouting.

Geotechnical Field Engineer, Los Angeles County Metropolitan Transportation Authority, I-105 Storm Drain Emergency Repairs, Los Angeles, California

This $3M project involved emergency repairs to storm drain joint leakage caused by the Northridge Earthquake, produce sinkholes and sand build up at the pump stations. Work included 400,000 LF of drilling, 2,000 grout holes, and 1,000 cubic yards of grout over a 1.5-mile alignment. Also prep for CIPP.

Field Project Engineer, Los Angeles County Metropolitan Transportation Authority, Redline Chemical Grouting Program, North Hollywood, California

A 2-mile segment from Universal City to North Hollywood for a 19-foot-diameter twin tube and using surface pre-treatment with sodium silicate grouting to improve tunnel face stability and mitigate flowing conditions and sinkhole surface migration supervised grouting and field quality control data collection for12M gallon chemical grouting program operating triple shifts seven days per week. Led daily utility clearances, grout performance and TBM coordination. Also coordinated with C-331 starter section horizontal grouting at the Universal City station.

Trenchless Advisor, San Francisco Public Utilities, Central Bayside Improvement Project (CBSIP), California

CSO routing alternatives evaluation, 72-in force main microtunnel preliminary design, subsurface investigation, green infrastructure.

Trenchless CM Lead, Northeast Utilities, Middletown-Norwalk 345kV Project, 42-in HDD Crossings, Connecticut

Independent inspection and QC, 5 HDPE bundled crossings 700-2000 ft.

Trenchless Lead, Kinder Morgan Co., Merced River 6-in Crossing Removal, California

Gas line trenchless demolition and remediation design.

HDD Advisor, Kern River Gas Co., 36-in HP APEX Pipeline Crossing of I-15, Salt Lake City, Utah

Complex groundwater, flowing sands, 70ft elevation drop required compaction grouting & hammer assist.

HDD Lead, Capital Region District, McLoughlin Point 42-in Force Main HDD Crossing, Victoria Harbor, British Colombia

Review and oversight of DB 3000 ft 36-in steel force main crossing, complex granite and soft marine deposits with hammer assist.

HDD Lead, Pinellas County, Boca Ciega Bay 30-in Force Main Crossing, Florida

Design and construction advisory for new harbor crossing in complex coral with 4125lf and 700lf bores.

HDD Lead, New Haven WPCA, New Haven Harbor 48-inch HDD Force Main Crossing, Connecticut

Design and CM of twin 1,800 lf HDPE crossing FM relocation. Overwater explorations & strict shellfish protections. ACEC CT Grand Conceptor Winner.

HDD Lead, City of Bremerton, 18-in Southwest Residential Sewer Expansion, Washington

Trenchless design, subsurface exploration, and route planning of 6 bores 700-1500 lf in urban highway interchanges.

HDD Lead, Hampton Roads Sanitation District (HRSD), Still Creek Force Main 42-in HDD, Williamsburg, Virginia

Design & CM of 3000 ft. HDPE crossing in soft coastal & dune deposits. Included GBR and VE.

HDD Lead, HRSD, South Trunk Sewer Section G 30-in Force Main, Norfolk, Virginia

Design and CM of 1400 lf 30-in FPVC urban highway crossing at 400yr old church with special monitoring.

HDD Lead, HRSD, Route 168 30-in Water Main Crossing, Chesapeake, Virginia

Trenchless evaluation, design and construction oversight of two 2000 lf HDPE crossings in soft marine deposits.

HDD Construction Engineer, City of Honolulu, 46-in Hart Street FM Crossing, Honolulu Harbor, Hawaii

VE design & CM of twin 3500 lf 46-in steel crossing through terminal container yard to WWTP. Sliplined w/ HDPE; overwater jet grout protection of gantry crane. 2002 ACEC Award; 2003 NASTT Runner-Up.

Trenchless Lead, Oklahoma City, Atoka Pipeline 60 & 72-in Canadian River Crossing, Oklahoma

Design and CM of new for raw water conveyance twin 2800 ft. microtunnel crossing.

Trenchless Lead, City of Everett, 48-in Pilchuck River Crossing, Washington

HDD and MT Alternatives evaluation and design of 2000 ft steel crossing in dense cobbles.

Trenchless Advisor, Miami Dade County, Norris Cut 60-in Force Main Crossing, Biscayne Bay, Florida

Construction evaluations of geotechnical conditions and tunneling performance for deep shafts and 10ft segmented tunnel to Fischer Island WWTP. New Civil Engineer’s Tunneling Award.

AECOM Imagine it. Delivered.

Joseph Marcos, PE

Sewer Flow Studies

Key Skills
Sewer Condition Assessment
Sewer Hydraulic Analysis
Sewer Design Analysis
Sewer Flow Studies
Feasibility Studies
Pipeline Conveyance Design
Stakeholder Coordination
Project Management
Construction Support

Years of experience
7

Years with AECOM
5

Education
MS, Environmental Engineering & Science, Stanford University, 2015
BS, Environmental Engineering, University of California – Irvine, 2011

Registrations
Professional Engineer (Civil), CA #90898

Professional Associations
American Society of Civil Engineers
WaterReuse

Office Location
Los Angeles

Joseph has successfully implemented sewer infrastructure upgrade projects having involvement in the entire design process ranging from preliminary engineering to bid support services. He also provided construction support experience in various disciplines.

Professional history

Joseph is a registered Civil Engineer and serves as deputy project manager and design engineer on various water/wastewater infrastructure projects. His focus is on sewer pipeline design but has experience in utility investigations, dam upgrades, and environmental/georemediation.

Selected project experience

Project Engineer, Orange County Sanitation District (OC San), 3-64 Rehabilitation of Western Regional Sewers, Orange County, California

Provided engineering design services throughout four phases:

Pre-Design Evaluation Studies: Reviewed existing as-builts, maintenance logs, and existing CCTV data to develop a supplemental sewer pipeline and manhole condition assessment and inspection program. Based on investigation results, determined and categorized the severity of each manhole and pipeline within the program in accordance with the National Association of Sewer Service Companies' (NASSCO) Pipeline Assessment Certification Program (PACP) standards. Worked with team to update hydraulic model and identify capacity needs based on 2040 projected dry and wet weather flows. Managed the scheduling and coordination of condition assessment, surveying, and utility research field activities among six cities, twelve subconsultants, and three additional jurisdictional agencies, including Caltrans.

Preliminary Design/Engineering: Analyzed sewer flow and condition assessment results to identify pipe segments and manholes that do not conform to OC Sanitation District standards including peak wet weather, d/D, surcharge, velocity, etc. Evaluated various pipeline replacement and rehabilitation alternatives, including CIPP lining, spiral-wound PVC, sliplining, short pipe sliplining, deformed liners, compression fit liners, open cut, microtunneling, and pipe bursting. Evaluated manhole alternatives including replacement, CIPM, and spray on lining systems.

Final Design/Engineering: Prepared plans and specifications. Participated in public outreach activities to notify stakeholders of project and potential impacts. Conducted workshops with client throughout the design process to ensure client is satisfied with design and progress.

Bid Support: Addressed Contractor questions and prepared conformed plans and specifications.

The project entails the rehabilitation and replacement of approximately 87,000 linear feet of sewer pipeline (18-in to 51-in. diameter), 217 manholes (up to 74-in. diameter), and a pump station facility (approximately 18.8 MGD).

Staff Engineer, United States Army Corps of Engineers, Whittier Narrows Utility Relocation Project, California

Researched existing surface and subsurface utilities. Evaluated potential utility relocation design alternatives. Managed and coordinated field work activities between client and four subcontractors to survey and identify existing utilities surrounding the Whittier Narrows Dam. This project entailed the preliminary design of existing utility relocations as a result of the client's proposed infrastructure modifications at Whittier Narrows Dam.

Staff Engineer, Metropolitan Water District of Southern California (MWD), Robert A. Skinner Treatment Plant Oxidation Retrofit Program, Winchester, CA

Reviewed historical construction field memorandums, requests for information, and plans, and updated as-built drawings utilizing MicroStation. The project entailed the update of as-built drawings for the treatment plant's pipeline infrastructure.

Staff Engineer, City of Fontana, Banana Avenue Storm Drain/Sewer Improvements, Fontana, CA.

Assisted with the preparation of technical specifications for storm drain, sewer, and roadway improvements. Specifications were project-tailored in accordance with Greenbook standards. The project entailed the installation of approximately 7,000 linear feet of storm drain and sewer pipeline expansion.

Staff Engineer, City of Los Angeles Bureau of Engineering, Argo Drain Sub-Basin Facility, Los Angeles, California

Assisted with permitting, prepared haul route exhibits, and generated plans and specifications. The project entailed the construction of storm water treatment facilities including diversion structures, a pump station, clarifier, underground infiltration tank, and infiltration wells.

Deputy Project Manager, MWD, Lake Mathews and Lake Skinner Dam Monitoring System Upgrades and Spillway Condition Assessment, Riverside County, California

Assisted with managing a technical team that identified and characterized erosion areas occurring at the dams, evaluated existing monitoring and instrumentation devices, and characterized the current design and condition of the spillway structures according to best practice dam design. Coordinated with internal team, clients, and subcontractors. Ensured AECOM's quality management system (QMS) policies and procedures were implemented, followed, and documented. This project entailed the evaluation of erosion and instrumentation and condition assessments at MWD's Lake Mathews Dam and Lake Skinner Dam.

Staff Engineer, MWD, Submittal Coordination, California

Coordinated submittal reviews between design engineers, project managers, and resident engineers for approximately 25 projects under construction to ensure submittals met deadlines outlined in the specifications.

Field Engineer, City of Lynwood Redevelopment Agency, Alameda Triangle Project, Lynwood, California

Reviewed historical data to develop a Phase II Environmental Site Assessment program that included soil, soil vapor, and groundwater sampling. Coordinated with subconsultants and jurisdictional agencies to obtain encroachment permits. Collected on-site samples and real-time data in accordance EPA methods. Reviewed analytical data and prepared technical memorandums highlighting results and recommendations. The project entailed sampling and analysis to delineate contamination and evaluate various remedial strategies and associated costs.

Field Engineer, City of Lynwood Redevelopment Agency, Lynwood Springs, Lynwood, California

Assisted with the design, installation, and optimization of a vacuum enhanced light non-aqueous phase liquid (LNAPL) extraction system. Provided engineering support services during construction, reviewed Contractor submittals, RFIs, etc. Also responsible for preparing quarterly status reports and calculating the total amount of contaminant mass removed.

Field Engineer, Olson Company, Phase II Environmental Site Assessment, Downey, California

Conducted a Phase II subsurface investigation consisting of soil, soil vapor, and groundwater sample collection to delineate contamination and evaluate various remedial strategies and associated costs.

Student Intern, San Francisco Public Utilities Commission, Southeast Treatment Plant Facility Upgrades, San Francisco, California

Reviewed design documents and oversaw construction activities for a grit removal pilot system as part of the Sewer System Improvement Program (SSIP). The SSIP is a 20-year, multi-billion dollar citywide investment that will upgrade San Francisco's aging sewer infrastructure.

Mark Webb, PhD, PE, Pr.Eng, F.ASCE

CIPP / Sliplining

Key Skills
Soil-Pipe Interaction
Non-Linear Finite Element Analysis (Fea)
Structural Design
Condition Assessment
Rehabilitation
Failure Investigations
Pro-Active Management of Buried Gravity And Pressure Pipes

Years of experience
22

Years with AECOM
1

Education
University of Massachusetts, Amherst, MA
Ph.D. in Civil and Environmental Engineering, 1999
University of Massachusetts, Amherst, MA
M.S. in Civil and Environmental Engineering, 1995
University of Pretoria, Pretoria, South Africa
B.Eng. Honors, Water Resources Engineering, 1994
University of Pretoria, Pretoria, South Africa
B.Eng. in Civil Engineering, 1993

Active Registration
Professional Engineer (Civil), MA # 56235

Office Location:
Chelmsford, MA

Dr Webb is a highly qualified professional civil engineer with over 20 years of experience in soil-pipe interaction, non-linear finite element analysis (FEA), structural design, construction, condition assessment, rehabilitation, failure investigations, and pro-active management of buried gravity and pressure pipes. He has inspected over 1,500 miles of high-pressure transmission mains using leading condition assessment technologies, performed countless internal pipeline inspections (RCP, PCCP, HDPE, FRP, DI and steel), and designed hundreds of miles of transmission mains. He is a Chapter Lead for External Pipe Repairs in AWWA's Manual of Practice M81 – Rehabilitation of Large Diameter Water Mains.

Professional history

Dr. Webb has accomplished his unique skillset through years of cutting-edge research and testing on soil-structure-interaction including full-scale buried pipe and culvert testing, non-linear finite element analysis (FEA) and extensive laboratory testing of soils. He enhanced antiquated FEA software to commercial software for the design, analysis and evaluation of buried pipes, culverts and other soil-structure interaction systems. As a researcher, he contributed significantly to rewriting the national AASHTO LRFD Bridge Design and Construction Specifications for large-span metal and reinforced concrete culverts (i.e., buried bridges). He put his bridge and culvert knowledge to practice by successfully installing several decline portal and rockfall protection tunnels for the mining industry in South Africa and further abroad while also advising on buried bridge and tunnel projects around the world..

Selected Recent Project Experience

Buried Pipe, Sewer and Tank Projects

Inspection and Rehabilitation

- 36 to 84 in. Christina River Force Main (CRFM) for New Castle County, New Castle, DE. (Technical Manager to perform engineering services including design, evaluation, analysis, risk assessment, risk mitigation, emergency planning, and construction management associated with measures to minimize risk and apply redundancies to the CRFM.
- 42 in. Diameter Steel Cooling Water Pipes for NASA Ames Research Center Unitary Plan Wind Tunnel (UPWT), Moffett Field, CA. (Internal inspection of steel pipes, and design support for

CIPP structural liner.

- 42 in. Diameter PCCP Raw Water Conveyance System Return to Service, Westfield, MA. (Internal and external inspection of PCCP, alternative analysis, and recommendations for rehabilitation and returning distressed ECP and LCP to service.

- Design Support for 24 to 36 in. Diameter Vent Shafts and 72 to 96 in. Diameter Drop Shafts for Pawtucket Tunnel, Pawtucket R.I. (Pipe design criteria, material and lining selection, and installation support.

- 30 in. Diameter Ductile Iron Force Main for Peirce Island, Portsmouth RI. (Review failure mechanism and recommendations for rehabilitation and replacement options.

- 48 and 54 in. Diameter Steel and RCCP Barkhamsted-Nepaug Transmission Main Condition Assessment, Hartford, CT.

- Concrete Horseshoe Shaped South Talcott Mountain Tunnel and Conduit Condition Assessment, Hartford, CT.

Condition Assessment and Integrity Management

- Inspection of Sanitary and Storm Sewers, Staten Island, NY. (Perform structural assessment of existing sewers as per of the South Shore Staten Island (SSSI) Coastal Storm Risk Management Project.
- Bulk Water Pipeline Leak Detection Inspections: Eikenhof Region, South Africa. (3-yr leak detection inspections on 596 km of DN300 to DN2900.
- Bulk Water Pipeline Leak Detection Inspections: Palmiet Region, South Africa. (3-yr leak detection inspections on 496 km of DN400 to DN2300.
- Bulk Water Pipeline Leak Detection Inspections: Mapleton Region, South Africa. (3 yr leak detection inspections on 496 km of DN300 to DN2100.
- Bulk Water Pipeline Leak Detection Inspections: Combined Region, South Africa. (3 yr leak detection inspections on 546 km of DN400 to DN3500.
- Condition Assessment of 90km DN1300 Rietspruit-Davel-Kriel Pre-Stressed Concrete Pipeline (PCP), Mpumalanga, South Africa. (Conduct electromagnetic inspection, flow and pressure monitoring, hydraulic and surge analysis, inline leak detection and live CCTV inspections, failure-risk engineering analysis, and pro-active pipeline management.
- Condition Assessment of 100km DN1200 Caledon-Bloemfontein Pre-Stressed Concrete Pipeline (PCP), Free State, South Africa. (Conduct inline leak detection and live CCTV inspections, and develop pipeline management strategy.

Geotechnical, Structural and Hydraulic Instrumentation

- Project on Grouted Lining Systems for the Renovation of Old Steel Pipelines and the Design of New Pipelines, Pretoria, South Africa. (Selection, assembly, wiring, programming, and data collection using a data logger to collect measurements from pressure transducers, strain gauges, thermocouples and flow meters.
- Development of Pipeline Profilometer, Pretoria, South Africa. (Develop a profile measuring device called a profilometer to measure shape distortions.
- High Pressure Pump Test Vehicle, Pretoria, South Africa. (Develop a data acquisition system (DAQ) system, graphical user interface (GUI) and hydrostatic pressure testing procedures to pressurize existing/new pipelines, procure, install and operate.
- Pressure Testing DN2358 B16 Pipeline Between CH0.0 to CH15.85 km, Mapleton, South Africa. (Hydrostatic step-pressure testing 15 km section of pipeline suspected of leaking using high pressure pump test vehicle.
- Instrumentation Plan for Testing of Large-Diameter Steel Pipes, Pretoria, South Africa. (Prepare a detailed instrumentation monitoring program to measure pipe wall stresses and strains, pipe displacements and buckling, soil stresses, soil density and moisture content, soil stress-strain-strength, and backfill elevations. Testing formed part of DN3130 prototype test pipes and full-scale pipe testing.
- Field Test Plan for Testing of Large-Diameter Steel Pipes, Pretoria, South Africa. (Prepare detailed pipe installation, backfilling and monitoring program for DN3130 full scale buried pipe tests.

Daniel Lee, PE, QSD,CQCM

Constructability Review

Key Skills
Feasibility Studies
Mass Grading
Technical Studies
Estimates & Specifications
Constructability Reviews

Years of Experience
41

Years with AECOM
16

Education
BSc, Civil Engineering, San Diego State University, 1983

Registrations
Professional Engineer (Civil), CA #38396
Professional Engineer (Civil), NV #14424
Qualified SWPPP Developer and Practitioner, CA #22313

Professional Associations
ASCE- American Society of Civil Engineers, Member
ACEC-American Council of Engineering Companies, Member
APWA-American Public Works Association, Member
CMAA-Construction Management Association of America, Member
WTS-Women Transportation Seminar, Member

Office Location:
San Diego

Dan has over 40 years of experience in project management and design of civil engineering projects both nationally and internationally. His background of extensive experience includes water resource, commercial, resort, industrial, residential land development, and major transportation and public works projects.

Professional history

Dan is the civil and transportation department manager in the San Diego office responsible for management, conceptualizing, and preparing feasibility studies for routing alignments, mass grading, and technical studies; ensuring efficiency and quality by completing constructability reviews, reviewing reports, drawings, estimates, and specifications; and marketing and leading technical professionals. He also has extensive public works experience in the areas of infrastructure design of transportation and water resource projects.

Selected project experience

Project Manager, City of San Diego - Pure Water: Conveyance Pipeline and Moreno Pump Station, San Diego, California

Responsible for the project which included five distinct elements: (1) sewer diversion/influent conveyance; (2) pump station and odor control systems; (3) a 10.2-mile, 48-inch-diameter sewer force main pipeline; (4) a 10.2-mile, 24-inch-diameter gravity brine return line; and (5) a new/replacement potable water transmission/distribution system along Morena Boulevard. Each project element has similar yet unique challenges, including tight utility corridors, high groundwater and/or geotechnical considerations, potential conflicts with competing construction projects, operating hydraulic conditions, and extreme traffic congestion pinch points throughout the entire project alignment. Work also included rigorous constructability reviews.

Project Manager, San Diego Eastline Trolley Water and Sewer Main Replacement/Realignment, San Diego, California

Responsible for the preparation of plans, specifications and estimates and constructability reviews for the replacement and realignment of sewer trunk mains, laterals, water mains and services along five miles of the Eastline Trolley for the Metropolitan Transit Development Board.

Project Manager, Marine Corps Recruiting Depot Housing Facilities and Redevelopment, San Diego, California

Responsible for the preparation of water and sewer master planning, improvement plans, cost estimates, specifications and construction staking on this 70-acre site.

Project Manager, Carmel Valley Village Sewer and Water Systems in San Diego, California

Project Manager for the design, constructability reviews and construction staking of all sewer and water mains and appurtenances for this 300-acre site.

Project Manager, High Country West Community Water and Sewer Systems in San Diego, California

Project Manager and Project Engineer for the preparation of the Sewer Master Plan for a 579-unit community development project, a 160-acre subdivision in Rancho Bernardo. He performed engineering design of all sewer and water mains, stations, force mains, pressure reducing stations and associated appurtenances. Services included mass grading, street design, drainage design, sewer and water systems, cost estimation, construction management, subdivision mapping, community workshops, feasibility studies, agency processing (CALTRANS), and constructability reviews and as-builts.

Project Manager, Horse Lake Reclaimed Water Reservoir and Pump Station, Camp Pendleton, California

Responsible for the preparation of an engineering concept/feasibility study for restoring and/or increasing the water storage capacity and analysis and grading studies and constructability reviews for the desolation of golf course irrigation lake for the Marine Corps Base. Horse Lake is a reclaimed water reservoir and is drawn upon for golf course and landscape irrigation. The study included evaluation of present and desired storage capacities, lake capacity after desilting, alternatives for increasing storage capacity, and recommendations of preferred alternatives and construction costs.

Project Manager, Horton Plaza Shopping Center, San Diego, California

Responsible for the preparation of plans, specifications and estimates and constructability reviews for the replacement or realignment of sewer, water and drainage systems within Fourth Avenue, First Avenue, “G” Street, and Broadway Place for the Center City Development Corporation.

Project Manager, La Costa Glen, Carlsbad, California

Providing construction drawings and estimates and constructability reviews for sewer, water and reclaimed water facilities in connection with a 55-acre retirement community in the City of Carlsbad.

Project Manager, National City Redevelopment, National City, California

Responsible for the preparation of sewer plans which included design and construction staking of 10 acres of redevelopment projects, drainage master plans, storm drain construction drawings, and estimates and specifications and constructability reviews for the 10-acre Redevelopment project for the City of National City.

Project Manager, Rancho Bernardo Road Water Main Upsizing Project (A Capital Improvement Project for the City of San Diego), San Diego, California

Project Manager for the realignment and upsizing of approximately two miles of 27" water main through heavily congested area of Rancho Bernardo. Work included design and constructability reviews and construction staking of mains, appurtenances and pressure reducing stations.

Project Manager, Various Clients, Various Facility Site Planning and Civil Engineering Projects, Various Locations

Prepared feasibility studies and mass grading designs, processed development permits (e.g. Coastal Commission and US Army Corps of Engineers), and prepared and processed public improvement plans for on-site and off-site sewer, water, street, and storm drain systems in California and Nevada.Work also included rigorous constructability reviews.

Robert Stallings, PE

Odor Control / Design Manuals and Procedures Review

Key Skills
Water Pollution Control Facility Design and Analysis
Water Works Facility Design and Analysis
WWTP Odor Control
Combined Sewer Overflows
Biological Nutrient Removal

Years of Experience
42

Years with AECOM
32

Education
BS, Civil Engineering, Villanova University, 1978

Registrations
Professional Engineer (Civil), CA #35487
Professional Engineer (Civil), MA #34225
Professional Engineer (Civil), VT #5652
Professional Engineer (Civil), HI #17236

Professional Associations
American Society of Civil Engineers
Water Environment Federation
New England Water Environment Association

Office Location:
Honolulu, HI

Bob has been working on design and operation of municipal sewerage systems for more than four decades and is expertly positioned to leverage his knowledge for this On-Call Engineering Services contract. Bob has reviewed design manuals and procedures for numerous sanitation agencies and is a contributor to many WEF publications.

Professional history

Bob specializes in the analysis, planning, and design of water pollution control and water works facilities. He is responsible for engineering, design, and construction phases of wastewater treatment facilities and municipal sewerage systems. He has experience working on projects with design flows ranging from 0.02 to 380 mgd. He has extensive dealings with a wide range of issues including wastewater treatment plants, odor control, facilities planning, combined sewer overflows, biological nutrient removal, aeration systems, disinfection and dechlorination systems, biosolids management, and pumping station upgrades.

Selected project experience

QA/QC Reviewer, Orange County Sanitation District (OC San), 3-64 Western Regional Sewers Rehabilitation, Orange County, California

Responsible for Predesign Evaluation Studies, preliminary and final design of more than 16-miles of sewer lining and replacement and reconstruction of the Westside Pump Station wetwell. The work involves extensive geotechnical and CCTV field investigations, pipeline and manhole condition assessments, hydraulic modeling, alignment studies, evaluation and design of bypassing systems, and extensive use of cured-in-place pipe (CIPP) lining for one of the largest sewer rehabilitation projects ever undertaken by OC San.

Project Engineer, OC San, Plant No. 2, P2-105 Digester Ferric Chloride Rehabilitation, Huntington Beach, California

Responsible for the preliminary design and final design for replacement of the digester ferric chloride feed system and Plant No. 2. The plant is designed to provide full secondary treatment for flows of 150-mgd using both the trickling filter/solids contact process and pure oxygen activated sludge process. The project includes two new ferric chloride storage tanks each 15,000-gallon capacity, six new chemical metering pumps, spill containment structure, and weather enclosure over the pumping equipment. The ferric chloride is injected into the digesters to reduce digester gas H2S concentrations to 40 ppm or less to meet the stringent Southern California Air Quality Management District air quality permit requirements. The system is designed to feed ferric chloride to 15 anaerobic digesters and 2 digested sludge holding tanks ranging from 80 to 105 feet in diameter.

Design Engineer, OC San, Plant 1 Scrubbers, Fountain Valley, California

Designed four 24,000 cfm countercurrent flow packed bed scrubbers for OC SAN Project P1-20. These scrubbers included a muriatic acid system to periodically dissolve scale from the packing. These scrubbers exhaust air from influent sewers and several portions of a 380-mgd headworks facility.

The design also included pre-chlorination and ferric chloride addition to reduce odors.

Project Engineer, OC San, Plant No. 1 Project P1-106 Truck Wash and Dewatering Beds, Fountain Valley, California

Responsible for the design of a new truck wash facility and related dewatering beds for storage and dewatering of community sewer cleaning residuals prior to disposal at a landfill. Odor control will be provided by covering residuals with sawdust or wood chips during the drying process. A truck wash station with a process drainage collection system will also be provided.

Project Engineer, OC San, Plant No. 1 P1-100 Anaerobic Digester Rehabilitation, Fountain Valley, California

Bob Served as Project Engineer for engineering studies, preliminary design and final design for rehabilitation of 10 anaerobic digesters and two digested sludge storage tanks. The plant is designed to provide full secondary treatment for flows of 165.0 mgd using both trickling filter and activated sludge processes. The digesters are pump mixed using a large nozzle mixing arrangement. Evaluated sludge loadings; process operations; digester feeding, heating, and mixing of the digester which will receive a blend of primary and waste activated sludge which will be thickened by centrifuges. Project includes condition assessment and asset management evaluation of process and ancillary equipment as part of the preliminary design effort, and the preparation of plans and specifications for construction of the improvements.

Project Engineer, OC San, Plant No. 1 Project P1-101 Sludge Thickening, Dewatering, and Odor Control, Fountain Valley, California

Responsible for AECOM's involvement in preliminary and final design of a thickening and dewatering centrifuge facility. Involved in hydraulic analyses for pumping thickened sludge streams using rheological data obtained through laboratory analysis of sludge samples collected from the plant, and design of a sludge blending facility and mixing systems for thickened sludge wet wells to allow the district to delay construction of additional anaerobic digestion facilities.

Process and Operations Engineering Specialist, OC San, Plant No. 2 Value Engineering Study Project P2-90 Trickling Filters, Huntington Beach, California

Specialist for value engineering of a 60.0-mgd trickling filter-solids contact secondary treatment facility.

Process and Operations Engineering Specialist, OC San, Plant No. 1 Value Engineering Study Project P1-102 Activated Sludge Facility No. 2, Fountain Valley, California

Specialist for value engineering of a 60.0-mgd activated sludge secondary treatment facility.

Project Engineer, OC San, Plant 2 Primary Sludge Feed System Project P2-91 Value Engineering Services, Fountain Valley, California

Engineer for a value engineering study for the primary sludge feed loop system to assess the major design areas, evaluate and make recommendations that might reduce associated costs, and evaluate ways reduce the project schedule and/or ensure no project delays. The three design areas to be re-evaluated are routing of the feed loop piping system, the electrical system configuration, and instrumentation/control system configuration.

Technical Team Leader, City and County of Honolulu, Department of Environmental Services, Sand Island WWTP Secondary Treatment Conceptual Design and Final Design Services, Oahu, Hawaii

Led the conceptual and final design of secondary treatment and solids handling improvements. The improvements must be implemented to comply with and EPA Consent Decree to achieve full secondary treatment for the ocean outfall discharge by 2035, as well as planning for future flows through year 2055. Projected future wastewater flows and loadings were developed for years 2035 and 2050 with average daily flow ranging from 89 to 96 mgd, and peak hour flows ranging from 144 to 240 mgd. The existing Sand Island facility provides chemically enhanced primary treatment, UV disinfecting and deep ocean discharge via the existing 84 -inch outfall. Primary solids are thickened, anaerobically digested, dewatered, and thermally dried. Final design is based on providing membrane bioreactor (MBR) technology for biological treatment. Phase 1 design provides partial secondary treatment with a monthly design capacity of 20 mgd including intermediate pumping, fine screens, MLE process reactors, and membrane bioreactor filtration. Solids thickening and odor control are also being provided.

AECOM Imagine it. Delivered.

Dylan LaFrance, PE

Hydraulic Modeling

Key Skills
Hydraulic Analysis
Hydraulic Modeling
Process Mechanical Design
Civil and Pipeline Design

Years of Experience
8

Years with AECOM
7

Education
BS, Civil Engineering, UCI, 2013
BS, Environmental Engineering, UCI, 2013
MS, Civil Engineering, UCLA, 2014

Registrations
Professional Engineer (Civil), CA #85727

Professional Associations
American Society Civil Engineers
American Academy Env. Engineers

Office Location:
Orange

Dylan has strong hydraulic analysis and hydraulic modeling experience, which includes a strong academic background and project experience with treatment plants, pump stations, and collection systems.

Professional history

Dylan has been a lead project engineer responsible for hydrologic and hydraulic analysis, hydraulic modeling, and civil and process mechanical design on several pump station, treatment plant, distribution and conveyance systems, and dam projects with various degrees of scope and scale. Dylan has experience coordinating complex design features between various design disciplines during both preliminary and final project design.

Selected project experience

Project Engineer, Los Angeles County Sanitation Districts (Districts), Colorado Lagoon Open Channel Sewage Handling System Study, Long Beach, California

Responsible for the development of a cost-benefit analysis for the replacement of an existing Districts trunk sewer with either an inverted sewer siphon or sewage lift station. Developed hydraulic model for existing collection system for proposed facility sizing, determined existing and future sewage flows, prepared preliminary layout of sewer siphon and lift station, and developed conceptual level cost estimate.

Project Engineer, Mission Springs Water District, West Valley Water Reclamation Facility, Desert Hot Springs, California

Responsible for overall treatment plant hydraulics and hydraulic modeling, site civil design including grading and drainage, site access and arrangement, and yard piping for a new 1.5 mgd sequencing batch reactor. Performed hydrologic analysis using Riverside County Flood Control requirements to size drainage control features and stormwater best management practices. Prepared site drainage report and water quality master plan.

Project Engineer, OC San, P1-129 RAS Piping Replacement at Activated Sludge Plant 1, Fountain Valley, California

Responsible for existing RAS pump station hydraulic capacity assessment, proposed bypass pumping system hydraulic analysis, including equipment sizing, selection and preliminary pumping orientation, and proposed bypass pumping capital and operating cost analysis.

Project Engineer, City of Oxnard, Oxnard Wastewater Treatment Plant Interim Improvements Project, Oxnard, California

Responsible for the site assessment and necessary improvements recommendation of an existing 20 mgd wastewater treatment plant including, secondary sedimentation tank internal mechanisms and influent gates replacement, RAS, WAS, secondary scum, and primary sludge pumps hydraulic analysis and replacement pump selection criteria, and new primary scum collection and conveyance facility sizing and arrangement.

Project Engineer, TraPac LLC, Port of Oakland Berths 25 & 26 Redevelopment, Oakland, California

Responsible for the site hydrology analysis to determine local site runoff generation to provide appropriately sized drainage facilities, which adhered to the City of Oakland design standards. Storm drainage sizing and piping arrangement, and utility piping sizing and arrangement, including sewer, domestic water, and fire water systems. Site Fire water analysis using hydraulic modeling software to ensure adequate facility sizing for California Fire Code residual pressure and flow demand requirements.

Project Engineer, Port of Long Beach, Pier G North Slip Backlands Development, Long Beach, California

Responsible for onsite potable, firewater, and sanitary sewer design. Utility research and coordination with local utility owners and regulatory agencies. Utility base map generation and managing subsurface utility investigations. Sitewide hydraulic modeling of water utility systems to ensure compliance with local ordinances and design parameters.

Project Engineer, Irvine Ranch Water District, Eastwood Recycled Water Pump Station, Irvine, California

Responsible for the hydraulic analysis and pump selection, mechanical piping and facilities sizing and arrangement, and general site civil design for a 60 mgd multi-zone 14 pump booster pump station.

Project Engineer, Santa Margarita Water District, Trampas Recycled Water Pump Station, Rancho Mission Viejo, California

Responsible for the hydraulic analysis and pump selection, mechanical piping and facilities sizing and arrangement, and general site civil design for a multi-zone 5 pump booster pump station.

Project Engineer, Alameda Corridor East, Durfee Avenue Grade Separation Stormwater Pump Station, Pico Rivera, California

Responsible for the hydraulic analysis and pump selection, wet well sizing, mechanical piping and facilities sizing and arrangement, and general site civil design for a 20 cfs stormwater pump station.

Project Engineer, Irvine Ranch Water District, Stockdale West Wellhead Equipping and Conveyance Facilities, Kern County, California

Responsible for the hydraulic analysis and pump selection for a deep well vertical turbine wellhead facility including constant speed versus variable speed life-cycle energy consumption analysis for three 2,500 gpm capacity production wells.

Project Engineer, Santa Margarita Water District, Trampas Canyon Dam and Reservoir, Rancho Mission Viejo, California

Responsible for the site civil design including, grading, access roadways, retaining walls, water and sewer pipelines, site drainage and paving, as well as reservoir inlet/outlet structure hydraulic analysis, emergency drawdown determination, intake screens, outlet conduit, and energy dissipator structure and valve sizing and arrangement for 5,000 acre-feet recycled water reservoir and earthen dam.

Project Engineer, Los Angeles County Department of Public Works, Santa Anita Debris Dam Seismic Strengthening Project, Arcadia, California

Responsible for the site civil design including, grading, access roadways, retaining walls, site drainage and paving, and debris basin supplemental intake structure hydraulic sizing, piping arrangement, mechanical slide gate selection, and outlet works emergency drawdown determination for an 80 ac-ft local runoff debris basin and earthen dam.

Project Engineer, Rancho California Water District, Vail Dam Replacement Project, Temecula, California

Responsible for site civil design including grading and drainage, access roadways, inlet/outlet tower, energy dissipator structure, and erosion control facilities. Mechanical design for inlet/outlet gates and emergency outlet piping and cone valve. Performed emergency drain-time analysis based on Division of Safety of Dams (DSOD) regulatory criteria for a new RCC dam and 50,000 ac-ft reservoir.

Project Engineer, Irvine Ranch Water District, Santiago Creek Dam Outlet Tower and Spillway Replacement Project, Irvine, California

Responsible for the civil and mechanical design of a new inclined outlet structure, including drain-time analysis based on DSOD regulatory criteria, including sizing and arrangement of intake screens, pneumatic control valves, outlet piping, and appurtenances, for a 30,000 ac-ft reservoir.

Robert Stein, PE

Construction Management Support

Key Skills
Construction Management
Resident Engineering / On-Site Observation
Constructability Reviews
Contractor Prequalification General Civil Engineering and Design

Years of Experience
36

Years with AECOM
33

Education
BS, Civil Engineering
San Diego State University, 1987

Registrations
Professional Engineer (Civil), CA #53670

Professional Associations
American Society of Civil Engineers

Trainings and Certifications
AECOM Certified Project Manager

Office Location:
Bakersfield

Robert has extensive experience in constructability reviews, processing of contractors' correspondence, clarifications, submittals, payment requests, change orders, schedule and budget management in addition to the analysis, processing of and resolution of contractors' claims.

Professional history

Robert has 36 years of experience in construction management of municipal construction projects. His expertise includes construction management of building structures, reinforced concrete structures, earthwork, pipeline, mechanical, chemical, electrical and process equipment related to water, wastewater and recycled water treatment plants, pump stations, reservoirs, road construction including freeway interchanges (bridge work, asphalt and portland cement concrete paving, sub base and sub grade preparation). Robert also specializes in coordination with local building authorities, permit agencies and utility agencies during construction. He has also expertly managed the coordination of engineering and architectural design personnel and specialty consultants (materials testing, survey, environmental, etc.).

Selected project experience

Construction Manager, The City of El Paso de Robles, 2.4 MGD Water Treatment Plant Project, Paso Robles, California

Construction Manager for the City of Paso Robles 2.4 MGD Water Treatment Plant. The $10M water treatment facility receives raw water from Lake Nacimiento and treats the water to potable water standards. The major components of the treatment plant are dissolved air flotation, microfiltration, granular activated carbon treatment, disinfection, concrete clearwater reservoir and a high service finished water pump station. The project also includes an operations building that includes a main control room, offices and an area for the membrane filtration equipment. Responsibilities include constructability review, resident engineering, construction administration, on-site observations, processing of submittals, RFI's, change orders and contractor payments. Responsibilities also include coordination of plan reviews and inspections with the City Building Official, coordination with utility agencies and permit agencies.

Resident Engineer, Antelope Valley – East Kern Water Agency, Quartz Hill Water Treatment Plant/ Operations Center Expansion Project, Lancaster, California

Resident Engineer for the $7M Operations Center Expansion which includes construction of a new 13,000 sf operations building. The new 2-story masonry building includes a new board room, laboratory, additional offices and storage space. Responsibilities include on-site inspection, contract administration, coordination with local permit agencies and coordination with existing treatment plant operations staff and utility agencies.

Resident Engineer, The Oxnard GREAT Program, City of Oxnard, California

Resident Engineer for the City of Oxnard's Advanced Water Purification Facility (AWPF). The $54M Oxnard's Advanced Water Purification Facility is a "state-of-the-art" water treatment facility which receives secondary treated effluent from the city of Oxnard wastewater treatment plant, and treats the water to Title 22 compliant recycled water. The major components of the AWPF are a lift pump station, microfiltration, reverse osmosis filtration, ultraviolet disinfection and a finish water pump station. The project also includes an administrative building with offices, laboratory, and a visitor's center. The administrative building included extensive architectural features and landscaping. Responsibilities include constructability review, resident engineering, construction administration, on-site observations, submittal, RFI, change orders, payment and schedule management, coordination with local building officials and utility agencies.

Senior Engineer, Water Recycling Facility, City of Fillmore, California

Senior Engineer for this $42 Million Design-Build-Operate (DBO) project which included the construction of a new state-of-the-art water recycling plant in the City of Fillmore. Responsible for oversight of design and construction as the City's Representative. Includes contract administration, on-site observations, design reviews, submittal reviews and monitoring of permit requirements.

Assistant Resident Engineer, Acton Water Treatment Plant and Eastside Water Treatment Plant, Antelope Valley-East Kern Water Agency, Quartz Hill, California

Assistant Resident Engineer and Inspector during the construction of the Antelope Valley-East Kern Water Agency's Acton Water Treatment Plant ($10M) and Eastside Water Treatment Plant ($3M). Major work items on these projects included a post-tensioned reinforced concrete reservoir (1.6 mg), reinforced concrete treatment structures, earthwork, and subgrade preparation, steel reservoir, piping, mechanical equipment, chemical feed and storage equipment, main control building, pump stations, standby generator electrical and instrumentation, site grading and access roads. The projects included extensive reinforced concrete construction of walls, decks, slabs and foundations for a main control building, sedimentation basins, filters, piping galleries and hydraulic channels. Related mechanical, chemical, process, electrical and instrumentation equipment were also a part of these projects.

Resident Engineer, Edison Wastewater Collection System Improvements, East Niles Community Services District, Bakersfield, California

Served as Resident Engineer. Project included the installation of over 3 miles of sewer mains and laterals to serve the community of East Niles.

Resident Engineer, 3,200-foot inverted siphon sewer main crossing of the Ventura River Crossing, Ojai Valley Sanitation District, Ojai, California

This $4+ million, project using horizontal directional drilling (HDD), involved the installation of a 30-inch welded steel casing, within a 48-inch bore. Cobble/boulder alluvium in the riverbanks necessitated the driving of 48-inch to 60-inch steel casing to bedrock on both ends of the bore. This was accomplished using pipe ramming and other techniques. Once in place, the 30-inch casing will house three 12-inch HDPE sewer carrier pipes, sized to avoid settlement of sediment. The upstream structure is designed to divert flows to the carrier pipes and intercept debris. A pig launching facility is included. A downstream structure is designed to recombine flows from the carrier pipes. Plans and specs address odor control and temporary construction issues, such as noise abatement.

Resident Engineer, Southeast Geysers Effluent Pipeline project, Lake County Sanitation District, Lake County, California

Resident Engineer for Contract 1-2 of this $35 million project with 30 miles of 20-inch diameter ductile iron and welded steel pipe, six pump stations, and lake intake facilities, a 250,000-gallon storage reservoir tank, and pipe laying from 50% slopes to flat ground.

Resident Engineer, City of Bakersfield – Sanitary Sewer Relocation for the Centennial Corridor Project, Bakersfield, California

Resident Engineer for the sewer relocation project for the Centennial Corridor. The $1.9 million project consisted of the relocation of City sewer mains to make room for the new Centennial Corridor Freeway. Also included construction on new manholes and reconnection of house laterals.

Teddy Hioe, PE

Civil

Key Skills
Water Transmission Pipelines
Pumping Stations
Tunneling
Trenchless Installations
Trunk Sewers And Force Mains
Treatment Plants

Years of experience
29

Years with AECOM
29

Education
BS, Civil Engineering, California State University – Fresno, 1987

Registrations
Professional Engineer (Civil), CA #50202

Professional Associations
Water Environment Federation
California Water Environment Association
American Society of Civil Engineers
American Water Works Association

Office Location:
Fresno

Professional history

Teddy specializes in preparation of plans, specifications, and cost estimates for public works infrastructure improvement projects. In addition, his specialties include constructability review, and construction administration/support services for water/wastewater pipeline design, stormdrain systems, flood control, and site development. His construction knowledge and experience provides a combination of design and practical field experience that uniquely equips him to work with clients, design professionals, and contractors.

Selected project experience

Project Manager, City of Fresno - Fresno Street/Lewis Avenue and Ashlan Avenue Sewer Rehabilitation Projects – Fresno Department of Public Utilities, Fresno, California

Project Manager for design, bidding, and construction-phase engineering to restore the structural integrity and prevent further corrosion caused by hydrogen sulfide. The rehabilitation lining project consisted of approximately 1 mile of sewer pipes range in diameter sizes from 12 to 6 inches.

Project Manager, City of Fresno - North Fresno Street and North College Avenues Sewer Rehabilitation Projects – Fresno Department of Public Utilities, Fresno, California

Project Manager for design, bidding, and construction-phase engineering to restore the structural integrity and prevent further corrosion caused by hydrogen sulfide. The rehabilitation lining project consisted of approximately 2 miles of sewer pipes ranging in diameter from 21 to 12 inches

Project Manager, City of Fresno - Blackstone Avenue and Shields Avenue Sewer Rehabilitation Projects – Fresno Department of Public Utilities, Fresno, California

Project Manager for design, bidding, and construction-phase engineering to restore the structural integrity and prevent further corrosion caused by hydrogen sulfide. The rehabilitation lining project consisted of approximately 1 mile of 20- and 15-inch-diameter sewer pipes.

Principal Engineer, City of Fresno - Third Street Sewer Rehabilitation Project – Fresno Department of Public Utilities, Fresno, California

Principal Engineer for the design, bidding, and construction-phase engineering to restore the structural integrity and prevent further corrosion caused by hydrogen sulfide. The rehabilitation lining project consisted approximately half a mile of 16-inch-diameter sewer lines.

Project Engineer, Orange County Sanitation District (OC San), 3-64 Rehabilitation of Western Regional Sewers, Orange County, California

Project Engineer for the design, bidding, and construction-phase engineering of Packages 3-64B and 3-64C to increase the existing sewer's flow capacity and extend the life for an additional 50 years. The 3-64B and 3-64C rehabilitation projects consists of approximately 32,000 linear feet of 15- to 39-inch diameter sewer lines. Project No. 3-64 consists of three individual construction packages that will be bidded and constructed separately: 3-64A, 3-64B, and 3-64C.

Project Civil Engineer, Paso Robles Water Treatment Plant, City of Paso Robles, Paso Robles, California

Project Civil Engineer for the design of on-site and off-site grading, paving, and utilities including water, sanitary sewer, and storm drain for the City's 2.4-MGD surface water treatment facility. The project includes a dissolved air flotation clarifier, membrane filtration, GAC contactors for taste and odor and DBP precursor reduction, four chemical feed systems, chemical storage facilities, and a 180,000-gallon clearwell. This plant will operate seasonally during the summer months to treat water from Lake Nacimiento.

Lead Project Engineer, Regional Transmission Mains Schematic Design, Fresno, California

Lead Project Engineer for the preliminary design services related to the construction of approximately 13 miles of 16- to 66-inch-diameter pipelines, designated as RTMs, for conveyance of potable water from the proposed new Southeast Surface Water Treatment Facility to the City's transmission grid mains and distribution system. Project has required extensive utility research and coordination efforts with all utility companies in the Fresno area.

Project Engineer, 60-Inch-Diameter Raw Water Pipeline, City of Fresno, Fresno, California

Project Engineer for the design and construction support of a 5-mile, 60-inch raw water pipeline between the Friant-Kern Canal and the city of Fresno Surface Water Treatment Facility. Project also includes flow control facilities and additional appurtenances and structures for draining the pipeline.

Lead Design Engineer, San Luis Obispo County Flood Control and Water Conservation District Water Delivery Project, San Luis Obispo, California

This water delivery project centered on a 45-mile pipeline. Project Lead Design Engineer for Units C and C1 for a total of approximately 12 miles of 30- and 36-inch-diameter water pipeline. Ultimately, the project will deliver 15,750 acre-feet per year of raw water from Nacimiento Reservoir to turnouts serving the growing communities of Paso Robles, Atascadero, Templeton, San Luis Obispo, and others. The primary work effort was to design the pipeline, which will have creek and river crossings, environmentally sensitive areas, state highway crossings, and pass through both urban and rural areas.

Construction Manager, Kit Carson School Water System Improvements, Kit Carson Union School District, Hanford, California

Project Construction Manager for the design, bid, and construction administration of the school's water system improvement project. Project consisted of 2 miles of 6- to 12-inch water pipelines, a 75,000-gallon bolted steel water tank, hydropneumatic tank, and booster pump station. The pipeline connects the school to the City's water system. The pipeline was constructed along a section of Lacey Boulevard. around State Route 43 that is under the City of Hanford, Kings County, and Caltrans jurisdiction. The design team worked closely with all three entities and obtained various permits and approvals.

Quality Control Engineer, Fruitridge Vista Water Company Water System Improvement Project, Sacramento, California

Project Quality Control Engineer for planning, design and construction phase services for a $20 million water system improvement project. Project included 5 miles of new water mains, new water services, fire hydrants, two interties to city of Sacramento with booster pumping stations, and three new municipal wells, two including wellhead treatment for manganese, arsenic, methane, and hydrogen sulfide.

Project Manager, City of Fresno - Peach Avenue New Sewer Project – Fresno Department of Public Utilities, Fresno, California

Project Manager for design, bidding, and construction-phase engineering to approximately half a mile of new 10-inch sewer pipeline and associated sewer lateral connections in the County of Fresno County.

Derrick Wong, PE
Condition Assessment

Key Skills
Wastewater Engineering
Capital Improvement Planningent
Asset Management
Master Planning
Risk and Reliability Analysis
Condition Assessment
Operations Plans
Emergency Operations Plans
Operational Strategy Services

Years of experience
27

Years with AECOM
22

Education
MS, Environmental Engineering, University of California, Berkeley, 1992
BS, Civil Engineering, Universityof California, Berkeley, 1991

Registrations
Professional Engineer (Civil), CA #54739

Professional Associations
American Water Works Association

Trainings and Certifications
Institute of Asset Management (IAM) Certificate in Asset Management

Office Location:
Oakland

Derrick is a condition assessment / asset management technical lead for AECOM in the West Region. He has performed extensive condition assessment work on water and wastewater system including both linear (pipelines) and vertical (plants and pump station assets). He has proven success in developing asset management based approaches to help utilities such as the San Francisco Public Utilities Commission in implementing multi-billion dollar programs to address important objectives such as achieving levels of service, assuring seismic reliability and improve aging infrastructure. Derrick holds a certificate in Asset Management from the Institute of Asset Management (IAM).

Professional history

Derrick is a Senior Manager with 27 years of professional experience performing a full range of water and wastewater utility and other related services. His technical experience includes master planning, capital improvement planning, asset management, emergency operations planning, as well as system risk and reliability analysis, facilities condition assessment, development of operations plans and maintenance related planning and assessments. An example, his recent work with SFPUC's Wastewater Enterprise includes the comprehensive condition assessment of its three treatment plants, 24 pump stations, and select major collection system assets as well as development of an asset management plan for force main assets. His work continues to support the SSIP and WWE's R&R improvement planning work, and analyses have included asset management framework support, risk analysis of WWE's assets, development of asset management tools, update of Maximo condition rating data and scoping of capital and R&R projects.

Selected project experience

Manager, San Francisco Public Utilities Commission (SFPUC), Sewer System Improvement Program, Treatment Plan and Pump Station Condition Assessment/Asset Management Program Support, San Francisco, California

Condition assessment, risk prioritization and improvement program for SFPUC's $7 billion wastewater improvement program. Completed condition assessment of its 3 major treatment plants, and 24 combined wastewater/stormwater pump stations, including assessment of structural, mechanical and electrical components. Inspections ranged from visual multi-discipline engineering evaluation to detailed destructive and NDT materials testing. Seismic evaluation was also performed to assess post-earthquake performance. Condition assessment report included definition of required improvements, improvement program schedule, planning level cost estimates and prioritization. Risk analysis was performed to support the asset management program, update CMMS (Maximo) condition ratings and develop/prioritize capital improvements.

Project Manager, SFPUC, Regional Water System Asset Management Program, San Francisco, California

Provided engineering support to the SFPUC in developing an asset management strategy for its Regional (Hetch Hetchy) Water System. An assessment of existing asset data and data needs. was performed, including a detailed review of the data in the SFPUC computerized maintenance management system (CMMS). The data was reviewed with respect to the organization, quality and completeness. Asset inspection procedures for major structures in the water transmission system were developed to guide inspections. Procedures were developed for bridges, dams, pipelines and tunnels. These procedures were intended assess the physical condition of these facilities for maintenance and ongoing R&R planning purposes.

A long-term facility asset life cycle strategy and schedule was developed. A master list of all major facilities was compiled along with original construction date. The following were compiled for each facility:

- Useful life/R&R cycle
- Replacement cost
- Condition Rating
- Criticality Rating
- Risk ratings including seismic, regulatory, etc.

These factors were used to estimate the replacement and major maintenance cycles for each facility. A long-term (50+ years) schedule was developed to provide a planning-level look at the future capital outlay needed to keep the water system in a state of good repair.

Project Manager, SFPUC, Collection System Asset Management Program Support, San Francisco, California

This program for the San Francisco Public Utilities Condition includes a multi-phase program to support asset management program implementation. The condition assessment phase included development of a Condition assessment program for linear assets, including sewer interceptors, gravity's sewers, discharge outfalls/structures and force mains. Manned and robotic inspections were performed for major assets. Visual inspections were supported by destructive and non-destructive testing (NDT) of materials of construction. Programmatic plans were developed for linear assets, including inspection approach, schedule, resource planning and budget planning. Detailed materials testing and structural analysis was performed on some assets as required to definitively determine condition, remaining life and required improvements.

Project Manager, SFPUC, Force Main Asset Management Plan, San Francisco, California

Currently developing an asset management plan (AMP) for force main assets associated with SFPUC's 24 wastewater pump stations. This plan establishes the framework and implementation roadmap for force mains including levels of service, inventory, failure modes, condition and consequence of failure analysis, risk prioritization, O&M and asset intervention strategies.

Project Manager, SFPUC, City Distribution Division Linear Asset Management Program (LAMP), San Francisco, California

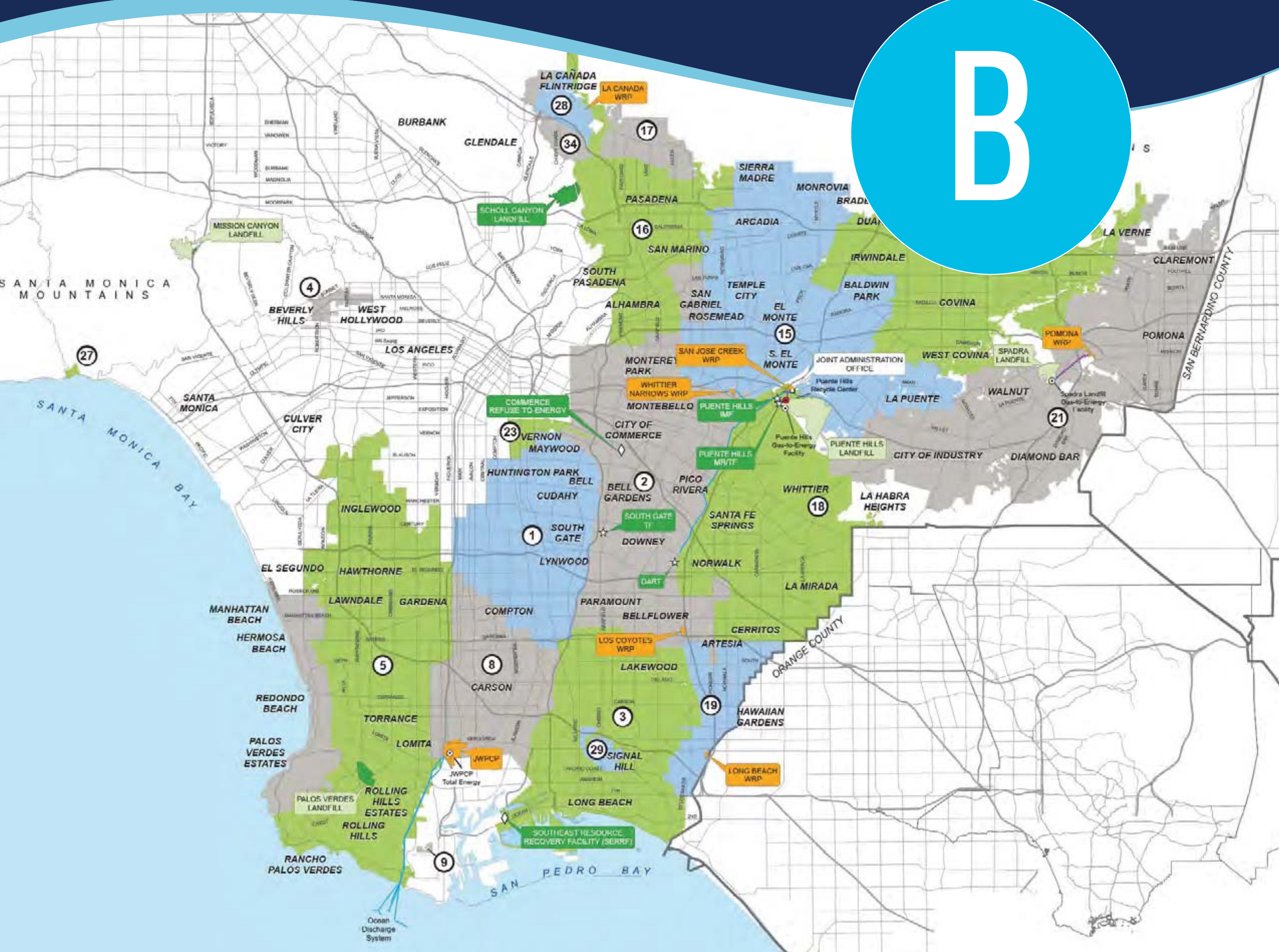
This project included development of a long-term linear assets management strategy and an R&R plan for main replacement for an initial 10-year period. Existing R&R planning practices were reviewed. A data collection and analysis were conducted to characterize the over 1,200 miles of water mains in San Francisco. A condition assessment strategy was be developed, utilizing existing GIS-based information and including recommendations for field investigations. The condition assessment, along with factors such as age, service impacts and property damage were incorporated into an overall R&R strategy for water mains. The prioritization method was based on a risk-based approach and will support comprehensive replacement program.

Project Manager, SFPUC, Water Supply System Facilities Reliability Program, San Francisco, California

Managed Phase III of the Facilities Reliability Program for the San Francisco Public Utilities Commission, which involved the inspection, condition assessment, and risk and reliability assessment of more than 115 water system facilities, including pump stations, pipelines, and treatment facilities. Managed multi-disciplined field inspections of all facilities and evaluations of facility hazards, vulnerability, condition, and reliability using a statistical/risk-based approach. Developed a ranking of all facilities based on a common risk index and recommended facility improvements to support and guide the commission's capital improvement program.

APPENDIX B
NON-COLLUSION DECLARATION (ATTACHMENT B)

B



ATTACHMENT B

LOS ANGELES COUNTY SANITATION DISTRICTS
Converting Waste Into Resources

RFP No. 03956

ON-CALL ENGINEERING SERVICES

NON-COLLUSION DECLARATION
(Public Contract Code §7106)

I, Jagadish Gundarlahalli, declare, as follows:

I am the Project Manager - authorized signatory of AECOM Technical Services, Inc., the party making the attached bid.

I know of my own personal knowledge and declare under penalty of perjury, that the attached bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone will refrain from bidding; that the bidder has not in any manner, directly or indirectly sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted its bid price or any breakdown of the bid price, or the contents of his bid, or divulged information or data relative to its bid, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent of any such corporation, partnership, company, association, organization, or bid depository to effectuate a collusive or sham bid.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

06/09/2021
(Date)

Los Angeles, California
(Location)

J. Gundarlahalli
(Signature of Bidder)

About AECOM

AECOM is the world's trusted infrastructure consulting firm, delivering professional services throughout the project lifecycle — from planning, design and engineering to program and construction management. On projects spanning transportation, buildings, water, new energy and the environment, our public- and private-sector clients trust us to solve their most complex challenges. Our teams are driven by a common purpose to deliver a better world through our unrivaled technical expertise and innovation, a culture of equity, diversity and inclusion, and a commitment to environmental, social and governance priorities. AECOM is a *Fortune 500* firm and its Professional Services business had revenue of $13.2 billion in fiscal year 2020. See how we are delivering sustainable legacies for generations to come at aecom.com and @AECOM.

aecom.com

Together, We Thrive

2020 ANNUAL REPORT

AECOM




"The resiliency of our people, our innovation and agility, and the indispensable partnerships we have forged with our clients through this crisis set us on a solid path to sustain growth and forge new market leadership."

Troy Rudd
Chief Executive Officer




DEAR STOCKHOLDERS:

It's been said that the true strengths of an organization are best measured during difficult times.

Over the past year, in the face of a public health emergency and unprecedented operating conditions due to a once-in-a-century pandemic, AECOM consistently delivered for our people, clients, communities and stockholders.

We kept our people safe and employed, achieved double-digit adjusted[1] EBITDA[2] growth, expanded project backlog and advanced our transformation into a lower-risk, higher-margin professional services firm. We also launched our comprehensive *Think and Act Globally* strategy to further improve how we work, deepen client relationships, better focus our expertise and market-leading capabilities for growth and set new standards for technical excellence in our industry.

Troy Rudd
Chief Executive Officer

I believe our organization is stronger today because of the adversity we overcame during the 2020 fiscal year. The resiliency of our people, our innovation and agility, and the indispensable partnerships we have forged with our clients through this crisis set us on a solid path to sustain growth and forge new market leadership.

As a leading professional services provider, the number-one ranked environmental services firm globally, a leader in key water sectors, the leading transportation design firm and a leading green designer and construction manager, we are well positioned to help our clients meet new requirements in addressing environmental, social and governance (ESG) factors that lead to improved outcomes.

To that end, in my new role as chief executive officer, I have moved quickly along with the leadership team to prioritize investments of capital and time to ensure we are delivering on our commitment to set a new standard of excellence in our industry. This includes actions we have taken to restructure the business and simplify the organization to remove layers and enhance collaboration. We have also established an internal practitioner-led ESG council focused on delivering on our sustainability, diversity and inclusion commitments to our people, communities and clients, reflecting our position as a signatory to the UN Global Compact.

I could not be prouder of what our professionals achieved in the past year, and we are energized by the opportunities we have in front of us.

Rising above the pandemic

The pandemic had profound impacts on the lives of our employees and their families, our clients and communities. Yet our people mobilized safely and quickly to provide extraordinary support and disaster response work from delivering temporary hospitals in cities around the world—in some instances, in a matter of days—to advising public- and private-sector clients across industries on their safe reopenings. We pioneered and rolled out virtual consultation tools and digital platforms to help public transit systems return to service and to advance other infrastructure projects critical to economic and social recovery.

FY20 Highlights

14%	$341	13%	$2.15	23%
Adjusted[1] EBITDA[2] growth	Free cash flow[3] (millions)	Increase in project backlog	Adjusted[1] earnings per share	FY21 adjusted earnings per share growth (mid-point of guidance)

With more than 90% of our 54,000 employees working remotely at peak, we leveraged technology to engage our clients and keep our teams productive. Our Fast Forward to the Future initiative builds upon this experience, our people's ingenuity and new technology to improve our efficiency and forever change how we work and deliver for our clients.

As a reflection of the strength of our global brand and reputation for integrity, AECOM was named one of *Fortune's* World's Most Admired Companies for a sixth consecutive year, and we were again ranked the number one design firm by *Engineering News-Record* in 2020 in many markets, including transportation, environment and facilities.

Reinforcing the strength of our business

In fiscal year 2020, we improved our underlying business and delivered on our financial commitments in the following ways:

- Achieved 14% adjusted[1] EBITDA[2] growth, marking a new high for our Professional Services business, and $341 million of free cash flow[3] for the year.
- Expanded our project backlog by 13%, near an all-time high, providing us with visibility to execute with certainty.
- Further simplified our business and reduced risk by completing the $2.4 billion sale of our Management Services group and closing on the divestiture of the Power construction and Civil construction businesses early in fiscal 2021.
- Extended shareholder value by delivering industry-leading adjusted operating margins, de-risking our business profile and strengthening our balance sheet. We executed on our capital allocation policy with more than $500 million of share repurchases between September and December 2020, and our Board of Directors increased the authorization for purchases from $305 million to $1 billion.
- In FY20, our adjusted[1] earnings per share (EPS) increased from $1.86 to $2.15, and we have set guidance for FY21 in the range of $2.55 to $2.75—a 23% increase at the midpoint.

Recognizing that promoting diversity in ideas and perspectives makes us a better, more innovative company, AECOM reaffirmed its commitment to extending a culture of equity, diversity and inclusion (ED&I) throughout our global enterprise. From creating a reverse mentoring program pairing more junior professionals with our executive leadership team to expanding employee resource groups, we continue to ensure AECOM remains a place where our diverse talent thrives with equitable opportunities to grow, deliver superior business results and enrich our communities.

Setting a new course for the future

Working with an engaged Board of Directors and senior leadership team, we have put forward a new strategic approach to help carry us through the pandemic and best address the evolving challenges faced by our clients and a warming planet.

Central to our strategy is my belief, informed by my long time spent in Professional Services organizations, that our people are at the heart of our company. They distinguish us in the marketplace and define AECOM as the innovative, go-to consultants for our clients' most challenging projects. Through every decision we make, our leadership team must be focused on creating value for our employees—and, in turn, creating value for our clients and shareholders.

“At AECOM, we are optimistic about the future and continue to work toward a world where infrastructure creates opportunity for everyone.”

As you’ll read in the pages that follow, our *Think and Act Globally* strategy is designed to advance our growth and create value in four ways:

THINK AND ACT GLOBALLY

1. **Simplifying our organization and focusing our global capabilities in markets that better play to our core strengths. Key among these changes was the global integration of our Design and Consulting Services (DCS) business.**

2. **Deepening our client relationships and the knowledge-based solutions we provide to capitalize on new opportunities.**

3. **Continuing to transform how we work to expand flexibility for our employees and clients, significantly improve productivity, advance technical excellence and increase client satisfaction.**

4. **Leading our industry in ESG to help our clients better prioritize and respond to environmental and net-zero mandates, and to support projects and programs that uplift communities and create positive social impact.**

Our bright future is the result of our transformation into a Professional Services firm. We have reduced risk in our business portfolio and made investments in people and digital innovations to expand our market share in transportation, water, facilities and the environment, and to deepen client engagement. A simplified operating model that leverages an expanded network of global design centers improves our efficiency, while standardizing high quality and allowing us to accelerate client delivery.

The ability to draw on diverse, global perspectives from our industry’s most talented workforce will continue to be a competitive advantage for AECOM, and the collaboration among our professionals that is reinforced by our *Think and Act Globally* strategy allows us to bring our global expertise to each client and power new ideas.

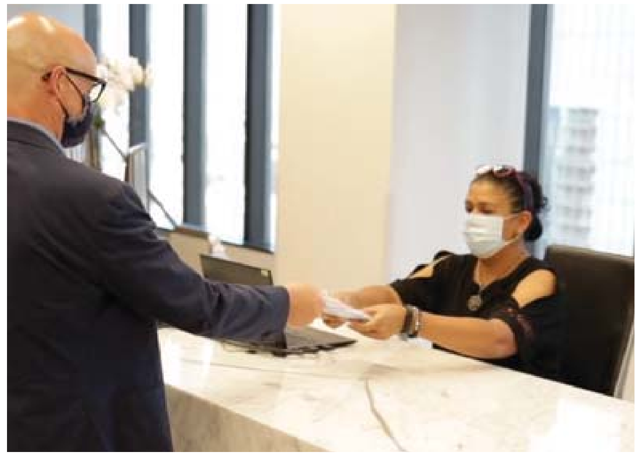
The changes we have made and our path forward, are already creating shareholder value, with our stock performance in fiscal year 2020, up nearly 20%, surpassing the average percentage gains of our peers and the S&P 500. We have built a cash-generative, enduring business model with the agility and resiliency to overcome uncertainties arising from the pandemic and better pursue emerging opportunities.

At AECOM, we are optimistic about the future and continue to work toward a world where infrastructure creates opportunity for everyone. We hope to know soon whether new vaccines and public health vigilance can bring an end to this pandemic, but the work of recovering from this global tragedy is already beginning.

No matter the challenges we may face on this journey together, AECOM is better positioned for success today than ever before in our history, and our teams are passionately aligned in purpose to deliver a better world.

Troy Rudd
Chief Executive Officer

Delivering a better world in which people and communities grow



WORK HIGHLIGHTS

2020 was a year like no other, and the COVID-19 pandemic had profound impacts on the daily lives of our employees and their families, our clients, our communities and our business.

Our employees' safety, health and well-being are our top priority. As soon as the pandemic began, we took immediate action to ensure they were safe and accounted for, and to maintain business continuity for our clients. In each of our markets, we have been doing our part to help contain the spread of COVID-19 and enable a safe work environment by following the lead of our safety and health experts, as well as guidance from public health organizations and government agencies.

From the earliest days of the outbreak, our professionals mobilized quickly to provide extraordinary support for our clients and communities during these challenging times. Working closely with federal, state and local clients, our teams led the industry for disaster response, including delivering temporary hospitals with thousands of hospital beds and advising clients on their safe reopening and return-to-work strategies.

We also changed the way we work, with more than 90% of our employees working remotely at peak while improving client satisfaction. The pandemic intensified the pace of digital transformation and has magnified the benefits of our long-standing investments in IT and innovation, including the development and release of cutting-edge solutions to help deepen engagement between our employees and our clients as well as our clients and their stakeholders. Through it all, our organization has come together in new ways to deliver for our clients and continue realizing our purpose to deliver a better world.

>90%

Remote workforce at peak of pandemic

RAPID RESPONSE

We quickly activated our disaster resilience teams to help federal, state and local clients expand healthcare capacity in the first months of the pandemic.

AECOM provided design, engineering, consultancy, construction management and project management services to assess and modify existing facilities, and design and build new temporary hospitals, alternate care facilities and testing locations.

>1,000

State University of New York at Old Westbury, Long Island, New York

- Expanded new alternate care facility capacity by 1,024 beds
- Delivered U.S. Army Corps of Engineers project in 28 days in support of a FEMA mission assignment

>1,000

New York City Department of Design and Construction, Brooklyn and Queens, New York

- Mobilized teams to manage construction of both hospitals within 24 hours of award
- Increased the city's hospital capacity by more than 1,000 beds

>400

The Ranch Events Complex, Loveland, Colorado

- Delivered a temporary health-care facility with nearly 200 operational patient beds as well as an additional 200 patient beds with minimal build-out for future surge capacity

>1,000

McCormick Place Convention Center, Chicago, Illinois

- Delivered 1,000 beds for the McCormick Place alternate care facility

Our work continues at the forefront of phased pilots for early detection and real-time monitoring of COVID-19 in wastewater, including developing sampling protocols and data normalization approaches.

>900

Alternate Hospital Sites, State of Rhode Island

- Provided oversight and program management to convert existing facilities within 21 days

>300

NHS Louisa Jordan Hospital, Glasgow, Scotland

- Delivered new temporary NHS Louisa Jordan hospital
- Initially provided NHS Scotland with 300 beds through the conversion of the Scottish Events Campus

>84

St. Vincents on the Park, Melbourne, Australia

- Re-commissioned Peter MacCallum Cancer Institute in 12 weeks
- Added to capacity in the healthcare system with additional 84 beds

Drive-Through Coronavirus Testing Center, Dubai, United Arab Emirates

- Appointed by TECOM Group to construct a testing center in Al Khawaneej within 10 days
- Finalized construction with zero incidents in nine days, enabling testing operations for the local community to begin ahead of schedule

>700

Bergen County Utilities Authority, Bergen County, New Jersy, in partnership with Columbia University

- Monitoring COVID-19 ribonucleic acid in wastewater for early indication of increases in infection rates and the effectiveness of vaccine deployment
- Collected, tested and analyzed more than 700 samples since the pandemic started
- Results found that wastewater monitoring statistically provides a seven to 10 day leading indicator of reported COVID-19 cases

>325

VenueShield program

- Partnered with ASM Global to release new venue reopening protocols to more than 325 ASM facilities worldwide
- Currently being deployed in arenas, stadia, theaters and convention centers

Accelerating our industry's transformation to drive faster results, smarter solutions and better outcomes for clients

DIGITAL & INNOVATION

MOBILITICS™ FOR PANDEMIC RESPONSE

AECOM launched Mobilitics™ for Pandemic Response, an updated version of its groundbreaking transportation scenario planning tool. This latest iteration helps transit agencies, departments of transportation and other clients across the U.S. assess how pandemic infection rates, stay-at-home orders, availability and deployment of vaccines, economic recovery and reopening, and other factors are expected to impact transportation patterns, in order to help clients better recover and strengthen resiliency.

The transportation industry is experiencing profound transformations, from changes in travel patterns and behaviors due to the global pandemic to technology advances in vehicle communication and automation to teleworking and increased e-commerce. Several of AECOM's transportation clients are already using Mobilitics™ to better understand how these complex and interrelated factors may impact future mobility and help inform service and capital planning decisions today.

Mobilitics™ at Work

Seamless Bay Area: AECOM teamed with Seamless Bay Area to develop a scenario planning tool and approach to evaluating and envisioning an integrated, people-focused and equitable transit system recovery plan for the San Francisco Bay Area. Mobilitics™ is being used to understand how different levels of transit network optimization and funding may impact future transportation patterns and accessibility. Additionally, the team is helping communicate the vision to policy-makers and the public to build support for near-, medium- and long-term funding and policy reforms.

New Jersey Transit: In order to provide actionable and results-oriented analysis and a better understanding of the impact of COVID-19 on New Jersey Transit, AECOM is using Mobilitics™ for scenario planning to forecast possible ridership and revenue under different recovery and return-to-service scenarios. This analysis includes regular updates to incorporate actual ridership and the pace of recovery to understand how these factors change the trajectory of ridership on bus, rail and light rail.

Northern Virginia Transportation Authority: With the goal of exploring impacts on operating conditions and investment considerations for future transportation projects, AECOM is providing services to the Northern Virginia Transportation Authority to evaluate the effects of the COVID-19 pandemic on travel behavior and return to service. The work involves developing four scenarios and performance analyses to help inform policy decisions and regional recovery efforts.

Increasing engagement

VIRTUAL PUBLIC CONSULTATION TOOL

Our interactive web-based tool allows clients to engage and consult stakeholders from their computer or mobile device. By providing a more resilient approach to community engagement, the new tool allows clients to engage with a wider audience who cannot attend in-person meetings during consultation periods.

Through the new platform, a virtual event can be personalized to show consultation materials including virtual reality and sound demonstrations, videos, maps, plans and pop-up banners. The tool allows for instant feedback so public reaction can be captured and saved for analysis and accurate reporting. There is also a chat function so on-hand experts can remotely answer questions as visitors look around the materials, similar to what would take place during an in-person event.

Many AECOM clients have already benefited from the virtual public consultation tool, including East Lothian Council, Oxfordshire County Council, Public Health England and the U.S. Army Corps of Engineers, Savannah District.

Streamlining processes

AECOM ENVIRONMENTAL ENGAGEMENT

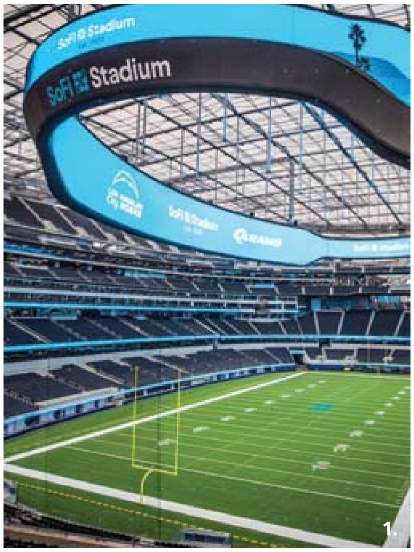
The AECOM Environmental Engagement platform streamlines environmental documentation and stakeholder engagement throughout the environmental assessment process by presenting highly technical information in a user-friendly, online and interactive format.

First developed by AECOM for public- and private-sector clients in Australia, the scalable platform has now expanded globally after AECOM successfully created a purpose-built digital environmental impact statement on behalf of Highways England and the first-ever National Environmental Policy Act–compliant digital statement on behalf of the U.S. Army Corps of Engineers.

Designed to complement and streamline the traditional paper-based environmental planning process, AECOM Environmental Engagement enables project teams to consolidate the many aspects of environmental studies,

including photos, visualizations, sound demonstrations, videos, models and narrative, into a single data platform. Through the platform, teams create the online experience, review the content and then publish the final document for stakeholders. It also enables stakeholders to provide feedback directly to project proponents who can track community sentiment throughout the project lifecycle.

The new platform works seamlessly with AECOM's virtual public consultation tool, which enables virtual community engagement in an interactive online platform. Together, these solutions provide powerful support to clients managing existing and future projects through the key planning and approval gates.



1.


2.


3.


4.

Our teams are driven by a common purpose to deliver a better world through our unrivaled technical expertise and innovation, a culture of equity, diversity and inclusion, and a commitment to environmental, social and governance priorities.

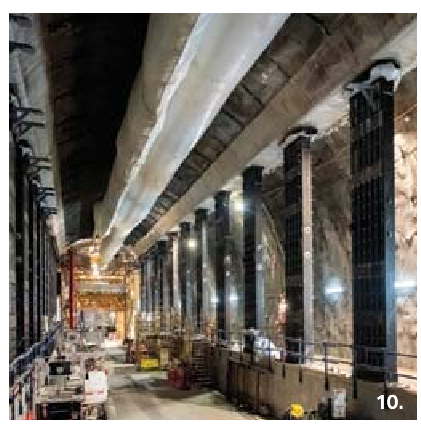

5.


6.


7.


8.


9.


10.

Resilience in action

In the face of unprecedented obstacles, our 54,000 professionals remained dedicated to pushing the limits of what's possible and continuing to deliver for clients and communities across the globe.

1. **SoFi Stadium**
   Through a joint venture, AECOM managed the construction of the first football stadium erected in Los Angeles in nearly a century, which can host approximately 70,000 fans inside the 3.1 million-square-foot facility.

2. **Los Angeles' Joint Water Pollution Control Plant**
   Through an Energy Savings Performance Contract, AECOM will retrofit one of the largest wastewater treatment plants in the U.S. that serves five million residents, businesses and industries.

3. **U.S. Air Force Academy's historic Sijan Hall**
   AECOM is designing the renovation of the 700,000-square-foot Sijan Hall, located in a National Historic Landmark district, which encompasses residential, academic, courtyard and recreational spaces.

4. **TEXRail**
   AECOM has been selected by Trinity Metro to conduct the environmental assessment and preliminary engineering for the TEXRail extension project. The extension will serve the more than 40,000 people who work in the fast-growing Medical District, plus residents and businesses in the surrounding Near Southside neighborhood.

5. **Réseau Électrique Métropolitain (REM)**
   AECOM is designing railway infrastructure for REM, including tracks, power and traction systems, as part of one overall integrated system that will link existing networks to serve the greater Montréal area. When completed in 2022, REM's 67 kilometers of double track will make it the fourth largest atomized electric transit network in the world.

6. **One Vanderbilt Avenue**
   AECOM Tishman served as construction manager for One Vanderbilt, a new 1,400-foot-high commercial tower adjacent to Midtown Manhattan's Grand Central Terminal, one of the busiest train stations in the world. The supertall building will be the second tallest office tower in New York City, with a public transit hall at the base of the building and a 14,000-square-foot public plaza.

7. **Natural Capital Laboratory**
   Accounting for environmental, social and economic impacts is an increasing priority for many organizations, and understanding and measuring natural capital, as part of this, is key. The Natural Capital Laboratory (NCL), set up by AECOM and the Lifescape Project, is a unique project to do just this: a live environment for identifying, quantifying and valuing the impacts of re-wilding.

8. **NEOM**
   AECOM will lead the design, transport and utilities backbone infrastructure for NEOM, a new model for urbanization and sustainability located in the northwest region of Saudi Arabia. In addition to design services, AECOM's scope will also include environmental and geo-technical support.

9. **Tuen Mun South Extension, Hong Kong**
   AECOM has been awarded the detailed planning and design consultancy contract for the Tuen Mun South Extension, Hong Kong. The project includes a 2.4-kilometer extension of the West Rail Line from the existing Tuen Mun Station to a new terminus at Tuen Mun South, with a new intermediate station, A16.

10. **Melbourne Metro Tunnel**
    The highly complex and challenging design brief will connect the new nine-kilometer Metro tunnels to the existing live rail corridors. AECOM's affiliates will design all elements of Victoria's largest-ever public transport project, which is critical to the mobility of a growing population.

Transforming how people work

WORKPLACE OF THE FUTURE

During the COVID-19 pandemic, we continued essential and mission-critical business operations in person as permitted and necessary, and shifted the majority of our professional consulting workforce to a virtual, work-from-home environment. We have ensured our employees could be safe, effective and productive from anywhere, and maintained delivery for our clients without sacrificing efficiency or quality.

Drawing upon the experiences of our teams, we invited their input and ideas to begin to shape the future ways of working at AECOM. In particular, through a global competition, we challenged employees to consider how new workspaces can support health, collaboration and camaraderie, how technology and tools can be leveraged to optimize productivity and client engagement, and what they need to be well and engaged. Many of the resulting ideas are being implemented regionally and globally.

Through our Workplace of the Future initiative, we are developing a space and technology framework that allows for seamless connectivity between home offices, company offices and client sites, and a new workplace design that accounts for reduced capacity requirements and evolving use cases.

Our commitment to providing employees with the support and development they need to do their best work and fostering a culture of respect and inclusion continues as we build a more flexible work environment.

We are also advancing initiatives to enable the digital delivery of our work by establishing best practices and governance protocols for the digital reuse of core elements of the design process.

50%

Up to 50% reduction in real estate footprint (compared to FY15)

30%

30% reduction in business travel (over five years)

74%

74% of employees want an expansion of flexible work options post-pandemic

98%

98% of key clients are open to using digital methods of engagement in the future

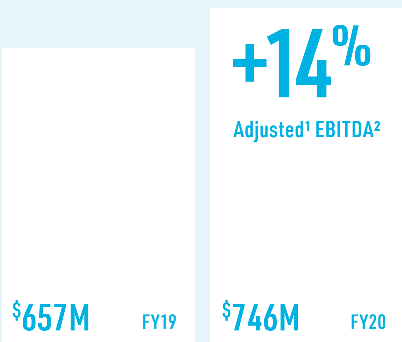
"Designing the future of work at AECOM will help us attract and retain top talent with a leading employee experience, strengthen client relationships through improved project delivery, advance our sustainability goals with a reduction in employee commuting and travel, and deliver bottom-line results through savings on fixed infrastructure costs."

Todd Battley
Chief Strategy Officer

Strength and recognition

FINANCIAL PERFORMANCE

Despite the challenges presented by the COVID-19 pandemic, our teams made exceptional contributions to their clients and our business that resulted in strong financial performance in fiscal 2020. In particular, we exceeded our guidance on nearly every key financial metric:



Adjusted EBITDA increased by 14%, which marked a new high for our Professional Services business and exceeded the mid-point of our guidance

+360bp

The segment-adjusted[1] operating margin[4] (on NSR[5]) increased by 160 basis points to 12.3% and exceeded our guidance by 60 basis points; our margins have increased by 360 basis points since fiscal 2018 and are at an industry-leading level

$341M

Free cash flow[3] of $619 million in the fourth quarter resulted in full-year free cash flow of $341 million, which exceeded the high end of our guidance range

$41.2B

Total backlog increased by 13% over the prior year to $41.2 billion, including 12% growth in contracted backlog, providing solid levels of visibility

> "With our transformation into a professional services firm, our business is well positioned to perform through periods of uncertainty."

Gaurav Kapoor
Chief Financial Officer

Throughout the year, we were recognized for our leadership and received numerous industry awards that reflect our continued commitment to excellence.

ACCOLADES

ENR Engineering News-Record

UNPARALLELED TECHNICAL EXPERTISE

#1

Environment Firm

Transportation Design Firm

Facilities Design Firm

Mixed-Used Buildings

Education Buildings

Aviation

Highways

Chemical Remediation

#2

Green Design Firm

Commercial Offices & Government Offices

Bridges

Mass Transit & Rail

Water Supply

Hazardous Waste

Wastewater Treatment

Dams & Reservoirs

#3

Site Assessment

Clean Air Compliance

Desalination Plants

Solar Power

Source: 2020 ENR rankings, reflecting global revenue

FORTUNE WORLD'S MOST ADMIRED COMPANIES 2020

Six consecutive years

BEST PLACES TO WORK 2020 for LGBTQ Equality 100% CORPORATE EQUALITY INDEX

100% rating on Corporate Equality Index and Best Place to Work for LGBTQ Equality

MILITARY FRIENDLY 2020 GOLD TOP 10 COMPANY

Military Friendly® Top 10 Company

Military Friendly® Top 10 Supplier Diversity Program

Military Friendly® Top 10 Employer

Military Friendly® Top 10 Spouse Employer

AECOM has been recognized globally for delivering projects that reflect our commitment to leading in environmental, social & governance (ESG) issues. We have received awards that commend our work in areas such as energy-efficient design, management of flood and coastal risk, sustainable solutions and outstanding environmental management.

SUSTAINABILITY AWARDS

The Te Auaunga Awa (Oakley Creek) flood mitigation project in New Zealand won the Morphum Environment & Sustainability Excellence Award. Initially intended to reduce flooding and allow for higher-density affordable housing in the area, this project is an example of collaboration and engineering excellence that led to a range of positive environmental, social, cultural and economic impacts.

The Clatterbridge Cancer Centre in Liverpool, which opened earlier this year, was named Subregional Project of the Year (Liverpool) at the 2020 North West Construction Awards. AECOM's role in the project was to design an energy-efficient building through the provision of multidisciplinary services, including building services engineering, civil and structural engineering, acoustic engineering, sustainability and BREEAM and environmental services.

Our designs for the Bay Bridge Pedestrian Piers received an award from the Northern California American Society of Landscape Architecture in the General Design category. This transformative project upcycled the old Bay Bridge foundations and salvaged bridge steel to create new pedestrian piers in Oakland and San Francisco. An opportunity was identified to repurpose funds that would have been used to implode the old bridge structures to instead build public access platforms for recreation in disadvantaged communities. AECOM's landscape architecture team led the design and implementation. Design, permitting and construction was completed in less than a year and a half — extremely fast for waterfront construction.

SAFETY AWARDS

AECOM has been commended by clients and councils with numerous safety awards across the globe over the course of FY2020, including:

GROUND ENGINEERING AWARDS 2020

2020 Ground Investigation Project of the Year

Awarded to Structural Soils working with Highways England and AECOM

2020 Health and Safety Award

Recognizing AECOM and Equipe Training's safety initiative to ensure plant and rig conformity/compliance on the Lower Thames Crossing project

From the United States National Safety Council (NSC) alone, AECOM received 157 awards, including:

NATIONAL SAFETY COUNCIL

155 Perfect Record Awards — Achieved a minimum of 12 consecutive months without a recordable injury or illness

2 Million Work Hours Awards — For each award, achieved a minimum of one million consecutive hours without an injury or illness that resulted in days away from work and zero fatalities

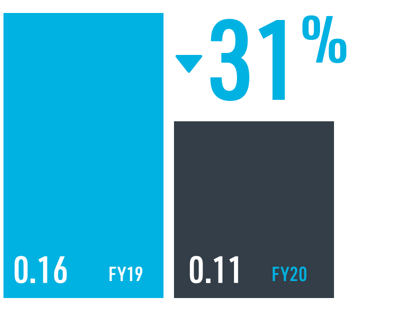
In addition, hundreds of AECOM supervisors earned Safety Qualified Supervisor status, an internal AECOM program demonstrating commitment to our values and outstanding leadership abilities.

Safeguarding our people remains a core value at AECOM, and our focus on safety was never more apparent than in fiscal 2020.

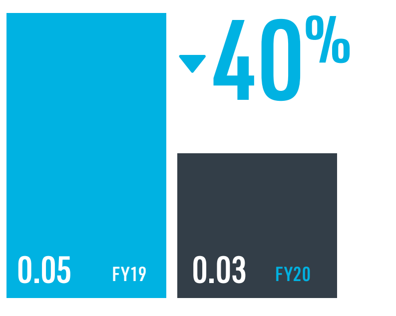
SAFETY

Over the course of the year, our Total Recordable Incident Rate improved by 31% over the prior year to 0.11, and our Lost Workday Case Rate improved by 40% to 0.03. Both of these metrics reflect a world-class level of safety performance and are at an industry-leading level.

Total Recordable Incident Rate (TRIR)



Lost Workday Case Rate (LWCR)



Over the course of the year, our Total Recordable Incident Rate in our Professional Services businesses improved by 31% over the prior year to 0.11, and our Lost Workday Case Rate improved by 40% to 0.03. Both of these metrics reflect a world-class level of safety performance, our restructuring activities throughout the year and an industry-leading level.

Our focus on safety extends beyond our strong performance on these indicators. To ensure our teams' safety, we are building on our strengths and continuing to proactively train our professionals, investigate and manage near-miss incidents and provide accessible avenues for identifying safety concerns and improvements. We are already making progress in these areas, exceeding our targets for our internal leading indicators on these initiatives.

Additionally, our commitment to safeguarding our people has been paramount in our response to the global coronavirus pandemic. We have further developed our pandemic preparedness and resiliency processes through cross-functional collaboration to protect the safety and well-being of our people, protect the environment and maintain business continuity. This includes key resources and tools that facilitate workplace readiness, address the challenges of new working environments (e.g., ergonomic awareness in working from home), support well-being and manage potential coronavirus exposure.

For our clients, we are dedicated to the safe delivery of their projects and continually monitor our safety performance to ensure that we meet their expectations. We have established dedicated Safety, Health and Environment leads for each of our key accounts and ensure participation in all required client-specific training programs, often jointly facilitated between AECOM and our clients.

Leading the way with sustainable solutions

SUSTAINABILITY

As a Professional Services firm, it is important that we lead in environmental, social and governance (ESG) issues, particularly as we acknowledge the biggest impact we can have is by providing sustainable support and advice to clients.

With more than 54,000 employees around the world, we have a significant opportunity—and responsibility—to not only lessen the impact of our work, but also to protect, enhance and restore the natural and social systems upon which we rely, including as part of our continued contribution to the United Nations Sustainable Development Goals.

This is why leading in ESG is a core element of our *Think and Act Globally* strategy, ensuring we encourage clients to join us on the sustainability journey to create a greener, healthier, more equitable planet.

A key aspect of our ESG strategy is our climate change response. We do not limit our thinking on emissions reductions simply to environmental issues. We also consider the vast impacts climate change can and will have on all the communities we serve, especially on people disproportionately affected who live in vulnerable areas. In response, we have set approved science-based targets in alignment with the Paris Agreement and targeted at preventing the worst impacts of climate change, with a 2025 deadline against a 2018 baseline:

2025 Science-Based Targets

20%
Reduction in scope 1 and 2 emissions (fleet vehicles and office energy)

10%
Reduction in supply chain emissions (scope 3)

We are proud of the progress we have made thus far since setting our approved targets early in 2020. At the end of the fiscal year, we achieved a 24% reduction in our Scope 1 and 2 emissions and a 5% reduction in supply chain emissions compared to FY18, meaning we have early achievement of our Scope 1 and 2 target in this unique year and are on track to achieve our supply chain target on schedule. These results show a consistent effort to improve efficiency in our business, and we are constantly looking to improve our data quality and emissions performance.

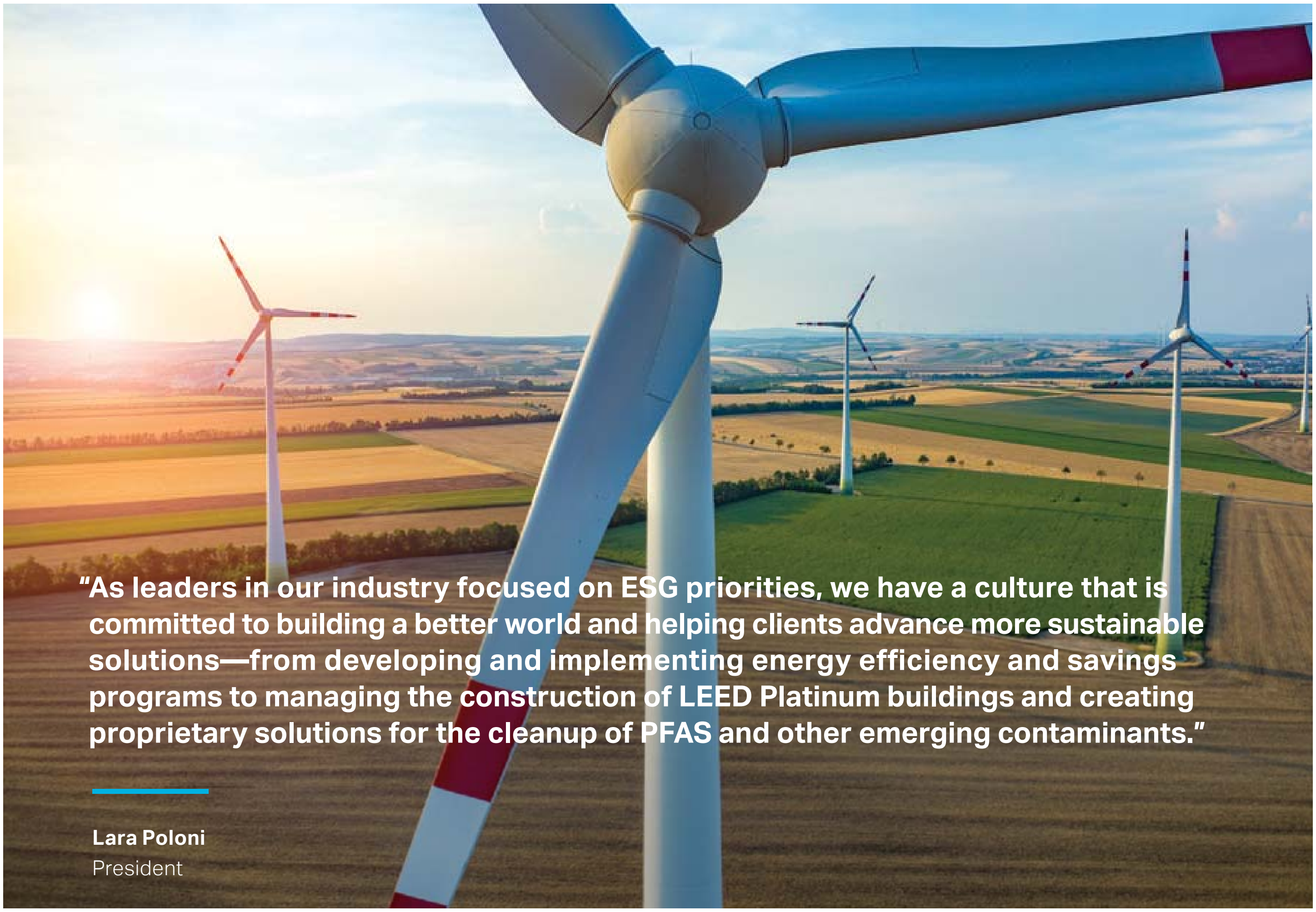
Scope	FY18 (baseline)	FY20
Scope 1 & 2 (MT CO_2e)	147,509	112,340
Supply chain (Scope 3) (MT CO_2e)	6,061,065	5,734,285
Total (MT CO_2e)	6,208,574	5,846,625

24%
Reduction in Scope 1 and 2 emissions (versus FY18)

5%
Reduction in supply chain emissions (versus FY18)

We continue to advance plans to create further efficiency in our operations and reduce our emissions, including increasing the amount of green energy used for our offices and implementing our Workplace of the Future initiative to further consolidate our real estate and reduce travel. Across our global real estate portfolio, we are refurbishing office spaces to create collaborative, innovative, low energy-related emissions working environments. These refurbishments are part of a low-emissions feasibility study that will scale up best practices and successes across all of our offices around the world.

We are also looking closely at our supply chain emissions to identify hotspots, integrate sustainability into our procurement processes and work with our key suppliers to decarbonize in line with the Paris Agreement. Our latest Carbon Disclosure Project (CDP) climate change response scored above the industry average. We also continue our commitment to addressing climate risk as part of business strategy through disclosing our climate-related risks and opportunities.



"As leaders in our industry focused on ESG priorities, we have a culture that is committed to building a better world and helping clients advance more sustainable solutions—from developing and implementing energy efficiency and savings programs to managing the construction of LEED Platinum buildings and creating proprietary solutions for the cleanup of PFAS and other emerging contaminants."

Lara Poloni
President

SUSTAINABILITY PROJECTS SPOTLIGHT

Helping to deliver clients' net zero ambitions

NETWORK RAIL, UNITED KINGDOM

AECOM is a trusted partner of Network Rail, providing sustainability services on its path to net-zero carbon, which includes three levels: strategic planning, tactical intervention identification and project implementation. The strategy includes a framework and a roadmap to 2050 that address economic, social and environmental sustainability issues. AECOM mobilized a team of Network Rail carbon champions who have identified savings of 14% in energy focusing on replacing gas for heating, more efficient lighting and cooling, and the transition to alternative fuels for fleet vehicles.

14%
Savings in Energy

This three-level engagement enables AECOM to deliver the energy reduction and zero-carbon plans in a coordinated fashion, delivering zero-carbon energy infrastructure in parallel with the confirmation of the completed pathway to net zero.

Strengthening climate resilience

CITY OF DALLAS ENVIRONMENTAL & CLIMATE ACTION PLAN

The City of Dallas commissioned AECOM to develop the city's first-ever Comprehensive Environmental and Climate Action Plan (CECAP) to implement the mayor's commitment to support the Paris Agreement. Unanimously adopted in May 2020, the CECAP includes a comprehensive roadmap that outlines the specific activities the city can undertake to reduce greenhouse gas emissions, improve environmental quality and strengthen climate resilience in the city. Leveraging insights gained from AECOM's proprietary Climate action for URBan sustainability (CURB) tool, the plan received wide support from environmental justice communities, environmental advocates, public health authorities, and education and business organizations.

Achieving carbon neutrality

80 ANN STREET, BRISBANE, AUSTRALIA

AECOM is designing 80 Ann Street, a 75,000-square-meter, 32-story commercial tower located in Brisbane, Australia, which features a new cross-block public laneway with retail tenancies, connecting Ann Street to Turbot Street through the heritage Brisbane Fruit and Produce Market building. The proposed development has been designed to meet numerous sustainability certifications and ratings, including the highest NABERS and WELL certifications, and achieve carbon neutrality through full electrification and power purchase agreements for renewable energy.

PEOPLE

When we are free to be ourselves, we thrive

The foundation of our continuing success as a premier professional consultancy is the ability to attract and retain the industry's best talent by offering a culture of respect and empowerment, enabling professional growth and development and delivering a world of opportunity.

EQUITY, DIVERSITY AND INCLUSION

Infrastructure creates opportunity for everyone

AECOM's more than 54,000 employees are the best and brightest in our industry. Diverse in backgrounds, perspectives and experiences and unified by a shared purpose to deliver a better world, our teams produce transformative outcomes for clients and communities.

In 2020, global social justice movements put equity, diversity and inclusion (ED&I) at the forefront of discussions. These important moments of reflection gave us an opportunity to reexamine our commitments. While ED&I has always been at the heart of our values and the culture we are fostering, we took action this year to renew and reenergize our efforts to advance ED&I both at AECOM and within our industry, beginning with the launch of a global ED&I Steering Committee and the appointment of a global ED&I leader.

Leadership Diversity

56%
Diverse Executive Team

45%
Diverse Board of Directors

Our leadership includes representation from a diverse array of communities, including race, ethnicity, gender and sexual orientation.

Board members as nominated for the 2021 annual meeting

Our pledge to advance ED&I

WE WILL BUILD DIVERSE TALENT

Our differences make AECOM better and more innovative. We strive to hire and develop talented people of all backgrounds and ensure inclusivity and fairness in our sourcing, interviewing and hiring processes. Through our partnerships with nonprofit organizations and universities, we offer robust internships, graduate development programs and volunteer opportunities that help give underserved populations access to STEAM education. In 2020, we were recognized by VIQTORY as a Military Friendly GOLD Employer for our overall commitment to veterans and military spouses and we were designated a Best Place to Work for LGBTQ Equality in the United States by the Human Rights Campaign Foundation.

WE WILL EXPAND UNDERSTANDING

To help every employee feel valued and included, we're creating an inclusive workplace through community building, training and family-friendly benefits policies. In response to the social justice movements during the past year, we conducted employee surveys and "real talk" discussions to provide a forum for employees to share their experiences and enable deeper understanding and empathy. We also renewed our investment in employee resource groups to support employees organizing for representation, development and networking.

"I am passionate about creating an environment where our people feel they belong and have the support they need to realize their full potential."

Shirley Adams
Chief Human Resources Officer

WE WILL ENRICH COMMUNITIES

Through strategic nonprofit partnerships, pro-bono work, skills-based volunteering and philanthropy, *Blueprint for a Better World*, our corporate responsibility platform, is focused on delivering access to safe and secure infrastructure to those who need it most, creating opportunity for the leaders of tomorrow and protecting our planet so that our company can fulfill its purpose to deliver a better world. As part of the Blueprint pro-bono program, our technical experts partnered with nonprofit organizations in their local communities to provide critical design, engineering and infrastructure solutions. In fiscal 2020, we continued to further our employees' passion through the Blueprint Travel Grant program, which included building dormitories to further Peruvian girls' education, purifying drinking water on the Zinga Island of Uganda, strengthening engineering ecosystems in sub-Saharan Africa and designing and fundraising for a women and children's center in Kosovo. In addition, we sustained our commitment to our enterprise strategic nonprofit partners—Engineers Without Borders and Water for People.

WE WILL THINK WITHOUT LIMITS

By cultivating a workforce that more closely represents our clients and the communities we serve, we are able to better anticipate and respond to their needs. We prioritize the social impact and benefits of equity, diversity and inclusion, factoring in these considerations into every project we pursue and the innovative solutions we deliver. At AECOM, we believe infrastructure has the power to alleviate today's economic and social distress, while building legacies for generations to come.

Keeping employees healthy and well

WELL-BEING

The well-being of our employees is our top priority. In 2020, our commitment to keeping our employees safe and healthy took on new importance as we navigated our response to the evolving pandemic. Employees were able to access critical health and medical guidance provided by our SH&E experts and we enhanced already existing programs and resources to support their urgent needs for healthcare, mental health, family care and financial assistance.

Empowering employees and leaders

DEVELOPMENT

We are invested in the growth and development of our employees. Our talent development strategy includes a focus on supporting all professionals in their current roles and preparing them for the future. In 2020, we continued our development programs for interns, early career professionals, frontline managers and high-potential leaders. In addition, we launched an enhanced AECOM University featuring a personalized learning experience for critical skill-building, and continued supporting our technical professionals through certification and continued-education resources, apprenticeship programs and our Technical Practice Network (TPN), which connects people to solve problems and build knowledge.

We are committed to acting with integrity and adhering to the highest standards of ethics and compliance.

ETHICS AND COMPLIANCE

Promoting a culture of ethics and integrity helps us safeguard our people and our company from potential wrongdoing while strengthening our brand and reputation for flawless execution. Our Code of Conduct outlines the legal guidelines we must follow and general ethical principles to help each of us make the right decisions when conducting business worldwide. Top leaders at AECOM promote ethical behavior through a global ethics committee as well as regional ethics committees. Our employees take part in annual Code of Conduct training, which received a 100% completion rate in FY20.

Furthermore, we have a comprehensive cross-functional ethics and compliance program focused on preventing issues from occurring, detecting them if and when they happen, effectively and expediently resolving issues and capturing lessons to prevent them from repeating.

> **"We've earned the trust of clients, employees and stakeholders by treating people with respect, acting responsibly and adhering to an unwavering commitment of ethical conduct."**
>
> **David Gan**
> Chief Legal Officer

HUMAN RIGHTS COMMITMENT

Provide equal employment opportunities to all employees without regard to any legally protected status

Uphold individual human rights and follow employment laws in all the locations where we conduct business

Zero-tolerance policy regarding the use of forced labor or human trafficking

All of these commitments are reflected in our Global Code of Conduct and Employee Handbook.

Executive Leadership

Troy Rudd
Chief Executive Officer

Shirley Adams
Chief Human Resources Officer

Jay Badame
President, Construction Management

Todd Battley
Chief Strategy Officer

David Gan
Chief Legal Officer

Gaurav Kapoor
Chief Financial Officer

Lara Poloni
President

Sarah Urbanowicz
Chief Information Officer

Warren Wachsberger
Chief Executive, AECOM Capital

Board of Directors

Douglas W. Stotlar
Director, Chairman of the Board

Bradley W. Buss
Director

Robert G. Card
Director

Diane C. Creel
Director

Jacqueline C. Hinman
Director

Lydia Kennard
Director

Troy Rudd
Director and Chief Executive Officer

Clarence T. Schmitz
Director

Daniel R. Tishman
Director

Sander van't Noordende
Director

Gen. Janet C. Wolfenbarger
Director

As nominated for the 2021 annual meeting

AECOM ON NYSE

AECOM's common stock trades on the New York Stock Exchange under the symbol ACM.

Investor materials

AECOM's Investor Relations website contains background on our company and our services, financial information, frequently asked questions and our online annual report, as well as other useful information. For investor information, including additional copies of our Annual Report, Form 10-K, Form 10-Q or other financial literature, please visit our website at investors.aecom.com.

Copies of AECOM's Form 10-K may be obtained free of charge by contacting William Gabrielski in our Investor Relations department via email at
AECOMInvestorRelations@aecom.com
or via phone at (212) 973-2982.

Independent registered public accounting firm
Ernst & Young LLP, Los Angeles, California, USA

Transfer Agent
Computershare
P.O. Box 30170,
College Junction, TX 77842
(800) 368-5948
www.computershare.com

DISCLAIMERS

Scope of report

The sustainability data and activities included in this report cover the past several years to provide a clearer picture of our performance. This report covers our owned or operated businesses and does not address the performance of our suppliers, contractors or partners unless otherwise noted. We have prepared the information and case studies solely to provide a general overview of our sustainability activities, and this report should not be used by anyone making an investment decision. In addition, the information in this report is summarized and is not a complete description of all of our activities; therefore, we have made qualitative judgments as to certain information to include that could be determined to be inaccurate or incomplete. We did not employ any third party firm to audit this report.

Forward-looking information

This report contains forward-looking statements relating to the manner in which we intend to conduct our activities based on our current plans and expectations. These statements are not promises of our future conduct or policy and are subject to a variety of uncertainties and other factors, many of which are beyond our control. Therefore, the actual conduct of our activities, including the development, implementation or continuation of any program, policy or initiative discussed in this report, may differ materially in the future. The statements of intention in this report speak only as of the date of this report, and we do not undertake to publicly update any statements in this report. As used in this report, the term "AECOM" and such terms as "the company," "our," "its," "we," and "us" may refer to one or more of AECOM's consolidated subsidiaries or affiliates or to all of them taken as a whole. All these terms are used for convenience only and are not intended as a precise description of any of the separate entities, each of which manages its own affairs.

FOOTNOTES

1 Excludes the impact of non-operating items, such as non-core operating losses and transaction-related expenses, restructuring costs and other items.

2 Net income before interest expense, tax expense, depreciation and amortization.

3 Free cash flow is defined as cash flow from operations less capital expenditures net of proceeds from disposals and includes the receipt of a favorable $122 million net working capital purchase price adjustment collected in May 2020 in connection with the sale of the Management Services (MS) business. The working capital adjustment represents the recovery of an operating cash flow shortfall of the MS business prior to its sale.

4 Reflects segment operating performance, excluding AECOM Capital.

5 Revenue, net of subcontractor and other direct costs.

RECONCILIATION OF NET INCOME ATTRIBUTABLE TO AECOM FROM CONTINUING OPERATIONS TO EBITDA TO ADJUSTED EBITDA

(Dollars in Millions)	Twelve Months Ended Sep 30, 2019	Twelve Months Ended Sep 30, 2020
Net income attributable to AECOM from continuing operations	$ 210.9	$ 170.4
Income tax expense (benefit)	13.5	45.8
Income attributable to AECOM	224.4	216.2
Depreciation and amortization expense[1]	196.5	192.7
Interest income[2]	(11.1)	(10.4)
Interest expense	161.6	159.8
Amortized bank fees included in interest expense	(10.7)	(6.2)
EBITDA	560.7	552.1
Noncore operating losses & transaction-related expenses	4.5	5.6
Impairment of long-lived assets	24.9	–
Restructuring costs	95.4	188.4
Gain on disposal activities	(3.6)	–
Depreciation expense included in above adjustments	(24.9)	–
Adjusted EBITDA	$ 657.0	$ 746.1

[1] Excludes depreciation from noncore operating losses and accelerated depreciation of project management tool

[2] Included in other income

Note: Variances within tables are due to rounding.

RECONCILIATION OF NET INCOME ATTRIBUTABLE TO AECOM FROM CONTINUING OPERATIONS PER DILUTED SHARE TO ADJUSTED NET INCOME ATTRIBUTABLE TO AECOM FROM CONTINUING OPERATIONS PER DILUTED SHARE

(Dollars in Millions)	Twelve Months Ended Sep 30, 2019	Twelve Months Ended Sep 30, 2020
Net income attributable to AECOM from continuing operations per diluted share	$ 1.32	$ 1.06
Per diluted share adjustments:		
Noncore operating losses & transaction related expenses	0.02	0.03
Accelerated depreciation of project management tool	–	0.18
Impairment of long-lived assets	0.16	–
Restructuring costs	0.60	1.17
Gain on disposal activities	(0.02)	–
Amortization of intangible assets	0.16	0.15
Financing charges in interest expense	0.07	0.14
Tax effect of the above adjustments*	(0.25)	(0.43)
Valuation allowances and other tax only items	(0.19)	(0.15)
Amortization of intangible assets included in NCI, net of tax	(0.01)	–
Adjusted net income attributable to AECOM from continuing operations per diluted share	$ 1.86	$ 2.15
Weighted average shares outstanding – basic	157.0	159.0
Weighted average shares outstanding – diluted	159.7	161.3

RECONCILIATION OF REVENUE TO REVENUE, NET OF SUBCONTRACTOR AND OTHER DIRECT COSTS (NSR)

(Dollars in Millions)	Twelve Months Ended Sep 30, 2019	Twelve Months Ended Sep 30, 2020
Segment Performance (excludes ACAP)		
Revenue	$13,634.3	$13,233.2
Less: subcontractor and other direct costs	7,419.9	7,063.1
Revenue, net of subcontractor and other direct costs	$ 6,214.4	$ 6,170.1

RECONCILIATION OF SEGMENT INCOME FROM OPERATIONS TO ADJUSTED INCOME FROM OPERATIONS

(Dollars in Millions)	Twelve Months Ended Sep 30, 2019	Twelve Months Ended Sep 30, 2020
Segment Performance (excludes ACAP)		
Income from operations	$ 623.4	$ 736.8
Noncore operating losses & transaction related expenses	4.5	(0.1)
Impairment of long-lived assets	15.2	–
Gain on disposal activities	(3.6)	–
Amortization of intangible assets	25.2	24.0
Adjusted income from operations	$ 664.7	$ 760.7

RECONCILIATION OF FY21 GAAP EPS GUIDANCE TO ADJUSTED EPS GUIDANCE

(All figures approximate)	Fiscal Year End 2021
GAAP EPS Guidance	$2.25 to $2.45
Adjusted EPS Excludes:	
Amortization of intangible assets	$0.13
Amortization of deferred financing fees	$0.03
Restructuring	$0.26
Tax effect of the above items	($0.12)
Adjusted EPS Guidance	$2.55 to $2.75

Adjusts the income tax expense (benefit) during the period to exclude the impact on our effective tax rate of the pre-tax adjustments shown above.

RECONCILIATION OF NET CASH PROVIDED BY OPERATING ACTIVITIES TO FREE CASH FLOW

	Three Months Ended			Twelve Months Ended	
	Sep 30, 2019	Jun 30, 2020	Sep 30, 2020	Sep 30, 2019	Sep 30, 2020
Net cash provided by operating activities	$793.7	$186.3	$649.3	$777.6	$329.6
Capital expenditures, net	(14.3)	(36.3)	(30.0)	(83.4)	(110.8)
Working capital adjustment from sale of Management Services business	–	122.0	–	–	122.0
Free cash flow	$779.4	$272.0	$619.3	$694.2	$340.8

Note: Variances within tables are due to rounding.

ABOUT AECOM

AECOM is the world's premier infrastructure consulting firm, delivering professional services throughout the project lifecycle—from planning, design and engineering to program and construction management. On projects spanning transportation, buildings, water, energy and the environment, our public- and private-sector clients trust us to solve their most complex challenges. Our teams are driven by a common purpose to deliver a better world through our unrivaled technical expertise and innovation, a culture of equity, diversity and inclusion, and a commitment to environmental, social and governance priorities. AECOM is a Fortune 500 firm and its Professional Services business had revenue of $13.2 billion in fiscal year 2020. See how we deliver what others can only imagine at aecom.com and @AECOM.

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-K

(Mark one)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

FOR THE FISCAL YEAR ENDED SEPTEMBER 30, 2020

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission file number 0-52423

AECOM

(Exact name of Registrant as specified in its charter)

Delaware	**61-1088522**
State or Other Jurisdiction Of Incorporation or Organization	I.R.S. Employer Identification Number

300 South Grand Avenue, 9th Floor	
Los Angeles, California	**90071**
Address of Principal Executive Offices	Zip Code

(213) 593-8000

Registrant's Telephone Number, Including Area Code

Former Name, Former Address and Former Fiscal Year, if Changed Since Last Report

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	**Trading Symbol(s)**	**Name of each exchange on which registered**
Common Stock, $0.01 par value	ACM	New York Stock Exchange

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. ☒ Yes ☐ No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. ☐ Yes ☒ No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. ☒ Yes ☐ No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). ☒ Yes ☐ No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of registrant's common stock held by non-affiliates on March 27, 2020 (the last business day of the registrant's most recently completed second fiscal quarter), based upon the closing price of a share of the registrant's common stock on such date as reported on the New York Stock Exchange was approximately $4.5 billion.

Number of shares of the registrant's common stock outstanding as of November 12, 2020: 150,763,791

DOCUMENTS INCORPORATED BY REFERENCE

Part III incorporates information by reference from the registrant's definitive proxy statement for the 2021 Annual Meeting of Stockholders, to be filed within 120 days of the registrant's fiscal 2020 year end.

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PART I

ITEM 1. BUSINESS

In this report, we use the terms "the Company," "we," "us" and "our" to refer to AECOM and its consolidated subsidiaries. Unless otherwise noted, references to years are for fiscal years. Our fiscal year consists of 52 or 53 weeks, ending on the Friday closest to September 30. For clarity of presentation, we present all periods as if the year ended on September 30. We refer to the fiscal year ended September 30, 2019 as "fiscal 2019" and the fiscal year ended September 30, 2020 as "fiscal 2020."

Overview

We are a premier global infrastructure consulting firm, delivering professional services throughout the project lifecycle – from planning, architecture, design and engineering to program and construction management. We partner with our clients in the public and private sectors to solve some of their most complex infrastructure challenges on projects spanning transportation, buildings, water, governments, energy and the environment.

According to Engineering News-Record's (ENR's) 2020 Design Survey, we are the second largest general architectural and engineering design firm in the world, ranked by 2019 design revenue, and we are ranked as the largest environment firm in the world. In addition, we are ranked by ENR as the leading firm in a number of design end markets, including transportation, general building and certain water-related markets, as well as the number two green design firm and the number four green contractor in the world. We utilize our scale and the strength of our workforce to create innovative solutions for our clients. Increasingly, clients are turning to us to shape solutions to achieve their Environmental, Social, and Governance (ESG) objectives. With our market leading capabilities, we are uniquely well suited to address these challenges.

A leader in key markets helping our clients deliver their ESG priorities

Environmental

Social

Governance

ENR Engineering News-Record

Source: 2020 ENR Rankings, reflecting global revenue

#1
- **Environment Firm**
- Chemical Remediation

#2
- Green Design Firm
- Water Supply
- Hazardous Waste
- Water Transmission & Aqueducts
- Wastewater Treatment
- Dams & Reservoirs

#3
- Site Assessment
- Clean Air Compliance
- Desalination Plants
- Solar Power

#4
- Green Contractor

Our business focuses primarily on providing fee-based planning, consulting, architectural and engineering design services and, therefore, our business is primarily driven by knowledge-based services. We primarily derive income from our ability to generate revenue and collect cash from our clients through the billing of our employees' time spent on client projects and our ability to manage our costs. AECOM Capital primarily derives its income from real estate development sales and management fees.

On January 31, 2020, we completed the sale of our Management Services (MS) business to an affiliate of American Securities LLC and Lindsay Goldberg LLC. Starting in the first quarter of fiscal 2020, our self-perform at-risk construction business met the criteria for held for sale. Collectively, the Management Services business and the self-perform at-risk construction businesses met the criteria for discontinued operation classification.

During the first quarter of fiscal 2020, we reorganized our operating and reporting structure to better align with our ongoing professional services business. The businesses that comprised the Management Services reportable segment and the civil infrastructure, power and oil and gas construction businesses in the former Construction Services (CS) reportable segment were classified as discontinued operations.

We report our continuing business through three segments, each of which is described in further detail below: Americas, International, and AECOM Capital (ACAP). Such segments are organized by the differing specialized needs of the respective clients and how we manage the business. We have aggregated various operating segments into our reportable segments based on their similar characteristics, including similar long-term financial performance, the nature of services provided, internal processes for delivering those services, and types of customers.

- *Americas:* Planning, consulting, architectural and engineering design, and construction management services to commercial and government clients in the United States, Canada, and Latin America in major end markets such as transportation, water, government, facilities, environmental, and energy.

- *International:* Planning, consulting, architectural and engineering design services to commercial and government clients in Europe, the Middle East, Africa, and the Asia-Pacific regions in major end markets such as transportation, water, government, facilities, environmental, and energy.

- *AECOM Capital (ACAP):* Investments primarily in real estate projects.

Our Americas and International Segments

Our Americas and International segments comprise a broad array of services, generally provided on a fee-for-service basis. These services include planning, consulting, architectural and engineering design, program management and construction management for industrial, commercial, institutional and government clients worldwide. For each of these services, our technical expertise includes civil, structural, process, mechanical, geotechnical systems and electrical engineering, architectural, landscape and interior design, urban and regional planning, project economics, cost consulting and environmental, health and safety work. Our Americas segment provides services generally in the United States, Canada and Latin America. Our International segment provides similar services generally in Europe, the Middle East, Africa and Asia-Pacific regions.

With our technical and management expertise, we are able to provide our clients a broad spectrum of services. For example, within our environmental management service offerings, we provide remediation, regulatory compliance planning and management, environmental modeling, environmental and social impact assessment and environmental permitting for major capital/infrastructure projects.

Our services may be sequenced over multiple phases. For example, in the area of program management and construction management services, our work for a client may begin with a small consulting or planning contract, and may later develop into an overall management role for the project or a series of projects, which we refer to as a program. Program and construction management contracts may employ small or large project teams and, in many cases, operate as an outsourcing arrangement with our staff located at the project site.

We provide the services in these segments both directly and through joint ventures or similar partner arrangements to the following end markets or business sectors:

Transportation.

- *Transit and Rail.* Light rail, heavy rail (including highspeed, commuter and freight) and multimodal transit projects.
- *Marine, Ports and Harbors.* Wharf facilities and container port facilities for private and public port operators.
- *Highways, Bridges and Tunnels.* Interstate, primary and secondary urban and rural highway systems and bridge projects.
- *Aviation.* Landside terminal and airside facilities, runways and taxiways.

Facilities.

- *Government.* Emergency response services for the U.S. Department of Homeland Security, including the Federal Emergency Management Agency and engineering and program management services for agencies of the Department of Defense and Department of Energy.
- *Industrial.* Industrial facilities for a variety of niche end markets such as manufacturing, distribution, aviation, aerospace, communications, media, pharmaceuticals, renewable energy, chemical, and food and beverage facilities.
- *Urban Master Planning/Design.* Strategic planning and master planning services for new cities and major mixed-use developments in locations such as India, China, Southeast Asia, the Middle East, North Africa, the United Kingdom and the United States.

- *Commercial and Leisure Facilities.* For example, corporate headquarters, high-rise office towers, historic buildings, hotels, leisure, sports and entertainment facilities and corporate campuses.

- *Educational.* For example, college and university campuses.

- *Health Care.* For example, private and public health facilities.

- *Correctional.* For example, detention and correctional facilities.

Environmental.

- *Water and Wastewater.* Treatment facilities as well as supply, distribution and collection systems, stormwater management, desalinization, and other water reuse technologies.

- *Environmental Management.* Remediation, waste handling, testing and monitoring of environmental conditions and environmental construction management.

- *Water Resources.* Regional-scale floodplain mapping and analysis for public agencies, along with the analysis and development of protected groundwater resources for companies in the bottled water industry.

Energy/Power.

- *Demand Side Management.* Public K12 schools and universities, health care facilities, and courthouses and other public buildings, as well as energy conservation systems for utilities.

- *Transmission and Distribution.* Power stations and electric transmissions and distribution and cogeneration systems.

- *Alternative/Renewable Energy.* Production facilities such as ethanol plants, wind farms and micro hydropower and geothermal subsections of regional power grids.

- *Hydropower/Dams.* Hydroelectric power stations, dams, spillways, and flood control systems.

- *Solar.* Solar photovoltaic projects and environmental permitting services.

Construction Management – We provide program and construction management services for large scale building facility construction projects primarily in the Americas including:

- Sports arenas;

- Modern office and residential towers;

- Hotel and gaming facilities;

- Meeting and exhibition spaces;

- Performance venues;

- Education facilities;

- Mass transit terminals; and

- Data centers.

Our AECOM Capital Segment

ACAP typically partners with investors and experienced developers as co-general partners. ACAP may, but is not required to, enter into contracts with our other AECOM affiliates to provide design, engineering, construction management, development and operations and maintenance services for ACAP funded projects. ACAP development activity is conducted through joint ventures or subsidiaries that may be consolidated or unconsolidated for financial reporting purposes depending on the extent and nature of our ownership interest. In addition, in connection with the investment activities of ACAP, AECOM or an affiliate may provide guarantees of certain financial obligations, including guarantees for completion of projects, repayment of debt, environmental indemnity obligations, and other lender required guarantees. In October 2019, AECOM-Canyon Partners, a joint venture between ACAP and Canyon Partners, LLC, a global alternative asset management firm, announced the final closing of an investment fund with just over $500 million in total commitments. The platform focuses on investing in co-general partner equity opportunities with high quality partners, primarily targeting “build-to-core” investments in the top 25 U.S. markets across all property types.

Thinking and Acting Globally

AECOM is at its best when we think and act globally. Our strategy is focused on setting a new standard of excellence in the professional services industry. First, our recently simplified operating structure promotes greater connectivity and collaboration across our seven regions and five global business lines. We drive growth by prioritizing our core markets, leaning into our greatest strengths and ensuring our best talent and resources are focused on nurturing client relationships. We are transforming the way we deliver work through technology and digital platforms improving the client experience and increasing efficiency. Lastly, we are building upon our position as a leading ESG company, unified by our purpose to deliver a better world.

Environmental, Social and Governance Matters

We are committed to being a leader in environmental sustainability, social responsibility, and corporate governance.

We embrace sustainability by striving to make a positive, lasting impact on society and the environment. Sustainability is at the core of what we do and how we operate — focusing on the environmental, social and governance impact of our business. Through our projects and our operations, we have both a significant opportunity and a responsibility to protect, enhance and restore the world's natural and social systems.

We are committed to addressing the effects of climate change as a key priority for our sustainability program by improving resilience and working to advance ambitious greenhouse gas emissions reduction targets. Having achieved our previous emissions reduction targets ahead of schedule, we have set new science-based targets for 2025 that are in alignment with the Paris Agreement's goals to limit the worst effects of climate change: a 20% reduction in Scope 1 and 2 emissions and a 10% reduction in supply chain emissions from our 2018 baseline. Our new targets have been independently validated by the Science Based Targets initiative (SBTi) and, at the time of validation, AECOM was the first and only US-based company in the engineering and construction sector to have set SBTi targets.

In addition, we continue to invest in proprietary innovations and solutions to combat globally pervasive emerging contaminants, such as our patented DE-FLUORO™ water treatment solution to destroy per- and polyfluoroalkyl substances (PFAS) on-site.

We have established an internal Global ESG Council to coordinate and drive our ESG initiatives across AECOM worldwide, and our Board, including through its Committees, has oversight over ESG matters. Additional information regarding our ESG initiatives is located on the investor relations section of our website, at https://investors.aecom.com/.

Human Capital Management

The foundation of our continuing success as a premier professional services enterprise is the ability to attract and retain the industry’s best, diverse talent by providing a culture of equity, diversity, inclusion, development, opportunity and empowerment. This understanding informs our approach to managing our human capital resources

Our principal asset is our employees, and large percentages of our employees have technical and professional backgrounds and undergraduate and/or advanced degrees. At the end of our fiscal 2020, we employed approximately 54,000 persons, of whom approximately 22,000 were employed in the United States. Over 4,000 of our domestic employees are covered by collective bargaining agreements or by specific labor agreements, which expire upon completion of the relevant project. We believe that the quality and level of service that our professionals deliver are among the highest in our industry.

We are committed to enhancing our position as a leading employer in our industry. Our culture and reputation as a leader in the engineering and construction sector enables us to recruit and retain some of the best available talent in the countries we operate in. We believe in a culture of equity, diversity and inclusion, and we are committed to advancing safe and respectful work environments where our employees are invited to bring their talents, backgrounds and expertise to bear on some of the world’s most complex problems and where every person has the opportunity to thrive personally and professionally.

We are committed to engaging our employees globally to understand regional inclusion and diversity opportunities, building leadership accountability and expanding recruitment efforts to foster a workforce reflective of our communities. To continue attracting and retaining some of the most talented employees in our industry, we ensure employees have the tools and resources they need to hone their skills, develop strong leadership behaviors and advance their careers. Our human capital objectives and initiatives are overseen by our Board as per our Corporate Governance Guidelines.

Health and Safety. Core to our corporate values is safeguarding our people and fostering a culture of caring that promotes the wellbeing of our employees, contractors and business partners. We safeguard our people, projects and reputation by striving for zero employee injuries and illnesses, while operating and delivering our work responsibly and sustainably. We maintain our industry’s best-in-class lost workday case and recordable incident rates, and our safety performance is consistently recognized by key clients across the regions where we work as well as by recognized safety organizations.

Equity, diversity and inclusion. While ED&I has always been a part of our culture, we continue to advance efforts globally to integrate our principles into all aspects of our work and measure results. We are focused on four key areas: 1) Building diverse talent through our recruitment efforts, as well as offering internships (including virtual internships during the Covid-19 pandemic) and partnering with nonprofit organizations and universities, 2) Enriching communities through pro-bono work, volunteerism, philanthropy and strategic partnerships, 3) Expanding understanding and empathy among employees through community-building, training and family-friendly benefit policies, and 4) Prioritizing the social impact and benefits of ED&I into every project we pursue and the innovative solutions we deliver.

Employee experience. We continue to enhance our employee programs, workplace culture and digital technologies to support employees and managers in more effective and efficient ways to execute their work and meaningfully engage with clients. These efforts include employee wellness and wellbeing programs to better support employees while working remotely during the Covid-19 pandemic and beyond, expanding access and technical training programs through our online education portal, AECOM University, delivering new digital tools to boost connectivity among employees, and advancing frontline leadership programs.

Workplace of the future. Drawing upon the experiences of our professionals, who have remained highly productive while working remotely during the Covid-19 pandemic, we have invited their input and ideas to begin to shape the future ways of working at AECOM. In particular, through a global competition, we challenged our professionals to consider how new workspaces can support health, collaboration and camaraderie, how technology and tools can be leveraged to ensure continuing productivity and client engagement, and what they need to be well and engaged. Many of the resulting ideas are being implemented regionally and globally.

Community responsibility. Through strategic nonprofit partnerships, pro-bono work, skills-based volunteering and philanthropy, *Blueprint for a Better World*, our corporate responsibility platform, is focused on delivering access to safe and secure infrastructure to those who need it most, creating opportunity for the leaders of tomorrow and protecting our planet so that our company can fulfill its purpose to deliver a better world. As part of the *Blueprint* pro-bono program, our technical experts partnered with nonprofit organizations in their local communities to provide critical design, engineering and infrastructure solutions. In fiscal 2020, we continued to further our employees' passion through the *Blueprint Travel Grant* program, which included building dormitories to further Peruvian girls' education, purifying drinking water on the Zinga Islands of Uganda, strengthening engineering ecosystems in Sub-Saharan Africa, and designing and fundraising for a women and children's center in Kosovo. In addition, we sustained our commitment to our enterprise strategic nonprofit partners – Engineers Without Borders and Water for People.

Our Clients

Our clients consist primarily of national, state, regional and local governments, public and private institutions and major corporations. The following table sets forth our total revenue attributable to these categories of clients for each of the periods indicated:

	Year Ended September 30, ($ in millions)					
	2020		2019		2018	
U.S. Federal Government	$ 1,027.8	8 %	$ 1,273.7	9 %	$ 1,141.3	8 %
U.S. State and Local Governments	2,709.7	20	2,696.6	20	3,144.2	23
Non-U.S. Governments	1,869.0	14	2,031.5	15	2,127.9	15
Subtotal Governments	5,606.5	42	6,001.8	44	6,413.4	46
Private Entities (worldwide)	7,633.5	58	7,640.7	56	7,464.9	54
Total	$ 13,240.0	100 %	$ 13,642.5	100 %	$ 13,878.3	100 %

No single client accounted for 10% or more of our revenue in any of the past five fiscal years. Approximately 8%, 9% and 8% of our revenue was derived through direct contracts with agencies of the U.S. federal government in the years ended September 30, 2020, 2019 and 2018, respectively.

Contracts

The price provisions of the contracts we undertake can be grouped into several broad categories: cost-reimbursable contracts, guaranteed maximum price contracts, and fixed-price contracts.

Cost-Reimbursable Contracts

Cost-reimbursable contracts include cost-plus fixed fee, cost-plus fixed rate, and time-and-materials price contracts. Under cost-plus contracts, we charge clients for our costs, including both direct and indirect costs, plus a negotiated fee or rate. We recognize revenues based on actual direct costs incurred and the applicable fixed rate or portion of the fixed fee earned as of the balance sheet date. Under time-and-materials price contracts, we negotiate hourly billing rates and charge clients based on the actual time we expend on the project. In addition, clients reimburse us for materials and other direct incidental expenditures incurred in connection with our performance under the contract. Time-and-material price contracts may also have a fixed-price element in the form of not-to-exceed or guaranteed maximum price provisions.

Some cost-plus contracts provide for award fees or a penalty based on performance criteria in lieu of a fixed fee or fixed rate. Other contracts include a base fee component plus a performance-based award fee. In addition, we may share award fees with subcontractors. We generally recognize revenue to the extent of costs actually incurred plus a proportionate amount of the fee expected to be earned. We take the award fee or penalty on contracts into consideration when estimating revenue and profit rates, and record revenue related to the award fees when there is sufficient information to assess anticipated contract performance and a significant reversal of the award fee is not probable. Once an award is received, the estimated or accrued fees are adjusted to the actual award amount.

Some cost-plus contracts provide for incentive fees based on performance against contractual milestones. The amount of the incentive fees varies, depending on whether we achieve above, at, or below target results. We originally recognize revenue on these contracts based upon expected results. These estimates are revised when necessary based upon additional information that becomes available as the contract progresses.

Guaranteed Maximum Price Contracts

Guaranteed maximum price contracts (GMP) share many of the same contract provisions as cost-plus and fixed-price contracts. As with cost-plus contracts, clients are provided a disclosure of all project costs, and a lump sum percentage fee is separately identified. We provide clients with a guaranteed price for the overall project (adjusted for change orders issued by clients) and a schedule including the expected completion date. Cost overruns or costs associated with project delays in completion could generally be our responsibility. For many of our commercial or residential GMP contracts, the final price is generally not established until we have subcontracted a substantial percentage of the trade contracts with terms consistent with the master contract, and we have negotiated additional contract limitations, such as waivers of consequential damages as well as aggregate caps on liabilities and liquidated damages. Revenue is recognized for GMP contracts as project costs are incurred relative to total estimated project costs.

Fixed-Price Contracts

Fixed-price contracts include both lump-sum and fixed-unit price contracts. Under lump-sum contracts, we perform all the work under the contract for a specified price. Lump-sum contracts are typically subject to price adjustments if the scope of the project changes or unforeseen conditions arise. Under fixed-unit price contracts, we perform a number of units of work at an agreed price per unit with the total payment under the contract determined by the actual number of units delivered. Revenue is recognized for fixed-price contracts using the input method measured on a cost-to-cost basis.

Some of our fixed-price contracts require us to provide surety bonds or parent company guarantees to assure our clients that their project will be completed in accordance with the terms of the contracts as further disclosed in Note 18—Commitments and Contingencies. In such cases, we may require our primary subcontractors to provide similar performance bonds and guarantees and to be adequately insured, and we may flow down the terms and conditions set forth in our agreement on to our subcontractors. There may be risks associated with completing these projects profitably if we are not able to perform our services within the fixed-price contract terms.

For the year ended September 30, 2020, our revenue was comprised of 43%, 30%, and 27% cost-reimbursable, guaranteed maximum price, and fixed-price contracts, respectively.

Joint Ventures

Some of our larger contracts may operate under joint ventures or other arrangements under which we team with other reputable companies, typically companies with which we have worked for many years. This is often done where the scale of the project dictates such an arrangement or when we want to strengthen either our market position or our technical skills.

Backlog

Backlog represents revenue we expect to realize for work completed by our consolidated subsidiaries and our proportionate share of work to be performed by unconsolidated joint ventures. Backlog is expressed in terms of gross revenue and therefore may include significant estimated amounts of third party or pass-through costs to subcontractors and other parties. Backlog for our consolidated subsidiaries is comprised of contracted backlog and awarded backlog. Our contracted backlog includes revenue we expect to record in the future from signed contracts, and in the case of a public client, where the project has been funded. We report transaction price allocated to remaining unsatisfied performance obligations (RUPO) of $18.9 billion, as described in Note 4, Revenue Recognition, in the notes to our consolidated financial statements. The most significant difference between our contracted backlog and RUPO is revenue related to service contracts that extend beyond the termination provision of those contracts. Our contracted backlog includes revenues for service contracts expected to be earned over the term of that contract. Guidance for the calculation of RUPO requires us to assume the contract will be terminated at its earliest convenience, resulting in RUPO to be $0.6 billion lower than contracted backlog. Our awarded backlog includes revenue we expect to record in the future where we have been awarded the work, but the contractual agreement has not yet been signed. The net results of our unconsolidated joint ventures are recognized as equity earnings, and awarded and contracted backlog representing our proportionate share of work to be performed by unconsolidated joint ventures is not presented as revenue in our Consolidated Statements of Operations. For non-government contracts, our backlog includes future revenue at contract rates, excluding contract renewals or extensions that are at the discretion of the client. For contracts with a not-to-exceed maximum amount, we include revenue from such contracts in backlog to the extent of the remaining estimated amount. We calculate backlog without regard to possible project reductions or expansions or potential cancellations until such changes or cancellations occur. No assurance can be given that we will ultimately realize our full backlog. Backlog fluctuates due to the timing of when contracts are awarded and contracted and when contract revenue is recognized. Many of our contracts require us to provide services over more than one year. Our backlog for the year ended September 30, 2020 increased $4.7 billion, or 12.9%, to $41.2 billion as compared to $36.5 billion for the corresponding period last year, primarily due to an increase in our construction management business.

The following summarizes contracted and awarded backlog (in billions):

	September 30,	
	2020	2019
Contracted backlog:		
Americas segment	$ 15.8	$ 13.9
International segment	3.7	3.6
Total contracted backlog	$ 19.5	$ 17.5
Awarded backlog:		
Americas segment	$ 20.1	$ 17.2
International segment	1.0	0.8
Total awarded backlog	$ 21.1	$ 18.0
Unconsolidated joint venture backlog:		
Americas segment	$ 0.6	$ 1.0
International segment	—	—
Total unconsolidated joint venture backlog	$ 0.6	$ 1.0
Total backlog:		
Americas segment	$ 36.5	$ 32.1
International segment	4.7	4.4
Total backlog	$ 41.2	$ 36.5

Competition

The markets we serve are highly fragmented and we compete with a large number of regional, national and international companies. We have numerous competitors, ranging from small private firms to multi-billion dollar companies, some of which have greater financial resources or that are more specialized and concentrate their resources in particular areas of expertise. The extent of our competition varies according to the particular markets and geographic area. The degree and type of competition we face is also influenced by the type and scope of a particular project. The technical and professional aspects of our services generally do not require large upfront capital expenditures and, therefore, provide limited barriers against new competitors.

We believe that we are well positioned to compete in our markets because of our reputation, our cost effectiveness, our long-term client relationships, our extensive network of offices, our employee expertise, and our broad range of services. In addition, as a result of our extensive national and international network, we are able to offer our clients localized knowledge and expertise, as well as the support of our worldwide professional staff. In addition, through investments in technology and innovation, we are able to bring advanced solutions to clients.

Seasonality

We experience seasonal trends in our business. Our revenue is typically higher in the last half of the fiscal year. The fourth quarter of our fiscal year (July 1 to September 30) is typically our strongest quarter. We find that the U.S. federal government tends to authorize more work during the period preceding the end of our fiscal year, September 30. In addition, many U.S. state governments with fiscal years ending on June 30 tend to accelerate spending during their first quarter, when new funding becomes available. Further, our construction management revenue typically increases during the high construction season of the summer months. Within the United States, as well as other parts of the world, our business generally benefits from milder weather conditions in our fiscal fourth quarter, which allows for more productivity from our on-site civil services. Our construction and project management services also typically expand during the high construction season of the summer months. The first quarter of our fiscal year (October 1 to December 31) is typically our lowest revenue quarter. The harsher weather conditions impact our ability to complete work in parts of North America and the holiday season schedule affects our productivity during this period. For these reasons, coupled with the number and significance of client contracts commenced and completed during a particular period, as well as the timing of expenses incurred for corporate initiatives, it is not unusual for us to experience seasonal changes or fluctuations in our quarterly operating results.

Risk Management and Insurance

Risk management is an integral part of our project management approach and our project execution process. We have an Office of Risk Management that reviews and oversees the risk profile of our operations. Also, pursuant to our internal delegations of authority, we have an internal process whereby a group of senior members of our risk management team evaluate risk through internal risk analyses of higher-risk projects, contracts or other business decisions. We maintain insurance covering professional liability and claims involving bodily injury and property damage. Wherever possible, we endeavor to eliminate or reduce the risk of loss on a project through the use of quality assurance/control, risk management, workplace safety and similar methods.

Regulations

Our business is impacted by environmental, health and safety, government procurement, anti-bribery and other government regulations and requirements. Below is a summary of some of the significant regulations that impact our business.

Environmental, Health and Safety. Our business involves the planning, design, program management, construction management, and operations and maintenance at various project sites, including, but not limited to, nuclear facilities, hazardous waste and Superfund sites, hydrocarbon production, distribution and transport sites, and other infrastructure-related facilities. We also regularly perform work in and around sensitive environmental areas, such as rivers, lakes and wetlands.

Significant fines, penalties and other sanctions may be imposed for non-compliance with environmental and health and safety laws and regulations, and some laws provide for joint and several strict liabilities for remediation of releases of hazardous substances, rendering a person liable for environmental damage, without regard to negligence or fault on the part of such person. These laws and regulations may expose us to liability arising out of the conduct of operations or conditions caused by others, or for our acts that were in compliance with all applicable laws at the time these acts were performed. For example, there are a number of governmental laws that strictly regulate the handling, removal, treatment, transportation and disposal of toxic and hazardous substances, such as the Comprehensive Environmental Response Compensation and Liability Act of 1980, and comparable national and state laws, that impose strict, joint and several liabilities for the entire cost of cleanup, without regard to whether a company knew of or caused the release of hazardous substances. In addition, some environmental regulations can impose liability for the entire clean-up upon owners, operators, generators, transporters and other persons arranging for the treatment or disposal of such hazardous substances related to contaminated facilities or project sites. Other federal environmental, health and safety laws affecting us include, but are not limited to, the Resource Conservation and Recovery Act, the National Environmental Policy Act, the Clean Air Act, the Clean Air Mercury Rule, the Occupational Safety and Health Act, the Toxic Substances Control Act, and the Superfund Amendments and Reauthorization Act, as well as other comparable national and state laws. Liabilities related to environmental contamination or human exposure to hazardous substances, comparable national and state laws or a failure to comply with applicable regulations could result in substantial costs to us, including cleanup costs, fines and civil or criminal sanctions, third-party claims for property damage or personal injury, or cessation of remediation activities.

Some of our business operations are covered by Public Law 85-804, which provides for indemnification by the U.S federal government against claims and damages arising out of unusually hazardous or nuclear activities performed at the request of the U.S. federal government. Should public policies and laws change, however, U.S. federal government indemnification may not be available in the case of any future claims or liabilities relating to hazardous activities that we undertake to perform.

Government Procurement. The services we provide to the U.S. federal government are subject to Federal Acquisition Regulation, the Truth in Negotiations Act, Cost Accounting Standards, the Services Contract Act, export controls rules and Department of Defense (DOD) security regulations, as well as many other laws and regulations. These laws and regulations affect how we transact business with our clients and, in some instances, impose additional costs on our business operations. A violation of specific laws and regulations could lead to fines, contract termination or suspension of future contracts. Our government clients can also terminate, renegotiate, or modify any of their contracts with us at their convenience; and many of our government contracts are subject to renewal or extension annually.

Anti-Bribery and other regulations. We are subject to the U.S. Foreign Corrupt Practices Act and similar anti-bribery laws, which generally prohibit companies and their intermediaries from making improper payments to foreign government officials for the purpose of obtaining or retaining business. The U.K. Bribery Act of 2010 prohibits both domestic and international bribery, as well as bribery across both private and public sectors. In addition, an organization that “fails to prevent bribery” committed by anyone associated with the organization can be charged under the U.K. Bribery Act unless the organization can establish the defense of having implemented “adequate procedures” to prevent bribery. To the extent we export technical services, data and products outside of the U.S., we are subject to U.S. and international laws and regulations governing international trade and exports, including, but not limited to, the International Traffic in Arms Regulations, the Export Administration Regulations, and trade sanctions against embargoed countries. We provide services to the DOD and other defense-related entities that often require specialized professional qualifications and security clearances. In addition, as engineering design services professionals, we are subject to a variety of local, state, federal, and foreign licensing and permit requirements and ethics rules.

Raw Materials

We purchase most of the raw materials and components necessary to operate our business from numerous sources. However, the price and availability of raw materials and components may vary from year to year due to customer demand, production capacity, market conditions, and material shortages. While we do not currently foresee the lack of availability of any particular raw materials in the near term, prolonged unavailability of raw materials necessary to our projects and services or significant price increases for those raw materials could have a material adverse effect on our business in the near term.

Government Contracts

Generally, our government contracts are subject to renegotiation or termination of contracts or subcontracts at the discretion of the U.S. federal, state or local governments, and national governments of other countries.

Trade Secrets and Other Intellectual Property

We rely principally on trade secrets, confidentiality policies and other contractual arrangements to protect much of our intellectual property.

Available Information

The reports we file with the Securities and Exchange Commission, including annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and proxy materials, including any amendments, are available free of charge on our website at *www.aecom.com* as soon as reasonably practicable after we electronically file such material with or furnish it to the SEC. The SEC also maintains a web site *(www.sec.gov)* containing reports, proxy and information statements, and other information that we file with the SEC. Our Corporate Governance Guidelines and our Code of Ethics are available on our website at *www.aecom.com* under the “Investors” section. Copies of the information identified above may be obtained without charge from us by writing to AECOM, 300 South Grand Avenue, 9th Floor, Los Angeles, California 90071, Attention: Corporate Secretary.

ITEM 1A. RISK FACTORS

We operate in a changing environment that involves numerous known and unknown risks and uncertainties that could materially adversely affect our operations. The risks described below highlight some of the factors that have affected, and in the future could affect our operations. Additional risks we do not yet know of or that we currently think are immaterial may also affect our business operations. If any of the events or circumstances described in the following risks actually occurs, our business, financial condition or results of operations could be materially adversely affected.

Risks Related to Our Markets, Customers and Business

We face various risks related to health outbreaks such as the Covid-19 coronavirus that may have material adverse effects on our business, financial position, results of operations and/or cash flows.

We face various risks related to health epidemics, pandemics, and similar outbreaks, including the current global outbreak of the Covid-19 coronavirus pandemic. The coronavirus pandemic is expected to reduce demand for our services and impact client spending in certain circumstances. An extended health outbreak could adversely affect the world economy resulting in an economic downturn that could further affect demand for our services. If significant portions of our workforce are unable to work or travel effectively for a prolonged period because of government-mandated quarantines, closures, or other restrictions, then our business and financial operations will be significantly impacted. For example, work on some non-essential construction and other client projects has temporarily halted our services on these projects. Extended disruptions due to the coronavirus could further delay or limit our ability to perform services, make or receive timely payments, and impair our ability to win future contracts. The continued spread of coronavirus without any impact from any effective treatments may cause further financial instability increasing our costs and ability to access the capital markets. Any cost increases due to the coronavirus may not be fully recoverable or adequately covered by our insurance. We cannot at this time predict the duration of the coronavirus pandemic or the impact of government regulations that might be imposed in response of the pandemic; however, the coronavirus pandemic may have a material adverse effect on our business, financial position, results of operations and cash flows.

Our industry is highly competitive, and we may be unable to compete effectively, which could result in reduced revenue, profitability and market share.

We are engaged in a highly competitive business. The markets we serve are highly fragmented and we compete with a large number of regional, national and international companies. These competitors may have greater financial and other resources than we do. Others are smaller and more specialized, and concentrate their resources in particular areas of expertise. The extent of our competition varies according to the particular markets and geographic area. In addition, the technical and professional aspects of some of our services generally do not require large upfront capital expenditures and provide limited barriers against new competitors.

The degree and type of competition we face is also influenced by the type and scope of a particular project. Our clients make competitive determinations based upon qualifications, experience, performance, reputation, technology, customer relationships, price and ability to provide the relevant services in a timely, safe and cost-efficient manner. Increased competition may result in our inability to win bids for future projects, increased margin pressure and loss of revenue, profitability and market share.

Demand for our services is cyclical and may be vulnerable to sudden economic downturns and reductions in government and private industry spending. If economic conditions remain uncertain and/or weaken, our revenue and profitability could be adversely affected.

Demand for our services is cyclical and may be vulnerable to sudden economic downturns, interest rate fluctuations and reductions in government and private industry spending that result in clients delaying, curtailing or canceling proposed and existing projects. For example, the Covid-19 coronavirus pandemic is expected to reduce demand for our services and impact client spending in certain circumstances. Where economies are weakening, our clients may demand more favorable pricing or other terms while their ability to pay our invoices or to pay them in a timely manner may be adversely affected. Our government clients may face budget deficits that prohibit them from funding proposed and existing projects. If economic conditions remain uncertain and/or weaken and/or government spending is reduced, our revenue and profitability could be materially adversely affected.

We depend on long-term government contracts, some of which are only funded on an annual basis. If appropriations for funding are not made in subsequent years of a multiple-year contract, we may not be able to realize all of our anticipated revenue and profits from that project.

A substantial portion of our revenue is derived from contracts with agencies and departments of national, state, and local governments. During fiscal 2020 and 2019, approximately 42% and 44%, respectively, of our revenue was derived from contracts with government entities.

Most government contracts are subject to the government's budgetary approval process. Legislatures typically appropriate funds for a given program on a year-by-year basis, even though contract performance may take more than one year. In addition, public-supported financing such as state and local municipal bonds may be only partially raised to support existing infrastructure projects. As a result, at the beginning of a program, the related contract is only partially funded, and additional funding is normally committed only as appropriations are made in each fiscal year. These appropriations, and the timing of payment of appropriated amounts, may be influenced by, among other things, the state of the economy, a government shutdown, competing priorities for appropriation, changes in administration or control of legislatures, and the timing and amount of tax receipts and the overall level of government expenditures. Similarly, the impact of an economic downturn on governments, including as a result of the coronavirus, may make it more difficult for them to fund infrastructure projects. If appropriations are not made in subsequent years on our government contracts, then we will not realize all of our potential revenue and profit from that contract.

If we are unable to win or renew government contracts during regulated procurement processes, our operations and financial results would be harmed.

Government contracts are awarded through a regulated procurement process. The federal government has awarded multi-year contracts with pre-established terms and conditions, such as indefinite delivery contracts, that generally require those contractors that have previously been awarded the indefinite delivery contract to engage in an additional competitive bidding process before a task order is issued. In addition, the federal government has also awarded federal contracts based on a low-price, technically acceptable criteria emphasizing price over qualitative factors, such as past performance. As a result of these competitive pricing pressures, our profit margins on future federal contracts may be reduced and may require us to make sustained efforts to reduce costs in order to realize profits under government contracts. If we are not successful in reducing the amount of costs we incur, our profitability on government contracts will be negatively impacted. In addition, we may not be awarded government contracts because of existing government policies designed to protect small businesses and under-represented minority contractors. Our inability to win or renew government contracts during regulated procurement processes could harm our operations and reduce our profits and revenues.

Governmental agencies may modify, curtail or terminate our contracts at any time prior to their completion and, if we do not replace them, we may suffer a decline in revenue.

Most government contracts may be modified, curtailed or terminated by the government either at its discretion or upon the default of the contractor. If the government terminates a contract at its discretion, then we typically are able to recover only costs incurred or committed, settlement expenses and profit on work completed prior to termination, which could prevent us from recognizing all of our potential revenue and profits from that contract. In addition, for some assignments, the U.S. government may attempt to "insource" the services to government employees rather than outsource to a contractor. If a government terminates a contract due to our default, we could be liable for excess costs incurred by the government in obtaining services from another source.

Our contracts with governmental agencies are subject to audit, which could result in adjustments to reimbursable contract costs or, if we are charged with wrongdoing, possible temporary or permanent suspension from participating in government programs.

Our books and records are subject to audit by the various governmental agencies we serve and their representatives. These audits can result in adjustments to the amount of contract costs we believe are reimbursable by the agencies and the amount of our overhead costs allocated to the agencies. If such matters are not resolved in our favor, they could have a material adverse effect on our business. In addition, if one of our subsidiaries is charged with wrongdoing as a result of an audit, that subsidiary, and possibly our company as a whole, could be temporarily suspended or could be prohibited from bidding on and receiving future government contracts for a period of time. Furthermore, as a government contractor, we are subject to an increased risk of investigations, criminal prosecution, civil fraud actions, whistleblower lawsuits, and other legal actions and liabilities to which purely private sector companies are not, the results of which could materially adversely impact our business. For example, from time to time we may be subject to qui tam lawsuits. Qui tam lawsuits typically allege that we have made false statements or certifications in connection with claims for payment, or improperly retained overpayments, from the government. These suits may remain under seal (and hence, be unknown to us) for some time while the government decides whether to intervene on behalf of the qui tam plaintiff.

An extended government shutdown, payment delays or reduced demand for our services may have a material impact on our results of operation and financial condition.

An extended government shutdown could significantly reduce demand for our services, delay payment and result in workforce reductions that may have a material adverse effect on our results of operation and financial condition. Moreover, a prolonged government shutdown could result in program cancellations, disruptions and/or stop work orders and could limit the government’s ability to effectively process and our ability to perform government contracts and successfully compete for new work.

Risks Related to our Capital Structure

The agreements governing our debt contain a number of restrictive covenants which will limit our ability to finance future operations, acquisitions or capital needs or engage in other business activities that may be in our interest.

The Credit Agreement and the indentures governing our debt contain a number of significant covenants that impose operating and other restrictions on us and our subsidiaries. Such restrictions affect or will affect and, in many respects, limit or prohibit, among other things, our ability and the ability of some of our subsidiaries to:

- incur additional indebtedness;
- create liens;
- pay dividends and make other distributions in respect of our equity securities;
- redeem or repurchase our equity securities;
- distribute excess cash flow from foreign to domestic subsidiaries;
- make investments or other restricted payments;
- sell assets;
- enter into transactions with affiliates; and
- effect mergers or consolidations.

In addition, our Credit Agreement also requires us to comply with a consolidated interest coverage ratio and consolidated leverage ratio. Our ability to comply with these ratios may be affected by events beyond our control. These restrictions could limit our ability to plan for or react to market or economic conditions or meet capital needs or otherwise restrict our activities or business plans, and could adversely affect our ability to finance our operations, acquisitions, investments or strategic alliances or other capital needs or to engage in other business activities that would be in our interest. A breach of any of these covenants or our inability to comply with the required financial ratios could result in a default under our debt instruments. If an event of default occurs, our creditors could elect to:

- declare all borrowings outstanding, together with accrued and unpaid interest, to be immediately due and payable;
- require us to apply all of our available cash to repay the borrowings; or
- prevent us from making debt service payments on our borrowings.

If we were unable to repay or otherwise refinance these borrowings when due, the applicable creditors could sell the collateral securing some of our debt instruments, which constitutes substantially all of our domestic and foreign, wholly owned subsidiaries' assets.

Our variable rate indebtedness subjects us to interest rate risk, which could cause our debt service obligations to increase significantly.

Borrowings under our Credit Agreement are at variable rates of interest and expose us to interest rate risk. If interest rates increase, our debt service obligations on the variable rate indebtedness will increase even though the amount borrowed remains the same, and our net income and cash flows, including cash available for servicing our indebtedness, will correspondingly decrease. A 1.00% increase in such interest rates would increase total interest expense under our Credit Agreement for the year ended September 30, 2020 by $2.9 million, including the effect of our interest rate swaps. We may, from time to time, enter into additional interest rate swaps that involve the exchange of floating for fixed rate interest payments in order to reduce interest rate volatility. However, we may not maintain interest rate swaps with respect to all of our variable rate indebtedness, and any swaps we enter into may not fully mitigate our interest rate risk and could be subject to credit risk themselves.

If we are unable to continue to access credit on acceptable terms, our business may be adversely affected.

The changing nature of the global credit markets could make it more difficult for us to access funds, refinance our existing indebtedness, enter into agreements for uncommitted debt bond facilities and new indebtedness, replace our existing revolving and term credit agreements or obtain funding through the issuance of our securities. We use credit facilities to support our working capital and other needs. There is no guarantee that we can continue to renew our credit facility on terms as favorable as those in our existing credit facility and, if we are unable to do so, our costs of borrowing and our business may be adversely affected.

Risks Related to our International Operations

The uncertainty surrounding the implementation of and effects of the United Kingdom's proposed withdrawal from the European Union could have an adverse effect on our business and financial results.

In March 2017, the United Kingdom government initiated a process to withdraw from the European Union (Brexit) and began negotiating the terms of its separation. The United Kingdom formally left the European Union on January 31, 2020, and is now in a transition period through December 31, 2020. Although the United Kingdom will remain in the European Union single market and customs union during the transition period, the long-term nature of the United Kingdom's relationship with the European Union is unclear and there is considerable uncertainty as to when any agreement will be reached and implemented. The uncertainty surrounding Brexit has created substantial economic and political uncertainty and volatility in currency exchange rates. Our United Kingdom business is a significant part of our European operations with approximately 6,000 employees and revenues representing approximately 6% of our total revenue for the fiscal year ended September 30, 2020. The uncertainty created by Brexit may cause our customers to closely monitor their costs and reduce demand for our services and may ultimately result in new regulatory and cost challenges for our United Kingdom and global operations. Any of these events could adversely affect our United Kingdom, European and overall business and financial results.

Our operations worldwide expose us to legal, political and economic risks in different countries as well as currency exchange rate fluctuations that could harm our business and financial results.

During fiscal 2020, revenue attributable to our services provided outside of the United States to non-U.S. clients was approximately 29% of our total revenue. There are risks inherent in doing business internationally, including:

- imposition of governmental controls and changes in laws, regulations or policies;

- political and economic instability, such as in the Middle East and South East Asia;
- civil unrest, acts of terrorism, force majeure, war, or other armed conflict;
- changes in U.S. and other national government trade policies affecting the markets for our services, such as retaliatory tariffs between the United States and China;
- political unrest in Hong Kong where we have a significant presence;
- impact of the coronavirus pandemic and its related economic impacts;
- changes in regulatory practices, tariffs and taxes, such as Brexit;
- potential non-compliance with a wide variety of laws and regulations, including anti-corruption, export control and anti-boycott laws and similar non-U.S. laws and regulations;
- changes in labor conditions;
- logistical and communication challenges; and
- currency exchange rate fluctuations, devaluations and other conversion restrictions.

Any of these factors could have a material adverse effect on our business, results of operations or financial condition.

We operate in many different jurisdictions and we could be adversely affected by violations of the U.S. Foreign Corrupt Practices Act and similar worldwide anti-corruption laws.

The U.S. Foreign Corrupt Practices Act (FCPA) and similar worldwide anti-corruption laws, including the U.K. Bribery Act of 2010, generally prohibit companies and their intermediaries from making improper payments to non-U.S. officials for the purpose of obtaining or retaining business. Our internal policies mandate compliance with these anti-corruption laws, including the requirements to maintain accurate information and internal controls which may fall within the purview of the FCPA, its books and records provisions or its anti-bribery provisions. We operate in many parts of the world that have experienced governmental corruption to some degree; and, in some circumstances, strict compliance with anti-corruption laws may conflict with local customs and practices. Despite our training and compliance programs, we cannot assure that our internal control policies and procedures always will protect us from reckless or criminal acts committed by our employees or agents. In addition, from time to time, government investigations of corruption in construction-related industries affect us and our peers. Violations of these laws, or allegations of such violations, could disrupt our business and result in a material adverse effect on our results of operations or financial condition.

We work in international locations where there are high security risks, which could result in harm to our employees and contractors or material costs to us.

Some of our services are performed in high-risk locations, such as the Middle East, Africa, and Southwest Asia, where the location is suffering from political, social or economic problems, or war or civil unrest. In those locations where we have employees or operations, we may incur material costs to maintain the safety of our personnel. Despite these precautions, the safety of our personnel in these locations may continue to be at risk. Acts of terrorism and threats of armed conflicts in or around various areas in which we operate could limit or disrupt markets and our operations, including disruptions resulting from the evacuation of personnel, cancellation of contracts, or the loss of key employees, contractors or assets.

Risks Related to Our Operations and Technology

Many of our project sites are inherently dangerous workplaces. Failure to maintain safe work sites and equipment could result in environmental disasters, employee deaths or injuries, reduced profitability, the loss of projects or clients and possible exposure to litigation.

Our project sites often put our employees and others in close proximity with mechanized equipment, moving vehicles, chemical and manufacturing processes, and highly regulated materials. On some project sites, we may be responsible for safety and, accordingly, we have an obligation to implement effective safety procedures. If we fail to implement these procedures or if the procedures we implement are ineffective, we may suffer the loss of or injury to our employees, as well as expose ourselves to possible litigation. As a result, our failure to maintain adequate safety standards and equipment could result in reduced profitability or the loss of projects or clients, and could have a material adverse impact on our business, financial condition, and results of operations.

Cybersecurity threats, information technology systems outages and data privacy incidents could adversely harm our business.

We may experience errors, outages, or delays of service in our information technology systems, which could significantly disrupt our operations, impact our clients and employees, damage our reputation, and result in litigation and regulatory fines or penalties. Various privacy and securities laws pertaining to client and employee data usage require us to manage and protect sensitive and proprietary information. For example, the European's Union General Data Protection Regulation extends the scope of the European Union data protection laws to all companies processing data of European Union residents, regardless of the company's location. In addition, the California Consumer Privacy Act increased the penalties for data privacy incidents.

We face threats to our information technology systems, including unauthorized access, computer hackers, computer viruses, malicious code, cyber-attacks, phishing and other cybersecurity problems and system disruptions, including possible unauthorized access to our and our clients' proprietary information. We rely on industry-accepted security measures and technology to securely maintain all proprietary information on our information technology systems. In the ordinary course of business, we have been targeted by malicious cyber-attacks. Anyone who circumvents our security measures could misappropriate proprietary information, including information regarding us, our employees and/or our clients, or cause interruptions in our operations. Although we devote significant resources to our cybersecurity programs and have implemented security measures to protect our systems and to prevent, detect and respond to cybersecurity incidents, there can be no assurance that our efforts will prevent these threats. As these security threats continue to evolve, we may be required to devote additional resources to protect, prevent, detect and respond against system disruptions and security breaches.

We also rely in part on third-party software and information technology vendors to run our critical accounting, project management and financial information systems. We depend on our software and information technology vendors to provide long-term software and hardware support for our information systems. Our software and information technology vendors may decide to discontinue further development, integration or long-term software and hardware support for our information systems, in which case we may need to abandon one or more of our current information systems and migrate some or all of our accounting, project management and financial information to other systems, thus increasing our operational expense, as well as disrupting the management of our business operations.

Any of these events could damage our reputation and have a material adverse effect on our business, financial condition, results of operations and cash flows. Furthermore, while we maintain insurance that specifically covers these attacks, our coverage may not sufficiently cover all types of losses or claims that may arise.

Risks Related to Contracts and Joint Ventures

Our business and operating results could be adversely affected by losses under fixed-price or guaranteed maximum price contracts.

Fixed-price contracts require us to either perform all work under the contract for a specified lump-sum or to perform an estimated number of units of work at an agreed price per unit, with the total payment determined by the actual number of units performed. In addition, we may enter guaranteed maximum price contracts where we guarantee a price or delivery date. For the year ended September 30, 2020, our revenue was comprised of 43%, 30%, and 27% cost-reimbursable, guaranteed maximum price, and fixed-price contracts, respectively. Fixed-price contracts expose us to a number of risks not inherent in cost-reimbursable contracts, including underestimation of costs, ambiguities in specifications, unforeseen increases in or failures in estimating the cost of raw materials, equipment or labor, problems with new technologies, delays beyond our control, fluctuations in profit margins, failures of subcontractors to perform and economic or other changes that may occur during the contract period. United States and foreign trade policy actions and tariffs such as the 2018 tariffs on steel and aluminum imports in the United States could affect the profitability of our fixed-price construction projects. Losses under fixed-price or guaranteed contracts could be substantial and adversely impact our results of operations.

Our failure to meet contractual schedule or performance requirements that we have guaranteed could adversely affect our operating results.

In some circumstances, we can incur liquidated or other damages if we do not achieve project completion by a scheduled date. If we or an entity for which we have provided a guarantee subsequently fails to complete the project as scheduled and the matter cannot be satisfactorily resolved with the client, we may be responsible for cost impacts to the client resulting from any delay or the cost to complete the project. Our costs generally increase from schedule delays and/or could exceed our projections for a particular project. In addition, project performance can be affected by a number of factors beyond our control, including unavoidable delays from governmental inaction, public opposition, inability to obtain financing, weather conditions, unavailability of vendor materials, changes in the project scope of services requested by our clients, industrial accidents, environmental hazards, labor disruptions, pandemics including the current coronavirus, and other factors. Material performance problems for existing and future contracts could cause actual results of operations to differ from those anticipated by us and also could cause us to suffer damage to our reputation within our industry and client base.

We may not be able to maintain adequate surety and financial capacity necessary for us to successfully bid on and win contracts.

In line with industry practice, we are often required to provide surety bonds, standby letters of credit or corporate guarantees to our clients that indemnify the customer should our affiliate fail to perform its obligations under the terms of a contract. As of September 30, 2020 and September 30, 2019, we were contingently liable for $6.2 billion and $4.8 billion, respectively, in issued surety bonds primarily to support project execution and we had outstanding letters of credit totaling $529.1 million and $493.7 million, respectively. A surety may issue a performance or payment bond to guarantee to the client that our affiliate will perform under the terms of a contract. If our affiliate fails to perform under the terms of the contract, then the client may demand that the surety or another corporate affiliate provide the contracted services. In addition, we would typically have obligations to indemnify the surety for any loss incurred in connection with the bond. If a surety bond or a letter of credit is required for a particular project and we are unable to obtain an appropriate surety bond or letter of credit, we may not be able to pursue that project, which in turn could have a material adverse impact on our business, financial condition, results of operations, and cash flows.

We conduct a portion of our operations through joint venture entities, over which we may have limited control.

Approximately 10% of our fiscal 2020 revenue was derived from our operations through joint ventures or similar partnership arrangements, where control may be shared with unaffiliated third parties. As with most joint venture arrangements, differences in views among the joint venture participants may result in delayed decisions or disputes. We also cannot control the actions of our joint venture partners and we typically have joint and several liability with our joint venture partners under the applicable contracts for joint venture projects. These factors could potentially adversely impact the business and operations of a joint venture and, in turn, our business and operations.

Operating through joint ventures in which we are minority holders results in us having limited control over many decisions made with respect to projects and internal controls relating to projects. Sales of our services provided to our unconsolidated joint ventures were approximately 4% of our fiscal 2020 revenue. We generally do not have control of these unconsolidated joint ventures. These joint ventures may not be subject to the same requirements regarding internal controls and internal control over financial reporting that we follow. As a result, internal control problems may arise with respect to these joint ventures, which could have a material adverse effect on our financial condition and results of operations and could also affect our reputation.

We participate in joint ventures where we provide guarantees and may be adversely impacted by the failure of the joint venture or its participants to fulfill their obligations.

We have investments in and commitments to joint ventures with unrelated parties, including in connection with construction services, government services, and the investment activities of ACAP. For example, real estate and infrastructure joint ventures are inherently risky and may result in future losses since real estate markets are impacted by economic trends and government policies that we do not control. These joint ventures from time to time may borrow money to help finance their activities and in some circumstances, we are required to provide guarantees of obligations of our affiliated entities. In addition, in connection with the investment activities of ACAP, we provide guarantees of obligations, including guarantees for completion of projects, repayment of debt, environmental indemnity obligations and other lender required guarantees.

AECOM Capital's real estate development and investment activities are inherently risky and may result in a future loss.

ACAP's real estate business involves managing, sponsoring, investing and developing commercial real estate projects (Real Estate Joint Ventures) that are inherently risky and may result in future losses since real estate markets are significantly impacted by economic trends and government policies that we do not control. Our registered investment adviser jointly manages and sponsors the AECOM-Canyon Equity Fund, L.P. (the "Fund"), in which the Company indirectly holds an equity interest and which also invests and develops Real Estate Joint Ventures on behalf of its investors. Real Estate Joint Ventures rely on substantial amounts of third party borrowing to finance their development activities including completion guarantees, repayment guarantees, environmental indemnities and other lender required credit support guarantees that may be provided by AECOM or an affiliate to secure the Real Estate Joint Venture financing. Although the Fund and the Real Estate Joint Ventures have reserves that will be used to share any cost overruns of the Real Estate Joint Ventures, if such reserves are depleted, then AECOM may be required to make support payments to fund non-budgeted cost overruns on behalf of the Fund (but not on behalf of the Fund's co-partner or any unaffiliated limited partners of the Real Estate Joint Ventures). Some of the Fund's limited partners may be permitted to make additional equity co-investments in certain Real Estate Joint Ventures for which AECOM will provide support payments on behalf of the limited partner co-investor in the event of a cost overrun of the Real Estate Joint Venture after additional specific reserves have been depleted. AECOM's provision of lender guarantees is contingent upon the Real Estate Joint Ventures meeting AECOM's underwriting criteria, including an affiliate of AECOM acting as either the construction manager at risk or the owner's representative for the project, no material adverse change in AECOM's financial condition, and the guarantee not violating a covenant under a material AECOM agreement.

Risks Related to Laws and Regulations

Misconduct by our employees, partners or consultants or our failure to comply with laws or regulations applicable to our business could cause us to lose customers or lose our ability to contract with government agencies.

As a government contractor, misconduct, fraud or other improper activities caused by our employees', partners' or consultants' failure to comply with laws or regulations could have a significant negative impact on our business and reputation. Such misconduct could include the failure to comply with procurement regulations, environmental regulations, regulations regarding the protection of sensitive government information, legislation regarding the pricing of labor and other costs in government contracts, regulations on lobbying or similar activities, and anti-corruption, anti-competition, export control and other applicable laws or regulations. Our failure to comply with applicable laws or regulations, misconduct by any of our employees or consultants or our failure to make timely and accurate certifications to government agencies regarding misconduct or potential misconduct could subject us to fines and penalties, loss of government granted eligibility, cancellation of contracts and suspension or debarment from contracting with government agencies, any of which may adversely affect our business.

We may be subject to substantial liabilities under environmental laws and regulations.

Our services are subject to numerous environmental protection laws and regulations that are complex and stringent. Our business involves in part the planning, design, program management, construction management, and operations and maintenance at various sites, including but not limited to, nuclear facilities, hazardous waste and Superfund sites, hydrocarbon production, distribution and transport sites, and other infrastructure-related facilities. We also regularly perform work in and around sensitive environmental areas, such as rivers, lakes and wetlands. In addition, we have contracts in support of U.S. federal government entities to destroy hazardous materials, including chemical agents and weapons stockpiles, as well as to decontaminate and decommission nuclear facilities. These activities may require us to manage, handle, remove, treat, transport and dispose of toxic or hazardous substances. We also own and operate several properties in the U.S. and Canada that have been used for the storage and maintenance of construction equipment. In the conduct of operations on these properties, and despite precautions having been taken, it is possible that there have been accidental releases of individually relatively small amounts of fuel, oils, hydraulic fluids and other fluids while storing or servicing this equipment. Such accidental releases though individually relatively small may have accumulated over time. Past business practices at companies that we have acquired may also expose us to future unknown environmental liabilities.

Significant fines, penalties and other sanctions may be imposed for non-compliance with environmental laws and regulations, and some environmental laws provide for joint and several strict liabilities for remediation of releases of hazardous substances, rendering a person liable for environmental damage, without regard to negligence or fault on the part of such person. These laws and regulations may expose us to liability arising out of the conduct of operations or conditions caused by others, or for our acts that were in compliance with all applicable laws at the time these acts were performed. For example, there are a number of governmental laws that strictly regulate the handling, removal, treatment, transportation and disposal of toxic and hazardous substances, such as Comprehensive Environmental Response Compensation and Liability Act of 1980, and comparable state laws, that impose strict, joint and several liabilities for the entire cost of cleanup, without regard to whether a company knew of or caused the release of hazardous substances. In addition, some environmental regulations can impose liability for the entire cleanup upon owners, operators, generators, transporters and other persons arranging for the treatment or disposal of such hazardous substances related to contaminated facilities or project sites. Other federal environmental, health and safety laws affecting us include, but are not limited to, the Resource Conservation and Recovery Act, the National Environmental Policy Act, the Clean Air Act, the Clean Air Mercury Rule, the Occupational Safety and Health Act, the Toxic Substances Control Act and the Superfund Amendments and Reauthorization Act and the Energy Reorganization Act of 1974, as well as other comparable national and state laws. Liabilities related to environmental contamination or human exposure to hazardous substances, or a failure to comply with applicable regulations could result in substantial costs to us, including cleanup costs, fines and civil or criminal sanctions, third-party claims for property damage or personal injury or cessation of remediation activities. Our continuing work in the areas governed by these laws and regulations exposes us to the risk of substantial liability.

Risks Related to Acquisitions and Divestitures

AECOM is a smaller company after the sale of our Management Services business and may be more vulnerable to changing market conditions.

AECOM is a smaller company after the sale of our Management Services business and more reliant on our remaining business segments. Our results of operations, cash flows, working capital, effective tax rate, and financing requirements may be subject to increased volatility and our ability to fund capital expenditures, investments and service debt may be diminished. Restructuring costs and other costs incurred in connection with the Management Services sale may exceed our estimates or diminish the benefits we expected to realize. In addition, any contingent purchase price adjustments could be unfavorable and result in lower aggregate cash proceeds. We are also obligated to incur ongoing costs and retain certain legal claims that were previously allocated to the Management Services business. As a result, we may be more vulnerable to changing market conditions, which could have a material adverse effect on our business, financial condition, and results of operations.

We may be unable to successfully execute or effectively integrate acquisitions and divestitures may not occur as planned.

We regularly review our portfolio of businesses and pursue growth through acquisitions and seek to divest non-core businesses. We may not be able to complete transactions on favorable terms, on a timely basis, or at all, and during the integration of any acquisition, we may discover regulatory and compliance issues. In addition, our results of operations and cash flows may be adversely impacted by (i) the failure of acquired businesses to meet or exceed expected returns; (ii) the failure to integrate acquired businesses on schedule and/or to achieve expected synergies; (iii) the inability to dispose of non-core assets and businesses on satisfactory terms and conditions; (iv) diversion of attention and increased burdens on our employees; and (v) the discovery of unanticipated liabilities or other problems in acquired businesses for which we lack contractual protections, insurance or indemnities, or with regard to divested businesses, claims by purchasers to whom we have provided contractual indemnification. Additional difficulties we may encounter as part of the integration process include the following:

- the consequences of a change in tax treatment and the possibility that the full benefits anticipated from the acquisition or disposition will not be realized;
- any delay in the integration or disposition of management teams, strategies, operations, products and services;
- differences in business backgrounds, corporate cultures and management philosophies that may delay successful integration;
- the ability to retain key employees;
- the ability to create and enforce uniform standards, controls, procedures, policies and information systems;
- the challenge of restructuring complex systems, technology, networks and other assets in a seamless manner that minimizes any adverse impact on customers, suppliers, employees and other constituencies;
- potential unknown liabilities and unforeseen increased expenses or delays associated with the acquisition, including costs to integrate beyond current estimates;
- the ability to deduct or claim tax attributes or benefits such as operating losses, business or foreign tax credits; and
- the disruption of, or the loss of momentum in, each company’s ongoing businesses or inconsistencies in standards, controls, procedures and policies.

Any of these factors could adversely affect our ability to maintain relationships with customers, suppliers, employees and other constituencies or could reduce our earnings or otherwise adversely affect our business and financial results.

Our plans to divest certain businesses are subject to various risks and uncertainties and may not be completed in accordance with the expected plans or anticipated time frame, or at all, and will involve significant time and expense, which could disrupt or adversely affect our business.

Divesting businesses involve risks and uncertainties, such as the difficulty separating assets related to such businesses from the businesses we retain, employee distraction, the need to obtain regulatory approvals and other third-party consents, which potentially disrupts customer and vendor relationships, and the fact that we may be subject to additional tax obligations or loss of certain tax benefits. Because of these challenges, as well as market conditions or other factors, the anticipated divestitures may take longer or be costlier or generate fewer benefits than expected and may not be completed at all. If we are unable to complete the divestitures or to successfully transition divested businesses, our business and financial results could be negatively impacted. After we dispose of a business, we may retain exposure on financial or performance guarantees and other contractual, employment, pension and severance obligations, and potential liabilities that may arise under law because of the disposition or the subsequent failure of an acquirer. As a result, performance by the divested businesses or other conditions outside of our control could have a material adverse effect on our results of operations. In addition, the divestiture of any business could negatively impact our profitability because of losses that may result from such a sale, the loss of sales and operating income, or a decrease in cash flows.

Other Risks

An impairment charge of goodwill could have a material adverse impact on our financial condition and results of operations.

Because we have grown in part through acquisitions, goodwill and intangible assets-net represent a substantial portion of our assets. Under generally accepted accounting principles in the United States (GAAP), we are required to test goodwill carried in our Consolidated Balance Sheets for possible impairment on an annual basis based upon a fair value approach and whenever events occur that indicate impairment could exist. These events or circumstances could include a significant change in the business climate, including a significant sustained decline in a reporting unit's market value, legal factors, operating performance indicators, competition, sale or disposition of a significant portion of our business, a significant sustained decline in our market capitalization and other factors. For example, in the year ended September 30, 2020, we recorded a noncash impairment of long-lived assets, including goodwill of $83.6 million primarily related to a decrease in the estimated recovery and fair value of reporting units with self-perform at-risk construction.

In addition, if we experience a decrease in our stock price and market capitalization over a sustained period, we would have to record an impairment charge in the future. The amount of any impairment could be significant and could have a material adverse impact on our financial condition and results of operations for the period in which the charge is taken.

We may be required to contribute additional cash to meet our significant underfunded benefit obligations associated with pension benefit plans we manage or multiemployer pension plans in which we participate.

We have defined benefit pension plans for employees in the United States, United Kingdom, Canada, Australia, and Ireland. At September 30, 2020, our defined benefit pension plans had an aggregate deficit (the excess of projected benefit obligations over the fair value of plan assets) of approximately $406.0 million. In the future, our pension deficits may increase or decrease depending on changes in the levels of interest rates, pension plan performance and other factors that may require us to make additional cash contributions to our pension plans and recognize further increases in our net pension cost to satisfy our funding requirements. If we are forced or elect to make up all or a portion of the deficit for unfunded benefit plans, our results of operations could be materially and adversely affected.

A multiemployer pension plan is typically established under a collective bargaining agreement with a union to cover the union-represented workers of various unrelated companies. Our collective bargaining agreements with unions will require us to contribute to various multiemployer pension plans; however, we do not control or manage these plans. For the year ended September 30, 2020, we contributed $4.0 million to multiemployer pension plans. Under the Employee Retirement Income Security Act, an employer who contributes to a multiemployer pension plan, absent an applicable exemption, may also be liable, upon termination or withdrawal from the plan, for its proportionate share of the multiemployer pension plan's unfunded vested benefit. If we terminate or withdraw from a multiemployer plan, absent an applicable exemption (such as for some plans in the building and construction industry), we could be required to contribute a significant amount of cash to fund the multiemployer plan's unfunded vested benefit, which could materially and adversely affect our financial results; however, since we do not control the multiemployer plans, we are unable to estimate any potential contributions that could be required.

We may experience disproportionately high levels of collection risk and nonpayment if certain clients in specific geographic areas or industries are adversely affected by factors particular to their geographic area or industry.

Our clients include public and private entities that have been, and may continue to be, negatively impacted by the changing landscape in the global economy. While no one client accounted for over 10% of our revenue for fiscal 2020, we face collection risk as a normal part of our business where we perform services and subsequently bill our clients for such services, or when we make equity investments in majority or minority controlled large-scale client projects and other long-term capital projects before the project completes operational status or completes its project financing. In the event that we have concentrated credit risk from clients in a specific geographic area or industry, continuing negative trends or a worsening in the financial condition of that specific geographic area or industry could make us susceptible to disproportionately high levels of default by those clients. Such defaults could materially adversely impact our revenues and our results of operations.

Our services expose us to significant risks of liability and our insurance policies may not provide adequate coverage.

Our services involve significant risks of professional and other liabilities that may substantially exceed the fees that we derive from our services. In addition, we sometimes contractually assume liability to clients on projects under indemnification or guarantee agreements. We cannot predict the magnitude of potential liabilities from the operation of our business. In addition, in the ordinary course of our business, we frequently make professional judgments and recommendations about environmental and engineering conditions of project sites for our clients. We may be deemed to be responsible for these professional judgments and recommendations if they are later determined to be inaccurate. Any unfavorable legal ruling against us could result in substantial monetary damages or even criminal violations.

Our professional liability policies cover only claims made during the term of the policy. Additionally, our insurance policies may not protect us against potential liability due to various exclusions in the policies and self-insured retention amounts. Partially or completely uninsured claims, if successful and of significant magnitude, could have a material adverse effect on our business.

Unavailability or cancellation of third-party insurance coverage would increase our overall risk exposure as well as disrupt the management of our business operations.

We maintain insurance coverage from third-party insurers as part of our overall risk management strategy and because some of our contracts require us to maintain specific insurance coverage limits. If any of our third-party insurers fail, suddenly cancel our coverage or otherwise are unable to provide us with adequate insurance coverage, then our overall risk exposure and our operational expenses would increase and the management of our business operations would be disrupted. In addition, there can be no assurance that any of our existing insurance coverage will be renewable upon the expiration of the coverage period or that future coverage will be affordable at the required limits.

If we do not have adequate indemnification for our services related to nuclear materials, it could adversely affect our business and financial condition.

We provide services to the nuclear energy industry in the ongoing maintenance and modification, as well as the decontamination and decommissioning, of nuclear energy plants. Indemnification provisions under the Price-Anderson Act available to nuclear energy plant operators and contractors do not apply to all liabilities that we might incur while performing services as a radioactive materials cleanup contractor for the nuclear energy industry. If the Price-Anderson Act’s indemnification protection does not apply to our services or if our exposure occurs outside the U.S., our business and financial condition could be adversely affected either by our client’s refusal to retain us, by our inability to obtain commercially adequate insurance and indemnification, or by potentially significant monetary damages we may incur.

Our backlog of uncompleted projects under contract is subject to unexpected adjustments and cancellations and, thus may not accurately reflect future revenue and profits.

At September 30, 2020, our contracted backlog was approximately $19.5 billion, our awarded backlog was approximately $21.1 billion and our unconsolidated joint venture backlog was approximately $0.6 billion for a total backlog of $41.2 billion. Our contracted backlog includes revenue we expect to record in the future from signed contracts and, in the case of a public sector client, where the project has been funded. We reported transaction price allocated to remaining unsatisfied performance obligations (RUPO) of $18.9 billion, as described in Note 4, Revenue Recognition, in the notes to our consolidated financial statements. The most significant difference between our contracted backlog and RUPO is revenue related to service contracts that extend beyond the termination provisions of those contracts. Our contracted backlog includes revenues for service contracts expected to be earned over the term of that contract. Guidance for the calculation of RUPO requires us to assume the contract will be terminated at its earliest convenience, resulting in RUPO to be $0.6 billion lower than contracted backlog. Our awarded backlog includes revenue we expect to record in the future where we have been awarded the work, but the contractual agreement has not yet been signed. We cannot guarantee that future revenue will be realized from either category of backlog or, if realized, will result in profits. Many projects may remain in our backlog for an extended period of time because of the size or long-term nature of the contract. In addition, from time to time, projects are delayed, scaled back or canceled. These types of backlog reductions adversely affect the revenue and profits that we ultimately receive from contracts reflected in our backlog.

We have submitted claims to clients for work we performed beyond the initial scope of some of our contracts. If these clients do not approve these claims, our results of operations could be adversely impacted.

We typically have pending claims submitted under some of our contracts for payment of work performed beyond the initial contractual requirements for which we have already recorded revenue. In general, we cannot guarantee that such claims will be approved in whole, in part, or at all. Often, these claims can be the subject of lengthy arbitration or litigation proceedings, and it is difficult to accurately predict when these claims will be fully resolved. When these types of events occur and unresolved claims are pending, we have used working capital in projects to cover cost overruns pending the resolution of the relevant claims. If these claims are not approved, our revenue may be reduced in future periods.

In conducting our business, we depend on other contractors, subcontractors and equipment and material providers. If these parties fail to satisfy their obligations to us or other parties or if we are unable to maintain these relationships, our revenue, profitability and growth prospects could be adversely affected.

We depend on contractors, subcontractors and equipment and material providers in conducting our business. There is a risk that we may have disputes with our subcontractors arising from, among other things, the quality and timeliness of work performed by the subcontractor, customer concerns about the subcontractor, or our failure to extend existing task orders or issue new task orders under a subcontract. Also, to the extent that we cannot acquire equipment and materials at reasonable costs, or if the amount we are required to pay exceeds our estimates, our ability to complete a project in a timely fashion or at a profit may be impaired. In addition, if any of our subcontractors fail to deliver on a timely basis the agreed-upon supplies and/or perform the agreed-upon services, our ability to fulfill our obligations as a prime contractor may be jeopardized; we could be held responsible for such failures and/or we may be required to purchase the supplies or services from another source at a higher price. This may reduce the profit to be realized or result in a loss on a project for which the supplies or services are needed.

We also rely on relationships with other contractors when we act as their subcontractor or joint venture partner. Our future revenue and growth prospects could be adversely affected if other contractors eliminate or reduce their subcontracts or joint venture relationships with us, or if a government agency terminates or reduces these other contractors' programs, does not award them new contracts or refuses to pay under a contract. In addition, due to "pay when paid" provisions that are common in subcontracts in many countries, including the U.S., we could experience delays in receiving payment if the prime contractor experiences payment delays.

If clients use our reports or other work product without appropriate disclaimers or in a misleading or incomplete manner, or if our reports or other work product are not in compliance with professional standards and other regulations, our business could be adversely affected.

The reports and other work product we produce for clients sometimes include projections, forecasts and other forward-looking statements. Such information by its nature is subject to numerous risks and uncertainties, any of which could cause the information produced by us to ultimately prove inaccurate. While we include appropriate disclaimers in the reports that we prepare for our clients, once we produce such written work product, we do not always have the ability to control the manner in which our clients use such information. As a result, if our clients reproduce such information to solicit funds from investors for projects without appropriate disclaimers and the information proves to be incorrect, or if our clients reproduce such information for potential investors in a misleading or incomplete manner, our clients or such investors may threaten to or file suit against us for, among other things, securities law violations. For example, in August 2016, an affiliate entered into a settlement related to, among other things, alleged deficiencies in a traffic forecast. If we were found to be liable for any claims related to our client work product, our business could be adversely affected.

In addition, our reports and other work product may need to comply with professional standards, licensing requirements, securities regulations and other laws and rules governing the performance of professional services in the jurisdiction where the services are performed. We could be liable to third parties who use or rely upon our reports and other work product even if we are not contractually bound to those third parties. These events could in turn result in monetary damages and penalties.

Failure to adequately protect, maintain, or enforce our rights in our intellectual property may adversely limit our competitive position.

Our success depends, in part, upon our ability to protect our intellectual property. We rely on a combination of intellectual property policies and other contractual arrangements to protect much of our intellectual property where we do not believe that trademark, patent or copyright protection is appropriate or obtainable. Trade secrets are generally difficult to protect. Although our employees are subject to confidentiality obligations, this protection may be inadequate to deter or prevent misappropriation of our confidential information and/or the infringement of our patents and copyrights. Further, we may be unable to detect unauthorized use of our intellectual property or otherwise take appropriate steps to enforce our rights. Failure to adequately protect, maintain, or enforce our intellectual property rights may adversely limit our competitive position.

Our ability to compete in our industry will be harmed if we do not retain the continued services of our senior management and key technical personnel.

We rely heavily upon the expertise and leadership of our people. There is strong competition for qualified technical and management personnel in the sectors in which we compete. We may not be able to continue to attract and retain qualified technical and management personnel, such as engineers, architects and project managers, who are necessary for the development of our business or to replace qualified personnel in the timeframe demanded by our clients. Also, some of our personnel hold government granted eligibility that may be required to obtain government projects. Loss of the services of, or failure to recruit senior management or key technical personnel could impact the long term performance of the Company and limit our ability to successfully complete existing projects and compete for new projects.

Our revenue and growth prospects may be harmed if we or our employees are unable to obtain government granted eligibility or other qualifications we and they need to perform services for our customers.

A number of government programs require contractors to have government granted eligibility, such as security clearance credentials. Depending on the project, eligibility can be difficult and time-consuming to obtain. If we or our employees are unable to obtain or retain the necessary eligibility, we may not be able to win new business, and our existing customers could terminate their contracts with us or decide not to renew them. To the extent we cannot obtain or maintain the required security clearances for our employees working on a particular contract, we may not derive the revenue or profit anticipated from such contract.

Negotiations with labor unions and possible work actions could divert management attention and disrupt operations. In addition, new collective bargaining agreements or amendments to agreements could increase our labor costs and operating expenses.

We regularly negotiate with labor unions and enter into collective bargaining agreements. The outcome of any future negotiations relating to union representation or collective bargaining agreements may not be favorable to us. We may reach agreements in collective bargaining that increase our operating expenses and lower our net income as a result of higher wages or benefit expenses. In addition, negotiations with unions could divert management attention and disrupt operations, which may adversely affect our results of operations. If we are unable to negotiate acceptable collective bargaining agreements, we may have to address the threat of union-initiated work actions, including strikes. Depending on the nature of the threat or the type and duration of any work action, these actions could disrupt our operations and adversely affect our operating results.

Our charter documents contain provisions that may delay, defer or prevent a change of control.

Provisions of our certificate of incorporation and bylaws could make it more difficult for a third party to acquire control of us, even if the change in control would be beneficial to stockholders. These provisions include the following:

- ability of our Board of Directors to authorize the issuance of preferred stock in series without stockholder approval;
- vesting of exclusive authority in our Board of Directors to determine the size of the board (subject to limited exceptions) and to fill vacancies; and
- advance notice requirements for stockholder proposals and nominations for election to our Board of

Directors.

Changes in tax laws could increase our worldwide tax rate and materially affect our results of operations.

We are subject to tax laws in the U.S. and numerous foreign jurisdictions. Many international legislative and regulatory bodies have proposed and/or enacted legislation that could significantly impact how U.S. multinational corporations are taxed on foreign earnings. Due to the large scale of our U.S. and international business activities, many of these proposed and enacted changes to the taxation of our activities could increase our worldwide effective tax rate and harm results of operations.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our corporate offices are located in approximately 31,000 square feet of space at 300 South Grand Avenue, Los Angeles, California. Our other offices, including smaller administrative or project offices, consist of an aggregate of approximately 9.2 million square feet worldwide. Virtually all of our offices are leased. See Note 11 in the notes to our consolidated financial statements for information regarding our lease obligations. We may add additional facilities from time to time in the future as the need arises.

ITEM 3. LEGAL PROCEEDINGS

As a government contractor, we are subject to various laws and regulations that are more restrictive than those applicable to non-government contractors. Intense government scrutiny of contractors' compliance with those laws and regulations through audits and investigations is inherent in government contracting and, from time to time, we receive inquiries, subpoenas, and similar demands related to our ongoing business with government entities. Violations can result in civil or criminal liability as well as suspension or debarment from eligibility for awards of new government contracts or option renewals.

We are involved in various investigations, claims and lawsuits in the normal conduct of our business. We are not always aware if we or our affiliates are under investigation or the status of such matters. Although the outcome of our legal proceedings cannot be predicted with certainty and no assurances can be provided, in the opinion of our management, based upon current information and discussions with counsel, with the exception of the matters noted in Note 18, Commitments and Contingencies, to the financial statements contained in this report to the extent stated therein, none of the investigations, claims and lawsuits in which we are involved is expected to have a material adverse effect on our consolidated financial position, results of operations, cash flows or our ability to conduct business. See Note 18, Commitments and Contingencies, to the financial statements contained in this report for a discussion of certain matters to which we are a party. The information set forth in such note is incorporated by reference into this Item 3. From time to time, we establish reserves for litigation when we consider it probable that a loss will occur.

ITEM 4. MINE SAFETY DISCLOSURES

The Company does not act as the owner of any mines, but we may act as a mining operator as defined under the Federal Mine Safety and Health Act of 1977 where we may be a lessee of a mine, a person who operates, controls or supervises such mine, or an independent contractor performing services or construction of such mine. Information concerning mine safety violations or other regulatory matters required by Section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act and Item 104 of Regulation S-K is included in Exhibit 95.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common stock is listed on the New York Stock Exchange (NYSE) under the symbol "ACM." According to the records of our transfer agent, there were 1,826 stockholders of record as of November 12, 2020.

Unregistered Sales of Equity Securities

None.

Equity Compensation Plans

The following table presents certain information about shares of AECOM common stock that may be issued under our equity compensation plans as of September 30, 2020:

Plan Category	Column A Number of securities to be issued upon exercise of outstanding options, warrants, and rights[1]	Column B Weighted-average exercise price of Outstanding options, warrants, and Rights	Column C Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in Column A)
Equity compensation plans not approved by stockholders:	N/A	N/A	N/A
Equity compensation plans approved by stockholders:			
AECOM Stock Incentive Plans	3,997,870 [1]	$ 36.41 [2]	12,045,145
AECOM Employee Stock Purchase Plan[3]	N/A	N/A	10,113,018
Total	3,997,870	$ 36.41	22,158,163

(1) Includes 393,201 shares issuable upon the exercise of stock options, 2,058,518 shares issuable upon the vesting of Restricted Stock Units and 1,546,151 shares issuable if specified performance targets are met under Performance Earnings Program Awards (PEP).

(2) Weighted-average exercise price of outstanding options only.

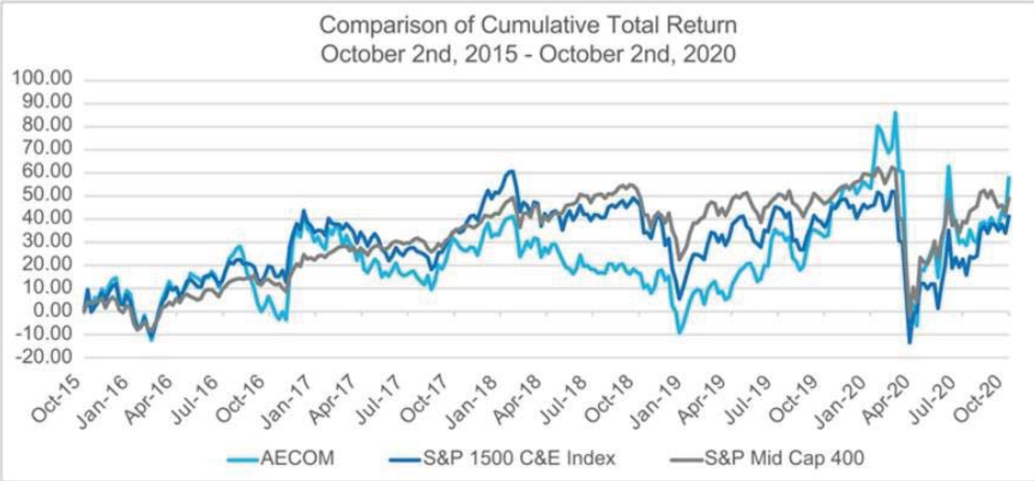
(3) Amounts only reflected in column (c) and include all shares available for future issuance and subject to outstanding rights.

Performance Measurement Comparison[1]

The following chart compares the cumulative total stockholder return of AECOM stock (ACM) with the cumulative total return of the S&P MidCap 400, and the S&P Composite 1500 Construction & Engineering, from October 2, 2015 to October 2, 2020.

We believe the S&P 400 MidCap is an appropriate independent broad market index, since it measures the performance of similar mid-sized companies in numerous sectors. In addition, we believe the S&P Composite 1500 Construction & Engineering index is an appropriate third party published industry index since it measures the performance of engineering and construction companies.

(1) This section is not "soliciting material," is not deemed "filed" with the SEC and is not incorporated by reference in any of our filings under the Securities Act or Exchange Act whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.



Stock Repurchase Program

On September 21, 2017, the Company's Board of Directors announced a new capital allocation policy that authorized the repurchase of up to $1.0 billion in AECOM common stock. Stock repurchases can be made through open market purchases or other methods, including pursuant to a Rule 10b5-1 plan. On November 13, 2020, the Board approved an increase in the Company's repurchase authorization to $1.0 billion, up from approximately $305 million authorization in place immediately prior to such date. A summary of the repurchase activity for the three months ended September 30, 2020 is as follows:

Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Dollar Value that May Yet Be Purchased Under the Plans or Programs
July 1 – 31, 2020	—	$ —	—	$ 760,000,000
August 1 – 31, 2020	—	—	—	760,000,000
September 1 – 30, 2020	3,459,937	39.39	3,459,937	623,698,000
Total	3,459,937	$ 39.39	3,459,937	

ITEM 6. SELECTED FINANCIAL DATA

SELECTED CONSOLIDATED FINANCIAL DATA

You should read the following selected consolidated financial data along with “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and the accompanying notes, which are included in this Form 10-K. We derived the selected consolidated financial data from our audited consolidated financial statements. As discussed further in Note 3 to our consolidated financial statements, certain businesses were classified as discontinued operations in fiscal year 2020. The discontinued operations classification has been retrospectively applied to fiscal years 2019 and 2018, but not fiscal years 2017 and 2016, which may affect comparability.

	Year Ended September 30,				
	2020	2019	2018	2017	2016
	(in millions, except share data)				
Consolidated Statement of Operations Data:					
Revenue	$ 13,240	$ 13,642	$ 13,878	$ 18,203	$ 17,411
Cost of revenue	12,530	13,030	13,399	17,519	16,768
Gross profit	710	612	479	684	643
Equity in earnings of joint ventures	49	49	49	142	104
General and administrative expenses	(190)	(148)	(135)	(134)	(115)
Restructuring costs	(188)	(95)	—	—	—
Gain (loss) on disposal activities	—	3	—	1	(43)
Impairment of long-lived assets	—	(25)	—	—	—
Acquisition and integration expenses	—	—	—	(39)	(214)
Income from operations	381	396	393	654	375
Other income	12	14	20	7	8
Interest expense	(160)	(161)	(201)	(232)	(258)
Income from continuing operations before income tax expense (benefit)	233	249	212	429	125
Income tax expense (benefit) from continuing operations	46	13	(4)	8	(38)
Net income from continuing operations	187	236	216	421	163
Net loss from discontinued operations	(341)	(420)	(19)		
Net (loss) income	(154)	(184)	197		
Net income attributable to noncontrolling interests from continuing operations	(16)	(25)	(21)		
Net income attributable to noncontrolling interests from discontinued operations	(16)	(52)	(40)		
Net income attributable to noncontrolling interests	(32)	(77)	(61)		
Net income attributable to AECOM from continuing operations	171	211	195	421	163
Net loss attributable to AECOM from discontinued operations	(357)	(472)	(59)	—	—
Net (loss) income attributable to AECOM	$ (186)	$ (261)	$ 136	$ 421	$ 163
Net income attributable to AECOM per share:					
Basic continuing operations per share	1.07	1.34	1.23	2.18	0.62
Basic discontinued operations per share	(2.24)	(3.00)	(0.37)	—	—
Basic	$ (1.17)	$ (1.66)	$ 0.86	$ 2.18	$ 0.62
Diluted continuing operations per share	1.06	1.32	1.20	2.13	0.62
Diluted discontinued operations per share	(2.22)	(2.95)	(0.36)	—	—
Diluted	$ (1.16)	$ (1.63)	$ 0.84	$ 2.13	$ 0.62
Weighted average shares outstanding: (in millions)					
Basic	159	157	159	156	155
Diluted	161	160	162	159	156

	Year Ended September 30,				
	2020	2019	2018 (in millions, except employee data)	2017	2016
Other Data:					
Depreciation and amortization[1]	$ 237	$ 261	$ 268	$ 279	$ 399
Amortization expense of acquired intangible assets[2]	52	86	97	103	202
Capital expenditures, net of disposals[3]	111	83	87	78	137
Contracted backlog	$ 19,541	$ 17,469	$ 15,419	$ 24,234	$ 23,710
Number of full-time and part-time employees[3]	54,000	86,000	87,000	87,000	87,000

(1) Includes amortization of deferred debt issuance costs.
(2) Included in depreciation and amortization above.
(3) Includes discontinued operations.

	As of September 30,				
	2020	2019	2018 (in millions)	2017	2016
Consolidated Balance Sheet Data:					
Cash and cash equivalents	$ 1,708	$ 886	$ 731	$ 802	$ 692
Working capital	1,440	1,073	998	1,104	696
Total assets	12,999	14,551	14,681	14,397	13,670
Long-term debt excluding current portion	2,041	3,218	3,420	3,702	3,702
AECOM Stockholders’ equity	3,293	3,691	4,093	3,996	3,367

ITEM 7. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This Annual Report on Form 10-K contains forward-looking statements within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 that are not limited to historical facts, but reflect the Company’s current beliefs, expectations or intentions regarding future events. These statements include forward-looking statements with respect to the Company, including the Company’s business, operations and strategy, and the engineering and construction industry. Statements that are not historical facts, without limitation, including statements that use terms such as "anticipates," "believes," "expects," "estimates," "intends," "may," "plans," "potential," "projects," and "will" and that relate to future impacts caused by the Covid-19 coronavirus pandemic and the related economic instability and market volatility, including the reaction of governments to the coronavirus, including any prolonged period of travel, commercial or other similar restrictions, the delay in commencement, or temporary or permanent halting of construction, infrastructure or other projects, requirements that we remove our employees or personnel from the field for their protection, and delays or reductions in planned initiatives by our governmental or commercial clients or potential clients; future revenues, expenditures and business trends; future reduction of our self-perform at-risk construction exposure; future accounting estimates; future contractual performance obligations; future conversions of backlog; future capital allocation priorities, including common stock repurchases, future trade receivables, future debt pay downs; future post-retirement expenses; future tax benefits and expenses; future compliance with regulations; future legal claims and insurance coverage; future effectiveness of our disclosure and internal controls over financial reporting; future costs savings; and other future economic and industry conditions, are forward-looking statements. In light of the risks and uncertainties inherent in all forward-looking statements, the inclusion of such statements in this Annual Report should not be considered as a representation by us or any other person that our objectives or plans will be achieved. Although management believes that the assumptions underlying the forward-looking statements are reasonable, these assumptions and the forward-looking statements are subject to various factors, risks and uncertainties, many of which are beyond our control, including, but not limited to, our business is cyclical and vulnerable to economic downturns and client spending reductions; government shutdowns; long-term government contracts and subject to uncertainties related to government contract appropriations; governmental agencies may modify, curtail or terminate our contracts; government contracts are subject to audits and adjustments of contractual terms; losses under fixed-price contracts; limited control over operations run through our joint venture entities; liability for misconduct by our employees or consultants; failure to comply with laws or regulations applicable to our business; maintaining adequate surety and financial capacity; high leverage and potential inability to service our debt and guarantees; exposure to Brexit and tariffs; exposure to political and economic risks in different countries; currency exchange rate fluctuations; retaining and recruiting key technical and management personnel; legal claims; inadequate insurance coverage; environmental law compliance and inadequate nuclear indemnification; unexpected adjustments and cancellations related to our backlog; partners and third parties who may fail to satisfy their legal obligations; managing pension costs; AECOM Capital’s real estate development; cybersecurity issues, IT outages and data privacy; risks associated with the benefits and costs of the Management Services transaction, including the risk that the expected benefits of the Management Services transaction or any contingent purchase price will not be realized within the expected time frame, in full or at all; the risk that costs of restructuring transactions and other costs incurred in connection with the Management Services transaction will exceed our estimates or otherwise adversely affect our business or operations; as well as other additional risks and factors discussed in this Annual Report on Form 10-K and any subsequent reports we file with the SEC. Accordingly, actual results could differ materially from those contemplated by any forward-looking statement.

All subsequent written and oral forward-looking statements concerning the Company or other matters attributable to the Company or any person acting on its behalf are expressly qualified in their entirety by the cautionary statements above. You are cautioned not to place undue reliance on these forward-looking statements, which speak only to the date they are made. The Company is under no obligation (and expressly disclaims any such obligation) to update or revise any forward-looking statement that may be made from time to time, whether as a result of new information, future developments or otherwise. Please review “Part I, Item 1A—Risk Factors” in this Annual Report for a discussion of the factors, risks and uncertainties that could affect our future results.

Our fiscal year consists of 52 or 53 weeks, ending on the Friday closest to September 30. For clarity of presentation, we present all periods as if the year ended on September 30. We refer to the fiscal year ended September 30, 2019 as “fiscal 2019” and the fiscal year ended September 30, 2020 as “fiscal 2020.” Fiscal years 2020, 2019, and 2018 each contained 53, 52, and 52 weeks, respectively, and ended on October 2, September 27, and September 28, respectively.

Overview

We are a leading global provider of professional, technical and management support services for governments, businesses and organizations throughout the world. We provide planning, consulting, architectural and engineering design, construction management services, and investment and development services to commercial and government clients worldwide in major end markets such as transportation, facilities, environmental, energy, water and government markets.

Our business focuses primarily on providing fee-based planning, consulting, architectural and engineering design services and, therefore, our business is labor intensive. We primarily derive income from our ability to generate revenue and collect cash from our clients through the billing of our employees' time spent on client projects and our ability to manage our costs. AECOM Capital primarily derives its income from real estate development sales and management fees.

During the first quarter of fiscal 2020, we reorganized our operating and reporting structure to better align with our ongoing professional services business. This reorganization better reflected our continuing operations after the sale of our Management Services segment and planned disposal of our self-perform at-risk construction businesses, including our civil infrastructure, power, and oil & gas construction businesses. Our Management Services and self-perform at-risk construction businesses were part of our former Management Services segment and a substantial portion of our former Construction Services segment, respectively. These businesses are classified as discontinued operations in all periods presented.

We report our continuing business through three segments: Americas, International, and AECOM Capital (ACAP). Such segments are organized by the differing specialized needs of the respective clients, and how we manage the business. We have aggregated various operating segments into our reportable segments based on their similar characteristics, including similar long-term financial performance, the nature of services provided, internal processes for delivering those services, and types of customers.

Our Americas segment delivers planning, consulting, architectural and engineering design, and construction management services to commercial and government clients in the United States, Canada, and Latin America in major end markets such as transportation, water, government, facilities, environmental, and energy. Our International segment delivers planning, consulting, and architectural and engineering design services to commercial and government clients in Europe, the Middle East, Africa, and the Asia-Pacific regions in major end markets such as transportation, water, government, facilities, environmental, and energy. Revenue for these two segments is primarily derived from fees for services we provide.

Our ACAP segment primarily invests in and develops real estate projects. ACAP typically partners with investors and experienced developers as co-general partners. ACAP may, but is not required to, enter into contracts with our other AECOM affiliates to provide design, engineering, construction management, development and operations, and maintenance services for ACAP funded projects.

Our revenue is dependent on our ability to attract and retain qualified and productive employees, identify business opportunities, integrate and maximize the value of our recent acquisitions, allocate our labor resources to profitable and high growth markets, secure new contracts, and renew existing client agreements. Demand for our services is cyclical and may be vulnerable to sudden economic downturns and reductions in government and private industry spending, which may result in clients delaying, curtailing or canceling proposed and existing projects. Moreover, as a professional services company, maintaining the high quality of the work generated by our employees is integral to our revenue generation and profitability.

Our costs consist primarily of the compensation we pay to our employees, including salaries, fringe benefits, the costs of hiring subcontractors, other project-related expenses and sales, general and administrative costs.

The U.S. federal government has proposed significant legislative and executive infrastructure initiatives that, if enacted, could have a positive impact to our infrastructure business.

Regarding our capital allocation policy, on November 13, 2020, the Board approved an increase in our repurchase authorization to $1.0 billion, up from the approximately $305 million authorization in place immediately prior to such date. We intend to deploy future available cash towards stock repurchases consistent with our capital allocation policy.

In July 2020, we drew $248.5 million on our secured delayed draw term loan facility for the purpose of redeeming all of the URS 5.00% Senior Notes due 2022 (2022 URS Senior Notes).

We expect to exit the self-perform at-risk construction and non-core oil and gas markets. We are in the process of exiting more than 30 countries, subject to applicable laws, as part of our ongoing plan to improve profitability and reduce our risk profile, and we continue to evaluate our geographic exposure as part of such plan.

We expect to incur restructuring costs of approximately $30 million to $50 million in fiscal 2021 primarily related to previously announced restructuring actions that are expected to deliver continued margin improvement and efficiencies. Total cash costs for these restructuring actions are expected to be approximately $30 million to $50 million.

Covid-19 Coronavirus Impacts

The impact of the coronavirus pandemic and measures to prevent its spread are affecting our businesses in a number of ways:

- The coronavirus and accompanying economic effects are expected to reduce demand for our services and impact client spending in certain circumstances; however, the uncertain nature of the coronavirus and its duration make it difficult for us to predict and quantify such impact.

- We have restricted non-essential business travel, required employees to work remotely where appropriate, reduced salaries or furloughed employees, reduced non-essential spending and limited physical interactions with our clients.

- Non-essential construction and work on other client projects has been temporarily halted in certain jurisdictions.

- Some contractual agreements are unable to be performed preventing us from making or receiving payments.

- The coronavirus has made accessing the capital markets and engaging in business and client development more difficult.

- The coronavirus has made estimating the future performance of our business and mitigating the adverse financial impact of these developments on our business operations more difficult.

- State and local budget shortfalls in the U.S. have negatively impacted our pipeline of pursuits and the pace of award activity.

- Certain markets, such as the U.K., Middle East, and Southeast Asia, are experiencing project delays that have impacted our performance and results.

- During the second half of fiscal 2020, we benefited from government subsidies of approximately $23.2 million, which were received under various programs related to retaining employees.

Acquisitions

The aggregate value of all consideration for our acquisitions consummated during the year ended September 30, 2018 was $5.6 million. There were no acquisitions consummated during the years ended September 30, 2020 and 2019.

All of our acquisitions have been accounted for as business combinations and the results of operations of the acquired companies have been included in our consolidated results since the dates of the acquisitions.

Components of Income and Expense

	Year Ended September 30,				
	2020	2019	2018 (in millions)	2017	2016
Other Financial Data:					
Revenue	$ 13,240	$ 13,642	$ 13,878	$ 18,203	$ 17,411
Cost of revenue	12,530	13,030	13,399	17,519	16,768
Gross profit	710	612	479	684	643
Equity in earnings of joint ventures	49	49	49	142	104
General and administrative expenses	(190)	(148)	(135)	(134)	(115)
Restructuring cost	(188)	(95)	—	—	—
Gain (loss) on disposal activities	—	3	—	1	(43)
Impairment of long-lived assets	—	(25)	—	—	—
Acquisition and integration expenses	—	—	—	(39)	(214)
Income from operations	$ 381	$ 396	$ 393	$ 654	$ 375

Revenue

We generate revenue primarily by providing planning, consulting, architectural and engineering design services to commercial and government clients around the world. Our revenue consists of both services provided by our employees and pass-through fees from subcontractors and other direct costs. We generally recognize revenue over time as performance obligations are satisfied and control over promised goods or services are transferred to our customers. We generally measure progress to completion using an input measure of total costs incurred divided by total costs expected to be incurred.

Cost of Revenue

Cost of revenue reflects the cost of our own personnel (including fringe benefits and overhead expense) associated with revenue.

Amortization Expense of Acquired Intangible Assets

Included in our cost of revenue is amortization of acquired intangible assets. We have ascribed value to identifiable intangible assets other than goodwill in our purchase price allocations for companies we have acquired. These assets include, but are not limited to, backlog and customer relationships. To the extent we ascribe value to identifiable intangible assets that have finite lives, we amortize those values over the estimated useful lives of the assets. Such amortization expense, although non-cash in the period expensed, directly impacts our results of operations. It is difficult to predict with any precision the amount of expense we may record relating to acquired intangible assets.

Equity in Earnings of Joint Ventures

Equity in earnings of joint ventures includes our portion of fees charged by our unconsolidated joint ventures to clients for services performed by us and other joint venture partners along with earnings we receive from our return on investments in unconsolidated joint ventures.

General and Administrative Expenses

General and administrative expenses include corporate expenses, including personnel, occupancy, and administrative expenses.

Acquisition and Integration Expenses

Acquisition and integration expenses are comprised of transaction costs, professional fees, and personnel costs, including due diligence and integration activities, primarily related to business acquisitions.

Goodwill Impairment

See Critical Accounting Policies and Consolidated Results below.

Income Tax Expense (Benefit)

As a global enterprise, income tax expense/(benefit) and our effective tax rates can be affected by many factors, including changes in our worldwide mix of pre-tax losses/earnings, the effect of non-controlling interest in income of consolidated subsidiaries, the extent to which the earnings are indefinitely reinvested outside of the United States, our acquisition strategy, tax incentives and credits available to us, changes in judgment regarding the realizability of our deferred tax assets, changes in existing tax laws and our assessment of uncertain tax positions. Our tax returns are routinely audited by the taxing authorities and settlements of issues raised in these audits can also sometimes affect our effective tax rate.

Geographic Information

For geographic financial information, please refer to Note 4 and Note 19 in the notes to our consolidated financial statements found elsewhere in the Form 10-K.

Critical Accounting Policies

Our financial statements are presented in accordance with accounting principles generally accepted in the United States (GAAP). Highlighted below are the accounting policies that management considers significant to understanding the operations of our business.

Revenue Recognition

Our accounting policies establish principles for recognizing revenue upon the transfer of control of promised goods or services to customers. We generally recognize revenues over time as performance obligations are satisfied. We generally measure our progress to completion using an input measure of total costs incurred divided by total costs expected to be incurred. In the course of providing these services, we routinely subcontract for services and incur other direct cost on behalf of our clients. These costs are passed through to clients, and in accordance with accounting rules, are included in our revenue and cost of revenue.

Revenue recognition and profit is dependent upon a number of factors, including the accuracy of a variety of estimates made at the balance sheet date, such as engineering progress, material quantities, the achievement of milestones, penalty provisions, labor productivity and cost estimates. Additionally, we are required to make estimates for the amount of consideration to be received, including bonuses, awards, incentive fees, claims, unpriced change orders, penalties and liquidated damages. Variable consideration is included in the estimate of transaction price only to the extent that a significant reversal would not be probable. We continuously monitor factors that may affect the quality of our estimates, and material changes in estimates are disclosed accordingly.

Claims Recognition

Claims are amounts in excess of the agreed contract price (or amounts not included in the original contract price) that we seek to collect from customers or others for delays, errors in specifications and designs, contract terminations, change orders in dispute or unapproved contracts as to both scope and price or other causes of unanticipated additional costs. We record contract revenue related to claims only if it is probable that the claim will result in additional contract revenue and only to the extent that a significant reversal would not be probable. The amounts recorded, if material, are disclosed in the notes to the financial statements. Costs attributable to claims are treated as costs of contract performance as incurred.

Government Contract Matters

Our federal government and certain state and local agency contracts are subject to, among other regulations, regulations issued under the Federal Acquisition Regulations (FAR). These regulations can limit the recovery of certain specified indirect costs on contracts and subject us to ongoing multiple audits by government agencies such as the Defense Contract Audit Agency (DCAA). In addition, most of our federal and state and local contracts are subject to termination at the discretion of the client.

Audits by the DCAA and other agencies consist of reviews of our overhead rates, operating systems and cost proposals to ensure that we account for such costs in accordance with the Cost Accounting Standards of the FAR (CAS). If the DCAA determines we have not accounted for such costs consistent with CAS, the DCAA may disallow these costs. There can be no assurance that audits by the DCAA or other governmental agencies will not result in material cost disallowances in the future.

Allowance for Doubtful Accounts

We record accounts receivable net of an allowance for doubtful accounts. This allowance for doubtful accounts is estimated based on management’s evaluation of the contracts involved and the financial condition of our clients. The factors we consider in our contract evaluations include, but are not limited to:

- Client type—federal or state and local government or commercial client;
- Historical contract performance;
- Historical collection and delinquency trends;
- Client credit worthiness; and
- General economic conditions.

Contract Assets and Contract Liabilities

Contract assets represent the contract revenue recognized but not yet billed pursuant to contract terms or accounts billed after the period end.

Contract liabilities represent the billings to date, as allowed under the terms of a contract, but not yet recognized as contract revenue using our revenue recognition policy.

Investments in Unconsolidated Joint Ventures

We have noncontrolling interests in joint ventures accounted for under the equity method. Fees received for and the associated costs of services performed by us and billed to joint ventures with respect to work done by us for third-party customers are recorded as our revenues and costs in the period in which such services are rendered. In certain joint ventures, a fee is added to the respective billings from both us and the other joint venture partners on the amounts billed to the third-party customers. These fees result in earnings to the joint venture and are split with each of the joint venture partners and paid to the joint venture partners upon collection from the third-party customer. We record our allocated share of these fees as equity in earnings of joint ventures.

Additionally, our ACAP segment primarily invests in real estate projects.

Income Taxes

We provide for income taxes in accordance with principles contained in ASC Topic 740, Income Taxes. Under these principles, we recognize the amount of income tax payable or refundable for the current year and deferred tax assets and liabilities for the future tax consequences of events that have been recognized in our financial statements or tax returns.

Deferred tax assets and liabilities are measured using enacted tax rates in effect for the year in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in earnings in the period when the new rate is enacted. Deferred tax assets are evaluated for future realization and reduced by a valuation allowance if it is more likely than not that a portion will not be realized.

We measure and recognize the amount of tax benefit that should be recorded for financial statement purposes for uncertain tax positions taken or expected to be taken in a tax return. With respect to uncertain tax positions, we evaluate the recognized tax benefits for recognition, measurement, derecognition, classification, interest and penalties, interim period accounting and disclosure requirements. Judgment is required in assessing the future tax consequences of events that have been recognized in our financial statements or tax returns.

Valuation Allowance. Deferred income taxes are provided on the liability method whereby deferred tax assets and liabilities are established for the difference between the financial reporting and income tax basis of assets and liabilities, as well as for tax attributes such as operating loss and tax credit carryforwards. Deferred tax assets and liabilities are adjusted for the effects of changes in tax laws and tax rates on the date of enactment of such changes to laws and tax rates.

Deferred tax assets are reduced by a valuation allowance when, in our opinion, it is more likely than not that some portion or all of the deferred tax assets may not be realized. The evaluation of the recoverability of the deferred tax asset requires the Company to weigh all positive and negative evidence to reach a conclusion that it is more likely than not that all or some portion of the deferred tax assets will not be realized. The weight given to the evidence is commensurate with the extent to which it can be objectively verified. Whether a deferred tax asset may be realized requires considerable judgment by us. In considering the need for a valuation allowance, we consider a number of factors including the nature, frequency, and severity of cumulative financial reporting losses in recent years, the future reversal of existing temporary differences, predictability of future taxable income exclusive of reversing temporary differences of the character necessary to realize the asset, relevant carryforward periods, taxable income in carry-back years if carry-back is permitted under tax law, and prudent and feasible tax planning strategies that would be implemented, if necessary, to protect against the loss of the deferred tax asset that would otherwise expire. Whether a deferred tax asset will ultimately be realized is also dependent on varying factors, including, but not limited to, changes in tax laws and audits by tax jurisdictions in which we operate.

If future changes in judgment regarding the realizability of our deferred tax assets lead us to determine that it is more likely than not that we will not realize all or part of our deferred tax asset in the future, we will record an additional valuation allowance. Conversely, if a valuation allowance exists and we determine that the ultimate realizability of all or part of the net deferred tax asset is more likely than not to be realized, then the amount of the valuation allowance will be reduced. This adjustment will increase or decrease income tax expense in the period of such determination.

Undistributed Non-U.S. Earnings. The results of our operations outside of the United States are consolidated for financial reporting; however, earnings from investments in non-U.S. operations are included in domestic U.S. taxable income only when actually or constructively received. No deferred taxes have been provided on the undistributed gross book-tax basis differences of our non-U.S. operations of approximately $1.5 billion because we have the ability to and intend to permanently reinvest these basis differences overseas. If we were to repatriate these basis differences, additional taxes could be due at that time.

We continually explore initiatives to better align our tax and legal entity structure with the footprint of our non-U.S. operations and we recognize the tax impact of these initiatives, including changes in assessment of its uncertain tax positions, indefinite reinvestment exception assertions and realizability of deferred tax assets, earliest in the period when management believes all necessary internal and external approvals associated with such initiatives have been obtained, or when the initiatives are materially complete.

Goodwill and Acquired Intangible Assets

Goodwill represents the excess of amounts paid over the fair value of net assets acquired from an acquisition. In order to determine the amount of goodwill resulting from an acquisition, we perform an assessment to determine the value of the acquired company's tangible and identifiable intangible assets and liabilities. In our assessment, we determine whether identifiable intangible assets exist, which typically include backlog and customer relationships.

We test goodwill for impairment annually for each reporting unit in the fourth quarter of the fiscal year and between annual tests, if events occur or circumstances change which suggest that goodwill should be evaluated. Such events or circumstances include significant changes in legal factors and business climate, recent losses at a reporting unit, and industry trends, among other factors. A reporting unit is defined as an operating segment or one level below an operating segment. Our impairment tests are performed at the operating segment level as they represent our reporting units.

During the impairment test, we estimate the fair value of the reporting unit using income and market approaches, and compare that amount to the carrying value of that reporting unit. In the event the fair value of the reporting unit is determined to be less than the carrying value, goodwill is impaired, and an impairment loss is recognized equal to the excess, limited to the total amount of goodwill allocated to the reporting unit.

The impairment evaluation process includes, among other things, making assumptions about variables such as revenue growth rates, profitability, discount rates, and industry market multiples, which are subject to a high degree of judgment.

Material assumptions used in the impairment analysis included the weighted average cost of capital (WACC) percent and terminal growth rates. For example, as of September 30, 2020, a 1% increase in the WACC rate represents a $500 million decrease to the fair value of our reporting units. As of September 30, 2020, a 1% decrease in the terminal growth rate represents a $200 million decrease to the fair value of our reporting units.

Pension Benefit Obligations

A number of assumptions are necessary to determine our pension liabilities and net periodic costs. These liabilities and net periodic costs are sensitive to changes in those assumptions. The assumptions include discount rates, long-term rates of return on plan assets and inflation levels limited to the United Kingdom and are generally determined based on the current economic environment in each host country at the end of each respective annual reporting period. We evaluate the funded status of each of our retirement plans using these current assumptions and determine the appropriate funding level considering applicable regulatory requirements, tax deductibility, reporting considerations and other factors. Based upon current assumptions, we expect to contribute $28.4 million to our international plans in fiscal 2021. Our required minimum contributions for our U.S. qualified plans are not significant. In addition, we may make additional discretionary contributions. We currently expect to contribute $12.2 million to our U.S. plans (including benefit payments to nonqualified plans and postretirement medical plans) in fiscal 2021. If the discount rate was reduced by 25 basis points, plan liabilities would increase by approximately $75.2 million. If the discount rate and return on plan assets were reduced by 25 basis points, plan expense would decrease by approximately $0.1 million and increase by approximately $3.0 million, respectively. If inflation increased by 25 basis points, plan liabilities in the United Kingdom would increase by approximately $35.0 million and plan expense would increase by approximately $1.9 million.

At each measurement date, all assumptions are reviewed and adjusted as appropriate. With respect to establishing the return on assets assumption, we consider the long term capital market expectations for each asset class held as an investment by the various pension plans. In addition to expected returns for each asset class, we take into account standard deviation of returns and correlation between asset classes. This is necessary in order to generate a distribution of possible returns which reflects diversification of assets. Based on this information, a distribution of possible returns is generated based on the plan’s target asset allocation.

Capital market expectations for determining the long term rate of return on assets are based on forward-looking assumptions which reflect a 20-year view of the capital markets. In establishing those capital market assumptions and expectations, we rely on the assistance of our actuaries and our investment consultants. We and the plan trustees review whether changes to the various plans’ target asset allocations are appropriate. A change in the plans’ target asset allocations would likely result in a change in the expected return on asset assumptions. In assessing a plan’s asset allocation strategy, we and the plan trustees consider factors such as the structure of the plan’s liabilities, the plan’s funded status, and the impact of the asset allocation to the volatility of the plan’s funded status, so that the overall risk level resulting from our defined benefit plans is appropriate within our risk management strategy.

Between September 30, 2019 and September 30, 2020, the aggregate worldwide pension deficit increased from $366.1 million to $406.0 million due to decreased discount rates. If the various plans do not experience future investment gains to reduce this shortfall, the deficit will be reduced by additional contributions.

Accrued Professional Liability Costs

We carry professional liability insurance policies or self-insure for our initial layer of professional liability claims under our professional liability insurance policies and for a deductible for each claim even after exceeding the self-insured retention. We accrue for our portion of the estimated ultimate liability for the estimated potential incurred losses. We establish our estimate of loss for each potential claim in consultation with legal counsel handling the specific matters and based on historic trends taking into account recent events. We also use an outside actuarial firm to assist us in estimating our future claims exposure. It is possible that our estimate of loss may be revised based on the actual or revised estimate of liability of the claims.

Foreign Currency Translation

Our functional currency is the U.S. dollar. Results of operations for foreign entities are translated to U.S. dollars using the average exchange rates during the period. Assets and liabilities for foreign entities are translated using the exchange rates in effect as of the date of the balance sheet. Resulting translation adjustments are recorded as a foreign currency translation adjustment into other accumulated comprehensive income/(loss) in stockholders’ equity.

We limit exposure to foreign currency fluctuations in most of our contracts through provisions that require client payments in currencies corresponding to the currency in which costs are incurred. As a result of this natural hedge, we generally do not need to hedge foreign currency cash flows for contract work performed. However, we will use foreign exchange derivative financial instruments from time to time to mitigate foreign currency risk. The functional currency of all significant foreign operations is the respective local currency.

Fiscal year ended September 30, 2020 compared to the fiscal year ended September 30, 2019

Consolidated Results

	Fiscal Year Ended		Change	
	September 30, 2020	September 30, 2019	$	%
	($ in millions)			
Revenue	$ 13,240.0	$ 13,642.5	$ (402.5)	(3.0)%
Cost of revenue	12,530.4	13,030.8	(500.4)	(3.8)
Gross profit	709.6	611.7	97.9	16.0
Equity in earnings of joint ventures	48.8	49.3	(0.5)	(1.1)
General and administrative expenses	(188.6)	(148.2)	(40.4)	27.3
Restructuring cost	(188.3)	(95.4)	(92.9)	97.3
Gain on disposal activities	—	3.6	(3.6)	(100.0)
Impairment of long-lived assets	—	(24.9)	24.9	(100.0)
Income from operations	381.5	396.1	(14.6)	(3.7)
Other income	11.1	14.6	(3.5)	(24.0)
Interest expense	(160.0)	(161.5)	1.5	(1.0)
Income from continuing operations before income tax expense	232.6	249.2	(16.6)	(6.6)
Income tax expense from continuing operations	45.7	13.5	32.2	239.0
Net income from continuing operations	186.9	235.7	(48.8)	(20.7)
Net loss from discontinued operations	(340.6)	(419.7)	79.1	(18.8)
Net loss	(153.7)	(184.0)	30.3	(16.4)
Net income attributable to noncontrolling interests from continuing operations	(16.5)	(24.7)	8.2	(33.6)
Net income attributable to noncontrolling interests from discontinued operations	(16.2)	(52.4)	36.2	(69.0)
Net income attributable to noncontrolling interests	(32.7)	(77.1)	44.4	(57.7)
Net income attributable to AECOM from continuing operations	170.4	211.0	(40.6)	(19.2)
Net loss attributable to AECOM from discontinued operations	(356.8)	(472.1)	115.3	(24.4)
Net loss attributable to AECOM	$ (186.4)	$ (261.1)	$ 74.7	(28.6)%

The following table presents the percentage relationship of statement of operations items to revenue:

	Fiscal Year Ended	
	September 30, 2020	September 30, 2019
Revenue	100.0 %	100.0 %
Cost of revenue	94.6	95.5
Gross profit	5.4	4.5
Equity in earnings of joint ventures	0.4	0.4
General and administrative expenses	(1.5)	(1.1)
Restructuring costs	(1.4)	(0.7)
Gain on disposal activities	0.0	0.0
Impairment of long-lived assets	0.0	(0.2)
Income from operations	2.9	2.9
Other income	0.1	0.1
Interest expense	(1.2)	(1.2)
Income from continuing operations before income tax expense	1.8	1.8
Income tax expense from continuing operations	0.4	0.1
Net income from continuing operations	1.4	1.7
Net loss from discontinued operations	(2.6)	(3.0)
Net loss	(1.2)	(1.3)
Net income attributable to noncontrolling interests from continuing operations	(0.1)	(0.2)
Net income attributable to noncontrolling interests from discontinued operations	(0.1)	(0.4)
Net income attributable to noncontrolling interests	(0.2)	(0.6)
Net income attributable to AECOM from continuing operations	1.3	1.5
Net loss attributable to AECOM from discontinued operations	(2.7)	(3.4)
Net loss attributable to AECOM	(1.4)%	(1.9)%

Revenue

Our revenue for the year ended September 30, 2020 decreased $402.5 million, or 3.0%, to $13,240.0 million as compared to $13,642.5 million for the corresponding period last year.

The decrease in revenue for the year ended September 30, 2020 was primarily attributable to decreases in our Americas segment of $251.1 million and in our International segment of $150.0 million, as discussed further below.

In the course of providing our services, we routinely subcontract for services and incur other direct costs on behalf of our clients. These costs are passed through to clients and, in accordance with industry practice and GAAP, are included in our revenue and cost of revenue. Because subcontractor and other direct costs can change significantly from project to project and period to period, changes in revenue may not be indicative of business trends. Subcontractor and other direct costs for the years ended September 30, 2020 and 2019 were $7.1 billion and $7.4 billion, respectively. Subcontractor costs and other direct costs as a percentage of revenue was 54% during the year ended September 30, 2020 and the year ended September 30, 2019.

Gross Profit

Our gross profit for the year ended September 30, 2020 increased $97.9 million, or 16.0%, to $709.6 million as compared to $611.7 million for the corresponding period last year. For the year ended September 30, 2020, gross profit, as a percentage of revenue, increased to 5.4% from 4.5% in the year ended September 30, 2019.

Gross profit changes were due to the reasons noted in Americas and International reportable segments below.

Equity in Earnings of Joint Ventures

Our equity in earnings of joint ventures for the year ended September 30, 2020 was $48.8 million as compared to $49.3 million in the corresponding period last year.

General and Administrative Expenses

Our general and administrative expenses for the year ended September 30, 2020 increased $40.4 million, or 27.3%, to $188.6 million as compared to $148.2 million for the corresponding period last year. For the year ended September 30, 2020, general and administrative expenses increased to 1.5% from 1.1% for the year ended September 30, 2019.

The increase in general and administrative expenses was primarily due to the accelerated depreciation of a project management tool.

Restructuring Costs

In the first quarter of fiscal 2019, we commenced a restructuring plan to improve profitability. We incurred additional restructuring costs in fiscal 2020 primarily related to optimizing our cost structure and eliminating overhead costs as a result of the sale of the Management Services business and the exit of our self-perform at-risk construction business. During the year ended September 30, 2020, we incurred restructuring expenses of $188.3 million, primarily related to personnel costs. During the year ended September 30, 2019, we incurred restructuring expenses of $95.4 million.

Gain on Disposal Activities

Gain on disposal activities in the accompanying statements of operations for the year ended September 30, 2019 was $3.6 million. The gain on disposal activities in the year ended September 30, 2019 primarily relates to the sale of certain non-core assets as part of our plan to improve profitability and reduce our risk profile.

Impairment of Long-Lived Assets

Impairment of long-lived assets was $24.9 million for the year ended September 30, 2019. The impairment of long lived assets was primarily related to leasehold improvements that were no longer recoverable. The impairment loss did not repeat in fiscal year 2020.

Other Income

Our other income for the year ended September 30, 2020 decreased $3.5 million to $11.1 million as compared to $14.6 million for the corresponding period last year.

Other income is primarily comprised of interest income.

Interest Expense

Our interest expense for the year ended September 30, 2020 was $160.0 million as compared to $161.5 million for the corresponding period last year.

The decrease in interest expense for the year ended September 30, 2020 was primarily due to lower average outstanding debt during the period.

Income Tax Expense

Our income tax expense for the year ended September 30, 2020 was $45.8 million compared to $13.5 million for the year ended September 30, 2019. The increase in tax expense for the year ended September 30, 2020, compared to the corresponding period last year, is due primarily to a decrease in benefit of $10.6 million related to changes in valuation allowances and an increase in tax expense of $8.2 million related to nondeductible costs, and an increase in tax expense related to foreign rate differential of $6.3 million.

During fiscal 2020, management approved a tax planning strategy and we restructured certain operations in Canada which resulted in the release of a valuation allowance related to net operating losses and other deferred tax assets in the amount of $31.7 million. We are now forecasting the utilization of the net operating losses within the foreseeable future. The new positive evidence was evaluated against any negative evidence to determine the valuation allowance was no longer needed.

During fiscal 2019, a valuation allowance in the amount of $38.1 million related to foreign tax credits was released due to sufficient positive evidence obtained during the fiscal year. The positive evidence included the issuance of regulations related to the Tax Act and forecasting the utilization of the foreign tax credits within the foreseeable future.

We are currently under tax audit in several jurisdictions including the U.S. and believe the outcomes which are reasonably possible within the next twelve months, including lapses in statutes of limitations, could result in future adjustments, but will not result in a material change in the liability for uncertain tax positions.

We regularly integrate and consolidate our business operations and legal entity structure, and such internal initiatives could impact the assessment of uncertain tax positions, indefinite reinvestment assertions and the realizability of deferred tax assets.

Net Loss From Discontinued Operations

During the first quarter of fiscal 2020, management approved a plan to dispose via sale our Management Services business and our self-perform at-risk construction businesses. As a result of these strategic actions, the Management Services and self-perform at-risk construction businesses were classified as discontinued operations. That classification was applied retrospectively for all periods presented.

Net loss from discontinued operations decreased $79.1 million to $340.6 million from $419.7 million for the years ended September 30, 2020 and 2019, respectively. The decrease in net loss from discontinued operations for the year ended September 30, 2020 was primarily due to a $161.9 million gain recorded on the disposal of our Management Services business. The gain was offset by impairment of goodwill of approximately $83.6 million related to the self-perform at-risk construction business, and a $247.2 million loss related to the remeasurement of the businesses within discontinued operations based on estimated fair values less costs to sell. Net loss from discontinued operations for the year ended September 30, 2019 included a goodwill impairment of $588.0 million related to a reduction in estimated fair value of our at-risk construction businesses and a reduction in our self-perform at-risk construction exposure.

Net Loss Attributable to AECOM

The factors described above resulted in the net loss attributable to AECOM of $186.4 million for the year ended September 30, 2020, as compared to the net loss attributable to AECOM of $261.1 million for the year ended September 30, 2019.

Results of Operations by Reportable Segment

Americas

	Fiscal Year Ended			
	September 30, 2020	September 30, 2019	Change $	Change %
	(in millions)			
Revenue	$ 10,131.5	$ 10,382.6	$ (251.1)	(2.4)%
Cost of revenue	9,551.0	9,871.1	(320.1)	(3.2)
Gross profit	$ 580.5	$ 511.5	$ 69.0	13.5 %

The following table presents the percentage relationship of statement of operations items to revenue:

	Fiscal Year Ended	
	September 30, 2020	September 30, 2019
Revenue	100.0 %	100.0 %
Cost of revenue	94.3	95.1
Gross profit	5.7 %	4.9 %

Revenue

Revenue for our Americas segment for the year ended September 30, 2020 decreased $251.1 million, or 2.4%, to $10,131.5 million as compared to $10,382.6 million for the corresponding period last year.

The decrease in revenue for the year ended September 30, 2020 was primarily driven by near-term headwinds from the coronavirus pandemic and lower oil and gas prices.

Gross Profit

Gross profit for our Americas segment for the year ended September 30, 2020 increased $69.0 million, or 13.5%, to $580.5 million as compared to $511.5 million for the corresponding period last year. As a percentage of revenue, gross profit increased to 5.7% of revenue for the year ended September 30, 2020 from 4.9% in the corresponding period last year.

The increase in gross profit and gross profit as a percentage of revenue for the year ended September 30, 2020 were primarily due to reduced costs resulting from restructuring activities that commenced during the prior year.

International

	Fiscal Year Ended			
	September 30, 2020	September 30, 2019	Change $	Change %
	(in millions)			
Revenue	$ 3,101.7	$ 3,251.7	$ (150.0)	(4.6)%
Cost of revenue	2,979.5	3,159.8	(180.3)	(5.7)
Gross profit	$ 122.2	$ 91.9	$ 30.3	33.0 %

The following table presents the percentage relationship of statement of operations items to revenue:

	Fiscal Year Ended	
	September 30, 2020	September 30, 2019
Revenue	100.0 %	100.0 %
Cost of revenue	96.1	97.2
Gross profit	3.9 %	2.8 %

Revenue

Revenue for our International segment for the year ended September 30, 2020 decreased $150.0 million, or 4.6%, to $3,101.7 million as compared to $3,251.7 million for the corresponding period last year.

The decrease in revenue for the year ended September 30, 2020 was primarily attributable to declines in the United Kingdom and Greater China regions due to downtime caused by the impact of the coronavirus pandemic in those regions and the Middle East was impacted by lower oil and gas prices.

Gross Profit

Gross profit for our International segment for the year ended September 30, 2020 increased $30.3 million, or 33.0%, to $122.2 million as compared to $91.9 million for the corresponding period last year. As a percentage of revenue, gross profit increased to 3.9% of revenue for the year ended September 30, 2020 from 2.8% in the corresponding period last year.

The increase in gross profit and gross profit as a percentage of revenue for the year ended September 30, 2020 was primarily due to reduced costs resulting from restructuring activities that commenced during the prior year.

AECOM Capital

	Fiscal Year Ended			
	September 30, 2020	September 30, 2019	Change $	Change %
	(in millions)			
Revenue	$ 6.8	$ 8.2	$ (1.4)	(17.1)%
Equity in earnings of joint ventures	$ 14.7	$ 17.7	$ (3.0)	(16.9)
General and administrative expenses	$ (8.6)	$ (5.0)	$ (3.6)	72.0 %

** NM - Not Meaningful*

Fiscal year ended September 30, 2019 compared to the fiscal year ended September 30, 2018

Consolidated Results

	Fiscal Year Ended		Change	
	September 30, 2019	September 30, 2018	$	%
	($ in millions)			
Revenue	$ 13,642.5	$ 13,878.3	$ (235.8)	(1.7)%
Cost of revenue	13,030.8	13,399.3	(368.5)	(2.8)
Gross profit	611.7	479.0	132.7	27.7
Equity in earnings of joint ventures	49.3	49.4	(0.1)	(0.1)
General and administrative expenses	(148.2)	(135.8)	(12.4)	9.1
Restructuring cost	(95.4)	—	(95.4)	0.0
Gain on disposal activities	3.6	—	3.6	0.0
Impairment of long-lived assets	(24.9)	—	(24.9)	0.0
Income from operations	396.1	392.6	3.5	0.9
Other income	14.6	20.6	(6.0)	(29.4)
Interest expense	(161.5)	(201.0)	39.5	(19.7)
Income from continuing operations before income tax expense (benefit)	249.2	212.2	37.0	17.4
Income tax expense (benefit) from continuing operations	13.5	(3.5)	17.0	(486.3)
Net income from continuing operations	235.7	215.7	20.0	9.3
Net loss from discontinued operations	(419.7)	(18.6)	(401.1)	NM
Net (loss) income	(184.0)	197.1	(381.1)	(193.3)
Net income attributable to noncontrolling interests from continuing operations	(24.7)	(20.2)	(4.5)	22.3
Net income attributable to noncontrolling interests from discontinued operations	(52.4)	(40.4)	(12.0)	29.4
Net income attributable to noncontrolling interests	(77.1)	(60.6)	(16.5)	27.0
Net income attributable to AECOM from continuing operations	211.0	195.5	15.5	7.9
Net loss attributable to AECOM from discontinued operations	(472.1)	(59.0)	(413.1)	699.5
Net (loss) income attributable to AECOM	$ (261.1)	$ 136.5	$ (397.6)	(291.3)%

**NM - Not Meaningful*

The following table presents the percentage relationship of statement of operations items to revenue:

	Fiscal Year Ended	
	September 30, 2019	September 30, 2018
Revenue	100.0 %	100.0 %
Cost of revenue	95.5	96.5
Gross profit	4.5	3.5
Equity in earnings of joint ventures	0.4	0.4
General and administrative expenses	(1.1)	(1.1)
Restructuring costs	(0.7)	0.0
Gain on disposal activities	0.0	0.0
Impairment of long-lived assets	(0.2)	0.0
Income from operations	2.9	2.8
Other income	0.1	0.1
Interest expense	(1.2)	(1.4)
Income from continuing operations before income tax expense (benefit)	1.8	1.5
Income tax expense (benefit) from continuing operations	0.1	(0.1)
Net income from continuing operations	1.7	1.6
Net loss from discontinued operations	(3.0)	(0.2)
Net (loss) income	(1.3)	1.4
Net income attributable to noncontrolling interests from continuing operations	(0.2)	(0.1)
Net income attributable to noncontrolling interests from discontinued operations	(0.4)	(0.3)
Net income attributable to noncontrolling interests	(0.6)	(0.4)
Net income attributable to AECOM from continuing operations	1.5	1.5
Net loss attributable to AECOM from discontinued operations	(3.4)	(0.5)
Net (loss) income attributable to AECOM	(1.9)%	1.0 %

Revenue

Our revenue for the year ended September 30, 2019 decreased $235.8 million, or 1.7%, to $13,642.5 million as compared to $13,878.3 million for the year ended September 30, 2018.

The decrease in revenue for the year ended September 30, 2019 was primarily attributable to a decrease in our subcontractor activity for residential high-rise buildings in New York City compared to the prior year.

In the course of providing our services, we routinely subcontract for services and incur other direct costs on behalf of our clients. These costs are passed through to clients and, in accordance with industry practice and GAAP, are included in our revenue and cost of revenue. Because subcontractor and other direct costs can change significantly from project to project and period to period, changes in revenue may not be indicative of business trends. Subcontractor and other direct costs for the years ended September 30, 2019 and 2018 were $7.4 billion and $7.7 billion, respectively. Subcontractor costs and other direct costs as a percentage of revenue decreased to 54% during the year ended September 30, 2019 compared with 56% during the year ended September 30, 2018.

Gross Profit

Our gross profit for the year ended September 30, 2019 increased $132.7 million, or 27.7%, to $611.7 million as compared to $479.0 million for the year ended September 30, 2018. For the year ended September 30, 2019, gross profit, as a percentage of revenue, increased to 4.5% from 3.5% in the year ended September 30, 2018.

Gross profit changes were due to the reasons noted in the Americas and International reportable segments below.

Equity in Earnings of Joint Ventures

Our equity in earnings of joint ventures for the year ended September 30, 2019 was $49.3 million as compared to $49.4 million in the year ended September 30, 2018.

General and Administrative Expenses

Our general and administrative expenses for the year ended September 30, 2019 increased $12.4 million, or 9.1%, to $148.2 million as compared to $135.8 million for the year ended September 30, 2018. For the year ended September 30, 2019, general and administrative expenses remained at 1.1% for the years ended September 30, 2019 and 2018.

Restructuring Costs

In the first quarter of fiscal 2019, we commenced a restructuring plan to improve profitability. During the year ended September 30, 2019, we incurred restructuring expenses of $95.4 million. We expect to achieve approximately $225 million of annual cost savings, which is expected to contribute to $150 million of cost savings in fiscal 2020.

Gain on Disposal Activities

Gain on disposal activities in the accompanying statements of operations for the year ended September 30, 2019 was $3.6 million for the year ended September 30, 2018. The gain on disposal activities primarily relates to incremental gains on the sale of specific non-core oil and gas assets in North America from our CS segment previously classified as assets held for sale.

Impairment of Long-Lived Assets

Impairment of long-lived assets was $24.9 million for the year ended September 30, 2019. The impairment of long lived assets was primarily related to leasehold improvements that were no longer recoverable.

Other Income

Our other income for the year ended September 30, 2019 decreased $6.0 million to $14.6 million as compared to $20.6 million for the year ended September 30, 2018.

Other income is primarily comprised of interest income. The decrease in other income for the year ended September 30, 2019 was primarily due to a $9.1 million gain realized in the year ended September 30, 2018 from a foreign exchange forward contract entered into as part of the refinance of our Credit Agreement in March 2018, as discussed below in “Liquidity and Capital Resources – Debt – 2014 Credit Agreement.”

Interest Expense

Our interest expense for the year ended September 30, 2019 was $161.5 million as compared to $201.0 million for the year ended September 30, 2018.

The decrease in interest expense for the year ended September 30, 2019 was primarily due to a $34.5 million prepayment premium paid on our $800 million unsecured 5.750% Senior Notes due 2022 that was incurred during the year ended September 30, 2018 and did not repeat in 2019.

Income Tax Expense (Benefit)

Our income tax expense for the year ended September 30, 2019 was $13.5 million compared to a benefit of $3.5 million for the year ended September 30, 2018. The increase in tax expense for the year ended September 30, 2019, compared to the year ended September 30, 2018, is due primarily to one-time items that occurred during the fiscal year ended September 30, 2018, including valuation allowance increases of $37.8 million, a $12.5 million net tax expense related to one-time U.S. federal tax law changes, a tax benefit of $26.0 million related to changes in uncertain tax positions primarily in the U.S. and Canada, and a tax benefit of $27.7 million related to an audit settlement in the U.S. The tax impact of these items was partially offset by a tax benefit of $26.5 million that occurred in fiscal 2019 related to changes in valuation allowances including the release of a valuation allowance in the amount of $38.1 million due to sufficient positive evidence obtained during fiscal 2019.

During fiscal 2018, we recorded a $38.1 million valuation allowance related to foreign tax credits as a result of U.S. federal tax law changes. In fiscal 2019, we released this valuation allowance due to sufficient positive evidence obtained during the quarter. The positive evidence included the issuance of regulations related to the Tax Act during the quarter and forecasting the utilization of the foreign tax credits within the foreseeable future.

During fiscal 2018, we effectively settled a U.S. federal income tax examination for URS pre-acquisition tax years 2012, 2013 and 2014 and recorded a benefit of $27.7 million related to various adjustments, in addition to the favorable settlement of R&D credits of $19.9 million recorded in fiscal 2018.

During fiscal 2018, President Trump signed The Tax Cuts and Jobs Act (Tax Act) into law. The Tax Act reduced our U.S. federal corporate tax rate from 35% to 21%, required companies to pay a one-time transition tax on accumulated earnings of foreign subsidiaries, created new taxes on certain foreign sourced earnings, and eliminated or reduced certain deductions.

In fiscal 2018, we remeasured certain deferred tax assets and liabilities based on the rates at which they were expected to reverse in the future, which is generally 21%. The amount recorded related to the remeasurement of our deferred tax balance was a $38.9 million tax expense. In addition, we released the deferred tax liability and recorded a tax benefit related to certain foreign subsidiaries for which the undistributed earnings are not intended to be reinvested indefinitely for $79.8 million and accrued $53.4 million of tax expense on these earnings as part of the one-time transition tax.

We are currently under tax audit in several jurisdictions including the U.S. and believe the outcomes which are reasonably possible within the next twelve months, including lapses in statutes of limitations, could result in future adjustments, but will not result in a material change in the liability for uncertain tax positions.

We regularly integrate and consolidate our business operations and legal entity structure, and such internal initiatives could impact the assessment of uncertain tax positions, indefinite reinvestment assertions and the realizability of deferred tax assets.

Net Loss From Discontinued Operations

Net loss from discontinued operations increased $401.1 million to $419.7 million compared to $18.6 million for the years ended September 30, 2019 and 2018, respectively. The increase in net loss from discontinued operations for the year ended September 30, 2019 was primarily related to goodwill impairment of $588.0 million recognized due to a reduction in the estimated fair value of our at-risk construction business and a reduction in our self-perform at-risk construction exposure.

Net (Loss) Income Attributable to AECOM

The factors described above resulted in the net loss attributable to AECOM of $261.1 million for the year ended September 30, 2019, as compared to the net income attributable to AECOM of $136.5 million for the year ended September 30, 2018.

Results of Operations by Reportable Segment

Americas

	Fiscal Year Ended			
	September 30, 2019	September 30, 2018	Change $	Change %
	(in millions)			
Revenue	$ 10,382.6	$ 10,512.3	$ (129.7)	(1.2)%
Cost of revenue	9,871.1	10,108.5	(237.4)	(2.3)
Gross profit	$ 511.5	$ 403.8	$ 107.7	26.7 %

The following table presents the percentage relationship of statement of operations items to revenue:

	Fiscal Year Ended	
	September 30, 2019	September 30, 2018
Revenue	100.0 %	100.0 %
Cost of revenue	95.1	96.2
Gross profit	4.9 %	3.8 %

Revenue

Revenue for our Americas segment for the year ended September 30, 2019 decreased $129.7 million, or 1.2%, to $10,382.6 million as compared to $10,512.3 million for the year ended September 30, 2018.

The decrease in revenue for the year ended September 30, 2019 was primarily attributable to decreased construction management of airports in the U.S. and residential high-rise buildings in New York City of approximately $340 million, partially offset by an increase in design consulting services, largely due to increased work performed on a residential housing storm disaster relief program.

Gross Profit

Gross profit for our Americas segment for the year ended September 30, 2019 increased $107.7 million, or 26.7%, to $511.5 million as compared to $403.8 million for the year ended September 30, 2018. As a percentage of revenue, gross profit increased to 4.9% of revenue for the year ended September 30, 2019 from 3.8% in the year ended September 30, 2018.

The increases in gross profit and gross profit as a percentage of revenue for the year ended September 30, 2019 were primarily due to reduced costs resulting from restructuring activities taken earlier in fiscal 2019.

International

	Fiscal Year Ended			
	September 30, 2019	September 30, 2018	Change $	Change %
	(in millions)			
Revenue	$ 3,251.7	$ 3,366.0	$ (114.3)	(3.4)%
Cost of revenue	3,159.8	3,290.8	(131.0)	(4.0)
Gross profit	$ 91.9	$ 75.2	$ 16.7	22.2 %

The following table presents the percentage relationship of statement of operations items to revenue:

	Fiscal Year Ended	
	September 30, 2019	September 30, 2018
Revenue	100.0 %	100.0 %
Cost of revenue	97.2	97.8
Gross profit	2.8 %	2.2 %

Revenue

Revenue for our International segment for the year ended September 30, 2019 decreased $114.3 million, or 3.4%, to $3,251.7 million as compared to $3,366.0 million for the year ended September 30, 2018.

Gross Profit

Gross profit for our International segment for the year ended September 30, 2019 increased $16.7 million, or 22.2%, to $91.9 million as compared to $75.2 million for the year ended September 30, 2018. As a percentage of revenue, gross profit increased to 2.8% of revenue for the year ended September 30, 2019 from 2.2% in the year ended September 30, 2018.

AECOM Capital

	Fiscal Year Ended			
	September 30, 2019	September 30, 2018	Change $	Change %
	(in millions)			
Revenue	$ 8.2	$ —	$ 8.2	NM %
Equity in earnings of joint ventures	$ 17.7	$ 15.3	$ 2.4	15.7
General and administrative expenses	$ (5.0)	$ (11.2)	$ 6.3	(55.4)%

* *NM — Not Meaningful*

Equity in earnings of joint ventures included a gain on the sale of a property.

Liquidity and Capital Resources

Cash Flows

Our principal sources of liquidity are cash flows from operations, borrowings under our credit facilities, and access to financial markets. Our principal uses of cash are operating expenses, capital expenditures, working capital requirements, acquisitions, repurchases of common stock, and repayment of debt. We believe our anticipated sources of liquidity including operating cash flows, existing cash and cash equivalents, borrowing capacity under our revolving credit facility and our ability to issue debt or equity, if required, will be sufficient to meet our projected cash requirements for at least the next twelve months. We expect to spend approximately $30 million to $50 million in restructuring costs in fiscal 2021 associated with previously announced restructuring actions that are expected to deliver continued margin improvement and efficiencies.

Generally, we do not provide for U.S. taxes or foreign withholding taxes on gross book-tax basis differences in our non-U.S. subsidiaries because such basis differences are able to and intended to be reinvested indefinitely. At September 30, 2020, we have determined that we will continue to indefinitely reinvest the earnings of some foreign subsidiaries and therefore we will continue to account for these undistributed earnings based on our existing accounting under ASC 740 and not accrue additional tax outside of the one-time transition tax required under the *Tax Cuts and Jobs Act* that was enacted on December 22, 2017. Determination of the amount of any unrecognized deferred income tax liability on this temporary difference is not practicable because of the complexities of the hypothetical calculation. Based on the available sources of cash flows discussed above, we anticipate we will continue to have the ability to permanently reinvest these remaining amounts.

At September 30, 2020, cash and cash equivalents were $1,708.3 million, an increase of $882.7 million, or 92.9%, from $885.6 million at September 30, 2019. The increase in cash and cash equivalents was primarily attributable to positive cash flows from operating activities and proceeds from the sale of our Management Services business, partially offset by repurchases of common stock and repayments of our credit agreement.

Net cash provided by operating activities was $329.6 million for the year ended September 30, 2020 as compared to $777.6 million for the year ended September 30, 2019. The change was primarily attributable to the timing of receipts and payments of working capital, which includes accounts receivable, contract assets, accounts payable, accrued expenses, and contract liabilities. The sale of trade receivables to financial institutions during the year ended September 30, 2020 provided a net unfavorable impact of $143.3 million as compared to a net benefit of $21.9 million during the year ended September 30, 2019. We expect to continue to sell trade receivables in the future as long as the terms continue to remain favorable to us.

Net cash provided by investing activities was $2,037.4 million for the year ended September 30, 2020, as compared to net cash used of $146.8 million for the year ended September 30, 2019. This increase in cash provided was primarily attributable to the sale of our Management Services business in fiscal 2020.

Net cash used in financing activities was $1,628.0 million for the year ended September 30, 2020, as compared to $433.3 million for the year ended September 30, 2019. This change was primarily attributable to repayments of our credit agreement and the redemption of our unsecured senior notes. Total borrowings outstanding varied during the period. For the year ended September 30, 2020, our weighted average floating rate borrowings were $292.4 million.

AECOM Caribe, a subsidiary of the Company, has incurred payment delays supporting the storm recovery work in the U.S. Virgin Islands. AECOM Caribe signed several contracts with Virgin Islands authorities to provide emergency design, construction and technical services after two Category Five hurricanes devastated the Virgin Islands in 2017, that were dependent on federal funding. AECOM Caribe and its subcontractors have performed over $750 million of work under the Virgin Islands contracts and payment delays have increased working capital by over $150 million from September 30, 2018 to September 30, 2019. We are currently negotiating with the Virgin Island authorities and U.S. Federal Emergency Management Agency to modify the contract and accelerate funding for current and future contractual payments; however, we can provide no certainty as to the timing or amount of future payments.

Working Capital

Working capital, or current assets less current liabilities, increased $367.0 million, or 34.2%, to $1,439.9 million at September 30, 2020 from $1,072.9 million at September 30, 2019. Net accounts receivable and contract assets, net of contract liabilities, decreased to $3,413.9 million at September 30, 2020 from $3,600.0 million at September 30, 2019.

Days Sales Outstanding (DSO), which includes net accounts receivable and contract assets, net of contract liabilities, was 90 days at September 30, 2020 compared to 94 days at September 30, 2019.

In Note 4, Revenue Recognition, in the notes to our consolidated financial statements, a comparative analysis of the various components of accounts receivable is provided. Except for claims, substantially all contract assets are expected to be billed and collected within twelve months.

Contract assets related to claims are recorded only if it is probable that the claim will result in additional contract revenue and if the amount can be reliably estimated. In such cases, revenue is recorded only to the extent that contract costs relating to the claim have been incurred. Award fees in contract assets are accrued only when there is sufficient information to assess contract performance. On contracts that represent higher than normal risk or technical difficulty, award fees are generally deferred until an award fee letter is received.

Because our revenue depends to a great extent on billable labor hours, most of our charges are invoiced following the end of the month in which the hours were worked, the majority usually within 15 days. Other direct costs are normally billed along with labor hours. However, as opposed to salary costs, which are generally paid on either a bi-weekly or monthly basis, other direct costs are generally not paid until payment is received (in some cases in the form of advances) from the customers.

Debt

Debt consisted of the following:

	September 30, 2020	September 30, 2019
	(in millions)	
2014 Credit Agreement	$ 248.5	$ 1,182.2
2014 Senior Notes	797.3	800.0
2017 Senior Notes	997.3	1,000.0
URS Senior Notes	—	248.1
Other debt	41.9	122.2
Total debt	2,085.0	3,352.5
Less: Current portion of debt and short-term borrowings	(20.9)	(98.3)
Less: Unamortized debt issuance costs	(23.0)	(36.2)
Long-term debt	$ 2,041.1	$ 3,218.0

The following table presents, in millions, scheduled maturities of our debt as of September 30, 2020:

Fiscal Year	
2021	$ 20.9
2022	17.9
2023	244.8
2024	5.1
2025	799.0
Thereafter	997.3
Total	$ 2,085.0

2014 Credit Agreement

We entered into a credit agreement (Credit Agreement) on October 17, 2014, which, as amended to date, consists of (i) a term loan A facility that includes a $510 million (USD) term loan A facility with a term expiring on March 13, 2021 and a $500 million Canadian dollar (CAD) term loan A facility and a $250 million Australian dollar (AUD) term loan A facility, each with terms expiring on March 13, 2023; (ii) a $600 million term loan B facility with a term expiring on March 13, 2025; and (iii) a revolving credit facility in an aggregate principal amount of $1.35 billion with a term expiring on March 13, 2023. Some of our subsidiaries (Guarantors) have guaranteed the obligations of the borrowers under the Credit Agreement. The borrowers' obligations under the Credit Agreement are secured by a lien on substantially all of our assets and the Guarantors' pursuant to a security and pledge agreement (Security Agreement). The collateral under the Security Agreement is subject to release upon fulfillment of conditions specified in the Credit Agreement and Security Agreement.

The Credit Agreement contains covenants that limit our ability and the ability of some of our subsidiaries to, among other things: (i) create, incur, assume, or suffer to exist liens; (ii) incur or guarantee indebtedness; (iii) pay dividends or repurchase stock; (iv) enter into transactions with affiliates; (v) consummate asset sales, acquisitions or mergers; (vi) enter into various types of burdensome agreements; or (vii) make investments.

On July 1, 2015, the Credit Agreement was amended to revise the definition of "Consolidated EBITDA" to increase the allowance for acquisition and integration expenses related to our acquisition of URS.

On December 22, 2015, the Credit Agreement was amended to further revise the definition of “Consolidated EBITDA” by further increasing the allowance for acquisition and integration expenses related to the acquisition of URS and to allow for an internal corporate restructuring primarily involving our international subsidiaries.

On September 29, 2016, the Credit Agreement and the Security Agreement were amended to (i) lower the applicable interest rate margins for the term loan A and the revolving credit facilities, and lower the applicable letter of credit fees and commitment fees to the revised consolidated leverage levels; (ii) extend the term of the term loan A and the revolving credit facility to September 29, 2021; (iii) add a new delayed draw term loan A facility tranche in the amount of $185.0 million; (iv) replace the then existing $500 million performance letter of credit facility with a $500 million basket to enter into secured letters of credit outside the Credit Agreement; and (v) revise covenants, including the Maximum Consolidated Leverage Ratio, so that the step down from a 5.00 to a 4.75 leverage ratio is effective as of March 31, 2017 as well as the investment basket for our ACAP business.

On March 31, 2017, the Credit Agreement was amended to (i) expand the ability of restricted subsidiaries to borrow under “Incremental Term Loans;” (ii) revise the definition of “Working Capital” as used in “Excess Cash Flow;” (iii) revise the definitions for “Consolidated EBITDA” and “Consolidated Funded Indebtedness” to reflect the expected gain and debt repayment of an AECOM Capital disposition, which disposition was completed on April 28, 2017; and (iv) amend provisions relating to our ability to undertake internal restructuring steps to accommodate changes in tax laws.

On March 13, 2018, the Credit Agreement was amended to (i) refinance the existing term loan A facility to include a $510 million (US) term loan A facility with a term expiring on March 13, 2021 and a $500 million CAD term loan A facility and a $250 million AUD term loan A facility each with terms expiring on March 13, 2023; (ii) issue a new $600 million term loan B facility to institutional investors with a term expiring on March 13, 2025; (iii) increase the capacity of our revolving credit facility from $1.05 billion to $1.35 billion and extend its term until March 13, 2023; (iv) reduce our interest rate borrowing costs as follows: (a) the term loan B facility, at our election, Base Rate (as defined in the Credit Agreement) plus 0.75% or Eurocurrency Rate (as defined in the Credit Agreement) plus 1.75%, (b) the (USD) term loan A facility, at our election, Base Rate plus 0.50% or Eurocurrency Rate plus 1.50%, and (c) the Canadian (CAD) term loan A facility, the Australian (AUD) term loan A facility, and the revolving credit facility, an initial rate of, at our election, Base Rate plus 0.75% or Eurocurrency Rate plus 1.75%, and after the end of our fiscal quarter ended June 30, 2018, Base Rate loans plus a margin ranging from 0.25% to 1.00% or Eurocurrency Rate plus a margin from 1.25% to 2.00%, based on the Consolidated Leverage Ratio (as defined in the Credit Agreement); and (v) revise covenants including increasing the amounts available under the restricted payment negative covenant and revising the Maximum Consolidated Leverage Ratio (as defined in the Credit Agreement) to include a 4.5 leverage ratio through September 30, 2019 after which the leverage ratio stepped down to 4.0.

On November 13, 2018, the Credit Agreement was amended to revise the definition of “Consolidated EBITDA” to increase corporate restructuring allowances and provide for additional flexibility under the covenants for non-core asset dispositions, among other changes.

On January 28, 2020, AECOM entered into Amendment No. 7 to the Credit Agreement which modifies the asset disposition covenant to permit the sale of our Management Services business and the mandatory prepayment provision so that only outstanding term loans were prepaid using the net proceeds from the sale.

On May 1, 2020, the Company entered into Amendment No. 8 to the Credit Agreement which allows for borrowings to be made, until three months after closing, up to an aggregate principal amount of $400,000,000 under a secured delayed draw term loan facility, the proceeds of which are permitted to be used to pay all or a portion of the amounts payable in connection with any tender for or redemption or repayment of the Company's or its subsidiaries' existing senior unsecured notes and any associated fees and expenses. The amendment also revised certain terms and covenants in the Credit Agreement, including by, among other things, revising the maximum leverage ratio covenant to 4.00:1.00, subject to increases to 4.50:1.00 for certain specified periods in connection with certain material acquisitions, increasing the potential size of incremental facilities under the Credit Agreement, revising the definition of "Consolidated EBITDA" to provide for additional flexibility in the calculation thereof and adding a Eurocurrency Rate floor of 0.75% to the interest rate under the revolving credit facility.

On July 30, 2020, we drew $248.5 million on our secured delayed draw term loan facility for the purpose of redeeming all of the 2022 URS Senior Notes.

Under the Credit Agreement, we are subject to a maximum consolidated leverage ratio and minimum consolidated interest coverage ratio at the end of each fiscal quarter. Our Consolidated Leverage Ratio was 2.7 at September 30, 2020. Our Consolidated Interest Coverage Ratio was 5.0 at September 30, 2020. As of September 30, 2020, we were in compliance with the covenants of the Credit Agreement.

At September 30, 2020 and September 30, 2019, outstanding standby letters of credit totaled $19.0 million and $22.8 million, respectively, under our revolving credit facilities. As of September 30, 2020 and September 30, 2019, we had $1,331.0 million and $1,327.2 million, respectively, available under our revolving credit facility.

2014 Senior Notes

On October 6, 2014, we completed a private placement offering of $800,000,000 aggregate principal amount of the unsecured 5.750% Senior Notes due 2022 (2022 Notes) and $800,000,000 aggregate principal amount of the unsecured 5.875% Senior Notes due 2024 (the 2024 Notes and, together with the 2022 Notes, the 2014 Senior Notes). On November 2, 2015, we completed an exchange offer to exchange the unregistered 2014 Senior Notes for registered notes, as well as all related guarantees. On March 16, 2018, we redeemed all of the 2022 Notes at a redemption price that was 104.313% of the principal amount outstanding plus accrued and unpaid interest. The March 16, 2018 redemption resulted in a $34.5 million prepayment premium, which was included in interest expense.

As of September 30, 2020, the estimated fair value of the 2024 Notes was approximately $863.0 million. The fair value of the 2024 Notes as of September 30, 2020 was derived by taking the mid-point of the trading prices from an observable market input (Level 2) in the secondary bond market and multiplying it by the outstanding balance of the 2024 Notes.

On July 21, 2020, we completed a cash tender offer at par for up to $639 million in aggregate principal amount of the 2024 Notes and the 2017 Senior Notes. We accepted for purchase all of 2024 Notes validly tendered and not validly withdrawn pursuant to the cash tender offer, amounting to $2.7 million aggregate principal amount of the 2024 Notes at par. We made the cash tender offer at par to satisfy obligations under the indentures governing the 2024 Notes and the 2017 Senior Notes relating to the use of certain cash proceeds from our disposition of the Management Services business, which was completed on January 31, 2020.

At any time prior to July 15, 2024, we may redeem on one or more occasions all or part of the 2024 Notes at a redemption price equal to the sum of (i) 100% of the principal amount thereof, plus (ii) a “make-whole” premium as of the date of the redemption, plus any accrued and unpaid interest to the date of redemption. In addition, on or after July 15, 2024, the 2024 Notes may be redeemed at a redemption price of 100% of the principal amount thereof, plus accrued and unpaid interest to the date of redemption.

The indenture pursuant to which the 2024 Notes were issued contains customary events of default, including, among other things, payment default, exchange default, failure to provide notices thereunder and provisions related to bankruptcy events. The indenture also contains customary negative covenants.

We were in compliance with the covenants relating to the 2024 Notes as of September 30, 2020.

2017 Senior Notes

On February 21, 2017, we completed a private placement offering of $1,000,000,000 aggregate principal amount of our unsecured 5.125% Senior Notes due 2027 (the 2017 Senior Notes) and used the proceeds to immediately retire the remaining $127.6 million outstanding on the then existing term loan B facility as well as repay $600 million of the term loan A facility and $250 million of the revolving credit facility under our Credit Agreement. On June 30, 2017, we completed an exchange offer to exchange the unregistered 2017 Senior Notes for registered notes, as well as related guarantees.

As of September 30, 2020, the estimated fair value of the 2017 Senior Notes was approximately $1,069.6 million. The fair value of the 2017 Senior Notes as of September 30, 2020 was derived by taking the mid-point of the trading prices from an observable market input (Level 2) in the secondary bond market and multiplying it by the outstanding balance of the 2017 Senior Notes. Interest will be payable on the 2017 Senior Notes at a rate of 5.125% per annum. Interest on the 2017 Senior Notes is payable semi-annually on March 15 and September 15 of each year, commencing on September 15, 2017. The 2017 Senior Notes will mature on March 15, 2027.

At any time and from time to time prior to December 15, 2026, we may redeem all or part of the 2017 Senior Notes, at a redemption price equal to 100% of their principal amount, plus a “make whole” premium as of the redemption date, and accrued and unpaid interest to the redemption date.

At any time on or after December 15, 2026, we may redeem on one or more occasions all or part of the 2017 Senior Notes at a redemption price equal to 100% of their principal amount, plus accrued and unpaid interest.

The indenture pursuant to which the 2017 Senior Notes were issued contains customary events of default, including, among other things, payment default, exchange default, failure to provide notices thereunder and provisions related to bankruptcy events. The indenture also contains customary negative covenants.

We were in compliance with the covenants relating to the 2017 Senior Notes as of September 30, 2020.

URS Senior Notes

In connection with the URS acquisition, we assumed the URS 3.85% Senior Notes due 2017 (2017 URS Senior Notes) and the URS 5.00% Senior Notes due 2022 (2022 URS Senior Notes), totaling $1.0 billion (URS Senior Notes). The URS acquisition triggered change in control provisions in the URS Senior Notes that allowed the holders of the URS Senior Notes to redeem their URS Senior Notes at a cash price equal to 101% of the principal amount and, accordingly, we redeemed $572.3 million of the URS Senior Notes on October 24, 2014. The remaining 2017 URS Senior Notes matured and were fully redeemed on April 3, 2017 for $179.2 million using proceeds from a $185 million delayed draw term loan A facility tranche under the Credit Agreement.

The remaining $248.5 million principal amount of the 2022 URS Senior Notes were fully redeemed on August 31, 2020 using proceeds from a $248.5 million secured delayed draw term loan facility under the Credit Agreement, at a redemption price that was 106.835% of the principal amount outstanding plus accrued and unpaid interest. The August 31, 2020 redemption resulted in a $17.0 million prepayment premium, which was included in interest expense.

Other Debt and Other Items

Other debt consists primarily of obligations under capital leases and loans, and unsecured credit facilities. Our unsecured credit facilities are primarily used for standby letters of credit issued in connection with general and professional liability insurance programs and for contract performance guarantees. At September 30, 2020 and September 30, 2019, these outstanding standby letters of credit totaled $510.1 million and $470.9 million, respectively. As of September 30, 2020, we had $435.3 million available under these unsecured credit facilities.

Effective Interest Rate

Our average effective interest rate on our total debt, including the effects of the interest rate swap agreements, during the years ended September 30, 2020, 2019 and 2018 was 5.3%, 5.1% and 5.1%, respectively.

Interest expense in the consolidated statement of operations included amortization of deferred debt issuance costs for the years ended September 30, 2020, 2019 and 2018 of $5.4 million, $5.0 million and $12.5 million, respectively.

Other Commitments

We enter into various joint venture arrangements to provide architectural, engineering, program management, construction management and operations and maintenance services. The ownership percentage of these joint ventures is typically representative of the work to be performed or the amount of risk assumed by each joint venture partner. Some of these joint ventures are considered variable interest. We have consolidated all joint ventures for which we have control. For all others, our portion of the earnings is recorded in equity in earnings of joint ventures. See Note 6, Joint Ventures and Variable Interest Entities, in the notes to our consolidated financial statements.

Other than normal property and equipment additions and replacements, expenditures to further the implementation of our various information technology systems, commitments under our incentive compensation programs, amounts we may expend to repurchase stock under our stock repurchase program and acquisitions from time to time and disposition costs, we currently do not have any significant capital expenditures or outlays planned except as described below. However, if we acquire additional businesses in the future or if we embark on other capital-intensive initiatives, additional working capital may be required.

Under our secured revolving credit facility and other facilities discussed in Other Debt and Other Items above, as of September 30, 2020, there was approximately $529.1 million outstanding under standby letters of credit primarily issued in connection with general and professional liability insurance programs and for contract performance guarantees. For those projects for which we have issued a performance guarantee, if the project subsequently fails to meet guaranteed performance standards, we may either incur significant additional costs or be held responsible for the costs incurred by the client to achieve the required performance standards.

We recognized on our balance sheet the funded status of our pension benefit plans, measured as the difference between the fair value of plan assets and the projected benefit obligation. At September 30, 2020, our defined benefit pension plans had an aggregate deficit (the excess of projected benefit obligations over the fair value of plan assets) of approximately $406.0 million. The total amounts of employer contributions paid for the year ended September 30, 2020 were $7.0 million for U.S. plans and $27.7 million for non-U.S. plans. Funding requirements for each plan are determined based on the local laws of the country where such plan resides. In some countries, the funding requirements are mandatory while in other countries, they are discretionary. There is a required minimum contribution for one of our domestic plans; however, we may make additional discretionary contributions. In the future, such pension funding may increase or decrease depending on changes in the levels of interest rates, pension plan performance and other factors. In addition, we have collective bargaining agreements with unions that require us to contribute to various third party multiemployer pension plans that we do not control or manage. In addition, we have collective bargaining agreements with unions that require us to contribute various third party multiemployer plans that we do not control or manage. For the year ended September 30, 2020, we contributed $4.0 million to multiemployer pension plans.

Condensed Combined Financial Information

In connection with the registration of the Company’s 2014 Senior Notes that were declared effective by the SEC on September 29, 2015, AECOM became subject to the requirements of Rule 3-10 of Regulation S-X, as amended, regarding financial statements of guarantors and issuers of guaranteed securities. Both the 2014 Senior Notes and the 2017 Senior Notes are fully and unconditionally guaranteed on a joint and several basis by some of AECOM’s directly and indirectly 100% owned subsidiaries (the Subsidiary Guarantors). Other than customary restrictions imposed by applicable statutes, there are no restrictions on the ability of the Subsidiary Guarantors to transfer funds to AECOM in the form of cash dividends, loans or advances.

The following tables present condensed combined summarized financial information for AECOM and the Subsidiary Guarantors. All intercompany balances and transactions are eliminated in the presentation of the combined financial statements. Amounts provided do not represent our total consolidated amounts as of September 30, 2020 and for the twelve months then ended.

Condensed Combined Balance Sheets
Parent and Subsidiary Guarantors
(unaudited - in millions)

	September 30, 2020
Current assets	$ 3,801.9
Non-current assets	3,620.1
Total assets	$ 7,422.0
Current liabilities	$ 3,175.1
Non-current liabilities	2,806.8
Total liabilities	5,981.9
Total stockholders' equity	1,440.1
Total liabilities and stockholders' equity	$ 7,422.0

Condensed Combined Statement of Operations
Parent and Subsidiary Guarantors
(unaudited - in millions)

	For the twelve months ended September 30, 2020
Revenue	$ 7,437.8
Cost of revenue	7,128.2
Gross profit	309.6
Net loss from continuing operations	(94.2)
Net income from discontinued operations	130.2
Net income	$ 36.0
Net income attributable to AECOM	$ 36.0

Commitments and Contingencies

We record amounts representing our probable estimated liabilities relating to claims, guarantees, litigation, audits and investigations. We rely in part on qualified actuaries to assist us in determining the level of reserves to establish for insurance-related claims that are known and have been asserted against us, and for insurance-related claims that are believed to have been incurred based on actuarial analysis, but have not yet been reported to our claims administrators as of the respective balance sheet dates. We include any adjustments to such insurance reserves in our consolidated results of operations. Our reasonably possible loss disclosures are presented on a gross basis prior to the consideration of insurance recoveries. We do not record gain contingencies until they are realized. In the ordinary course of business, we may not be aware that we or our affiliates are under investigation and may not be aware of whether or not a known investigation has been concluded.

In the ordinary course of business, we may enter into various arrangements providing financial or performance assurance to clients, lenders, or partners. Such arrangements include standby letters of credit, surety bonds, and corporate guarantees to support the creditworthiness or the project execution commitments of our affiliates, partnerships and joint ventures. Performance arrangements typically have various expiration dates ranging from the completion of the project contract and extending beyond contract completion in some circumstances such as for warranties. We may also guarantee that a project, when complete, will achieve specified performance standards. If the project subsequently fails to meet guaranteed performance standards, we may incur additional costs, pay liquidated damages or be held responsible for the costs incurred by the client to achieve the required performance standards. The potential payment amount of an outstanding performance arrangement is typically the remaining cost of work to be performed by or on behalf of third parties. Generally, under joint venture arrangements, if a partner is financially unable to complete its share of the contract, the other partner(s) may be required to complete those activities.

At September 30, 2020 and 2019, we were contingently liable in the amount of approximately $529.1 million and $493.7 million, respectively, in issued standby letters of credit and $6.2 billion and $4.8 billion, respectively, in issued surety bonds primarily to support project execution.

In the ordinary course of business, we enter into various agreements providing financial or performance assurances to clients on behalf of certain unconsolidated partnerships, joint ventures and other jointly executed contracts. These agreements are entered into primarily to support the project execution commitments of these entities.

Our registered investment adviser jointly manages and sponsors the AECOM-Canyon Equity Fund, L.P. (the “Fund”), in which we indirectly hold an equity interest and have an ongoing capital commitment to fund investments. At September 30, 2020, we have capital commitments of $22.1 million to the Fund over the next 8 years.

In addition, in connection with the investment activities of AECOM Capital, we provide guarantees of certain contractual obligations, including guarantees for completion of projects, repayment of debt, environmental indemnity obligations and other lender required guarantees.

Department of Energy Deactivation, Demolition, and Removal Project

AECOM Energy and Construction, Inc., an Ohio corporation, a former affiliate of the Company (“Former Affiliate”) executed a cost-reimbursable task order with the Department of Energy (DOE) in 2007 to provide deactivation, demolition and removal services at a New York State project site that, during 2010, experienced contamination and performance issues. In February 2011, the Former Affiliate and the DOE executed a Task Order Modification that changed some cost-reimbursable contract provisions to at-risk. The Task Order Modification, including subsequent amendments, required the DOE to pay all project costs up to $106 million, required the Former Affiliate and the DOE to equally share in all project costs incurred from $106 million to $146 million, and required the Former Affiliate to pay all project costs exceeding $146 million.

Due to unanticipated requirements and permitting delays by federal and state agencies, as well as delays and related ground stabilization activities caused by Hurricane Irene in 2011, the Former Affiliate was required to perform work outside the scope of the Task Order Modification. In December 2014, the Former Affiliate submitted an initial set of claims against the DOE pursuant to the Contracts Disputes Acts seeking recovery of $103 million, including additional fees on changed work scope (the “2014 Claims”). On December 6, 2019, the Former Affiliate submitted a second set of claims against the DOE seeking recovery of an additional $60.4 million, including additional project costs and delays outside the scope of the contract as a result of differing site and ground conditions (the “2019 Claims”). The Former Affiliate also submitted three alternative breach of contract claims to the 2014 and 2019 Claims that may entitle the Former Affiliate to recovery of $148.5 million to $329.4 million. On December 30, 2019, the DOE denied the Former Affiliate’s 2014 Claims. On September 25, 2020, the DOE denied the Former Affiliate’s 2019 Claims. The Company intends to appeal these decisions by December 30, 2020. Deconstruction, decommissioning and site restoration activities are complete.

On January 31, 2020, the Company completed the sale of its Management Services business to the Purchaser including the Former Affiliate who worked on the DOE project. The Company and the Purchaser agreed that all future DOE project claim recoveries and costs will be split 10% to the Purchaser and 90% to the Company with the Company retaining control of all future strategic legal decisions.

The Company intends to vigorously pursue all claimed amounts but can provide no certainty that the Company will recover 2014 and 2019 Claims submitted against the DOE, or any additional incurred claims or costs, which could have a material adverse effect on the Company’s results of operations.

New York Department of Environmental Conservation

In September 2017, AECOM USA, Inc. was advised by the New York State Department of Environmental Conservation (DEC) of allegations that it committed environmental permit violations pursuant to the New York Environmental Conservation Law (ECL) associated with AECOM USA, Inc.’s oversight of a stream restoration project for Schoharie County which could result in substantial penalties if calculated under the ECL’s maximum civil penalty provisions. AECOM USA, Inc. disputes this claim and intends to continue to defend this matter vigorously; however, AECOM USA, Inc. cannot provide assurances that it will be successful in these efforts. The potential range of loss in excess of any current accrual cannot be reasonably estimated at this time primarily because the matter involves complex and unique environmental and regulatory issues; the project site involves the oversight and involvement of various local, state and federal government agencies; there is substantial uncertainty regarding any alleged damages; and the matter is in its preliminary stages.

Refinery Turnaround Project

A Former Affiliate of the Company entered into an agreement to perform turnaround maintenance services during a planned shutdown at a refinery in Montana in December 2017. The turnaround project was completed in February 2019. Due to circumstances outside of the Company's Former Affiliate’s control, including client directed changes and delays and the refinery’s condition, the Company's Former Affiliate performed additional work outside of the original contract over $90 million and is entitled to payment from the refinery owner of approximately $144 million. In March 2019, the refinery owner sent a letter to the Company’s Former Affiliate alleging it incurred approximately $79 million in damages due to the Company’s Former Affiliate’s project performance. In April 2019, the Company’s Former Affiliate filed and perfected a $132 million construction lien against the refinery for unpaid labor and materials costs. In August 2019, following a subcontractor complaint filed in the Thirteen Judicial District Court of Montana asserting claims against the refinery owner and the Company’s Former Affiliate, the refinery owner crossclaimed against the Company’s Former Affiliate and the subcontractor. In October 2019, following the subcontractor’s dismissal of its claims, the Company’s Former Affiliate removed the matter to federal court and cross claimed against the refinery owner. In December 2019, the refinery owner claimed $93.0 million in damages and offsets against the Company’s Former Affiliate.

On January 31, 2020, the Company completed the sale of its Management Services business to the Purchaser including the Former Affiliate, however, the Refinery Turnaround project, including related claims and liabilities, remained as part of the Company's self-perform at-risk construction business which is classified within discontinued operations.

The Company intends to vigorously prosecute and defend this matter; however, the Company cannot provide assurance that the Company will be successful in these efforts. The resolution of this matter and any potential range of loss cannot be reasonably determined or estimated at this time, primarily because the matter raises complex legal issues that Company is continuing to assess.

Contractual Obligations and Commitments

The following summarizes our contractual obligations and commercial commitments as of September 30, 2020:

Contractual Obligations and Commitments	Total	Less than One Year	One to Three Years (in millions)	Three to Five Years	More than Five Years
Debt	$ 2,085.0	$ 20.9	$ 262.7	$ 804.1	$ 997.3
Interest on debt	581.5	121.9	230.4	153.7	75.5
Operating leases	1,121.1	212.4	311.1	225.8	371.8
Pension funding obligations(1)	40.6	40.6	—	—	—
Total contractual obligations and commitments	$ 3,828.2	$ 395.8	$ 804.2	$ 1,183.6	$ 1,444.6

(1) Represents expected fiscal 2021 contributions to fund our defined benefit pension and other postretirement plans. Contributions beyond one year have not been included as amounts are not determinable.

New Accounting Pronouncements and Changes in Accounting

In May 2014, the Financial Accounting Standards Board (FASB) issued new accounting guidance which amended the existing accounting standards for revenue recognition. The new accounting guidance establishes principles for recognizing revenue upon the transfer of promised goods or services to customers, in an amount that reflects the expected consideration received in exchange for those goods or services. We adopted the new standard on October 1, 2018, using the modified retrospective method, which resulted in an adjustment to retained earnings of $7.0 million, net of tax. Detailed disclosures regarding the adoption and other required disclosures can be found in Note 4.

In February 2016, the FASB issued new accounting guidance which changes accounting requirements for leases. The new guidance requires lessees to recognize the assets and liabilities arising from all leases, including those classified as operating leases under previous accounting guidance, on the balance sheet. It also requires disclosure of key information about leasing arrangements to increase transparency and comparability among organizations. We adopted the new guidance beginning October 1, 2019 using the modified retrospective adoption method, which resulted in a downward adjustment to retained earnings of $87.8 million, net of tax. Detailed disclosures regarding the adoption and other required disclosures can be found in Note 11.

In June 2016, the FASB issued a new credit loss standard that changes the impairment model for most financial assets and some other instruments. The new guidance will replace the current “incurred loss” approach with an “expected loss” model for instruments measured at amortized cost. It also simplifies the accounting model for purchased credit-impaired debt securities and loans. The guidance will be effective for the fiscal year starting October 1, 2020. We do not expect that the adoption of this standard will have a material impact on our consolidated financial statements.

In February 2018, the FASB issued new accounting guidance which provides entities the option to reclassify certain tax effects from other comprehensive income to retained earnings. The guidance addresses a narrow-scope financial reporting issue related to the tax effects that may become stranded in accumulated other comprehensive income as a result of the enactment of the Tax Cuts and Jobs Act (Tax Act). Under the guidance, an entity may elect to reclassify the income tax effects of the Tax Act on items within accumulated other comprehensive income to retained earnings. We have determined that we will not make this election.

In August 2018, the FASB issued new accounting guidance aligning the capitalization of certain implementation costs incurred in a hosting arrangement that is a service contract with previously existing guidance for capitalizing costs incurred to develop internal-use software. The new guidance will be effective for the fiscal year starting October 1, 2020. We do not expect that the adoption of this guidance will have a material impact on our consolidated financial statements.

In August 2018, the FASB issued new accounting guidance amending the disclosure requirements for fair value measurements. These improvements will require more disclosure for amounts measured at fair value, and specifically unobservable inputs used in fair value measurements. We expect to adopt the new guidance starting on October 1, 2020. We are currently evaluating the impact that the new guidance will have on our financial reporting process.

In March 2020, the Securities and Exchange Commission (SEC) adopted final rules that amend the financial disclosure requirement for guarantors of registered debt securities in Rule 3-10 of Regulation S-X. The new rules amend and streamline the disclosures required by guarantors and issuers of guaranteed securities. Among other things, the new disclosures may be located outside the financial statements. The new rule is effective January 4, 2021, and early adoption is permitted. We adopted the new rule on March 31, 2020. Accordingly, the revised condensed consolidating financial information is presented in Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations.

Off-Balance Sheet Arrangements

We enter into various joint venture arrangements to provide architectural, engineering, program management, construction management and operations and maintenance services. The ownership percentage of these joint ventures is typically representative of the work to be performed or the amount of risk assumed by each joint venture partner. Some of these joint ventures are considered variable interest entities. We have consolidated all joint ventures for which we have control. For all others, our portion of the earnings are recorded in equity in earnings of joint ventures. See Note 6 in the notes to our consolidated financial statements. We do not believe that we have any off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that would be material to investors.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Financial Market Risks

We are exposed to market risk, primarily related to foreign currency exchange rates and interest rate exposure of our debt obligations that bear interest based on floating rates. We actively monitor these exposures. Our objective is to reduce, where we deem appropriate to do so, fluctuations in earnings and cash flows associated with changes in foreign exchange rates and interest rates. In order to accomplish this objective, we sometimes enter into derivative financial instruments, such as forward contracts and interest rate hedge contracts. It is our policy and practice to use derivative financial instruments only to the extent necessary to manage our exposures. We do not use derivative financial instruments for trading purposes.

Foreign Exchange Rates

We are exposed to foreign currency exchange rate risk resulting from our operations outside of the U.S. We use foreign currency forward contracts from time to time to mitigate foreign currency risk. We limit exposure to foreign currency fluctuations in most of our contracts through provisions that require client payments in currencies corresponding to the currency in which costs are incurred. As a result of this natural hedge, we generally do not need to hedge foreign currency cash flows for contract work performed. The functional currency of our significant foreign operations is the respective local currency.

Interest Rates

Our Credit Agreement and certain other debt obligations are subject to variable rate interest which could be adversely affected by an increase in interest rates. As of September 30, 2020 and 2019, we had $248.5 million and $1,182.2 million, respectively, in outstanding borrowings under our term credit agreements and our revolving credit facility. Interest on amounts borrowed under these agreements is subject to adjustment based on specified levels of financial performance. The applicable margin that is added to the borrowing's base rate can range from 0.25% to 2.00%. For the year ended September 30, 2020, our weighted average floating rate borrowings were $292.4 million, or $192.4 million excluding borrowings with effective fixed interest rates due to interest rate swap agreements. If short term floating interest rates had increased by 1.00%, our interest expense for the year ended September 30, 2020 would have increased by $2.9 million. We invest our cash in a variety of financial instruments, consisting principally of money market securities or other highly liquid, short-term securities that are subject to minimal credit and market risk.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

AECOM
Index to Consolidated Financial Statements
September 30, 2020

Audited Annual Consolidated Financial Statements

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of AECOM

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of AECOM (the "Company") as of September 30, 2020 and 2019, the related consolidated statements of operations, comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended September 30, 2020, and the related notes and financial statement schedule listed in the Index at Item 15(a) (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at September 30, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended September 30, 2020, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the Company's internal control over financial reporting as of September 30, 2020, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated November 18, 2020 expressed an unqualified opinion thereon.

Adoption of New Accounting Standard

As discussed in Notes 2 and 11 to the consolidated financial statements, the Company changed its method of accounting for leases in 2020 due to the adoption of ASU No. 2016-02, *Leases*.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Revenue Recognition - Contract cost and claim recovery estimates

Description of the Matter	For the year ended September 30, 2020, contract revenues recognized by the Company were $13.2 billion. Contract revenues include $3.6 billion which relate to fixed price contracts. As described in Note 4 of the consolidated financial statements, the Company generally recognizes revenues for these contracts over time as performance obligations are satisfied. The Company generally measures its progress to completion using an input measure of total costs incurred divided by total costs expected to be incurred. In addition, the Company's estimate of transaction price includes variable consideration associated with claims only to the extent that a significant reversal would not be probable. Recognition of revenue and profit over time as performance obligations are satisfied for long-term fixed price contracts is highly judgmental as it requires the Company to prepare estimates of total contract revenue and total contract costs, including costs to complete in-process contracts. These estimates are dependent upon a number of factors, including the accuracy of estimates made at the balance sheet date, such as engineering progress, material quantities, the achievement of milestones, penalty provisions, labor productivity and cost estimates. As of September 30, 2020, significant claims included in contract assets and other non-current assets on the consolidated balance sheet were approximately $170 million. Revenue recognition relating to claims is highly judgmental as the amount has been disputed by the customer and it requires the Company to prepare estimates of amounts expected to be recovered. Changes in recovery estimates can have a material effect on the amount of revenue recognized. Auditing contract revenue recognition is complex and highly judgmental due to the variability and uncertainty associated with estimating the costs to complete and amounts expected to be recovered from claims. Changes in these estimates would have a significant effect on the amount of contract revenue recognized.
How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design, and tested the operating effectiveness of controls that address the risk of material misstatement of contract revenue including those associated with cost to complete estimates for long-term fixed price contracts and estimates of amounts expected to be recovered from claims. For example, we tested controls over the Company's review of estimated direct and indirect costs to be incurred and estimates of claim recovery amounts. To evaluate the Company's determination of estimated costs to complete, we selected a sample of contracts and, among other things, inspected the executed contracts including any significant amendments; conducted interviews with and inspected questionnaires prepared by project personnel; tested key components of the cost to complete estimates, including materials, labor, and subcontractors costs; reviewed support for estimates of project contingencies; compared actual project margins to historical and expected results; and recalculated revenues recognized. To test revenue recognized relating to claims, we selected a sample of projects and evaluated the estimates made by management by reviewing documentation from management's specialists and external counsel to support the amount of the claim. We also tested management's estimation process by performing a lookback analysis to evaluate claims settled in the current year compared to management's prior year estimates.

Valuation of goodwill

Description of the Matter	As of September 30, 2020, the Company’s goodwill was $3.5 billion. As discussed in Note 1 of the consolidated financial statements, in the fourth quarter of each fiscal year the Company performs an annual goodwill impairment test for each reporting unit and between annual tests if events occur or circumstances change which suggest that goodwill should be evaluated. Auditing management’s goodwill impairment tests is complex and highly judgmental due to the significant estimates required to determine the fair value of the reporting units. These fair value estimates are affected by significant assumptions including revenue growth rate, profitability, weighted average cost of capital, and terminal values, which reflect management’s expectations about future market or economic conditions.
How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design, and tested the operating effectiveness of controls over the Company’s goodwill impairment review process including management’s review of the significant assumptions used to determine the fair value of the reporting units. To test the estimated fair value of its reporting units, with the support of a valuation specialist, we performed audit procedures that included, among others, assessing fair value methodologies and testing the significant assumptions discussed above and the underlying data used by the Company in its analysis. We compared the significant assumptions used by management to current industry and economic trends, historical operating results, contract backlog, changes to the Company’s business operations and other relevant factors. We performed a lookback analysis to evaluate the accuracy of management’s prior year revenue and profitability estimates. We performed sensitivity analyses of significant assumptions to evaluate the changes in the fair value of the reporting units that would result from changes in the assumptions. We also tested the reconciliation of the fair value of the reporting units to the market capitalization of the Company.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 1990.

Los Angeles, CA
November 18, 2020

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of AECOM

Opinion on Internal Control over Financial Reporting

We have audited AECOM's (the "Company") internal control over financial reporting as of September 30, 2020, based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the "COSO criteria"). In our opinion, AECOM maintained, in all material respects, effective internal control over financial reporting as of September 30, 2020, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the 2020 consolidated financial statements of the Company and our report dated November 18, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

Los Angeles, California
November 18, 2020

AECOM

Consolidated Balance Sheets
(in thousands, except share data)

	September 30, 2020	September 30, 2019
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 1,599,688	$ 777,476
Cash in consolidated joint ventures	108,644	108,163
Total cash and cash equivalents	1,708,332	885,639
Accounts receivable—net	2,865,888	2,869,216
Contract assets	1,536,389	1,581,806
Prepaid expenses and other current assets	667,393	515,593
Current assets held for sale	716,727	1,633,302
Income taxes receivable	35,637	49,089
TOTAL CURRENT ASSETS	7,530,366	7,534,645
PROPERTY AND EQUIPMENT—NET	381,672	405,605
DEFERRED TAX ASSETS—NET	357,318	288,949
INVESTMENTS IN UNCONSOLIDATED JOINT VENTURES	229,312	256,131
GOODWILL	3,484,221	3,476,813
INTANGIBLE ASSETS—NET	76,917	99,636
OTHER NON-CURRENT ASSETS	160,036	172,134
OPERATING LEASE RIGHT-OF-USE ASSETS	652,115	—
NON-CURRENT ASSETS HELD FOR SALE	126,994	2,316,995
TOTAL ASSETS	$ 12,998,951	$ 14,550,908
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Short-term debt	$ 223	$ 47,835
Accounts payable	2,352,144	2,410,838
Accrued expenses and other current liabilities	2,211,734	1,878,319
Income taxes payable	47,103	59,541
Contract liabilities	988,881	851,040
Current liabilities held for sale	469,718	1,163,654
Current portion of long-term debt	20,651	50,527
TOTAL CURRENT LIABILITIES	6,090,454	6,461,754
OTHER LONG-TERM LIABILITIES	162,784	266,304
OPERATING LEASE LIABILITIES	745,287	—
LONG-TERM LIABILITIES HELD FOR SALE	98,793	313,962
DEFERRED TAX LIABILITY-NET	3,491	4,511
PENSION BENEFIT OBLIGATIONS	443,462	387,042
LONG-TERM DEBT	2,041,136	3,217,985
TOTAL LIABILITIES	9,585,407	10,651,558
COMMITMENTS AND CONTINGENCIES (Note 18)		
AECOM STOCKHOLDERS' EQUITY:		
Common stock—authorized, 300,000,000 shares of $0.01 par value as of September 30, 2020 and 2019; issued and outstanding 157,044,687 and 157,482,983 shares as of September 30, 2020 and 2019, respectively	1,570	1,575
Additional paid-in capital	4,035,414	3,953,650
Accumulated other comprehensive loss	(918,674)	(864,197)
Retained earnings	174,248	599,548
TOTAL AECOM STOCKHOLDERS' EQUITY	3,292,558	3,690,576
Noncontrolling interests	120,986	208,774
TOTAL STOCKHOLDERS' EQUITY	3,413,544	3,899,350
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 12,998,951	$ 14,550,908

See accompanying Notes to Consolidated Financial Statements.

AECOM

Consolidated Statements of Operations
(in thousands, except per share data)

	Fiscal Year Ended		
	September 30, 2020	September 30, 2019	September 30, 2018
Revenue	$ 13,239,976	$ 13,642,455	$ 13,878,316
Cost of revenue	12,530,416	13,030,800	13,399,283
Gross profit	709,560	611,655	479,033
Equity in earnings of joint ventures	48,781	49,320	49,357
General and administrative expenses	(188,535)	(148,123)	(135,787)
Restructuring costs	(188,345)	(95,446)	—
Gain on disposal activities	—	3,590	—
Impairment of long-lived assets	—	(24,900)	—
Income from operations	381,461	396,096	392,603
Other income	11,056	14,556	20,628
Interest expense	(159,914)	(161,482)	(201,023)
Income from continuing operations before taxes	232,603	249,170	212,208
Income tax expense (benefit) for continuing operations	45,753	13,498	(3,494)
Net income from continuing operations	186,850	235,672	215,702
Net loss from discontinued operations	(340,591)	(419,662)	(18,575)
Net (loss) income	(153,741)	(183,990)	197,127
Net income attributable to noncontrolling interests from continuing operations	(16,398)	(24,710)	(20,197)
Net income attributable to noncontrolling interests from discontinued operations	(16,231)	(52,350)	(40,462)
Net income attributable to noncontrolling interests	(32,629)	(77,060)	(60,659)
Net income attributable to AECOM from continuing operations	170,452	210,962	195,505
Net loss attributable to AECOM from discontinued operations	(356,822)	(472,012)	(59,037)
Net (loss) income attributable to AECOM	$ (186,370)	$ (261,050)	$ 136,468
Net (loss) income attributable to AECOM per share:			
Basic continuing operations per share	$ 1.07	$ 1.34	$ 1.23
Basic discontinued operations per share	$ (2.24)	$ (3.00)	$ (0.37)
Basic earnings per share	$ (1.17)	$ (1.66)	$ 0.86
Diluted continuing operations per share	$ 1.06	$ 1.32	$ 1.20
Diluted discontinued operations per share	$ (2.22)	$ (2.95)	$ (0.36)
Diluted earnings per share	$ (1.16)	$ (1.63)	$ 0.84
Weighted average shares outstanding:			
Basic	159,005	157,044	159,101
Diluted	161,292	159,684	162,261

See accompanying Notes to Consolidated Financial Statements.

AECOM

Consolidated Statements of Comprehensive Income (Loss)
(in thousands)

	Fiscal Year Ended		
	September 30, 2020	September 30, 2019	September 30, 2018
Net (loss) income	$ (153,741)	$ (183,990)	$ 197,127
Other comprehensive (loss) income, net of tax:			
Net unrealized gain (loss) on derivatives, net of tax	4,094	(13,972)	1,693
Foreign currency translation adjustments	(18,206)	(46,628)	(82,717)
Pension adjustments, net of tax	(40,051)	(100,367)	79,523
Other comprehensive (loss) income, net of tax	(54,163)	(160,967)	(1,501)
Comprehensive (loss) income, net of tax	(207,904)	(344,957)	195,626
Noncontrolling interests in comprehensive income of consolidated subsidiaries, net of tax	(32,943)	(76,960)	(61,827)
Comprehensive (loss) income attributable to AECOM, net of tax	$ (240,847)	$ (421,917)	$ 133,799

See accompanying Notes to Consolidated Financial Statements.

AECOM

Consolidated Statements of Stockholders' Equity
(in thousands)

	Common Stock	Additional Paid-In Capital	Accumulated Other Comprehensive Loss	Retained Earnings	Total AECOM Stockholders' Equity	Non-Controlling Interests	Total Stockholder's Equity
BALANCE AT SEPTEMBER 30, 2017	$ 1,575	$ 3,733,572	$ (700,661)	$ 961,640	$ 3,996,126	$ 218,560	$ 4,214,686
Net income	—	—	—	136,468	136,468	60,659	197,127
Other comprehensive loss	—	—	(2,669)	—	(2,669)	1,168	(1,501)
Issuance of stock	42	68,069	—	—	68,111	—	68,111
Repurchases of stock under stock repurchase program	(40)	—	—	(149,960)	(150,000)	—	(150,000)
Repurchases of stock	(8)	(31,093)	—	—	(31,101)	—	(31,101)
Proceeds from exercise of options	1	2,749	—	—	2,750	—	2,750
Stock based compensation	—	73,095	—	—	73,095	—	73,095
Other transactions with noncontrolling interests	—	—	—	—	—	(5,012)	(5,012)
Contributions from noncontrolling interests	—	—	—	—	—	7,729	7,729
Distributions to noncontrolling interests	—	—	—	—	—	(97,510)	(97,510)
BALANCE AT SEPTEMBER 30, 2018	1,570	3,846,392	(703,330)	948,148	4,092,780	185,594	4,278,374
Net loss	—	—	—	(261,050)	(261,050)	77,060	(183,990)
Cumulative effect of accounting standard adoption	—	—	—	(12,452)	(12,452)	—	(12,452)
Other comprehensive loss	—	—	(160,867)	—	(160,867)	(100)	(160,967)
Issuance of stock	44	66,517	—	—	66,561	—	66,561
Repurchases of stock	(39)	(23,071)	—	(75,098)	(98,208)	—	(98,208)
Stock based compensation	—	63,812	—	—	63,812	—	63,812
Other transactions with noncontrolling interests	—	—	—	—	—	16,208	16,208
Contributions from noncontrolling interests	—	—	—	—	—	5,069	5,069
Distributions to noncontrolling interests	—	—	—	—	—	(75,057)	(75,057)
BALANCE AT SEPTEMBER 30, 2019	1,575	3,953,650	(864,197)	599,548	3,690,576	208,774	3,899,350
Net loss	—	—	—	(186,370)	(186,370)	32,629	(153,741)
Cumulative effect of accounting standard adoption	—	—	—	(87,787)	(87,787)	—	(87,787)
Other comprehensive loss	—	—	(54,477)	—	(54,477)	314	(54,163)
Issuance of stock	43	63,297	—	—	63,340	—	63,340
Repurchases of stock	(48)	(35,762)	—	(151,143)	(186,953)	—	(186,953)
Stock based compensation	—	54,229	—	—	54,229	—	54,229
Disposal of noncontrolling interest of business sold	—	—	—	—	—	(60,089)	(60,089)
Contributions from noncontrolling interests	—	—	—	—	—	9,917	9,917
Distributions to noncontrolling interests	—	—	—	—	—	(70,559)	(70,559)
BALANCE AT SEPTEMBER 30, 2020	$ 1,570	$ 4,035,414	$ (918,674)	$ 174,248	$ 3,292,558	$ 120,986	$ 3,413,544

See accompanying Notes to Consolidated Financial Statements.

AECOM

Consolidated Statements of Cash Flows
(in thousands)

	Fiscal Year Ended		
	September 30, 2020	September 30, 2019	September 30, 2018
CASH FLOWS FROM OPERATING ACTIVITIES:			
Net (loss) income	$ (153,741)	$ (183,990)	$ 197,127
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Depreciation and amortization	237,376	261,185	267,570
Equity in earnings of unconsolidated joint ventures	(23,279)	(80,990)	(81,133)
Distribution of earnings from unconsolidated joint ventures	90,158	65,954	118,712
Non-cash stock compensation	54,229	63,812	73,095
Prepayment premium on redemption of unsecured senior notes	16,986	—	34,504
Impairment of long-lived assets, including goodwill	336,472	615,400	168,178
Loss on disposal activities	—	10,381	2,949
Gain on sale of discontinued operations	(161,900)	—	—
Foreign currency translation	(31,919)	(19,099)	(48,270)
Write-off of debt issuance costs	—	—	7,048
Deferred income tax expense (benefit)	11,130	(98,015)	36,746
Other	32,028	5,899	(472)
Changes in operating assets and liabilities, net of effects of acquisitions:			
Accounts receivable and contract assets	(136,955)	(316,487)	(381,787)
Prepaid expenses and other assets	(31,815)	(16,576)	(75,980)
Accounts payable	(192,980)	251,410	474,950
Accrued expenses and other current liabilities	118,441	259,572	18,474
Contract liabilities	128,312	7,559	2,729
Other long-term liabilities	37,079	(48,399)	(39,887)
Net cash provided by operating activities	329,622	777,616	774,553
CASH FLOWS FROM INVESTING ACTIVITIES:			
Proceeds from sale of discontinued operations, net of cash disposed	2,218,866	—	—
Proceeds from purchase price adjustment on business acquisition	—	—	2,203
Cash acquired from consolidation of joint venture	—	—	7,630
Proceeds from disposal of businesses, net of cash disposed	—	46,490	19,537
Investment in unconsolidated joint ventures	(111,077)	(141,769)	(91,030)
Return of investment in unconsolidated joint ventures	28,047	22,750	105,769
Proceeds from sale of investments	12,392	12,365	7,174
Payments for purchase of investments	—	(3,223)	(23,492)
Proceeds from disposal of property and equipment	3,800	17,291	26,401
Payments for capital expenditures	(114,591)	(100,664)	(113,279)
Net cash provided by (used in) investing activities	2,037,437	(146,760)	(59,087)
CASH FLOWS FROM FINANCING ACTIVITIES:			
Proceeds from borrowings under credit agreements	4,452,078	7,700,774	8,529,014
Repayments of borrowings under credit agreements	(5,568,320)	(7,984,624)	(8,040,262)
Redemption of unsecured senior notes	(248,522)	—	(800,000)
Prepayment premium on redemption of unsecured senior notes	(16,986)	—	(34,504)
Cash paid for debt issuance costs	(4,228)	—	(12,181)
Proceeds from issuance of common stock	26,388	30,448	35,233
Proceeds from exercise of stock options	—	—	2,750
Payments to repurchase common stock	(186,953)	(98,208)	(179,466)
Net distributions to noncontrolling interests	(60,642)	(69,988)	(89,781)
Other financing activities	(20,785)	(11,681)	(35,671)
Net cash used in financing activities	(1,627,970)	(433,279)	(624,868)
EFFECT OF EXCHANGE RATE CHANGES ON CASH	(1,194)	(3,956)	(6,227)
NET INCREASE IN CASH AND CASH EQUIVALENTS	737,895	193,621	84,371
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	1,080,354	886,733	802,362
CASH AND CASH EQUIVALENTS AT END OF YEAR	1,818,249	1,080,354	886,733
LESS: CASH AND CASH EQUIVALENTS INCLUDED IN CURRENT ASSETS HELD FOR SALE	(109,917)	(194,715)	(155,240)
CASH AND CASH EQUIVALENTS OF CONTINUING OPERATIONS AT END OF YEAR	$ 1,708,332	$ 885,639	$ 731,493
SUPPLEMENTAL CASH FLOW INFORMATION:			
Interest paid	$ (201,402)	$ (222,263)	$ (271,842)
Net income taxes (paid) refund received	$ (71,031)	$ 2,500	$ (40,589)

See accompanying Notes to Consolidated Financial Statements.

AECOM

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Significant Accounting Policies

Organization—AECOM and its consolidated subsidiaries provide planning, consulting, architectural and engineering design services to commercial and government clients worldwide in major end markets such as transportation, facilities, environmental, energy, water and government. The Company also provides construction services, including building construction and energy, infrastructure and industrial construction, primarily in the Americas.

Fiscal Year—The Company reports results of operations based on 52 or 53-week periods ending on the Friday nearest September 30. For clarity of presentation, all periods are presented as if the year ended on September 30. Fiscal years 2020, 2019 and 2018 each contained 53, 52 and 52 weeks, respectively, and ended on October 2, September 27, and September 28, respectively.

Use of Estimates—The preparation of financial statements in conformity with accounting principles generally accepted in the United States (GAAP) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. The more significant estimates affecting amounts reported in the consolidated financial statements relate to revenues under long-term contracts and self-insurance accruals. Actual results could differ from those estimates.

Principles of Consolidation and Presentation—The consolidated financial statements include the accounts of all majority-owned subsidiaries and joint ventures in which the Company is the primary beneficiary. All inter-company accounts have been eliminated in consolidation. Also see Note 6 regarding joint ventures and variable interest entities.

Government Contract Matters—The Company's federal government and certain state and local agency contracts are subject to, among other regulations, regulations issued under the Federal Acquisition Regulations (FAR). These regulations can limit the recovery of certain specified indirect costs on contracts and subjects the Company to ongoing multiple audits by government agencies such as the Defense Contract Audit Agency (DCAA). In addition, most of the Company's federal and state and local contracts are subject to termination at the discretion of the client.

Audits by the DCAA and other agencies consist of reviews of the Company's overhead rates, operating systems and cost proposals to ensure that the Company accounted for such costs in accordance with the Cost Accounting Standards of the FAR (CAS). If the DCAA determines the Company has not accounted for such costs consistent with CAS, the DCAA may disallow these costs. There can be no assurance that audits by the DCAA or other governmental agencies will not result in material cost disallowances in the future.

Cash and Cash Equivalents—The Company's cash equivalents include highly liquid investments which have an initial maturity of three months or less.

Allowance for Doubtful Accounts—The Company records its accounts receivable net of an allowance for doubtful accounts. This allowance for doubtful accounts is estimated based on management's evaluation of the contracts involved and the financial condition of its clients. The factors the Company considers in its contract evaluations include, but are not limited to:

- Client type—federal or state and local government or commercial client;
- Historical contract performance;
- Historical collection and delinquency trends;

- Client credit worthiness; and
- General economic conditions.

Derivative Financial Instruments—The Company accounts for its derivative instruments as either assets or liabilities and carries them at fair value.

For derivative instruments that hedge the exposure to variability in expected future cash flows that are designated as cash flow hedges, the effective portion of the gain or loss on the derivative instrument is reported as a component of accumulated other comprehensive income in stockholders' equity and reclassified into income in the same period or periods during which the hedged transaction affects earnings. The ineffective portion of the gain or loss on the derivative instrument, if any, is recognized in current income. To receive hedge accounting treatment, cash flow hedges must be highly effective in offsetting changes to expected future cash flows on hedged transactions.

The net gain or loss on the effective portion of a derivative instrument that is designated as an economic hedge of the foreign currency translation exposure generated by the re-measurement of certain assets and liabilities denominated in a non-functional currency in a foreign operation is reported in the same manner as a foreign currency translation adjustment. Accordingly, any gains or losses related to these derivative instruments are recognized in current income.

Derivatives that do not qualify as hedges are adjusted to fair value through current income.

Fair Value of Financial Instruments—The Company determines the fair values of its financial instruments, including short-term investments, debt instruments and derivative instruments, and pension and post-retirement plan assets based on inputs or assumptions that market participants would use in pricing an asset or a liability. The Company categorizes its instruments using a valuation hierarchy for disclosure of the inputs used to measure fair value. This hierarchy prioritizes the inputs into three broad levels as follows: Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities; Level 2 inputs are quoted prices for similar assets and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument; Level 3 inputs are unobservable inputs based on the Company's assumptions used to measure assets and liabilities at fair value. The classification of a financial asset or liability within the hierarchy is determined based on the lowest level input that is significant to the fair value measurement.

The carrying amounts of cash and cash equivalents, accounts receivable and accounts payable approximate fair value because of the short maturities of these instruments. The carrying amount of the revolving credit facility approximates fair value because the interest rates are based upon variable reference rates.

The Company's fair value measurement methods may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Although the Company believes its valuation methods are appropriate and consistent with those used by other market participants, the use of different methodologies or assumptions to determine fair value could result in a different fair value measurement at the reporting date.

Property and Equipment—Property and equipment are recorded at cost and are depreciated over their estimated useful lives using the straight-line method. Expenditures for maintenance and repairs are expensed as incurred. Typically, estimated useful lives range from ten to forty-five years for buildings, three to ten years for furniture and fixtures and three to twelve years for computer systems and equipment. Leasehold improvements are amortized on a straight-line basis over the shorter of their estimated useful lives or the remaining terms of the underlying lease agreement.

Long-Lived Assets—Long-lived assets to be held and used are reviewed for impairment whenever events or circumstances indicate that the assets may not be recoverable. The carrying amount of an asset to be held and used is not recoverable if it exceeds the sum of the undiscounted cash flows expected from the use and eventual disposition of the asset. For assets to be held and used, impairment losses are recognized based upon the excess of the asset's carrying amount over the fair value of the asset. For long-lived assets to be disposed, impairment losses are recognized at the lower of the carrying amount or fair value less cost to sell.

Goodwill and Acquired Intangible Assets—Goodwill represents the excess of amounts paid over the fair value of net assets acquired from an acquisition. In order to determine the amount of goodwill resulting from an acquisition, the Company performs an assessment to determine the value of the acquired company's tangible and identifiable intangible assets and liabilities. In its assessment, the Company determines whether identifiable intangible assets exist, which typically include backlog and customer relationships. Intangible assets are amortized over the period in which the contractual or economic benefits of the intangible assets are expected to be realized.

The Company tests goodwill for impairment annually for each reporting unit in the fourth quarter of the fiscal year and between annual tests, if events occur or circumstances change which suggest that goodwill should be evaluated. Such events or circumstances include significant changes in legal factors and business climate, recent losses at a reporting unit, and industry trends, among other factors. A reporting unit is defined as an operating segment or one level below an operating segment. The Company's impairment tests are performed at the operating segment level as they represent the Company's reporting units.

During the impairment test, the Company estimates the fair value of the reporting unit using income and market approaches, and compares that amount to the carrying value of that reporting unit. In the event the fair value of the reporting unit is determined to be less than the carrying value, goodwill is impaired, and an impairment loss is recognized equal to the excess, limited to the total amount of goodwill allocated to the reporting unit. See also Note 3.

Pension Plans—The Company has certain defined benefit pension plans. The Company calculates the market-related value of assets, which is used to determine the return-on-assets component of annual pension expense and the cumulative net unrecognized gain or loss subject to amortization. This calculation reflects the Company's anticipated long-term rate of return and amortization of the difference between the actual return (including capital, dividends, and interest) and the expected return over a five-year period. Cumulative net unrecognized gains or losses that exceed 10% of the greater of the projected benefit obligation or the fair market related value of plan assets are subject to amortization.

Insurance Reserves—The Company maintains insurance for certain insurable business risks. Insurance coverage contains various retention and deductible amounts for which the Company accrues a liability based upon reported claims and an actuarially determined estimated liability for certain claims incurred but not reported. It is generally the Company's policy not to accrue for any potential legal expense to be incurred in defending the Company's position. The Company believes that its accruals for estimated liabilities associated with professional and other liabilities are sufficient and any excess liability beyond the accrual is not expected to have a material adverse effect on the Company's results of operations or financial position.

Foreign Currency Translation—The Company's functional currency is generally the U.S. dollar, except for foreign operations where the functional currency is generally the local currency. Results of operations for foreign entities are translated to U.S. dollars using the average exchange rates during the period. Assets and liabilities for foreign entities are translated using the exchange rates in effect as of the date of the balance sheet. Resulting translation adjustments are recorded as a foreign currency translation adjustment into other accumulated comprehensive income/(loss) in stockholders' equity.

The Company uses foreign currency forward contracts from time to time to mitigate foreign currency risk. The Company limits exposure to foreign currency fluctuations in most of its contracts through provisions that require client payments in currencies corresponding to the currency in which costs are incurred. As a result of this natural hedge, the Company generally does not need to hedge foreign currency cash flows for contract work performed.

Noncontrolling Interests—Noncontrolling interests represent the equity investments of the minority owners in the Company's joint ventures and other subsidiary entities that the Company consolidates in its financial statements.

Income Taxes—The Company files a consolidated U.S. federal corporate income tax return and combined / consolidated state tax returns and separate company state tax returns. The Company accounts for certain income and expense items differently for financial reporting and income tax purposes. Deferred tax assets and liabilities are determined based on the difference between the financial statement and tax basis of assets and liabilities, applying enacted statutory tax rates in effect for the year in which the differences are expected to reverse. In determining the need for a valuation allowance, management reviews both positive and negative evidence, including the nature, frequency, and severity of cumulative financial reporting losses in recent years, the future reversal of existing temporary differences, predictability of future taxable income exclusive of reversing temporary differences of the character necessary to realize the asset, relevant carryforward periods, taxable income in carry-back years if carry-back is permitted under tax law, and prudent and feasible tax planning strategies that would be implemented, if necessary, to protect against the loss of the deferred tax asset that would otherwise expire. Based upon management’s assessment of all available evidence, the Company has concluded that it is more likely than not that the deferred tax assets, net of valuation allowance, will be realized.

2. New Accounting Pronouncements and Changes in Accounting

In May 2014, the Financial Accounting Standards Board (FASB) issued new accounting guidance which amended the existing accounting standards for revenue recognition. The new accounting guidance establishes principles for recognizing revenue upon the transfer of promised goods or services to customers, in an amount that reflects the expected consideration received in exchange for those goods or services. The Company adopted the new standard on October 1, 2018, using the modified retrospective method, which resulted in an adjustment to retained earnings of $7.0 million, net of tax. Detailed disclosures regarding the adoption and other required disclosures can be found in Note 4.

In February 2016, the FASB issued new accounting guidance which changes accounting requirements for leases. The new guidance requires lessees to recognize the assets and liabilities arising from all leases, including those classified as operating leases under previous accounting guidance, on the balance sheet. It also requires disclosure of key information about leasing arrangements to increase transparency and comparability among organizations. The Company adopted the new guidance beginning October 1, 2019 using the modified retrospective adoption method, which resulted in a downward adjustment to retained earnings of $87.8 million, net of tax. Detailed disclosures regarding the adoption and other required disclosures can be found in Note 11.

In June 2016, the FASB issued a new credit loss standard that changes the impairment model for most financial assets and some other instruments. The new guidance will replace the current ”incurred loss” approach with an ”expected loss” model for instruments measured at amortized cost. It also simplifies the accounting model for purchased credit-impaired debt securities and loans. The guidance will be effective for the Company’s fiscal year starting October 1, 2020. The Company does not expect that the adoption of this standard will have a material impact on its consolidated financial statements.

In February 2018, the FASB issued new accounting guidance which provides entities the option to reclassify certain tax effects from other comprehensive income to retained earnings. The guidance addresses a narrow-scope financial reporting issue related to the tax effects that may become stranded in accumulated other comprehensive income as a result of the enactment of the Tax Cuts and Jobs Act (Tax Act). Under the guidance, an entity may elect to reclassify the income tax effects of the Tax Act on items within accumulated other comprehensive income to retained earnings. The Company has determined that it will not make this election.

In August 2018, the FASB issued new accounting guidance aligning the capitalization of certain implementation costs incurred in a hosting arrangement that is a service contract with previously existing guidance for capitalizing costs incurred to develop internal-use software. The new guidance will be effective for the Company's fiscal year starting October 1, 2020. The Company does not expect that the adoption of this guidance will have a material impact on its consolidated financial statements.

In August 2018, the FASB issued new accounting guidance amending the disclosure requirements for fair value measurements. These improvements will require more disclosure for amounts measured at fair value, and specifically unobservable inputs used in fair value measurements. The Company expects to adopt the new guidance starting on October 1, 2020. The Company is currently evaluating the impact that the new guidance will have on its financial reporting process.

In March 2020, the Securities and Exchange Commission (SEC) adopted final rules that amend the financial disclosure requirement for guarantors of registered debt securities in Rule 3-10 of Regulation S-X. The new rules amend and streamline the disclosures required by guarantors and issuers of guaranteed securities. Among other things, the new disclosures may be located outside the financial statements. The new rule is effective January 4, 2021, and early adoption is permitted. The Company adopted the new rule on March 31, 2020. Accordingly, the revised condensed consolidating financial information is presented outside of these consolidated financial statements.

3. Discontinued Operations, Goodwill, and Intangible Assets

On October 12, 2019, the Company entered into a purchase and sale agreement with Maverick Purchaser Sub, LLC ("Purchaser"), an affiliate of American Securities LLC and Lindsay Goldberg LLC. Per the terms of that agreement, the Company agreed to transfer the assets and liabilities constituting its Management Services business to the Purchaser. The transaction with the Purchaser closed on January 31, 2020. The Company received total cash consideration of $2.28 billion inclusive of the receipt in the third quarter of fiscal 2020 of $122.0 million received in connection with a favorable working capital purchase price adjustment and contingent consideration of approximately $120 million attributable to certain claims related to prior work and engagements. As a result of the sale, the Company recognized a pre-tax gain of $161.9 million. The gain on sale was included in the net loss from discontinued operations in the Consolidated Statements of Operations.

Additionally, in the first quarter of fiscal 2020, management approved a plan to dispose via sale the Company's self-perform at-risk construction businesses within the next year. These businesses include the Company's civil infrastructure, power, and oil and gas construction businesses that were previously reported in the Company's Construction Services segment. After consideration of the relevant facts, the Company concluded the assets and liabilities of its Management Services business and its self-perform at-risk construction businesses met the criteria for classification as held for sale. The Company concluded the actual and proposed disposal activities represented a strategic shift that will have a major effect on the Company's operations and financial results and qualified for presentation as discontinued operations in accordance with FASB Accounting Standards Codification (ASC) 205-20. Accordingly, the financial results of the Management Services business and the self-perform at-risk construction businesses are presented in the Consolidated Statements of Operations as discontinued operations for all periods presented. Current and non-current assets and liabilities of these businesses not sold as of the balance sheet date are presented in the Consolidated Balance Sheets as assets and liabilities held for sale for both periods presented. Interest expense allocated to discontinued operations represents interest expenses for the discontinued operations' finance leases and term loans, which were required to be settled upon the sale of the Management Services business.

During the second quarter of fiscal 2020, the Company identified indicators of impairment for the self-perform at-risk construction business. Specifically, the Company's forecast for its Oil and Gas business decreased significantly from the prior period due primarily to the volatility in global oil prices, which negatively impacted forecasts for future revenues and earnings. As a result, the Company assessed the Oil and Gas business for impairment and determined the fair value of the disposal group was lower than its carrying value. Fair value was estimated using Level 3 inputs, such as forecasted cash flows. Accordingly, the Company recorded impairment losses for that business' goodwill of approximately $83.6 million and intangible assets of approximately $5.7 million. These impairment losses were recorded in net loss from discontinued operations on the Consolidated Statements of Operations.

During the fourth quarter of fiscal 2020, the Company recorded a $247.2 million loss related to the remeasurement of its self-perform at-risk construction businesses to fair value less cost to sell. Fair value was estimated using Level 3 inputs, such as forecasted cash flows, and Level 2 inputs, including bid prices from potential buyers.

The following table represents summarized balance sheet information of assets and liabilities held for sale (in millions):

	September 30, 2020	September 30, 2019
Cash and cash equivalents	$ 109.9	$ 194.7
Receivables and contract assets	544.3	1,326.6
Other	62.5	112.0
Current assets held for sale	$ 716.7	$ 1,633.3
Property and equipment, net	$ 119.8	$ 153.8
Goodwill	—	1,798.5
Other	254.4	364.7
Write-down of assets to fair value less cost to sell	(247.2)	—
Non-current assets held for sale	$ 127.0	$ 2,317.0
Accounts payable and accrued expenses	$ 394.5	$ 1,056.0
Contract liabilities	73.6	88.9
Other	1.6	18.8
Current liabilities held for sale	$ 469.7	$ 1,163.7
Long-term liabilities held for sale	$ 98.8	$ 314.0

The following table represents summarized income statement information of discontinued operations (in millions):

	Fiscal Year Ended	
	September 30, 2020	September 30, 2019
Revenue	$ 3,150.8	$ 6,530.9
Cost of revenue	3,179.2	6,329.1
Gross (loss) profit	(28.4)	201.8
Equity in earnings of joint ventures	(25.5)	31.7
Gain (loss) on disposal activities	161.9	(14.0)
Transaction costs	(43.2)	—
Impairment of long-lived assets, including goodwill	(336.5)	(590.5)
Loss from operations	(271.7)	(371.0)
Other income	1.8	2.5
Interest expense	(40.5)	(64.8)
Loss before taxes	(310.4)	(433.3)
Income tax (benefit) expense	30.2	(13.6)
Net loss from discontinued operations	$ (340.6)	$ (419.7)

The significant components included in the Consolidated Statement of Cash Flows for the discontinued operations are as follows (in millions):

	Fiscal Year Ended	
	September 30, 2020	September 30, 2019
Depreciation and amortization:	$	$
Property and equipment	4.6	26.9
Intangible assets and capitalized debt issuance costs	26.0	66.5
Payments for capital expenditures	(19.6)	(20.1)

The changes in the carrying value of goodwill by reportable segment for the year ended September 30, 2020 were as follows:

	September 30, 2019	Foreign Exchange Impact	September 30, 2020
		(in millions)	
Americas	$ 2,618.6	$ (1.5)	$ 2,617.1
International	858.2	8.9	867.1
Total	$ 3,476.8	$ 7.4	$ 3,484.2

The gross amounts and accumulated amortization of the Company's acquired identifiable intangible assets with finite useful lives as of September 30, 2020 and September 30, 2019, included in intangible assets—net, in the accompanying consolidated balance sheets, were as follows:

	September 30, 2020			September 30, 2019			
	Gross Amount	Accumulated Amortization	Intangible Assets, Net	Gross Amount	Accumulated Amortization	Intangible Assets, Net	Amortization Period
			(in millions)				(years)
Backlog and customer relationships	$ 662.8	$ (585.9)	$ 76.9	$ 661.4	$ (561.8)	$ 99.6	1 - 11

Amortization expense of acquired intangible assets included within cost of revenue was $24.1 million and $25.2 million for the years ended September 30, 2020 and 2019, respectively. The following table presents estimated amortization expense of existing intangible assets for the succeeding years:

Fiscal Year	(in millions)
2021	$ 20.3
2022	19.5
2023	18.6
2024	17.3
2025	0.7
Thereafter	0.5
Total	$ 76.9

4. Revenue Recognition

On October 1, 2018, the Company adopted ASC 606 on a modified retrospective basis, which amended the accounting standards for revenue recognition. As a result, the new guidance was applied retrospectively to contracts which were not completed as of October 1, 2018. Contracts completed prior to October 1, 2018 were accounted for using the guidance in effect at that time. The cumulative effect of applying the new guidance was recorded as a reduction to retained earnings at October 1, 2018 of $7.0 million, net of tax. Consistent with the modified retrospective transition approach, the comparative period was not adjusted to conform with current period presentation. The adjustment was primarily related to segmenting or combining contracts by performance obligations identified under the criteria of the new standard.

The new accounting guidance establishes principles for recognizing revenue upon the transfer of control of promised goods or services to customers, in an amount that reflects the expected consideration received in exchange for those goods or services. The Company generally recognizes revenues over time as performance obligations are satisfied. The Company generally measures its progress to completion using an input measure of total costs incurred divided by total costs expected to be incurred. In the course of providing its services, the Company routinely subcontracts for services and incurs other direct costs on behalf of its clients. These costs are passed through to clients and, in accordance with GAAP, are included in the Company's revenue and cost of revenue. These subcontractor and other direct costs for the years ended September 30, 2020, 2019 and 2018 were $7.1 billion, $7.4 billion and $7.7 billion, respectively.

Recognition of revenue and profit is dependent upon a number of factors, including the accuracy of a variety of estimates made at the balance sheet date, such as engineering progress, material quantities, the achievement of milestones, penalty provisions, labor productivity and cost estimates. Additionally, the Company is required to make estimates for the amount of consideration to be received, including bonuses, awards, incentive fees, claims, unpriced change orders, penalties, and liquidated damages. Variable consideration is included in the estimate of the transaction price only to the extent that a significant reversal would not be probable. Management continuously monitors factors that may affect the quality of its estimates, and material changes in estimates are disclosed accordingly. Costs attributable to claims are treated as costs of contract performance as incurred.

The following summarizes the Company's major contract types:

Cost Reimbursable Contracts

Cost reimbursable contracts include cost-plus fixed fee, cost-plus fixed rate, and time-and-materials price contracts. Under cost-plus contracts, the Company charges clients for its costs, including both direct and indirect costs, plus a negotiated fee or rate. The Company recognizes revenue based on actual direct costs incurred and the applicable fixed rate or portion of the fixed fee earned as of the balance sheet date. Under time-and-materials price contracts, the Company negotiates hourly billing rates and charges its clients based on the actual time that it expends on a project. In addition, clients reimburse the Company for materials and other direct incidental expenditures incurred in connection with its performance under the contract. The Company may apply a practical expedient to recognize revenue in the amount in which it has the right to invoice if its right to consideration is equal to the value of performance completed to date.

Guaranteed Maximum Price Contracts (GMP)

GMP contracts share many of the same contract provisions as cost-plus and fixed-price contracts. As with cost-plus contracts, clients are provided a disclosure of all the project costs, and a lump sum or percentage fee is separately identified. The Company provides clients with a guaranteed price for the overall project (adjusted for change orders issued by clients) and a schedule including the expected completion date. Cost overruns or costs associated with project delays in completion could generally be the Company's responsibility. For many of the Company's commercial or residential GMP contracts, the final price is generally not established until the Company has subcontracted a substantial percentage of the trade contracts with terms consistent with the master contract, and it has negotiated additional contractual limitations, such as waivers of consequential damages as well as aggregate caps on liabilities and liquidated damages. Revenue is recognized for GMP contracts as project costs are incurred relative to total estimated project costs.

Fixed-Price Contracts

Fixed price contracts include both lump-sum and fixed-unit price contracts. Under lump-sum contracts, the Company performs all the work under the contract for a specified fee. Lump-sum contracts are typically subject to price adjustments if the scope of the project changes or unforeseen conditions arise. Under fixed-unit price contracts, the Company performs a number of units of work at an agreed price per unit with the total payment under the contract determined by the actual number of units delivered. Revenue is recognized for fixed-price contracts using the input method measured on a cost-to-cost basis.

The following tables present the Company's revenues disaggregated by revenue sources:

	Fiscal Year Ended		
	September 30, 2020	September 30, 2019	September 30, 2018
		(in millions)	
Cost reimbursable	$ 5,734.5	$ 5,958.2	$ 5,440.3
Guaranteed maximum price	3,896.8	3,962.6	4,673.9
Fixed price	3,608.7	3.721.7	3,764.1
Total revenue	$ 13,240.0	$ 13,642.5	$ 13,878.3

	Fiscal Year Ended		
	September 30, 2020	September 30, 2019	September 30, 2018
		(in millions)	
Americas	$ 10,138.3	$ 10,390.8	$ 10,512.3
Europe, Middle East, Africa	1,620.3	1,752.1	1,816.2
Asia Pacific	1,481.4	1,499.6	1,549.8
Total revenue	$ 13,240.0	$ 13,642.5	$ 13,878.3

As of September 30, 2020, the Company had allocated $18.9 billion of transaction price to unsatisfied or partially satisfied performance obligations, of which approximately 60% is expected to be satisfied within the next twelve months.

Contract liabilities represent amounts billed to clients in excess of revenue recognized to date. The Company recognized revenue of $592.7 million and $595.7 million during the years ended September 30, 2020 and 2019, respectively, that was included in contract liabilities as of September 30, 2019 and 2018, respectively.

The Company's timing of revenue recognition may not be consistent with its rights to bill and collect cash from its clients. Those rights are generally dependent upon advance billing terms, milestone billings based on the completion of certain phases of work or when services are performed. The Company's accounts receivable represent amounts billed to clients that have yet to be collected and represent an unconditional right to cash from its clients. Contract assets represent the amount of contract revenue recognized but not yet billed pursuant to contract terms or accounts billed after the balance sheet date. Contract liabilities represent billings as of the balance sheet date, as allowed under the terms of a contract, but not yet recognized as contract revenue pursuant to the Company's revenue recognition policy.

Net accounts receivable consisted of the following:

	Fiscal Year Ended	
	September 30, 2020	September 30, 2019
	(in millions)	
Billed	$ 2,419.6	$ 2,368.2
Contract retentions	524.2	557.5
Total accounts receivable—gross	2,943.8	2,925.7
Allowance for doubtful accounts	(77.9)	(56.5)
Total accounts receivable—net	$ 2,865.9	$ 2,869.2

Substantially all contract assets as of September 30, 2020 and September 30, 2019 are expected to be billed and collected within twelve months, except for claims. Significant claims recorded in contract assets and other non-current assets were approximately $170 million and $110 million as of September 30, 2020 and September 30, 2019, respectively. The asset related to the Deactivation, Demolition, and Removal Project retained from the Purchaser discussed in Note 18 is presented in prepaid expense and other current assets from continuing operations in the Consolidated Balance Sheet. Contract retentions represent amounts invoiced to clients where payments have been withheld from progress payments until the contracted work has been completed and approved by the client. These retention agreements vary from project to project and could be outstanding for several months or years.

Allowances for doubtful accounts have been determined through specific identification of amounts considered to be uncollectible and potential write-offs, plus a non-specific allowance for other amounts for which some potential loss has been determined to be probable as of the balance sheet date based on current and past experience.

No single client accounted for more than 10% of the Company's outstanding receivables at September 30, 2020 and September 30, 2019.

The Company sold trade receivables to financial institutions, of which $166.6 million and $91.9 million were outstanding as of September 30, 2020 and September 30, 2019, respectively. The Company does not retain financial or legal obligations for these receivables that would result in material losses. The Company's ongoing involvement is limited to the remittance of customer payments to the financial institutions with respect to the sold trade receivables.

5. Property and Equipment

Property and equipment, at cost, consists of the following:

	Fiscal Year Ended		
	September 30, 2020	September 30, 2019	Useful Lives (years)
	(in millions)		
Building and land	$ 11.5	$ 11.2	10 - 45
Leasehold improvements	343.2	363.5	1 - 20
Computer systems and equipment	557.4	582.3	3 - 12
Furniture and fixtures	134.8	133.0	3 - 10
Total	1,046.9	1,090.0	
Accumulated depreciation and amortization	(665.2)	(684.4)	
Property and equipment, net	$ 381.7	$ 405.6	

Depreciation expense for the fiscal years ended September 30, 2020, 2019 and 2018 were $163.4 million, $137.5 million, and $125.5 million, respectively. Depreciation is calculated using primarily the straight-line method over the estimated useful lives of the assets, or in the case of leasehold improvements and capitalized leases, the lesser of the remaining term of the lease or its estimated useful life.

6. Joint Ventures and Variable Interest Entities

The Company's joint ventures provide architecture, engineering, program management, construction management, operations and maintenance services and invest in real estate projects. Joint ventures, the combination of two or more partners, are generally formed for a specific project. Management of the joint venture is typically controlled by a joint venture executive committee, comprised of representatives from the joint venture partners. The joint venture executive committee normally provides management oversight and controls decisions which could have a significant impact on the joint venture.

Some of the Company's joint ventures have no employees and minimal operating expenses. For these joint ventures, the Company's employees perform work for the joint venture, which is then billed to a third-party customer by the joint venture. These joint ventures function as pass through entities to bill the third-party customer. For consolidated joint ventures of this type, the Company records the entire amount of the services performed and the costs associated with these services, including the services provided by the other joint venture partners, in the Company's result of operations. For certain of these joint ventures where a fee is added by an unconsolidated joint venture to client billings, the Company's portion of that fee is recorded in equity in earnings of joint ventures.

The Company also has joint ventures that have their own employees and operating expenses, and to which the Company generally makes a capital contribution. The Company accounts for these joint ventures either as consolidated entities or equity method investments based on the criteria further discussed below.

The Company follows guidance on the consolidation of variable interest entities (VIEs) that requires companies to utilize a qualitative approach to determine whether it is the primary beneficiary of a VIE. The process for identifying the primary beneficiary of a VIE requires consideration of the factors that indicate a party has the power to direct the activities that most significantly impact the joint venture's economic performance, including powers granted to the joint venture's program manager, powers contained in the joint venture governing board and, to a certain extent, a company's economic interest in the joint venture. The Company analyzes its joint ventures and classifies them as either:

- a VIE that must be consolidated because the Company is the primary beneficiary or the joint venture is not a VIE and the Company holds the majority voting interest with no significant participative rights available to the other partners; or

- a VIE that does not require consolidation and is treated as an equity method investment because the Company is not the primary beneficiary or the joint venture is not a VIE and the Company does not hold the majority voting interest.

As part of the above analysis, if it is determined that the Company has the power to direct the activities that most significantly impact the joint venture's economic performance, the Company considers whether or not it has the obligation to absorb losses or rights to receive benefits of the VIE that could potentially be significant to the VIE.

Contractually required support provided to the Company's joint ventures is discussed in Note 18.

Summary of financial information of the consolidated joint ventures is as follows:

	September 30, 2020	September 30, 2019
	(in millions)	
Current assets	$ 536.3	$ 581.3
Non-current assets	77.0	75.4
Total assets	$ 613.3	$ 656.7
Current liabilities	$ 409.9	$ 432.8
Non-current liabilities	1.5	—
Total liabilities	411.4	432.8
Total AECOM equity	113.9	137.9
Noncontrolling interests	88.0	86.0
Total owners' equity	201.9	223.9
Total liabilities and owners' equity	$ 613.3	$ 656.7

Total revenue of the consolidated joint ventures was $787.6 million, $1,095.2 million, and $1,322.8 million for the years ended September 30, 2020, 2019 and 2018, respectively. The assets of the Company's consolidated joint ventures are restricted for use only by the particular joint venture and are not available for the general operations of the Company.

Summary of financial information of the unconsolidated joint ventures, as derived from their unaudited financial statements, is as follows:

	September 30, 2020	September 30, 2019
	(in millions)	
Current assets	$ 1,087.2	$ 1,133.5
Non-current assets	465.8	904.5
Total assets	$ 1,553.0	$ 2,038.0
Current liabilities	$ 937.1	$ 1,115.5
Non-current liabilities	58.9	182.3
Total liabilities	996.0	1,297.8
Joint ventures' equity	557.0	740.2
Total liabilities and joint ventures' equity	$ 1,553.0	$ 2,038.0
AECOM's investment in joint ventures	$ 229.3	$ 256.1

	Twelve Months Ended	
	September 30, 2020	September 30, 2019
	(in millions)	
Revenue	$ 3,058.9	$ 2,959.3
Cost of revenue	2,993.1	2,876.1
Gross profit	$ 65.8	$ 83.2
Net income	$ 59.8	$ 83.4

Summary of AECOM's equity in earnings of unconsolidated joint ventures is as follows:

	Fiscal Year Ended		
	September 30, 2020	September 30, 2019	September 30, 2018
		(in millions)	
Pass through joint ventures	$ 34.1	$ 31.6	$ 34.2
Other joint ventures	14.7	17.7	15.2
Total	$ 48.8	$ 49.3	$ 49.4

7. Pension Benefit Obligations

In the U.S., the Company sponsors various qualified defined benefit pension plans. Benefits under these plans generally are based on the employee's years of creditable service and compensation; however, all U.S. defined benefit plans are closed to new participants and have frozen accruals.

The Company also sponsors various non-qualified plans in the U.S.; all of these plans are frozen. Outside the U.S., the Company sponsors various pension plans, which are appropriate to the country in which the Company operates, some of which are government mandated.

The following tables provide reconciliations of the changes in the U.S. and international plans' benefit obligations, reconciliations of the changes in the fair value of assets for the last three years ended September 30, and reconciliations of the funded status as of September 30 of each year.

	Fiscal Year Ended					
	September 30, 2020		September 30, 2019		September 30, 2018	
	U.S.	Int'l	U.S.	Int'l	U.S.	Int'l
	(in millions)					
Change in benefit obligation:						
Benefit obligation at beginning of year	$ 252.9	$ 1,311.3	$ 232.9	$ 1,188.7	$ 251.9	$ 1,333.4
Service cost	—	0.6	—	0.5	—	1.1
Participant contributions	—	0.3	0.1	0.3	0.2	0.4
Interest cost	6.4	22.4	8.6	29.7	7.4	32.0
Benefits and expenses paid	(16.3)	(42.9)	(15.2)	(41.2)	(16.6)	(53.7)
Actuarial (gain) loss	20.7	82.8	27.8	206.5	(10.6)	(87.7)
Plan settlements	(2.1)	(4.1)	(1.3)	(3.7)	—	(3.0)
Plan amendments	—	—	—	5.2	0.6	—
Plan curtailments	—	—	—	—	—	(0.1)
Foreign currency translation (gain) loss	—	69.8	—	(74.7)	—	(33.7)
Benefit obligation at end of year	$ 261.6	$ 1,440.2	$ 252.9	$ 1,311.3	$ 232.9	$ 1,188.7

	Fiscal Year Ended					
	September 30, 2020		September 30, 2019		September 30, 2018	
	U.S.	Int'l	U.S.	Int'l	U.S.	Int'l
	(in millions)					
Change in plan assets						
Fair value of plan assets at beginning of year	$ 129.3	$ 1,068.8	$ 131.4	$ 965.9	$ 136.5	$ 993.1
Actual return on plan assets	11.7	59.5	4.5	180.3	4.3	29.3
Employer contributions	7.0	27.7	9.8	28.1	7.0	27.8
Participant contributions	—	0.3	0.1	0.3	0.2	0.4
Benefits and expenses paid	(16.3)	(42.9)	(15.2)	(41.2)	(16.6)	(53.7)
Plan settlements	(2.1)	(4.1)	(1.3)	(3.7)	—	(3.0)
Foreign currency translation gain (loss)	—	56.9	—	(60.9)	—	(28.0)
Fair value of plan assets at end of year	$ 129.6	$ 1,166.2	$ 129.3	$ 1,068.8	$ 131.4	$ 965.9

	Fiscal Year Ended					
	September 30, 2020		September 30, 2019		September 30, 2018	
	U.S.	Int'l	U.S.	Int'l	U.S.	Int'l
	(in millions)					
Reconciliation of funded status:						
Funded status at end of year	$ (132.0)	$ (274.0)	$ (123.6)	$ (242.5)	$ (101.5)	$ (222.8)
Contribution made after measurement date	N/A	N/A	N/A	N/A	N/A	N/A
Net amount recognized at end of year	$ (132.0)	$ (274.0)	$ (123.6)	$ (242.5)	$ (101.5)	$ (222.8)

The following table sets forth the amounts recognized in the consolidated balance sheets as of September 30, 2020, 2019 and 2018:

	Fiscal Year Ended					
	September 30, 2020		September 30, 2019		September 30, 2018	
	U.S.	Int'l	U.S.	Int'l	U.S.	Int'l
	(in millions)					
Amounts recognized in the consolidated balance sheets:						
Other non-current assets	$ —	$ 44.0	$ —	$ 28.2	$ —	$ 19.1
Accrued expenses and other current liabilities	(6.5)	—	(7.3)	—	(6.3)	—
Pension benefit obligations	(125.5)	(318.0)	(116.3)	(270.7)	(95.2)	(241.9)
Net amount recognized in the balance sheet	$ (132.0)	$ (274.0)	$ (123.6)	$ (242.5)	$ (101.5)	$ (222.8)

The following table details the reconciliation of amounts in the consolidated statements of stockholders' equity for the fiscal years ended September 30, 2020, 2019 and 2018:

	Fiscal Year Ended					
	September 30, 2020		September 30, 2019		September 30, 2018	
	U.S.	Int'l	U.S.	Int'l	U.S.	Int'l
	(in millions)					
Reconciliation of amounts in consolidated statements of stockholders' equity:						
Prior service (cost) credit	$ (0.1)	$ (1.2)	$ (0.7)	$ (1.2)	$ (0.8)	$ 4.1
Net loss	(133.5)	(297.8)	(123.1)	(233.0)	(94.8)	(186.4)
Total recognized in accumulated other comprehensive loss	$ (133.6)	$ (299.0)	$ (123.8)	$ (234.2)	$ (95.6)	$ (182.3)

The components of net periodic benefit cost other than the service cost component are included in other income (expense) in the consolidated statement of operations. The following table details the components of net periodic benefit cost for the Company's pension plans for fiscal years ended September 30, 2020, 2019 and 2018:

	Fiscal Year Ended					
	September 30, 2020		September 30, 2019		September 30, 2018	
	U.S.	Int'l	U.S.	Int'l	U.S.	Int'l
	(in millions)					
Components of net periodic benefit cost:						
Service costs	$ —	$ 0.6	$ —	$ 0.5	$ —	$ 1.1
Interest cost on projected benefit obligation	6.4	22.4	8.6	29.7	7.4	32.0
Expected return on plan assets	(7.0)	(37.5)	(9.0)	(38.1)	(9.0)	(43.1)
Amortization of prior service costs (credits)	0.1	0.1	0.1	(0.1)	0.1	(0.2)
Amortization of net loss	5.0	8.6	3.9	4.1	4.1	8.2
Curtailment loss recognized	0.5	—	—	—	—	—
Settlement loss recognized	0.6	0.5	0.2	0.8	—	0.3
Net periodic benefit cost	$ 5.6	$ (5.3)	$ 3.8	$ (3.1)	$ 2.6	$ (1.7)

The amount of applicable deferred income taxes included in other comprehensive income arising from a change in net prior service cost and net gain/loss was $15.0 million, $15.9 million, and $15.8 million in the years ended September 30, 2020, 2019 and 2018, respectively.

Amounts included in accumulated other comprehensive loss as of September 30, 2020 that are expected to be recognized as components of net periodic benefit cost during fiscal 2021 are (in millions):

	U.S.	Int'l
Amortization of prior service cost	$ —	$ (0.1)
Amortization of net actuarial losses	(5.9)	(8.7)
Total	$ (5.9)	$ (8.8)

The table below provides additional year-end information for pension plans with accumulated benefit obligations in excess of plan assets.

	Fiscal Year Ended					
	September 30, 2020		September 30, 2019		September 30, 2018	
	U.S.	Int'l	U.S.	Int'l	U.S.	Int'l
			(in millions)			
Projected benefit obligation	$ 260.7	$ 1,216.6	$ 252.5	$ 1,141.9	$ 232.2	$ 1,002.6
Accumulated benefit obligation	260.7	1,211.5	252.5	1,132.7	232.2	991.9
Fair value of plan assets	129.6	898.5	129.3	871.2	131.3	760.7

Funding requirements for each pension plan are determined based on the local laws of the country where such pension plan resides. In certain countries, the funding requirements are mandatory while in other countries, they are discretionary. The Company currently intends to contribute $28.4 million to the international plans in fiscal 2021. The required minimum contributions for U.S. plans are not significant. In addition, the Company may make discretionary contributions. The Company currently intends to contribute $12.2 million to U.S. plans in fiscal 2021.

The table below provides the expected future benefit payments, in millions:

Year Ending September 30,	U.S.	Int'l
2021	$ 19.1	$ 50.6
2022	18.8	48.6
2023	17.7	50.5
2024	17.6	51.5
2025	17.4	52.6
2026-2030	79.2	286.4
Total	$ 169.8	$ 540.2

The underlying assumptions for the pension plans are as follows:

	Fiscal Year Ended					
	September 30, 2020		September 30, 2019		September 30, 2018	
	U.S.	Int'l	U.S.	Int'l	U.S.	Int'l
			(in millions)			
Weighted-average assumptions to determine benefit obligation:						
Discount rate	2.25 %	1.67 %	2.94 %	1.81 %	4.12 %	2.91 %
Salary increase rate	N/A	2.68 %	N/A	2.52 %	N/A	2.79 %
Weighted-average assumptions to determine net periodic benefit cost:						
Discount rate	2.94 %	1.81 %	4.12 %	2.91 %	3.66 %	2.67 %
Salary increase rate	N/A	2.52 %	N/A	2.79 %	N/A	2.76 %
Expected long-term rate of return on plan assets	7.30 %	4.03 %	7.00 %	4.43 %	7.00 %	4.73 %

Pension costs are determined using the assumptions as of the beginning of the plan year. The funded status is determined using the assumptions as of the end of the plan year.

The following table summarizes the Company's target allocation for 2020 and pension plan asset allocation, both U.S. and international, as of September 30, 2020 and 2019:

	Target Allocations		Percentage of Plan Assets as of September 30,			
			2020		2019	
	U.S.	Int'l	U.S.	Int'l	U.S.	Int'l
Asset Category:						
Equities	45 %	26 %	47 %	26 %	45 %	36 %
Debt	43	53	42	54	44	31
Cash	2	4	1	4	2	3
Property and other	10	17	10	16	9	30
Total	100 %	100 %	100 %	100 %	100 %	100 %

The Company's domestic and foreign plans seek a competitive rate of return relative to an appropriate level of risk depending on the funded status and obligations of each plan and typically employ both active and passive investment management strategies. The Company's risk management practices include diversification across asset classes and investment styles and periodic rebalancing toward asset allocation targets. The target asset allocation selected for each plan reflects a risk/return profile that the Company believes is appropriate relative to each plan's liability structure and return goals.

To develop the expected long-term rate of return on assets assumption, the Company considered the historical returns and the future expectations for returns for each asset class, as well as the target asset allocation of the pension portfolio and the diversification of the portfolio. This resulted in the selection of a 7.30% and 4.03% weighted-average long-term rate of return on assets assumption for the fiscal year ended September 30, 2020 for U.S. and non-U.S. plans, respectively.

As of September 30, 2020, the fair values of the Company's pension plan assets by major asset categories were as follows:

	Total Carrying Value as of September 30, 2020	Fair Value Measurement as of September 30, 2020			
		Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Investments measured at NAV
			(in millions)		
Cash and cash equivalents	$ 50.6	$ 20.2	$ 30.4	$ —	$ —
Equity and debt securities	442.3	442.3	—	—	—
Investment funds					
Diversified and equity funds	31.5	13.0	15.1	3.4	—
Fixed income funds	36.2	23.1	13.1	—	—
Common collective funds	707.5	—	—	—	707.5
Derivative instruments	27.7	—	27.7	—	—
Total	$ 1,295.8	$ 498.6	$ 86.3	$ 3.4	$ 707.5

As of September 30, 2019, the fair values of the Company's pension plan assets by major asset categories were as follows:

	Total Carrying Value as of September 30, 2019	Fair Value Measurement as of September 30, 2019 Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Investments measured at NAV
			(in millions)		
Cash and cash equivalents	$ 35.7	$ 21.1	$ 14.6	$ —	$ —
Equity and debt securities	115.5	115.5	—	—	—
Investment funds					
Diversified and equity funds	155.7	141.9	13.8	—	—
Fixed income funds	36.6	21.3	15.3	—	—
Common collective funds	668.7	—	—	—	668.7
Assets held by insurance company	26.8	—	—	26.8	—
Derivative instruments	159.1	—	159.1	—	—
Total	$ 1,198.1	$ 299.8	$ 202.8	$ 26.8	$ 668.7

Changes for the year ended September 30, 2020 in the fair value of the Company's recurring post-retirement plan Level 3 assets are as follows:

	September 30, 2019 Beginning balance	Actual return on plan assets, relating to assets still held at reporting date	Actual return on plan assets, relating to assets sold during the period	Purchases, sales and settlements	Transfer into / (out of) Level 3	Change due to exchange rate changes	September 30, 2020 Ending balance
				(in millions)			
Level 3 Assets	$ 26.8	$ (0.2)	$ (2.1)	$ (25.4)	$ 3.2	$ 1.1	$ 3.4

Changes for the year ended September 30, 2019, in the fair value of the Company's recurring post-retirement plan Level 3 assets are as follows:

	September 30, 2018 Beginning balance	Actual return on plan assets, relating to assets still held at reporting date	Actual return on plan assets, relating to assets sold during the period	Purchases, sales and settlements	Transfer into / (out of) Level 3	Change due to exchange rate changes	September 30, 2019 Ending balance
				(in millions)			
Level 3 Assets	$ 45.0	$ 0.4	$ (0.1)	$ (17.0)	$ —	$ (1.5)	$ 26.8

Cash equivalents are mostly comprised of short-term money-market instruments and are valued at cost, which approximates fair value.

For equity investment funds not traded on an active exchange, or if the closing price is not available, the trustee obtains indicative quotes from a pricing vendor, broker, or investment manager. These funds are categorized as Level 2 if the custodian obtains corroborated quotes from a pricing vendor or categorized as Level 3 if the custodian obtains uncorroborated quotes from a broker or investment manager.

Fixed income investment funds categorized as Level 2 are valued by the trustee using pricing models that use verifiable observable market data (e.g., interest rates and yield curves observable at commonly quoted intervals), bids provided by brokers or dealers, or quoted prices of securities with similar characteristics.

Hedge funds categorized as Level 3 are valued based on valuation models that include significant unobservable inputs and cannot be corroborated using verifiable observable market data. Hedge funds are valued by independent administrators. Depending on the nature of the assets, the general partners or independent administrators use both the income and market approaches in their models. The market approach consists of analyzing market transactions for comparable assets while the income approach uses earnings or the net present value of estimated future cash flows adjusted for liquidity and other risk factors. As of September 30, 2019, there were no material changes to the valuation techniques.

Common collective funds are valued based on net asset value (NAV) per share or unit as a practical expedient as reported by the fund manager, multiplied by the number of shares or units held as of the measurement date. Accordingly, these NAV-based investments have been excluded from the fair value hierarchy. These collective investment funds have minimal redemption notice periods and are redeemable daily at the NAV, less transaction fees, without significant restrictions. There are no significant unfunded commitments related to these investments.

Multiemployer Pension Plans

The Company participates in construction-industry multiemployer pension plans. Generally, the plans provide defined benefits to substantially all employees covered by collective bargaining agreements. Under the Employee Retirement Income Security Act, a contributor to a multiemployer plan is liable, upon termination or withdrawal from a plan, for its proportionate share of a plan's unfunded vested liability. The Company's aggregate contributions to these multiemployer plans were $4.0 million and $7.5 million for the years ended September 30, 2020 and 2019, respectively. At September 30, 2020 and 2019, none of the plans in which the Company participates are individually significant to its consolidated financial statements.

8. Debt

Debt consisted of the following:

	September 30, 2020	September 30, 2019
	(in millions)	
2014 Credit Agreement	$ 248.5	$ 1,182.2
2014 Senior Notes	797.3	800.0
2017 Senior Notes	997.3	1,000.0
URS Senior Notes	—	248.1
Other debt	41.9	122.2
Total debt	2,085.0	3,352.5
Less: Current portion of debt and short-term borrowings	(20.9)	(98.3)
Less: Unamortized debt issuance costs	(23.0)	(36.2)
Long-term debt	$ 2,041.1	$ 3,218.0

The following table presents, in millions, scheduled maturities of the Company's debt as of September 30, 2020:

Fiscal Year	
2021	$ 20.9
2022	17.9
2023	244.8
2024	5.1
2025	799.0
Thereafter	997.3
Total	$ 2,085.0

2014 Credit Agreement

The Company entered into a credit agreement (Credit Agreement) on October 17, 2014, which, as amended to date, consists of (i) a term loan A facility that includes a $510 million (US) term loan A facility with a term expiring on March 13, 2021 and a $500 million Canadian dollar (CAD) term loan A facility and a $250 million Australian dollar (AUD) term loan A facility, each with terms expiring on March 13, 2023; (ii) a $600 million term loan B facility with a term expiring on March 13, 2025; and (iii) a revolving credit facility in an aggregate principal amount of $1.35 billion with a term expiring on March 13, 2023. Some of subsidiaries of the Company (Guarantors) have guaranteed the obligations of the borrowers under the Credit Agreement. The borrowers' obligations under the Credit Agreement are secured by a lien on substantially all of the assets of the Company and the Guarantors pursuant to a security and pledge agreement (Security Agreement). The collateral under the Security Agreement is subject to release upon fulfillment of conditions specified in the Credit Agreement and Security Agreement.

The Credit Agreement contains covenants that limit the ability of the Company and the ability of some of its subsidiaries to, among other things: (i) create, incur, assume, or suffer to exist liens; (ii) incur or guarantee indebtedness; (iii) pay dividends or repurchase stock; (iv) enter into transactions with affiliates; (v) consummate asset sales, acquisitions or mergers; (vi) enter into various types of burdensome agreements; or (vii) make investments.

On July 1, 2015, the Credit Agreement was amended to revise the definition of "Consolidated EBITDA" to increase the allowance for acquisition and integration expenses related to the Company's acquisition of the URS Corporation (URS) in October 2014.

On December 22, 2015, the Credit Agreement was amended to further revise the definition of "Consolidated EBITDA" by further increasing the allowance for acquisition and integration expenses related to the acquisition of URS and to allow for an internal corporate restructuring primarily involving the Company's international subsidiaries.

On September 29, 2016, the Credit Agreement and the Security Agreement were amended to (1) lower the applicable interest rate margins for the term loan A and the revolving credit facilities, and lower the applicable letter of credit fees and commitment fees to the revised consolidated leverage levels; (2) extend the term of the term loan A and the revolving credit facility to September 29, 2021; (3) add a new delayed draw term loan A facility tranche in the amount of $185.0 million; (4) replace the then existing $500 million performance letter of credit facility with a $500 million basket to enter into secured letters of credit outside the Credit Agreement; and (5) revise covenants, including the Maximum Consolidated Leverage Ratio so that the step down from a 5.00 to a 4.75 leverage ratio is effective as of March 31, 2017 as well as the investment basket for the Company's AECOM Capital business.

On March 31, 2017, the Credit Agreement was amended to (1) expand the ability of restricted subsidiaries to borrow under "Incremental Term Loans;" (2) revise the definition of "Working Capital" as used in "Excess Cash Flow;" (3) revise the definitions for "Consolidated EBITDA" and "Consolidated Funded Indebtedness" to reflect the expected gain and debt repayment of an AECOM Capital disposition, which disposition was completed on April 28, 2017; and (4) amend provisions relating to the Company's ability to undertake internal restructuring steps to accommodate changes in tax laws.

On March 13, 2018, the Credit Agreement was amended to (1) refinance the existing term loan A facility to include a $510 million (US) term loan A facility with a term expiring on March 13, 2021 and a $500 million CAD term loan A facility and a $250 million AUD term loan A facility each with terms expiring on March 13, 2023; (2) issue a new $600 million term loan B facility to institutional investors with a term expiring on March 13, 2025; (3) increase the capacity of the Company’s revolving credit facility from $1.05 billion to $1.35 billion and extend its term until March 13, 2023; (4) reduce the Company’s interest rate borrowing costs as follows: (a) the term loan B facility, at the Company’s election, Base Rate (as defined in the Credit Agreement) plus 0.75% or Eurocurrency Rate (as defined in the Credit Agreement) plus 1.75%, (b) the (US) term loan A facility, at the Company’s election, Base Rate plus 0.50% or Eurocurrency Rate plus 1.50%, and (c) the Canadian (CAD) term loan A facility, the Australian (AUD) term loan A facility, and the revolving credit facility, an initial rate of, at the Company’s election, Base Rate plus 0.75% or Eurocurrency Rate plus 1.75%, and after the end of the Company’s fiscal quarter ended June 30, 2018, Base Rate loans plus a margin ranging from 0.25% to 1.00% or Eurocurrency Rate plus a margin from 1.25% to 2.00%, based on the Consolidated Leverage Ratio (as defined in the Credit Agreement); (5) revise covenants including increasing the amounts available under the restricted payment negative covenant and revising the Maximum Consolidated Leverage Ratio (as defined in the Credit Agreement) to include a 4.5 leverage ratio through September 30, 2019 after which the leverage ratio stepped down to 4.0.

On November 13, 2018, the Credit Agreement was amended to revise the definition of "Consolidated EBITDA" to increase corporate restructuring allowances and provide for additional flexibility under the covenants for non-core asset dispositions, among other changes.

On January 28, 2020, AECOM entered into Amendment No. 7 to the Credit Agreement which modifies the asset disposition covenant to permit the sale of the Management Services business and the mandatory prepayment provision so that only outstanding term loans were prepaid using the net proceeds from the sale.

On May 1, 2020, the Company entered into Amendment No. 8 to the Credit Agreement which allows for borrowings to be made, until three months after closing, up to an aggregate principal amount of $400,000,000 under a secured delayed draw term loan facility, the proceeds of which are permitted to be used to pay all or a portion of the amounts payable in connection with any tender for or redemption or repayment of the Company's or its subsidiaries' existing senior unsecured notes and any associated fees and expenses. The amendment also revised certain terms and covenants in the Credit Agreement, including by, among other things, the maximum leverage ratio covenant to 4.00:1.00, subject to increases to 4.50:1.00 for certain specified periods in connection with certain material acquisitions, increasing the potential size of incremental facilities under the Credit Agreement, revising the definition of "Consolidated EBITDA" to provide for additional flexibility in the calculation thereof and adding a Eurocurrency Rate floor of 0.75% to the interest rate under the revolving credit facility.

On July 30, 2020, the Company drew $248.5 million on its secured delayed draw term loan facility for the purpose of redeeming all of the 2022 URS Senior Notes.

Under the Credit Agreement, the Company is subject to a maximum consolidated leverage ratio and minimum consolidated interest coverage ratio at the end of each fiscal quarter. The Company’s Consolidated Leverage Ratio was 2.7 at September 30, 2020. The Company’s Consolidated Interest Coverage Ratio was 5.0 at September 30, 2020. As of September 30, 2020, the Company was in compliance with the covenants of the Credit Agreement.

At September 30, 2020 and 2019, outstanding standby letters of credit totaled $19.0 million and $22.8 million, respectively, under the Company’s revolving credit facilities. As of September 30, 2020 and 2019, the Company had $1,331.0 million and $1,327.2 million, respectively, available under its revolving credit facility.

2014 Senior Notes

On October 6, 2014, the Company completed a private placement offering of $800,000,000 aggregate principal amount of the unsecured 5.750% Senior Notes due 2022 (2022 Notes) and $800,000,000 aggregate principal amount of the unsecured 5.875% Senior Notes due 2024 (the 2024 Notes and, together with the 2022 Notes, the 2014 Senior Notes). On November 2, 2015, the Company completed an exchange offer to exchange the unregistered 2014 Senior Notes for registered notes, as well as all related guarantees. On March 16, 2018, the Company redeemed all of the 2022 Notes at a redemption price that was 104.313% of the principal amount outstanding plus accrued and unpaid interest. The March 16, 2018 redemption resulted in a $34.5 million prepayment premium, which was included in interest expense.

As of September 30, 2020, the estimated fair value of the 2024 Notes was approximately $863.0 million. The fair value of the 2024 Notes as of September 30, 2020 was derived by taking the mid-point of the trading prices from an observable market input (Level 2) in the secondary bond market and multiplying it by the outstanding balance of the 2024 Notes.

On July 21, 2020, the Company completed a cash tender offer at par for up to $639 million in aggregate principal amount of the 2024 Notes and the 2017 Senior Notes. The Company accepted for purchase all of 2024 Notes validly tendered and not validly withdrawn pursuant to the cash tender offer, amounting to $2.7 million aggregate principal amount of the 2024 Notes at par. The Company made the cash tender offer at par to satisfy obligations under the indentures governing the 2024 Notes and the 2017 Senior Notes relating to the use of certain cash proceeds from its disposition of the Management Services business, which was completed on January 31, 2020.

At any time prior to July 15, 2024, the Company may redeem on one or more occasions all or part of the 2024 Notes at a redemption price equal to the sum of (i) 100% of the principal amount thereof, plus (ii) a “make-whole” premium as of the date of the redemption, plus any accrued and unpaid interest to the date of redemption. In addition, on or after July 15, 2024, the 2024 Notes may be redeemed at a redemption price of 100% of the principal amount thereof, plus accrued and unpaid interest to the date of redemption.

The indenture pursuant to which the 2024 Notes were issued contains customary events of default, including, among other things, payment default, exchange default, failure to provide notices thereunder and provisions related to bankruptcy events. The indenture also contains customary negative covenants.

The Company was in compliance with the covenants relating to the 2024 Notes as of September 30, 2020.

2017 Senior Notes

On February 21, 2017, the Company completed a private placement offering of $1,000,000,000 aggregate principal amount of its unsecured 5.125% Senior Notes due 2027 (the 2017 Senior Notes) and used the proceeds to immediately retire the remaining $127.6 million outstanding on the then existing term loan B facility as well as repay $600 million of the term loan A facility and $250 million of the revolving credit facility under its Credit Agreement. On June 30, 2017, the Company completed an exchange offer to exchange the unregistered 2017 Senior Notes for registered notes, as well as related guarantees.

As of September 30, 2020, the estimated fair value of the 2017 Senior Notes was approximately $1,069.6 million. The fair value of the 2017 Senior Notes as of September 30, 2020 was derived by taking the mid-point of the trading prices from an observable market input (Level 2) in the secondary bond market and multiplying it by the outstanding balance of the 2017 Senior Notes. Interest will be payable on the 2017 Senior Notes at a rate of 5.125% per annum. Interest on the 2017 Senior Notes is payable semi-annually on March 15 and September 15 of each year, commencing on September 15, 2017. The 2017 Senior Notes will mature on March 15, 2027.

At any time and from time to time prior to December 15, 2026, the Company may redeem all or part of the 2017 Senior Notes, at a redemption price equal to 100% of their principal amount, plus a “make whole” premium as of the redemption date, and accrued and unpaid interest to the redemption date.

At any time on or after December 15, 2026, the Company may redeem on one or more occasions all or part of the 2017 Senior Notes at a redemption price equal to 100% of their principal amount, plus accrued and unpaid interest.

The indenture pursuant to which the 2017 Senior Notes were issued contains customary events of default, including, among other things, payment default, exchange default, failure to provide notices thereunder and provisions related to bankruptcy events. The indenture also contains customary negative covenants.

The Company was in compliance with the covenants relating to the 2017 Senior Notes as of September 30, 2020.

URS Senior Notes

In connection with the URS acquisition, the Company assumed the URS 3.85% Senior Notes due 2017 (2017 URS Senior Notes) and the URS 5.00% Senior Notes due 2022 (2022 URS Senior Notes), totaling $1.0 billion (URS Senior Notes). The URS acquisition triggered change in control provisions in the URS Senior Notes that allowed the holders of the URS Senior Notes to redeem their URS Senior Notes at a cash price equal to 101% of the principal amount and, accordingly, the Company redeemed $572.3 million of the URS Senior Notes on October 24, 2014. The remaining 2017 URS Senior Notes matured and were fully redeemed on April 3, 2017 for $179.2 million using proceeds from a $185 million delayed draw term loan A facility tranche under the Credit Agreement.

The remaining $248.5 million principal amount of the 2022 URS Senior Notes were fully redeemed on August 31, 2020 using proceeds from a $248.5 million secured delayed draw term loan facility under the Credit Agreement, at a redemption price that was 106.835% of the principal amount outstanding plus accrued and unpaid interest. The August 31, 2020 redemption resulted in a $17.0 million prepayment premium, which was included in interest expense.

Other Debt and Other Items

Other debt consists primarily of obligations under capital leases and loans, and unsecured credit facilities. The Company's unsecured credit facilities are primarily used for standby letters of credit issued in connection with general and professional liability insurance programs and for contract performance guarantees. At September 30, 2020 and 2019, these outstanding standby letters of credit totaled $510.1 million and $470.9 million, respectively. As of September 30, 2020, the Company had $435.3 million available under these unsecured credit facilities.

Effective Interest Rate

The Company's average effective interest rate on its total debt, including the effects of the interest rate swap agreements, during the years ended September 30, 2020, 2019 and 2018 was 5.3%, 5.1% and 5.1%, respectively.

Interest expense in the consolidated statements of operations included amortization of deferred debt issuance costs for the years ended September 30, 2020, 2019 and 2018 of $5.4 million, $5.0 million, and $12.5 million, respectively.

9. Derivative Financial Instruments and Fair Value Measurements

The Company uses certain interest rate derivative contracts to hedge interest rate exposures on the Company's variable rate debt. The Company enters into foreign currency derivative contracts with financial institutions to reduce the risk that its cash flows and earnings will be adversely affected by foreign currency exchange rate fluctuations. The Company's hedging program is not designated for trading or speculative purposes.

The Company recognizes derivative instruments as either assets or liabilities on the accompanying consolidated balance sheets at fair value. The Company records changes in the fair value (i.e., gains or losses) of the derivatives that have been designated as accounting hedges in the accompanying consolidated statements of operations as cost of revenue, interest expense or to accumulated other comprehensive loss in the accompanying consolidated balance sheets.

Cash Flow Hedges

The Company uses interest rate swap agreements designated as cash flow hedges to fix the variable interest rates on portions of the Company's debt. The Company initially reports any gain on the effective portion of a cash flow hedge as a component of accumulated other comprehensive loss. Depending on the type of cash flow hedge, the gain is subsequently reclassified to interest expense when the interest expense on the variable rate debt is recognized. If the hedged transaction becomes probable of not occurring, any gain or loss related to interest rate swap agreements would be recognized in other income.

The notional principal in U.S. dollar (USD), Canadian dollar (CAD), and Australian dollar (AUD), fixed rates and related expiration dates of the Company's outstanding interest rate swap agreements were as follows:

September 30, 2020			
Notional Amount Currency	Notional Amount (in millions)	Fixed Rate	Expiration Date
USD	200.0	2.60 %	February 2023

September 30, 2019			
Notional Amount Currency	Notional Amount (in millions)	Fixed Rate	Expiration Date
AUD	200.0	2.19 %	February 2021
CAD	400.0	2.49 %	September 2022
USD	200.0	2.60 %	February 2023

Other Foreign Currency Forward Contracts

The Company uses foreign currency forward contracts which are not designated as accounting hedges to hedge intercompany transactions and other monetary assets or liabilities denominated in currencies other than the functional currency of a subsidiary. Gains and losses on these contracts were not material for the years ended September 30, 2020, 2019 and 2018.

Fair Value Measurements

The Company's non-pension financial assets and liabilities recorded at fair values relate to derivative instruments and were not material at September 30, 2020 or 2019.

See Note 17 for accumulated balances and reporting period activities of derivatives related to reclassifications out of accumulated other comprehensive income or loss for the years ended September 30, 2020, 2019 and 2018. Amounts recognized in accumulated other comprehensive loss from the Company's foreign currency options were immaterial for all years presented. Amounts reclassified from accumulated other comprehensive loss into income from the foreign currency options were immaterial for all years presented. Additionally, there were no material losses recognized in income due to amounts excluded from effectiveness testing from the Company's interest rate swap agreements.

10. Concentration of Credit Risk

Financial instruments which potentially subject the Company to concentrations of credit risk consist principally of cash investments and trade receivables. The Company's cash balances and short-term investments are maintained in accounts held by major banks and financial institutions located primarily in the U.S., Canada, Europe, Australia, Middle East and Hong Kong. If the Company extends significant credit to clients in a specific geographic area or industry, the Company may experience disproportionately high levels of default if those clients are adversely affected by factors particular to their geographic area or industry. Concentrations of credit risk with respect to trade receivables are limited due to the large number of customers comprising the Company's customer base, including, in large part, governments, government agencies and quasi-government organizations, and their dispersion across many different industries and geographies. See Note 4 regarding the Company's foreign revenues. In order to mitigate credit risk, the Company continually reviews the credit worthiness of its major private clients.

11. Leases

On October 1, 2019, the Company adopted FASB ASC 842 on a modified retrospective basis, which amended the accounting standards for leases. Accordingly, the Company applied the new guidance as of the date of adoption with a cumulative-effect adjustment recorded through equity. Prior periods have not been restated as a result of the adoption. Retained earnings decreased $87.8 million due to the adoption, primarily from impairment of the right-of-use assets associated with office building leases. Consistent with its restructuring plan to improve profitability in the fourth quarter of fiscal 2019, the Company evaluated its real estate portfolio to better align with the ongoing business. The Company identified leased assets that were not recoverable, and recorded an adjustment to retained earnings upon adoption reflecting the impairment of those long-lived leased assets. Fair value of the right-of-use assets was determined primarily using Level 3 inputs, such as discounted cash flows.

The Company also applied transition elections that allow it to avoid reassessment of whether expired or expiring leases are or contain leases, lease classification, and initial direct costs. Adoption of the new lease guidance did not significantly change the Company's accounting for finance leases, which were previously referred to as capital leases.

The Company and its subsidiaries are lessees in non-cancelable leasing agreements for office buildings and equipment. Substantially all of the Company's office building leases are operating leases, and its equipment leases are both operating and finance leases. The Company groups lease and non-lease components for its equipment leases into a single lease component but separates lease and non-lease components for its office building leases.

The Company recognizes a right-of-use asset and lease liability for its operating leases at the commencement date equal to the present value of the contractual minimum lease payments over the lease term. The present value is calculated using the rate implicit in the lease, if known, or the Company's incremental secured borrowing rate. The discount rate used for operating leases is primarily determined based on an analysis the Company's incremental secured borrowing rate, while the discount rate used for finance leases is primarily determined by the rate specified in the lease.

The related lease payments are expensed on a straight-line basis over the lease term, including, as applicable, any free-rent period during which the Company has the right to use the asset. For leases with renewal options where the renewal is reasonably assured, the lease term, including the renewal period, is used to determine the appropriate lease classification and to compute periodic rental expense. Leases with initial terms shorter than 12 months are not recognized on the balance sheet, and lease expense is recognized on a straight-line basis.

The components of lease expenses are as follows:

	Fiscal Year Ended September 30, 2020 (in millions)
Operating lease cost	$ 191.6
Finance lease cost:	
Amortization of right-of-use assets	17.1
Interest on lease liabilities	1.9
Variable lease cost	36.5
Short-term lease cost	19.2
Total lease cost	$ 266.3

Additional balance sheet information related to leases is as follows:

(in millions except as noted)	Balance Sheet Classification	Sept 30, 2020
Assets:		
Operating lease assets	Operating lease right-of-use assets	$ 652.1
Finance lease assets	Property and equipment – net	29.1
Total lease assets		$ 681.2
Liabilities:		
Current:		
Operating lease liabilities	Accrued expenses and other current liabilities	$ 168.4
Finance lease liabilities	Current portion of long-term debt	9.8
Total current lease liabilities		178.2
Non-current:		
Operating lease liabilities	Operating lease liabilities, noncurrent	745.3
Finance lease liabilities	Long-term debt	22.0
Total non-current lease liabilities		$ 767.3

	Sept 30, 2020
Weighted average remaining lease term (in years):	
Operating leases	7.3
Finance leases	3.3
Weighted average discount rates:	
Operating leases	4.6 %
Finance leases	4.7 %

Additional cash flow information related to leases is as follows:

	Fiscal Year Ended Sept 30, 2020 (in millions)
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows from operating leases	$ 208.7
Operating cash flows from finance leases	1.8
Financing cash flows from finance leases	14.7
Right-of-use assets obtained in exchange for new operating leases	126.9
Right-of-use assets obtained in exchange for new finance leases	26.4

Total remaining lease payments under both the Company’s operating and finance leases are as follows:

Fiscal Year	Operating Leases (in millions)	Finance Leases
2021	$ 212.4	$ 10.3
2022	170.7	9.0
2023	140.4	7.6
2024	120.4	5.1
2025	105.4	1.9
Thereafter	371.8	0.1
Total lease payments	$ 1,121.1	$ 34.0
Less: Amounts representing interest	$ (207.4)	$ (2.2)
Total lease liabilities	$ 913.7	$ 31.8

12. Stockholders' Equity

Common Stock Units—Common stock units are only redeemable for common stock. In the event of liquidation of the Company, holders of stock units are entitled to no greater rights than holders of common stock. See also Note 13.

Accelerated Share Repurchase—In August 2018, the Company entered into an accelerated share repurchase (ASR) with JPMorgan Chase Bank, National Association (JPMorgan) to repurchase $150 million of its common stock. During the quarter ended September 30, 2018, JPMorgan delivered 4.0 million shares to the Company, at which point the Company's shares outstanding were reduced and accounted for as a reduction to retained earnings. The initial share delivery represented the minimum amount of shares JPMorgan was contractually obligated to provide under the ASR agreement. The ASR completed on October 11, 2018, which resulted in the delivery of an additional 0.6 million shares to the Company from JPMorgan.

13. Share-Based Payments

Defined Contribution Plans—Substantially all permanent domestic employees are eligible to participate in defined contribution plans provided by the Company. Under these plans, participants may make contributions into a variety of funds, including a fund that is fully invested in Company stock. Employees are not required to allocate any funds to Company stock; however, the Company does provide an annual Company match in AECOM shares. Employees may generally reallocate their account balances on a daily basis; however, employees classified as insiders are restricted under the Company's insider trading policy. Compensation expense for the employer contributions related to AECOM stock issued under defined contribution plans during fiscal years ended September 30, 2020, 2019 and 2018 was $33.7 million, $32.3 million, and $32.3 million, respectively.

Stock Incentive Plans—Under the 2016 Stock Incentive Plan, the Company has up to 12.0 million securities remaining available for future issuance as of September 30, 2020. Stock options may be granted to employees and non-employee directors with an exercise price not less than the fair market value of the stock on the date of grant. Unexercised options expire seven years after date of grant.

During the three years in the period ended September 30, 2020, option activity was as follows:

	Number of Options (in millions)	Weighted Average Exercise Price
Balance, September 30, 2017	0.7	31.11
Granted	—	—
Exercised	(0.1)	27.79
Cancelled	—	—
Balance, September 30, 2018	0.6	31.62
Granted	—	—
Exercised	—	—
Cancelled	(0.5)	(31.62)
Balance, September 30, 2019	0.1	31.62
Granted	0.3	38.72
Exercised	—	—
Cancelled	—	—
Balance, September 30, 2020	0.4	36.41
Exercisable as of September 30, 2018	—	N/A
Exercisable as of September 30, 2019	0.1	31.62
Exercisable as of September 30, 2020	0.1	31.62

The aggregate intrinsic value of stock options exercised during the year ended September 30, 2018 was $0.9 million.

The fair value of the Company's employee stock option awards is estimated on the date of grant. The expected term of awards granted represents the period of time the awards are expected to be outstanding. The risk-free interest rate is based on U.S. Treasury bond rates with maturities equal to the expected term of the option on the grant date. The Company uses historical data as a basis to estimate the probability of forfeitures. The weighted average grant-date fair value of stock options granted during the year ended September 30, 2020 was $11.30.

The Company grants stock units to employees under its Performance Earnings Program (PEP), whereby units are earned and issued dependent upon meeting established cumulative performance objectives and vest over a three-year service period. Additionally, the Company issues restricted stock units to employees which are earned based on service conditions. The grant date fair value of PEP awards and restricted stock unit awards is that day's closing market price of the Company's common stock. The weighted average grant date fair value of PEP awards was $42.99, $27.53, and $37.69 during the years ended September 30, 2020, 2019 and 2018, respectively. The weighted average grant date fair value of restricted stock unit awards was $41.90, $27.73, and $36.83 during the years ended September 30, 2020, 2019 and 2018, respectively. Total compensation expense related to these share-based payments including stock options was $54.2 million, $63.8 million, and $73.1 million during the years ended September 30, 2020, 2019 and 2018, respectively. Unrecognized compensation expense related to total share-based payments outstanding as of September 30, 2020 and 2019 was $69.1 million and $74.6 million, respectively, to be recognized on a straight-line basis over the awards' respective vesting periods which are generally three years.

14. Income Taxes

Income before income taxes included income from domestic operations of $52.9 million, $133.0 million, and $100.9 million for fiscal years ended September 30, 2020, 2019 and 2018 and income from foreign operations of $179.7 million, $116.2 million, and $111.3 million for fiscal years ended September 30, 2020, 2019 and 2018.

Income tax (benefit) expense was comprised of:

	Fiscal Year Ended		
	September 30, 2020	September 30, 2019 (in millions)	September 30, 2018
Current:			
Federal	$ 21.8	$ (17.3)	$ (159.7)
State	12.7	29.8	2.3
Foreign	55.7	41.7	51.1
Total current income tax expense (benefit)	90.2	54.2	(106.3)
Deferred:			
Federal	(21.8)	(26.1)	119.6
State	12.8	(24.6)	4.1
Foreign	(35.4)	10.0	(20.9)
Total deferred income tax (benefit) expense	(44.4)	(40.7)	102.8
Total income tax (benefit) expense	$ 45.8	$ 13.5	$ (3.5)

The major elements contributing to the difference between the U.S. federal statutory rate of 21% for fiscal years ended September 30, 2020 and 2019 and 24.5% for fiscal year ended September 30, 2018, respectively, and the effective tax rate are as follows:

	Fiscal Year Ended					
	September 30, 2020		September 30, 2019		September 30, 2018	
	Amount	%	Amount	%	Amount	%
			(in millions)			
Tax at federal statutory rate	$ 48.8	21.0 %	$ 52.0	21.0 %	$ 52.4	24.5 %
State income tax, net of federal benefit	8.4	3.6	7.0	2.8	(1.3)	(0.6)
Foreign residual income	39.5	17.0	35.8	14.5	9.9	4.6
Nondeductible costs	15.8	6.8	7.6	3.1	2.5	1.2
Return to provision	5.1	2.2	(0.2)	(0.1)	(21.2)	(9.9)
Foreign tax rate differential	3.2	1.4	(3.1)	(1.3)	(0.7)	(0.3)
Income tax credits and incentives	(47.8)	(20.6)	(44.7)	(18.1)	(28.6)	(13.4)
Valuation allowance	(15.9)	(6.9)	(26.5)	(10.7)	37.8	17.7
Change in uncertain tax positions	(8.3)	(3.6)	5.6	2.3	(26.0)	(12.2)
Exclusion of tax on non-controlling interests	(3.4)	(1.5)	(5.3)	(2.1)	(5.0)	(2.3)
Tax exempt income	(5.1)	(2.2)	(3.9)	(1.6)	(7.4)	(3.5)
Audit settlement	—	—	(4.6)	(1.9)	(27.7)	(13.0)
Impact of changes in tax law	—	—	(1.5)	(0.6)	12.5	5.9
Other items, net	5.5	2.5	(4.7)	(1.9)	(0.7)	(0.4)
Total income tax expense (benefit)	$ 45.8	19.7 %	$ 13.5	5.4 %	$ (3.5)	(1.7)%

During fiscal 2020, the Company approved a tax planning strategy and restructured certain operations in Canada which resulted in a release of a valuation allowance related to net operating losses and other deferred tax assets of $31.7 million. The Company is now forecasting the utilization of the net operating losses within the foreseeable future. The new positive evidence was evaluated against any negative evidence to determine the valuation allowance was no longer needed.

During fiscal 2018, the Company recorded a valuation allowance of $38.1 million against foreign tax credits related to deferred tax assets in the U.S. In its determination of the realizability of its deferred tax assets, the Company evaluated positive evidence consisting of forecasts of foreign tax credit utilization against future foreign source income, earnings trends over a sustainable period, positive economic conditions in the industries the Company operates in, possible prudent and feasible tax planning strategies (net of costs to implement the tax planning strategies) and actual usage of foreign tax credit carryforwards. The Company also evaluated negative evidence consisting of significant foreign tax credits and U.S. tax law changes that restrict the usage of foreign tax credits. This evaluation was conducted on a tax jurisdictional basis or legal entity basis, as applicable, and based on the weighing of all positive and negative evidence, a determination was made as to the realizability of the deferred tax assets on that same basis.

During fiscal 2019, the Company reevaluated the valuation allowance based on positive evidence and negative evidence including new positive evidence related to the issuance of regulations during the first quarter related to *The Tax Cuts and Jobs Act* (Tax Act) and forecasting the utilization of the foreign tax credits within the foreseeable future. Based on the weighing of all positive and negative evidence the Company determined that a valuation allowance was no longer needed and released the valuation allowance resulting in a tax benefit of $38.1 million.

During fiscal 2018, President Trump signed what is commonly referred to as the Tax Act into law. The Tax Act reduced the Company's U.S. federal corporate tax rate from 35% to a blended tax rate of 24.5% for its fiscal year ending September 30, 2018 and 21% for fiscal years thereafter, required companies to pay a one-time transition tax on accumulated earnings of foreign subsidiaries, created new taxes on foreign sourced earnings and eliminated or reduced deductions.

During fiscal 2018, the Company recorded tax expense of $38.9 million related to the remeasurement of its U.S. deferred tax assets and liabilities based on the rates at which they are expected to reverse in the future, which is generally 21%. In addition, the Company released the deferred tax liability and recorded a tax benefit related to foreign subsidiaries for which the undistributed earnings are not intended to be reinvested indefinitely for $79.8 million and accrued $53.4 million of tax expense related to the one-time transition tax. During fiscal 2019, the Company completed the calculation of the total foreign earnings and profits of foreign subsidiaries and recorded a tax benefit of $1.5 million.

During fiscal 2018, the Company had a favorable settlement for R&D credits and recorded a tax benefit of $19.9 million. In addition, the Company effectively settled the U.S. federal income tax examination for URS pre-acquisition tax years 2012, 2013 and 2014 and recorded an additional benefit of $27.7 million related to various adjustments.

The Company is currently under tax audit in several jurisdictions including the U.S and believe the outcomes which are reasonably possible within the next twelve months, including lapses in statutes of limitations, could result in adjustments, but will not result in a material change in the liability for uncertain tax positions.

Generally, the Company would reverse its valuation allowance in a particular tax jurisdiction if the positive evidence examined, such as projected and sustainable earnings or a tax-planning strategy that allows for the usage of the deferred tax asset, is sufficient to overcome significant negative evidence, such as large net operating loss carryforwards or a cumulative history of losses in recent years. In the United States, the valued deferred tax assets have a restricted life or use under relevant tax law and, therefore, it is unlikely that the valuation allowance related to these assets will reverse. In addition, the Company is continually investigating tax planning strategies that, if prudent and feasible, may be implemented to realize a deferred tax asset that would otherwise expire unutilized. The identification and internal/external approval (as relevant) of such a prudent and feasible tax planning strategy could cause a reduction in the valuation allowance.

The deferred tax assets (liabilities) are as follows:

	Fiscal Year Ended	
	September 30, 2020	September 30, 2019
	(in millions)	
Deferred tax assets:		
Compensation and benefit accruals not currently deductible	$ 119.4	$ 98.0
Net operating loss carryforwards	173.2	132.6
Self-insurance reserves	17.6	11.3
Research and experimentation and other tax credits	112.9	138.5
Pension liability	95.1	78.2
Accrued liabilities	303.2	97.2
Capital loss carryforward	104.8	—
Other	26.0	14.8
Total deferred tax assets	952.2	570.6
Deferred tax liabilities:		
Unearned revenue	(40.3)	(53.4)
Depreciation and amortization	(106.7)	(76.3)
Acquired intangible assets	(24.5)	(25.1)
Investment in subsidiaries	(10.9)	(10.9)
Right of use assets	(164.9)	—
Contingent consideration	(33.6)	—
Total deferred tax liabilities	(380.9)	(165.7)
Valuation allowance	(217.5)	(120.6)
Net deferred tax assets	$ 353.8	$ 284.3

As of September 30, 2020 and 2019, the Company has available unused foreign and state net operating loss (NOL) carryforwards of $710.2 million and $505.3 million, respectively, which expire at various dates over the next several years and capital loss carryforwards of $355.7 million which expire in 2025; some foreign NOL carryforwards never expire. In addition, as of September 30, 2020, the Company has unused federal and state research and development credits of $71.2 million and $27.2 million, respectively, and other credits of $14.5 million which expire at various dates over the next several years.

As of September 30, 2020 and 2019, gross deferred tax assets were $952.2 million and $570.6 million, respectively. The Company has recorded a valuation allowance of $217.5 million and $120.6 million at September 30, 2020 and 2019, respectively, primarily related to foreign and state net operating loss carryforwards, capital loss carryforwards, tax credits and other deferred tax assets. The Company has performed an assessment of positive and negative evidence, including the nature, frequency, and severity of cumulative financial reporting losses in recent years, the future reversal of existing temporary differences, predictability of future taxable income exclusive of reversing temporary differences of the character necessary to realize the asset, relevant carryforward periods, taxable income in carry-back years if carry-back is permitted under tax law, and prudent and feasible tax planning strategies that would be implemented, if necessary, to protect against the loss of the deferred tax asset that would otherwise expire. Although realization is not assured, based on the Company's assessment, the Company has concluded that it is more likely than not that the remaining gross deferred tax asset (exclusive of deferred tax liabilities) of $734.7 million will be realized and, as such, no additional valuation allowance has been provided. The net increase in the valuation allowance of $96.9 million is primarily attributable to an increase in valuation allowances of $71.2 million related to capital losses, partially offset by the release of a valuation allowance of $31.7 million related to net operating losses and other deferred tax assets in Canada, the utilization of $1.5 million of foreign net operating loss carryforwards in the current year and increases in valuation allowances for unbenefitable losses.

Generally, the Company does not provide for U.S. taxes or foreign withholding taxes on gross book-tax differences in its non-U.S. subsidiaries because such basis differences of approximately $1.5 billion are able to and intended to be reinvested indefinitely. If these basis differences were distributed, foreign tax credits could become available under current law to partially or fully reduce the resulting U.S. income tax liability. There may also be additional U.S. or foreign income tax liability upon repatriation, although the calculation of such additional taxes is not practicable.

As of September 30, 2020 and 2019, the Company had a liability for unrecognized tax benefits, including potential interest and penalties, net of related tax benefit, totaling $65.8 million and $70.1 million, respectively. The gross unrecognized tax benefits as of September 30, 2020 and 2019 were $47.1 million and $55.7 million, respectively, excluding interest, penalties, and related tax benefit. Of the $47.1 million, approximately $29.5 million would be included in the effective tax rate if recognized. A reconciliation of the beginning and ending amount of gross unrecognized tax benefits is as follows:

	Fiscal Year Ended	
	September 30, 2020	September 30, 2019
	(in millions)	
Balance at the beginning of the year	$ 55.7	$ 53.8
Gross increase in current period's tax positions	2.8	2.9
Gross increase in prior years' tax positions	—	0.8
Gross decrease in prior years' tax positions	(7.9)	(1.0)
Decrease due to settlement with tax authorities	(0.5)	—
Decrease due to lapse of statute of limitations	(3.5)	—
Gross change due to foreign exchange fluctuations	0.5	(0.8)
Balance at the end of the year	$ 47.1	$ 55.7

The Company classifies interest and penalties related to uncertain tax positions within the income tax expense line in the accompanying consolidated statements of operations. As of September 30, 2020, the accrued interest and penalties were $18.9 million and $2.7 million, respectively, excluding any related income tax benefits. At September 30, 2019, the accrued interest and penalties were $20.3 million and $4.3 million, respectively, excluding any related income tax benefits.

The Company files income tax returns in numerous tax jurisdictions, including the U.S., and numerous U.S. states and non-U.S. jurisdictions around the world. The statute of limitations varies by jurisdiction in which the Company operates. Because of the number of jurisdictions in which the Company files tax returns, in any given year the statute of limitations in certain jurisdictions may expire without examination within the 12-month period from the balance sheet date.

While it is reasonably possible that the total amounts of unrecognized tax benefits could significantly increase or decrease within the next twelve months, an estimate of the range of possible change cannot be made.

15. Earnings Per Share

Basic earnings per share (EPS) excludes dilution and is computed by dividing net income attributable to AECOM by the weighted average number of common shares outstanding for the period. Diluted EPS is computed by dividing net income attributable to AECOM by the weighted average number of common shares outstanding and potential common shares for the period. The Company includes as potential common shares the weighted average dilutive effects of equity awards using the treasury stock method. For the periods presented, equity awards excluded from the calculation of potential common shares were not significant.

The following table sets forth a reconciliation of the denominators of basic and diluted earnings per share:

	Fiscal Year Ended		
	September 30, 2020	September 30, 2019	September 30, 2018
		(in millions)	
Denominator for basic earnings per share	159.0	157.0	159.1
Potential common shares	2.3	2.7	3.2
Denominator for diluted earnings per share	161.3	159.7	162.3

16. Other Financial Information

Accrued expenses and other current liabilities consist of the following:

	Fiscal Year Ended	
	September 30, 2020	September 30, 2019
	(in millions)	
Accrued salaries and benefits	$ 675.7	$ 681.5
Accrued contract costs	1,104.7	927.1
Other accrued expenses	431.3	269.7
	$ 2,211.7	$ 1,878.3

Accrued contract costs above include balances related to professional liability accruals of $596.0 million and $536.6 million as of September 30, 2020 and 2019, respectively. The remaining accrued contract costs primarily relate to costs for services provided by subcontractors and other non-employees. Liabilities recorded related to accrued contract losses were not material as of September 30, 2020 and 2019. The Company did not have material revisions to estimates for contracts where revenue is recognized using the percentage-of-completion method during the twelve months ended September 30, 2020. In the first quarter of fiscal 2019, the Company commenced a restructuring plan to improve profitability. The Company incurred restructuring expenses of $188.3 million, including personnel and other costs of $149.2 million and real estate costs of $39.1 million during the year ended September 30, 2020, of which $56.2 million was accrued and unpaid at September 30, 2020. The Company incurred restructuring expenses of $95.4 million, including personnel and other costs of $73.3 million and real estate costs of $22.1 million during the year ended September 30, 2019, of which $26.5 million was accrued and unpaid at September 30, 2019. In connection with this restructuring plan, the Company evaluated its real estate portfolio to better align with the ongoing business. The Company identified certain long-lived assets that were no longer recoverable, and recorded an impairment of $27.4 million in Impairment of long-lived assets, including goodwill during the fourth quarter of fiscal 2019. Fair value of the long-lived assets was determined primarily using Level 3 inputs, such as discounted cash flows.

During the twelve months ended September 30, 2020, the Company applied for subsidies in accordance with various government legislations. The Company recognized $23.2 million during fiscal year 2020 as a reduction to cost of revenues as the expected amount of the subsidy.

17. Reclassifications out of Accumulated Other Comprehensive Loss

The accumulated balances and reporting period activities for the years ended September 30, 2020, 2019 and 2018 related to reclassifications out of accumulated other comprehensive loss are summarized as follows (in millions):

	Pension Related Adjustments	Foreign Currency Translation Adjustments	Loss on Derivative Instruments	Accumulated Other Comprehensive Loss
Balances at September 30, 2018	$ (202.3)	$ (502.2)	$ 1.2	$ (703.3)
Other comprehensive income (loss) before reclassification	(107.2)	(46.5)	(17.2)	(170.9)
Amounts reclassified from accumulated other comprehensive loss	6.8	—	3.2	10.0
Balances at September 30, 2019	$ (302.7)	$ (548.7)	$ (12.8)	$ (864.2)

	Pension Related Adjustments	Foreign Currency Translation Adjustments	Loss on Derivative Instruments	Accumulated Other Comprehensive Loss
Balances at September 30, 2019	$ (302.7)	$ (548.7)	$ (12.8)	$ (864.2)
Other comprehensive income (loss) before reclassification	(72.5)	(18.6)	(5.3)	(96.4)
Amounts reclassified from accumulated other comprehensive loss	32.4	—	9.5	41.9
Balances at September 30, 2020	$ (342.8)	$ (567.3)	$ (8.6)	$ (918.7)

18. Commitments and Contingencies

The Company records amounts representing its probable estimated liabilities relating to claims, guarantees, litigation, audits and investigations. The Company relies in part on qualified actuaries to assist it in determining the level of reserves to establish for insurance-related claims that are known and have been asserted against it, and for insurance-related claims that are believed to have been incurred based on actuarial analysis, but have not yet been reported to the Company's claims administrators as of the respective balance sheet dates. The Company includes any adjustments to such insurance reserves in its consolidated results of operations. The Company's reasonably possible loss disclosures are presented on a gross basis prior to the consideration of insurance recoveries. The Company does not record gain contingencies until they are realized. In the ordinary course of business, the Company may not be aware that it or its affiliates are under investigation and may not be aware of whether or not a known investigation has been concluded.

In the ordinary course of business, the Company may enter into various arrangements providing financial or performance assurance to clients, lenders, or partners. Such arrangements include standby letters of credit, surety bonds, and corporate guarantees to support the creditworthiness or the project execution commitments of its affiliates, partnerships and joint ventures. Performance arrangements typically have various expiration dates ranging from the completion of the project contract and extending beyond contract completion in certain circumstances such as for warranties. The Company may also guarantee that a project, when complete, will achieve specified performance standards. If the project subsequently fails to meet guaranteed performance standards, the Company may incur additional costs, pay liquidated damages or be held responsible for the costs incurred by the client to achieve the required performance standards. The potential payment amount of an outstanding performance arrangement is typically the remaining cost of work to be performed by or on behalf of third parties. Generally, under joint venture arrangements, if a partner is financially unable to complete its share of the contract, the other partner(s) may be required to complete those activities.

At September 30, 2020, the Company was contingently liable in the amount of approximately $529.1 million in issued standby letters of credit and $6.2 billion in issued surety bonds primarily to support project execution.

In the ordinary course of business, the Company enters into various agreements providing financial or performance assurances to clients on behalf of certain unconsolidated partnerships, joint ventures and other jointly executed contracts. These agreements are entered into primarily to support the project execution commitments of these entities.

The Company's registered investment adviser jointly manages and sponsors the AECOM-Canyon Equity Fund, L.P. (the "Fund"), in which the Company indirectly holds an equity interest and has an ongoing capital commitment to fund investments. At September 30, 2020, the Company has capital commitments of approximately $22.1 million to the Fund over the next 8 years.

In addition, in connection with the investment activities of AECOM Capital, the Company provides guarantees of certain contractual obligations, including guarantees for completion of projects, repayment of debt, environmental indemnity obligations and other lender required guarantees.

Department of Energy Deactivation, Demolition, and Removal Project

AECOM Energy and Construction, Inc., an Ohio corporation, a former affiliate of the Company ("Former Affiliate") executed a cost-reimbursable task order with the Department of Energy (DOE) in 2007 to provide deactivation, demolition and removal services at a New York State project site that, during 2010, experienced contamination and performance issues. In February 2011, the Former Affiliate and the DOE executed a Task Order Modification that changed some cost-reimbursable contract provisions to at-risk. The Task Order Modification, including subsequent amendments, required the DOE to pay all project costs up to $106 million, required the Former Affiliate and the DOE to equally share in all project costs incurred from $106 million to $146 million, and required the Former Affiliate to pay all project costs exceeding $146 million.

Due to unanticipated requirements and permitting delays by federal and state agencies, as well as delays and related ground stabilization activities caused by Hurricane Irene in 2011, the Former Affiliate was required to perform work outside the scope of the Task Order Modification. In December 2014, the Former Affiliate submitted an initial set of claims against the DOE pursuant to the Contracts Disputes Acts seeking recovery of $103 million, including additional fees on changed work scope (the "2014 Claims"). On December 6, 2019, the Former Affiliate submitted a second set of claims against the DOE seeking recovery of an additional $60.4 million, including additional project costs and delays outside the scope of the contract as a result of differing site and ground conditions (the "2019 Claims"). The Former Affiliate also submitted three alternative breach of contract claims to the 2014 and 2019 Claims that may entitle the Former Affiliate to recovery of $148.5 million to $329.4 million. On December 30, 2019, the DOE denied the Former Affiliate's 2014 Claims. On September 25, 2020, the DOE denied the Former Affiliate's 2019 Claims. The Company intends to appeal these decisions by December 30, 2020. Deconstruction, decommissioning and site restoration activities are complete.

On January 31, 2020, the Company completed the sale of its Management Services business to the Purchaser including the Former Affiliate who worked on the DOE project. The Company and the Purchaser agreed that all future DOE project claim recoveries and costs will be split 10% to the Purchaser and 90% to the Company with the Company retaining control of all future strategic legal decisions.

The Company intends to vigorously pursue all claimed amounts but can provide no certainty that the Company will recover 2014 and 2019 Claims submitted against the DOE, or any additional incurred claims or costs, which could have a material adverse effect on the Company's results of operations.

New York Department of Environmental Conservation

In September 2017, AECOM USA, Inc. was advised by the New York State Department of Environmental Conservation (DEC) of allegations that it committed environmental permit violations pursuant to the New York Environmental Conservation Law (ECL) associated with AECOM USA, Inc.'s oversight of a stream restoration project for Schoharie County which could result in substantial penalties if calculated under the ECL's maximum civil penalty provisions. AECOM USA, Inc. disputes this claim and intends to continue to defend this matter vigorously; however, AECOM USA, Inc. cannot provide assurances that it will be successful in these efforts. The potential range of loss in excess of any current accrual cannot be reasonably estimated at this time primarily because the matter involves complex and unique environmental and regulatory issues; the project site involves the oversight and involvement of various local, state and federal government agencies; there is substantial uncertainty regarding any alleged damages; and the matter is in its preliminary stages.

Refinery Turnaround Project

A Former Affiliate of the Company entered into an agreement to perform turnaround maintenance services during a planned shutdown at a refinery in Montana in December 2017. The turnaround project was completed in February 2019. Due to circumstances outside of the Company's Former Affiliate's control, including client directed changes and delays and the refinery's condition, the Company's Former Affiliate performed additional work outside of the original contract over $90 million and is entitled to payment from the refinery owner of approximately $144 million. In March 2019, the refinery owner sent a letter to the Company's Former Affiliate alleging it incurred approximately $79 million in damages due to the Company's Former Affiliate's project performance. In April 2019, the Company's Former Affiliate filed and perfected a $132 million construction lien against the refinery for unpaid labor and materials costs. In August 2019, following a subcontractor complaint filed in the Thirteen Judicial District Court of Montana asserting claims against the refinery owner and the Company's Former Affiliate, the refinery owner crossclaimed against the Company's Former Affiliate and the subcontractor. In October 2019, following the subcontractor's dismissal of its claims, the Company's Former Affiliate removed the matter to federal court and cross claimed against the refinery owner. In December 2019, the refinery owner claimed $93.0 million in damages and offsets against the Company's Former Affiliate.

On January 31, 2020, the Company completed the sale of its Management Services business to the Purchaser including the Former Affiliate, however, the Refinery Turnaround project, including related claims and liabilities, remained as part of the Company's self-perform at-risk construction business which is classified within discontinued operations.

The Company intends to vigorously prosecute and defend this matter; however, the Company cannot provide assurance that the Company will be successful in these efforts. The resolution of this matter and any potential range of loss cannot be reasonably determined or estimated at this time, primarily because the matter raises complex legal issues that Company is continuing to assess.

19. Reportable Segments and Geographic Information

During the first quarter of fiscal 2020, the Company reorganized its operating and reporting structure to better align with its ongoing professional services business. This reorganization better reflects the continuing operations of the Company after the sale of its former Management Services reportable segment and planned disposal of its self-perform at-risk construction businesses discussed in Note 3. The businesses that comprised the Company's former Management Services reportable segment and the civil infrastructure, power and oil and gas construction businesses in the former Construction Services reportable segment were classified as discontinued operations. The former Design and Consulting Services reportable segment and construction management business in the former Construction Services reportable segment were reformed around geographic regions. The Americas segment provides planning, consulting, architectural and engineering design services, and construction management services to commercial and government clients in the United States, Canada, and Latin America, while the International segment provides similar professional services to commercial and government clients in Europe, the Middle East, Africa, and the Asia-Pacific regions.

The Company's AECOM Capital (ACAP) segment primarily invests in and develops real estate projects. These reportable segments are organized by the differing specialized needs of the respective clients, and how the Company manages its business. The Company has aggregated various operating segments into its reportable segments based on their similar characteristics, including similar long term financial performance, the nature of services provided, internal processes for delivering those services, and types of customers. The change in reportable segments was applied to all periods presented.

The following tables set forth summarized financial information concerning the Company's reportable segments:

Reportable Segments:	Americas	International	AECOM Capital	Corporate	Total
			(in millions)		
Fiscal Year Ended September 30, 2020:					
Revenue	$ 10,131.5	$ 3,101.7	$ 6.8	$ —	$ 13,240.0
Gross profit	580.5	122.2	6.9	—	709.6
Equity in earnings of joint ventures	19.8	14.3	14.7	—	48.8
General and administrative expenses	—	—	(8.6)	(180.0)	(188.6)
Restructuring costs	—	—	—	(188.3)	(188.3)
Operating income (loss)	600.3	136.5	13.0	(368.3)	381.5
Segment assets	7,929.3	2,454.0	198.0	1,573.9	
Gross profit as a % of revenue	5.7 %	3.9 %			5.4 %
Fiscal Year Ended September 30, 2019:					
Revenue	$ 10,382.6	$ 3,251.7	$ 8.2	$ —	$ 13,642.5
Gross profit	511.5	91.9	8.3	—	611.7
Equity in earnings of joint ventures	17.7	13.9	17.7	—	49.3
General and administrative expenses	—	—	(5.0)	(143.2)	(148.2)
Restructuring costs	—	—	—	(95.4)	(95.4)
Gain on disposal activities	—	3.6	—	—	3.6
Impairment of long lived assets	(10.8)	(4.4)	—	(9.7)	(24.9)
Operating income (loss)	518.4	105.0	21.0	(248.3)	396.1
Segment assets	7,437.3	2,247.1	197.8	718.4	
Gross profit as a % of revenue	4.9 %	2.8 %			4.5 %
Fiscal Year Ended September 30, 2018:					
Revenue	$ 10,512.3	$ 3,366.0	$ —	$ —	$ 13,878.3
Gross profit	403.8	75.2	—	—	479.0
Equity in earnings of joint ventures	27.1	7.0	15.3	—	49.4
General and administrative expenses	—	—	(11.2)	(124.6)	(135.8)
Operating income (loss)	430.9	82.2	4.1	(124.6)	392.6
Segment assets	7,119.9	2,353.2	140.6	676.9	
Gross profit as a % of revenue	3.8 %	2.2 %			3.5 %

Geographic Information:

	Fiscal Year Ended		
Long-Lived Assets	September 30, 2020	September 30, 2019	September 30, 2018
		(in millions)	
Americas	3,733.2	3,399.1	3,469.2
Europe, Middle East, Africa	875.8	738.8	745.8
Asia Pacific	375.3	272.4	278.3
Total	4,984.3	4,410.3	4,493.3

Long-lived assets consist of noncurrent assets excluding deferred tax assets.

20. Major Clients

No single client accounted for 10% or more of the Company's revenue in any of the past five fiscal years. Approximately 8%, 9%, and 8% of the Company's revenue was derived through direct contracts with agencies of the U.S. federal government in the years ended September 30, 2020, 2019 and 2018, respectively.

21. Quarterly Financial Information—Unaudited

In the opinion of management, the following unaudited quarterly data reflects all adjustments necessary for a fair statement of the results of operations. All such adjustments are of a normal recurring nature.

Fiscal Year 2020:	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	(in millions, except per share data)			
Revenue	$ 3,235.6	$ 3,245.7	$ 3,189.7	$ 3,569.0
Cost of revenue	3,069.8	3,076.9	3,004.6	3,379.1
Gross profit	165.8	168.8	185.1	189.9
Equity in earnings of joint ventures	9.9	13.5	8.6	16.8
General and administrative expenses	(43.6)	(41.0)	(54.5)	(49.5)
Restructuring costs	(44.9)	(31.2)	(20.3)	(91.9)
Income from operations	87.2	110.1	118.9	65.3
Other income	4.0	2.4	3.1	1.6
Interest expense	(40.4)	(37.1)	(35.0)	(47.5)
Income from continuing operations before taxes	50.8	75.4	87.0	19.4
Income tax expense (benefit) for continuing operations	15.9	21.7	(7.2)	15.3
Net income from continuing operations	34.9	53.7	94.2	4.1
Net income (loss) from discontinued operations	18.2	(130.7)	(0.1)	(228.0)
Net income (loss)	53.1	(77.0)	94.1	(223.9)
Net income attributable to noncontrolling interests from continuing operations	(4.0)	(5.2)	(3.1)	(4.2)
Net income attributable to noncontrolling interests from discontinued operations	(8.5)	(3.9)	(1.6)	(2.2)
Net income attributable to noncontrolling interests	(12.5)	(9.1)	(4.7)	(6.4)
Net income (loss) attributable to AECOM from continuing operations	30.9	48.5	91.1	(0.1)
Net income (loss) attributable to AECOM from discontinued operations	9.7	(134.6)	(1.7)	(230.2)
Net income (loss) attributable to AECOM	$ 40.6	$ (86.1)	$ 89.4	$ (230.3)
Net income attributable to AECOM per share:				
Basic continuing operations per share	$ 0.20	$ 0.31	$ 0.57	$ —
Basic discontinued operations per share	$ 0.06	$ (0.85)	$ (0.01)	$ (1.44)
Basic earnings per share	$ 0.26	$ (0.54)	$ 0.56	$ (1.44)
Diluted continuing operations per share	$ 0.19	$ 0.30	$ 0.56	$ —
Diluted discontinued operations per share	$ 0.06	$ (0.84)	$ (0.01)	$ (1.44)
Diluted earnings per share	$ 0.25	$ (0.54)	$ 0.55	$ (1.44)
Weighted average shares outstanding:				
Basic	157.3	158.6	160.1	160.0
Diluted	160.6	160.7	161.8	160.0

Fiscal Year 2019:	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	(in millions, except per share data)			
Revenue	$ 3,356.3	$ 3,412.6	$ 3,360.2	$ 3,513.4
Cost of revenue	3,232.9	3,267.8	3,206.4	3,323.7
Gross profit	123.4	144.8	153.8	189.7
Equity in earnings of joint ventures	6.6	16.6	9.2	16.9
General and administrative expenses	(35.9)	(37.4)	(37.5)	(37.4)
Restructuring costs	(63.3)	(15.9)	—	(16.2)
Impairment of long-lived assets	—	—	—	(24.9)
Gain on disposal activities	—	—	—	3.6
Income from operations	30.8	108.1	125.5	131.7
Other income	3.0	3.8	4.3	3.5
Interest expense	(39.4)	(41.4)	(40.5)	(40.2)
(Loss) income from continuing operations before taxes	(5.6)	70.5	89.3	95.0
Income tax (benefit) expense for continuing operations	(42.5)	12.2	27.2	16.6
Net income from continuing operations	36.9	58.3	62.1	78.4
Net income (loss) from discontinued operations	28.2	35.2	43.3	(526.4)
Net income (loss)	65.1	93.5	105.4	(448.0)
Net income attributable to noncontrolling interests from continuing operations	(4.9)	(6.9)	(6.1)	(6.8)
Net income attributable to noncontrolling interests from discontinued operations	(8.6)	(8.8)	(15.6)	(19.4)
Net income attributable to noncontrolling interests	(13.5)	(15.7)	(21.7)	(26.2)
Net income (loss) attributable to AECOM from continuing operations	32.0	51.4	56.0	71.6
Net income (loss) attributable to AECOM from discontinued operations	19.6	26.4	27.7	(545.8)
Net income (loss) attributable to AECOM	$ 51.6	$ 77.8	$ 83.7	$ (474.2)
Net income (loss) attributable to AECOM per share:				
Basic continuing operations per share	$ 0.20	$ 0.33	$ 0.36	$ 0.45
Basic discontinued operations per share	$ 0.13	$ 0.17	$ 0.17	$ (3.46)
Basic earnings per share	$ 0.33	$ 0.50	$ 0.53	$ (3.01)
Diluted continuing operations per share	$ 0.20	$ 0.32	$ 0.35	$ 0.44
Diluted discontinued operations per share	$ 0.12	$ 0.17	$ 0.17	$ (3.39)
Diluted earnings per share	$ 0.32	$ 0.49	$ 0.52	$ (2.95)
Weighted average shares outstanding:				
Basic	156.4	156.6	157.4	157.7
Diluted	159.6	158.4	159.8	160.9

22. Subsequent Events

On October 16, 2020, the Company closed on the sale of its Power construction business to CriticalPoint Capital, LLC. Prior to the sale, the Power construction business was classified within discontinued operations.

The Company has repurchased approximately 7.0 million shares for approximately $318.7 million since the beginning of fiscal year 2021.

AECOM Technology Corporation

Schedule II: Valuation and Qualifying Accounts

(amounts in millions)

	Balance at Beginning of Year	Additions Charged to Cost of Revenue	Deductions[(a)]	Other and Foreign Exchange Impact	Balance at the End of the Year
Allowance for Doubtful Accounts					
Fiscal Year 2020	$ 56.5	$ 37.6	$ (16.4)	$ 0.2	$ 77.9
Fiscal Year 2019	$ 54.2	$ 23.9	$ (21.0)	$ (0.6)	$ 56.5
Fiscal Year 2018	$ 53.7	$ 18.1	$ (16.3)	$ (1.3)	$ 54.2

(a) Primarily relates to accounts written-off and recoveries

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Based on management's evaluation, with the participation of our Chief Executive Officer (CEO) and Chief Financial Officer (CFO), our CEO and CFO have concluded that our disclosure controls and procedures as defined in Rules 13a-15(e) and 15(d)-15(e) under the Securities Exchange Act of 1934, as amended (Exchange Act), were effective as of September 30, 2020 to ensure that information required to be disclosed by us in this Annual Report on Form 10-K or submitted under the Exchange Act is (i) recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission rules and forms, and (ii) accumulated and communicated to our management, including our principal executive and principal financial officer, as appropriate, to allow timely decisions regarding required disclosures.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rule 13a-15(f) or 15d-15(f) promulgated under the Securities Exchange Act of 1934, as amended, as a process designed by, or under the supervision of, the company's principal executive and principal financial officers and effected by the company's board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Projections of any evaluation of the effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management, with the participation of our CEO and CFO, assessed the effectiveness of our internal control over financial reporting as of September 30, 2020, the end of our fiscal year. Our management based its assessment on criteria established in *Internal Control—Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Our management's assessment included evaluation and testing of the design and operating effectiveness of key financial reporting controls, process documentation, accounting policies, and our overall control environment.

Based on our management's assessment, our management has concluded that our internal control over financial reporting was effective as of September 30, 2020. Our management communicated the results of its assessment to the Audit Committee of our Board of Directors.

Our independent registered public accounting firm, Ernst & Young LLP, audited our financial statements for the fiscal year ended September 30, 2020 included in this Annual Report on Form 10-K, and has issued an audit report with respect to the effectiveness of the Company's internal control over financial reporting, a copy of which is included earlier in this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting during the fiscal quarter ended September 30, 2020 identified in connection with the evaluation required by paragraph (d) of Rules 13a-15 and 15d-15 under the Exchange Act that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

The Company expects to incur restructuring costs of approximately $30 million to $50 million in fiscal year 2021 primarily related to previously announced restructuring actions that are expected to deliver continued margin improvement and efficiencies. Total cash costs for the restructuring are expected to be approximately $30 million to $50 million.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Incorporated by reference from our definitive proxy statement for the 2021 Annual Meeting of Stockholders, to be filed within 120 days of our fiscal 2020 year end.

ITEM 11. EXECUTIVE COMPENSATION

Incorporated by reference from our definitive proxy statement for the 2021 Annual Meeting of Stockholders, to be filed within 120 days of our fiscal 2020 year end.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDERS MATTERS

Other than with respect to the information relating to our equity compensation plans, which is incorporated herein by reference to Part II, Item 5, “Equity Compensation Plans” of this Form 10-K, the information required by this item is incorporated by reference from our definitive proxy statement for the 2021 Annual Meeting of Stockholders, to be filed within 120 days of our fiscal 2020 year end.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Incorporated by reference from our definitive proxy statement for the 2021 Annual Meeting of Stockholders, to be filed within 120 days of our fiscal 2020 year end.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Incorporated by reference from our definitive proxy statement for the 2021 Annual Meeting of Stockholders, to be filed within 120 days of our fiscal 2020 year end.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) Documents filed as part of this report:

(1) The Company's Consolidated Financial Statements at September 30, 2020 and 2019 and for each of the three years in the period ended September 30, 2020 and the notes thereto, together with the report of the independent auditors on those Consolidated Financial Statements are hereby filed as part of this report.

(2) Financial Statement Schedule II—Valuation and Qualifying Accounts for the Years Ended September 30, 2020, 2019 and 2018.

(3) See Exhibits and Index to Exhibits, below.

(b) Exhibits.

Exhibit Number	Exhibit Description	Form	Incorporated by Reference (Exchange Act Filings Located at File No. 0-52423) Exhibit	Filing Date	Filed Herewith
2.1	Purchase and Sale Agreement, dated as of October 12, 2019, by and between AECOM and Maverick Purchaser Sub, LLC	8-K	2.1	10/17/2019	
3.1	Amended and Restated Certificate of Incorporation of AECOM Technology Corporation.	10-K	3.1	11/21/2011	
3.2	Certificate of Amendment to Amended and Restated Certificate of Incorporation of AECOM Technology Corporation.	S-4	3.2	8/1/2014	
3.3	Certificate of Correction of Amended and Restated Certificate of Incorporation of AECOM Technology Corporation.	10-K	3.3	11/17/2014	
3.4	Certificate of Amendment to the Company's Certificate of Incorporation.	8-K	3.1	1/9/2015	
3.5	Certificate of Amendment to the Company's Certificate of Incorporation.	8-K	3.1	3/3/2017	
3.6	Amended and Restated Bylaws.	8-K	3.2	11/15/2018	
3.7	Certificate of Designations for Class C Preferred Stock.	Form 10	3.2	1/29/2007	
3.8	Certificate of Designations for Class E Preferred Stock.	Form 10	3.3	1/29/2007	
3.9	Certificate of Designations for Class F Convertible Preferred Stock.	Form 10	3.4	1/29/2007	
3.10	Certificate of Designations for Class G Convertible Preferred Stock.	Form 10	3.5	1/29/2007	
4.1	Form of Common Stock Certificate.	Form 10	4.1	1/29/2007	
4.2	Description of Registrant's Securities				X
4.3	Indenture, dated as of October 6, 2014, by and among AECOM Technology Corporation, the Guarantors party thereto, and U.S. Bank National Association, as trustee.	8-K	4.1	10/8/2014	

Exhibit Number	Exhibit Description	Form	Incorporated by Reference (Exchange Act Filings Located at File No. 0-52423)		Filed Herewith
			Exhibit	Filing Date	
4.4	First Supplemental Indenture, dated as of October 17, 2014, by and among AECOM Technology Corporation, the guarantors party thereto and U.S. Bank National Association.	10-K	4.10	11/17/2014	
4.5	Second Supplemental Indenture, dated as of June 3, 2015, by and among AECOM, the guarantors party thereto and U.S. Bank National Association.	S-4	4.3	7/6/2015	
4.6	Third Supplemental Indenture, dated as of June 19, 2015, by and among AECOM, the guarantor party thereto and U.S. Bank National Association.	S-4	4.4	7/6/2015	
4.7	Fourth Supplemental Indenture, dated as of March 13, 2018, by and among AECOM, the guarantors party thereto and U.S. Bank National Association.	8-K	10.2	3/14/2018	
4.8†	Indenture, dated March 15, 2012, between URS Corporation, URS Fox U.S. LP and U.S. Bank National Association.	8-K	4.01	3/20/2012	
4.9†	First Supplemental Indenture, dated March 15, 2012, by and among URS Corporation, URS Fox U.S. LP, the additional guarantor parties thereto and U.S. Bank National Association.	8-K	4.02	3/20/2012	
4.10†	Second Supplemental Indenture, dated March 15, 2012, by and among URS Corporation, URS Fox U.S. LP, the additional guarantor parties thereto and U.S. Bank National Association.	8-K	4.03	3/20/2012	
4.11†	Third Supplemental Indenture, dated as of May 14, 2012, by and among URS Corporation, URS Fox U.S. LP, the additional guarantor parties thereto and U.S. Bank National Association.	8-K	4.6	5/18/2012	
4.12†	Fourth Supplemental Indenture, dated as of September 24, 2012, by and among URS Corporation, URS Fox U.S. LP, the additional guarantor parties thereto and U.S. Bank National Association.	8-K	4.2	9/26/2012	
4.13	Fifth Supplemental Indenture, dated as of October 17, 2014, by and among AECOM Global II, LLC, URS Fox U.S. LP and U.S. Bank National Association.	10-K	4.8	11/17/2014	
4.14	Indenture, dated as of February 21, 2017, by and among AECOM, the Guarantors party thereto and U.S. Bank, National Association, as trustee.	8-K	4.1	2/21/2017	
4.15	First Supplemental Indenture, dated as of March 13, 2018, by and among AECOM, the guarantors party thereto and U.S. Bank National Association.	8-K	10.3	3/14/2018	

Exhibit Number	Exhibit Description	Form	Incorporated by Reference (Exchange Act Filings Located at File No. 0-52423)		Filed Herewith
			Exhibit	Filing Date	
4.16	Credit Agreement, dated as of October 17, 2014, among AECOM Technology Corporation and certain of its subsidiaries, as borrowers, certain lenders, Bank of America, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer, MUFG Union Bank, N.A., BNP Paribas, JPMorgan Chase Bank, N.A., and the Bank of Nova Scotia, as Co-Syndication Agents, and BBVA Compass, Credit Agricole Corporate and Investment Bank, HSBC Bank USA, National Association, Sumitomo Mitsui Banking Corporation and Wells Fargo Bank, National Association, as Co-Documentation Agents.	8-K	10.1	10/17/2014	
4.17	Amendment No. 1 to the Credit Agreement, dated as of July 1, 2015, by and among AECOM and certain of its subsidiaries, as borrowers, certain lenders, Bank of America, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer.	8-K	10.1	7/7/2015	
4.18	Amendment No. 2 to Credit Agreement, dated as of December 22, 2015, among the Company, the Lenders party thereto, and Bank of America, N.A., as Administrative Agent, Swing Line Lender, and an L/C Issuer.	8-K	10.1	12/22/2015	
4.19	Amendment No. 3 to Credit Agreement and Amendment No. 1 to the Security Agreement, dated as of September 29, 2016, among the Company, the Lenders party thereto, and Bank of America, N.A., as Administrative Agent, Swing Line Lender, and an L/C Issuer.	8-K	10.1	9/30/2016	
4.20	Amendment No. 4 to Credit Agreement dated as of March 31, 2017, among the Company, the Lenders party thereto, and Bank of America, N.A., as Administrative Agent, Swing Line Lender, and an L/C Issuer.	8-K	10.1	4/6/2017	
4.21	Amendment No. 5 to Credit Agreement dated as of March 13, 2018, among AECOM, the Lenders party thereto, and Bank of America, N.A., as Administrative Agent, Swing Line Lender, and an L/C Issuer.	8-K	10.1	3/14/2018	
4.22	Amendment No. 6 to Credit Agreement, dated as of November 12, 2018, among AECOM, the Lenders party thereto, and Bank of America, N.A., as Administrative Agent, Swing Line Lender, and an L.C. Issuer	10-K	4.21	11/13/2018	
4.23	Amendment No. 7 to Credit Agreement, dated as of January 28, 2020, by and among AECOM, each borrower and guarantor party thereto, the lenders party thereto, and Bank of America, N.A, as administrative agent	8-K	10.1	2/3/2020	

Exhibit Number	Exhibit Description	Form	Incorporated by Reference (Exchange Act Filings Located at File No. 0-52423) Exhibit	Filing Date	Filed Herewith
4.24	Fifth Supplemental Indenture, dated as of April 23, 2020, by and among AECOM, the guarantors party thereto and U.S. Bank National Association.	10-Q	10.1	5/6/2020	
4.25	Second Supplemental Indenture, dated as of April 23, 2020, by and among AECOM, the guarantors party thereto and U.S Bank National Association.	10-Q	10.2	5/6/2020	
4.26	Amendment No. 8 to the Credit Agreement, dated as of May 1, 2020, by and among AECOM, each borrower and guarantor party thereto, the lenders party thereto, and Bank of America, N.A., as of administrative agent.	10-Q	10.3	5/6/2020	
10.1#	AECOM Technology Corporation Change in Control Severance Policy for Key Executives	10-Q	10.1	2/7/2018	
10.2#	Employment Agreement between AECOM Technology Corporation and Randall A. Wotring, dated as of January 1, 2015.	10-Q	10.2	2/11/2015	
10.3#	Amended and Restated 2006 Stock Incentive Plan.	Schedule 14A	Annex B	1/21/2011	
10.4#	Form of Stock Option Standard Terms and Conditions under 2006 Stock Incentive Plan.	8-K	10.1	12/5/2008	
10.5#	Form of Restricted Stock Unit Standard Terms and Conditions under 2006 Stock Incentive Plan.	8-K	10.2	12/21/2012	
10.6#	Standard Terms and Conditions for Performance Earnings Program under AECOM Technology Corporation 2006 Stock Incentive Plan.	8-K	10.3	12/5/2008	
10.7#	AECOM Amended & Restated 2016 Stock Incentive Plan.	Schedule 14A	Annex B	1/19/2017	
10.8#	Form Standard Terms and Conditions for Restricted Stock Units for Non-Employee Directors under the 2016 Stock Incentive.	10-Q	10.3	5/11/2016	
10.9#	Form Standard Terms and Conditions for Restricted Stock Units under the 2016 Stock Incentive Plan.	10-Q	10.4	5/11/2016	
10.10#	Form Standard Terms and Conditions for Performance Earnings Program under the 2016 Stock Incentive Plan.	10-Q	10.5	5/11/2016	
10.11#	Form Standard Terms and Conditions for Non-Qualified Stock Options under the 2016 Stock Incentive Plan.	10-Q	10.6	5/11/2016	
10.12#	Standard Terms and Conditions for Performance Earnings Program and Performance Criteria.	8-K	10.1	12/15/2016	
10.13#	AECOM Technology Corporation Executive Deferred Compensation Plan.	8-K	10.1	12/21/2012	
10.14#	First Amendment to the AECOM Executive Deferred Compensation Plan.	10-Q	10.3	2/10/2016	
10.15#	AECOM Technology Corporation Executive Incentive Plan.	Schedule 14A	Annex A	1/22/2010	
10.16#	Letter Agreement, dated as of March 6, 2014, by and among AECOM Technology Corporation and Michael S. Burke.	8-K	10.1	3/12/2014	

Exhibit Number	Exhibit Description	Form	Incorporated by Reference (Exchange Act Filings Located at File No. 0-52423)		Filed Herewith
			Exhibit	Filing Date	
10.17#	Letter Agreement, dated as of May 8, 2018 between AECOM and Michael S. Burke.	10-Q	10.1	5/9/2018	
10.18#	Form of Special LTI Award Stock Option Terms and Conditions under the 2006 Stock Incentive Plan.	8-K	10.2	3/12/2014	
10.19#	AECOM Retirement & Savings Plan (amended and restated effective July 1, 2016).	10-Q	10.1	8/10/2016	
10.20#	AECOM Amended and Restated Employee Stock Purchase Plan.	DEF 14A	Annex A	1/23/2019	
10.21#	Change in Control Severance Agreement, dated as of August 23, 2019, by and between AECOM Management Services Inc. and John Vollmer.	8-K	10.1	8/23/2019	
10.22#	Retention and Completion Bonus Award Agreement, effective as of August 23, 2019, by and between AECOM and John Vollmer.	8-K	10.2	8/23/2019	
10.23#	Form Standard Terms and Conditions for Performance Earnings Program under the 2016 Stock Incentive Plan (Fiscal Year 2019)	10-Q	10.1	2/6/2019	
10.24#	Form Standard Terms and Conditions for Performance Earnings Program under the 2016 Stock Incentive Plan (Fiscal Year 2020)	10-Q	10.1	2/5/2020	
10.25	Agreement, dated as of November 22, 2019, by and among AECOM and Starboard Value LP and the other parties set forth therein	8-K	10.1	11/22/2019	
10.26#	Letter Agreement between AECOM and Michael S. Burke effective November 22, 2019	10-Q	10.3	2/5/2020	
10.27#	Separation and Release Agreement between AECOM and Carla J. Christofferson dated November 27, 2019	10-Q	10.4	2/5/2020	
10.28#	Letter Agreement between AECOM and Michael S. Burke effective March 11, 2020	10-Q	10.4	5/6/2020	
10.29#	AECOM 2020 Stock Incentive Plan	DEF 14A	Annex A	1/23/2020	
10.30#	Letter Agreement between AECOM and W. Troy Rudd dated June 13, 2020	10-Q	10.1	8/5/2020	
10.31#	Letter Agreement between AECOM and Lara Poloni dated June 13, 2020	10-Q	10.2	8/5/2020	
10.32#	Senior Leadership Severance Plan	10-Q	10.3	8/5/2020	
10.33#	Employment Agreement, dated October 19, 2020, by and between AECOM Australia Pty Ltd and Lara Poloni				X
10.34#	Separation and Release Agreement, dated as of October 2, 2020, by and between AECOM and Steve Morriss				X
10.35#	Separation and Release Agreement, dated October 2, 2020, by and between AECOM and Randall A. Wotring				X
21.1	Subsidiaries of AECOM.				X
23.1	Consent of Independent Registered Public Accounting Firm.				X
31.1	Certification of the Company's Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				X

Exhibit Number	Exhibit Description	Form	Incorporated by Reference (Exchange Act Filings Located at File No. 0-52423) Exhibit	Filing Date	Filed Herewith
31.2	Certification of the Company's Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				X
32*	Certification of the Company's Chief Executive Officer and Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				X
95	Mine Safety Disclosure.				X
101	The following financial statements from the Company's Annual Report on Form 10-K for the year ended September 30, 2020 were formatted in iXBRL (Inline eXtensible Business Reporting Language): (i) Consolidated Balance Sheets, (ii) Consolidated Statements of Operations, (iii) Consolidated Statements of Comprehensive Income (Loss), (iv) Consolidated Statements of Stockholders' Equity, (v) Condensed Consolidated Statements of Cash Flows, and (vi) the Notes to Condensed Consolidated Financial Statements, tagged as blocks of text and including detailed tags.				X
104	The cover page from the Company's Annual Report on Form 10-K for the year ended September 30, 2020, formatted in Inline XBRL.				X

Management contract or compensatory plan or arrangement.

* Document has been furnished and not filed.

† Indicates a material agreement previously filed by URS Corporation, a public company acquired by AECOM on October 17, 2014.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURE

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

AECOM

By: /s/ GAURAV KAPOOR
Gaurav Kapoor
Chief Financial Officer
(Principal Financial Officer)

Date: November 18, 2020

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant in the capacities and on the date indicated.

Signature	Title	Date
/s/ W. TROY RUDD W. Troy Rudd	Chief Executive Officer (Principal Executive Officer)	November 18, 2020
/s/ GAURAV KAPOOR Gaurav Kapoor	Chief Financial Officer (Principal Financial Officer, Principal Accounting Officer)	November 18, 2020
/s/ BRADLEY W. BUSS Bradley W. Buss	Director	November 18, 2020
/s/ ROBERT G. CARD Robert G. Card	Director	November 18, 2020
/s/ JACQUELINE C. HINMAN Jacqueline C. Hinman	Director	November 18, 2020
/S/ STEVEN A. KANDARIAN Steven A. Kandarian	Director	November 18, 2020
/s/ ROBERT J. ROUTS Robert J. Routs	Director	November 18, 2020
/s/ CLARENCE T. SCHMITZ Clarence T. Schmitz	Director	November 18, 2020
/s/ DOUGLAS W. STOTLAR Douglas W. Stotlar	Director (Chairman)	November 18, 2020
/s/ DANIEL R. TISHMAN Daniel R. Tishman	Director	November 18, 2020
/s/ GEN. JANET C. WOLFENBARGER, USAF RET. Gen. Janet C. Wolfenbarger, USAF Ret.	Director	November 18, 2020

Exhibit 4.2

DESCRIPTION OF THE REGISTRANT'S SECURITIES REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

As of September 30, 2020, AECOM (the "Company," "we," "us" or "our") has one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), our common stock, par value $0.01 per share ("Common Stock").

The summary of the general terms and provisions of the Common Stock set forth below does not purport to be complete and is subject to and qualified by reference to the Company's Amended and Restated Certificate of Incorporation, as amended by the Certificates of Amendment thereto (as amended, the "Certificate"), and Amended and Restated Bylaws ("Bylaws"), each of which is incorporated by reference as exhibits to the Annual Report on Form 10-K. For additional information, please read the Certificate and Bylaws and the applicable provisions of the General Corporation Law of Delaware (the "DGCL").

Description of Common Stock

General. The Certificate authorizes us to issue 300,000,000 shares of Common Stock. Subject to the rights pertaining to any series of preferred stock, in the event of our liquidation, holders of our Common Stock are entitled to share ratably in our assets legally available for distribution after the payment of our debts. The shares of Common Stock have no preemptive, subscription, conversion or redemption rights. Subject to the rights of the holders of preferred stock, the holders of the Common Stock are entitled to receive dividends, when, as and if declared by our Board of Directors (the "Board"), from funds legally available for such dividend payments.

Delaware Law. We are subject to the provisions of Section 203 of the DGCL. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years after the date on which the person becomes an interested stockholder, unless (i) prior to the time that such stockholder becomes an interested stockholder, the Board of Directors approves such transaction or business combination, (ii) the stockholder acquires more than 85% of the outstanding voting stock of the corporation (excluding shares held by directors who are officers or held in employee stock plans) upon consummation of such transaction, or (iii) at or subsequent to the time such stockholder becomes an interested stockholder, the business combination is approved by the Board of Directors and by two-thirds of the outstanding voting stock of the corporation (excluding shares held by the interested stockholder) at a meeting of stockholders (and not by written consent). A "business combination" includes a merger, asset sale or other transaction resulting in a financial benefit to such interested stockholder. For purposes of Section 203, "interested stockholder" is a person who, together with affiliates and associates, owns (or within three years prior, did own) 15% or more of the corporation's voting stock.

Certificate of Incorporation and Bylaws. Various provisions of our Certificate and Bylaws, which are summarized in the following paragraphs, may be deemed to have an anti-takeover effect and may delay, defer or prevent a tender offer or takeover attempt that a stockholder might consider in its best interest, including those attempts that might result in a premium over the market price for the shares held by stockholders.

No Cumulative Voting. The DGCL provides that stockholders are denied the right to cumulate votes in the election of directors unless our Certificate provides otherwise. Our Certificate does not expressly address cumulative voting.

No Stockholder Action by Written Consent; Calling of Special Meetings of Stockholders. Our Certificate prohibits stockholder action by written consent. Our Bylaws also provide that special meetings of our stockholders (i) may be called at any time by the Board or by a committee of the Board which has been duly designated by the Board and whose powers and authority, as expressly provided in a resolution of the Board, include the power to call such meetings, and (ii) must be called by the Chairman of the Board or the Secretary of the Company upon the request of one or more persons that own at least 25% of the outstanding shares of the Company that are entitled to vote on the matter(s) to be brought before the proposed special meeting as of the record date fixed in accordance with the Bylaws, provided the requesting stockholder(s) satisfy the requirements specified in the Bylaws.

Voting Rights. A majority of the outstanding shares entitled to vote on a matter, represented in person or by proxy, constitutes a quorum at any meeting of stockholders except as otherwise provided by applicable law or by the Certificate. Prior to the Company's 2020 annual meeting of stockholders, at any meeting of stockholders for the election of directors, when a quorum is present, a plurality of the votes of the shares of the Company present in person or represented by proxy at the meeting and entitled to vote on the election of directors at such meeting of stockholders is sufficient to elect directors. Commencing with the Company's 2020 annual meeting of stockholders, at any meeting of stockholders for the election of directors, including the 2020 annual meeting, each director will be elected by a majority of the votes cast; provided that, if the election is contested, the directors will be elected by a plurality of the votes cast. In all other matters, when a quorum is present at any meeting, the affirmative vote of the holders of a majority of the shares of capital stock present in person or represented by proxy at the meeting and entitled to vote on the subject matter at such meeting of stockholders shall decide any question brought before such meeting, unless the question is one upon which by express provision of applicable law or of the Certificate or the Bylaws, a different vote is required, in which case such express provision shall govern and control the decision of such matter.

Unless otherwise provided in the Certificate, each stockholder entitled to vote at any meeting of the stockholders shall be entitled to one vote (in person or by proxy) for each share held by such stockholder which has voting power upon the matter in question.

Proxy Access Provision of Our Bylaws. The Bylaws permit a stockholder, or a group of up to 20 stockholders, owning 3% or more of the Company's outstanding common stock continuously for at least three years to nominate and include in the Company's proxy materials director nominees not to exceed the greater of (i) 20% of the Board or (ii) two directors, provided that the stockholder(s) and the nominee(s) satisfy the procedural and eligibility requirements specified in the Bylaws.

Advance Notice Requirements for Stockholder Proposals and Director Nominations. Our Bylaws provide that stockholders seeking to bring business before an annual meeting of stockholders must provide timely notice of their proposal in writing to the corporate secretary. To be timely, a stockholder's notice must be delivered or mailed and received at our principal executive offices not less than 90 nor more than 120 days prior to the first anniversary of the preceding year's annual meeting of stockholders. Our Bylaws also specify requirements as to the form and content of a stockholder's notice. These provisions may impede stockholders' ability to bring matters before an annual meeting of stockholders or make nominations for directors at an annual meeting of stockholders.

Annual Election of Directors. We do not have a classified board of directors. The full Board is subject to re-election at each annual meeting of our stockholders.

Limitations on Liability and Indemnification of Officers and Directors. The DGCL authorizes corporations to limit or eliminate the personal liability of directors to corporations and their stockholders for monetary damages for breaches of directors' fiduciary duties. Our Certificate includes a provision that eliminates the personal liability of directors for monetary damages for actions taken as a director, except for liability:

- for breach of duty of loyalty;
- for acts or omissions not in good faith or involving intentional misconduct or knowing violation of law;
- under Section 174 of the DGCL (unlawful dividends); or
- for transactions from which the director derived improper personal benefit.

Our Bylaws provide that we must indemnify our directors and officers to the fullest extent authorized by the DGCL. We are also expressly authorized to carry directors' and officers' insurance providing indemnification for our directors, officers and certain employees for some liabilities. We believe that these indemnification provisions and insurance are useful to attract and retain qualified directors and officers.

The limitation of liability and indemnification provisions in our Certificate and Bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duty. These provisions may also have the effect of reducing the likelihood of derivative litigation against directors and officers, even though such an action, if successful, might otherwise benefit us and our stockholders.

Authorized But Unissued Shares. Subject to the requirements of any stock exchange on which shares of our Common Stock may be listed, our authorized but unissued shares of Common Stock will be available for future issuance without the approval of holders of Common Stock. We may use these additional shares for a variety of corporate purposes, including future offerings to raise additional capital, corporate acquisitions and employee benefit plans.

Listing. The Common Stock is traded on the New York Stock Exchange under the trading symbol “ACM.”

EMPLOYMENT AGREEMENT (Agreement)

between

AECOM AUSTRALIA PTY LTD (the COMPANY)

and

LARA POLONI

1. Date of Commencement

Your commencement date with the Company is August 15, 2020 and your employment will continue until terminated by either party in accordance with this Agreement. The Company recognises your prior service from 14 June 1994 for the purposes of all service-related entitlements, with the exception of severance entitlements which are covered by the AECOM Change in Control Severance Policy for Key Executives and the AECOM Senior Leadership Severance Plan. Your employment is conditional upon you being an Australian citizen, holding current Australian residency or valid visa status for eligibility to work in Australia. You agree that the offer letter dated 13 June 2020 issued by the Company's U.S. entity to you as well as any other employment agreement you previously entered with the Company or its parents/subsidiaries/affiliates (if any) is here by superseded and will terminate automatically and without the provision of notice or any entitlement to compensation upon the commencement of your employment with the Company pursuant to this Agreement, except that the last paragraph on page one (1) in the 13 June 2020 offer letter that sets forth the 2021 Fiscal Year long term inventive ("LTI") award opportunity shall remain in effect.

2. Position and Reporting

You are assigned to the full-time permanent position of President of AECOM, a Delaware corporation ("AECOM"), which is with the ultimate parent of the Company.

In this capacity, you will initially be based in our Melbourne office, reporting to the Chief Executive Officer of AECOM (your Manager).

The Company is a global company and as such project work may require you to travel to other locations within Australia or overseas and/or perform work for any of AECOM's related entities as may be necessary for the proper performance of your duties.

3. Remuneration

The Company will pay to you a Total Fixed Remuneration (TFR) per annum as detailed below. This TFR covers all work required to be carried out by you in your position. Your TFR includes an annual base salary plus compulsory superannuation contributions, as well as the total cost (including consequential fringe benefits tax) of all other benefits provided to you and as may be agreed between you and the Company from time to time.

Annual Base Salary (Gross)	AUD $1,042,500, subject to the deduction of applicable taxation
	(the equivalent of US$750,000 per annum, based on an exchange rate of 1:1.39 (USD:AUD)); the Company will examine the currency exchange rate in our around January of each year starting in January 2022 or as otherwise mutually agreed or as determined by the Compensation/Organization Committee of the AECOM Board of Directors (the "Compensation Committee").

The Base Salary may be subject to temporary salary reductions consistent with any policy or similar actions as applicable to executive officers of AECOM generally. Any reduction in Base Salary will be set out in a variation letter to this Agreement which will be executed by the parties in writing.

The Company undertakes and guarantees to you that it will pay to you the TFR identified in this Agreement, which is an amount of annual earnings in relation to the performance of work during your period of employment and which exceeds the high-income threshold. You accept and agree to this undertaking and the amount of earnings specified in the base salary and remuneration and, as a result, agree that no modern award applies to you during your employment with the Company. This undertaking constitutes a guarantee of annual earnings for the purpose of section 330 of the *Fair Work Act 2009* (Cth).

From time to time, costs associated with your remuneration (including fringe benefits tax liability or superannuation contributions) may alter. If this occurs, the Company may at its sole discretion (subject to legislative obligations) change components of your remuneration package, including base salary, so as to have the effect that the total cost to the Company of providing the components of the package is equivalent to, and does not result in any increase to, the TFR.

You will be eligible to participate in the AECOM Executive Incentive Plan (Incentive Plan) as in effect from time to time, with a 2021 fiscal year target award opportunity of up to 110% of Base Salary. The Company's determination of whether or not to pay you any amount under the plan, the eligibility criteria for and the amount and timing of such incentive payment will be determined by the Compensation Committee in its sole discretion subject to your achievement of performance goals and the terms of the Incentive Plan. You have no contractual right to receive an incentive payment and the rules of the Incentive Plan do not form part of this Agreement. The Company reserves the right to vary, amend, discontinue or withdraw the Incentive Plan at any time it deems fit, at its sole discretion, including to cap or limit the amount of any payment to you and for any changes to have retrospective effect. If your employment under this Agreement is terminated, or if you are serving any period of notice of termination as at the payment date, you are not entitled to any payment pursuant to the Incentive Plan or part thereof.

You will also be eligible to participate in AECOM's employee benefit plans as in effect from time to time that are available to other executive officers of AECOM, including AECOM's Change in Control Severance Policy for Key Executives and AECOM's Senior Leadership Severance Plan (the "Pre-CIC Severance Plan"), as in effect from time to time. No such plans form part of this Agreement. The Company reserves the right to vary, amend, discontinue or withdraw such plans at any time it deems fit, at its sole discretion, including to cap or limit the amount of any payment to you under such plans and for any changes to have retrospective effect.

The Company will pay your annual base salary on or before the 15th of each month by electronic funds transfer into your nominated bank or building society account.

Remuneration Review

Your TFR will be reviewed by your Manager annually taking into account your performance and contribution, the business results of AECOM and market conditions. Any increase in your TFR is at the sole discretion of the Company. There is no obligation on the Company to award any increase to your TFR following any review.

4. Superannuation

The Company will make superannuation contributions for you at the rate required under the *Superannuation Guarantee (Charge) Act 1992* (Cth) to avoid a charge.

As AECOM manages total fixed remuneration the amount of superannuation contributions made by the Company on your behalf may change in accordance with future legislative changes to the compulsory superannuation contribution rate.

You may nominate a complying superannuation fund in accordance with applicable legislation. If you do not make a nomination, the Company will make all required superannuation contributions on your behalf to its default fund, which is currently the AMP AECOM Australia Signature Superannuation Fund. This fund may change at the Company's election from time to time. A Standard Choice form must be completed and returned upon acceptance of this offer.

If you elect the Company superannuation fund, you will be provided with temporary salary continuance in the event of a serious injury or illness, with a benefit of up to 75% of your superannuation salary (subject to eligibility for benefits under the Fund being established). If eligible for benefits a three (3) month waiting period applies. Full details will be provided upon commencement of employment and if you make the necessary election.

5. Hours of Work

Your weekly hours of work are 38 hours per week, Monday to Friday, plus any reasonable additional hours as are necessary and reasonable to perform your duties and responsibilities (not including an unpaid meal break each day). Start and finish times should be discussed and agreed with your manager.

Your remuneration has been set at a level to compensate you for all hours worked, including all such reasonable additional hours and you acknowledge that no additional payment will be made for time worked in excess of 38 hours per week.

6. Fitness for Work

From time to time the Company may lawfully and reasonably direct you to attend a doctor or other health professional nominated by the Company for the purpose of having a medical examination to ascertain your fitness or capacity to undertake your duties and/or undertake medically supervised tests (e.g. drug alcohol, general fitness) to determine a level of "fitness for work". Such tests may also be required by our clients from time to time in order to fulfil contractual, industrial or Workplace Health & Safety obligation. You authorise the Company to obtain a copy of any reports and the results of any tests undertaken in respect of any such medical examinations or fitness for work tests.

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7. Responsibilities

In carrying out your duties it is your responsibility to perform the duties assigned to you to the best of your ability and knowledge; act in the Company's best interests and use your best efforts to promote the interests of the Company. You are expected to comply with all lawful and reasonable directions of the Company; all law applicable to your position and the duties assigned to you.

8. Leave Entitlements

The leave entitlements detailed below are subject to the notice and evidence requirements of the *Fair Work Act 2009* (Cth) and/or as detailed in the Company's leave policy as amended from time to time which forms a lawful and reasonable direction with which you must comply but does not form part of this Agreement.

<u>Annual Leave</u> - You are entitled to annual leave in accordance with the *Fair Work Act 2009* (Cth). The remainder of this paragraph summarises the key aspects of your annual leave entitlements under the Act. You are entitled to four (4) weeks' paid annual leave for each year of service in accordance with the *Fair Work Act 2009* (Cth) as amended from time to time. Subject to this Agreement, annual leave is to be taken at a time agreed to between you and the Company or, failing agreement at a time specified by the Company. Annual leave accrues progressively during a year of service according to your ordinary hours of work and is cumulative.

<u>Christmas Closure</u> - Project commitments permitting, it is currently the practice of the Company's offices to close for a period of time around Christmas and New Year. Accordingly, you may be directed by the Company to take annual leave during any shutdown period over the Christmas/New Year period or where you have accrued an excessive annual leave balance. You will be required to utilise your accrued annual leave to cover the non-public holiday days during this shutdown period. New employees with insufficient annual leave may be permitted to take un-accrued annual leave to be re-credited in the following calendar year.

<u>Long Service Leave</u> - You will be entitled to long service leave in accordance with the applicable legislation in the State or Territory that is your primary place of employment.

<u>Public Holidays</u> - You are entitled to the gazetted public holidays, which fall on your standard work days, in the State or Territory that is your primary place of employment being the office location identified in the Position and Reporting section of this Agreement, unless your primary place of employment changes due to relocation at the request of the Company.

<u>Personal/Carer's Leave</u> - You are entitled to personal leave in accordance with the *Fair Work Act 2009* (Cth). The remainder of this paragraph summarises the key aspects of your personal leave entitlements under this Act. You are entitled to ten (10) days' of paid personal leave for each year of service. This leave can be used in circumstances of personal illness or injury, or to provide care and support to a member of your immediate family or a member of your household as a result of a personal illness or injury or an unexpected emergency affecting the member. Paid personal leave accrues progressively during a year of service according to your ordinary hours of work and is cumulative. Where your paid personal leave entitlement is otherwise exhausted, you are also entitled to up to two

(2) days of unpaid carer's leave (per occasion). On termination you are not entitled to any payment in lieu of accrued but untaken personal leave.

<u>Compassionate Leave</u> – You are entitled to up to two (2) days paid compassionate leave for each occasion where a member of your household or immediate family passes away or contracts a personal illness or injury which poses a serious threat to life.

<u>Study Leave</u> - Study leave is available for employees undertaking **approved** secondary and tertiary studies in an area directly linked to your profession and career path. Study leave of up to four (4) days per academic year may be approved by your Manager on a case-by-case basis, and the granting of study leave is at the Company's sole discretion

<u>Parental Leave</u> – You are entitled to unpaid parental leave in accordance with the *Fair Work Act 2009* (Cth). After completing six (6) months of continuous service you will be entitled to paid parental leave in accordance with the Company's Parental Leave Guide.

<u>Community Service Leave</u> – You are entitled to community service leave in accordance with the *Fair Work Act 2009* (Cth).

You are required to notify the Company as soon as reasonably practicable, preferably before your usual time for commencement of work on the day of your inability to attend work for any reason, including due to a need to take personal leave. If requested to do so, you must supply the Company with evidence that supports your reason to take the type of leave requested, for example, a medical certificate or a statutory declaration.

<u>Family and Domestic Violence Leave</u> – You are entitled to Family and Domestic Violence leave in accordance with the *Fair Work Act 2009* (Cth) and in accordance with the Company Family and Domestic Violence Leave Policy.

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9. Policies, Procedures and Guidelines

The Company's policies, procedures and guidelines as prescribed, amended and published from time to time are not incorporated into and do not form part of this Agreement, nor do they impose contractual obligations on the Company or give rise to contractual rights enforceable by you.

Some of the Company's policies, procedures and guidelines, including those of our parent company "AECOM", such as but not limited to the Code of Conduct, Clawback Policy, Good Working Relationships, Insider Trading, Electronic Communications and the Safety, Health & Environment policies, place obligations on you as an employee of the Company. Where such obligations arise, it is a condition of your employment with the Company and under this Agreement that you comply with these obligations as a lawful and reasonable direction issued to you by the Company.

You are also obliged under this Agreement to undertake related training in relation to such policies, procedures and guidelines as requested from time to time.

Policies, procedures and guidelines may be added to, modified or withdrawn at any time and in the event that there is a conflict between this Agreement and the policies, procedures and guidelines this Agreement will prevail. Failure to comply with the Company's policies, procedures and guidelines may be taken into account in assessing your performance and your conduct as an employee. Conduct which is in breach of policies, procedures or guidelines or refusing to undertake training in relation to policies, procedures or guidelines, may in particular cases justify disciplinary action, up to and including termination of employment without notice or without payment in lieu of notice. You should therefore ensure that you are familiar with the Company's policies, and procedures and guidelines, which can be obtained from the company's intranet, your Manager or the Human Resources team.

10. Company Equipment

All equipment provided to you by the Company during your employment, including mobile phones, BlackBerry/PDA devices and computers remain the property of the Company and must be returned to the Company upon the end of your employment.

11. Privacy

For the purpose of this clause, "personal information", including "health information" and "sensitive information" have the same meaning as in the *Privacy Act 1988* (Cth).

You consent to the Company, its related entities and each person to whom you have disclosed personal information, collecting, using and disclosing personal information for any purpose relating to their business or your employment in accordance with the *Privacy Act 1988* (Cth). Information concerning your employment may be shared, when required for a direct business purpose or as instructed by a government agency or court order.

12. Conflict of Interest

You represent and acknowledge that the offer and acceptance of employment with the Company will not place you or have the potential to place you in a situation of conflict of interest or duty or potential of conflict of interest or duty with the offered position. If you have any legal or contractual obligation which may preclude or impose restrictions on your potential employment with the Company, you must disclose this to the Company prior to your acceptance.

During your employment you must not allow a situation to arise which places you in a situation, or potential situation, of conflict of interest or duty with your position at the Company. During your employment, you must not, without the prior written consent of the Company, undertake any appointment or position (including any directorship) or other paid work or time-consuming unpaid work, or advise or provide services to, or be engaged, or associated with any business or activity (including a business on your own account) that:

a) results in your performing activities similar to your duties and responsibilities under this Agreement; ;
b) results in the business or activity competing with the Company;
c) adversely affects the Company or its reputation; or
d) hinders the performance of your duties.

You must not accept any payment or other benefit from any person as an inducement or reward for any act or omission in connection with the business and affairs of the Company or the duties assigned to you by the Company from time to time.

If a situation arises whereby you believe you have, or have the potential to have, a conflict of interest or duty:

a) you must immediately advise your Manager of the situation; and
b) you must take all reasonable steps to avoid the conflict or potential conflict and follow all reasonable directions of your Manager in that regard.

13. Confidentiality

During your employment and following termination of your employment, you will keep confidential all Confidential Information. Confidential Information means all information which is confidential to the AECOM, the Company, and their Affiliates (collectively "AECOM Group"), including trade secrets, information concerning the market within which the AECOM Group operates, technical information concerning the AECOM's products or the materials used by AECOM Group in its business, information about the AECOM's financial performance, customer lists and customer information, information concerning the Company's markets, business projections, business plans and business forecasts concerning the AECOM Group's performance or likely future activity and/or any other information which is confidential to the business affairs of the AECOM Group or its suppliers and customers and/or employees and which is not in the public domain.

You further agree that during your employment with the Company you will not improperly use or disclose any Executive Restricted Information which includes proprietary or confidential information or trade secrets of any person or entity with whom you have an agreement or duty to keep such information or secrets confidential.

You must not during or at any time after your employment with the Company ends, disclose or publish any Confidential Information and you must use your best endeavours to prevent the disclosure or publication of the Confidential Information to any person except if it falls within one of the following exceptions:

e) the disclosure if required by law;
f) the prior written consent of the AECOM Group is obtained to the disclosure; or
g) the disclosure is in the proper performance of your duties to the AECOM Group's agents, employees or advisers who enter into an undertaking of confidentiality reasonably required by the AECOM Group.

You must not make a copy or other record of Confidential Information except in the proper performance of your duties.

You will:

a) upon termination of your employment with the Company, or at any time at the request of AECOM or the Company, immediately deliver to AECOM or the Company all documents or other things in your possession, custody or control on which any Confidential Information is stored or recorded, whether in writing or in electronic or other form; or
b) if requested by AECOM or the Company, instead of delivering the Confidential Information to the AECOM or Company, destroy the Confidential Information (in the case of data stored electronically or in other form, by erasing it from the media on which it is stored such that it cannot be recovered or in any way reconstructed or reconstituted) and certify in writing to AECOM or the Company that the Confidential Information, including all copies, has been destroyed.

14. Intellectual Property Rights

You acknowledge that the Company is the absolute owner of all Intellectual Property rights in the Works.

You must disclose to the Company all Works whether capable of attracting Intellectual Property rights or not. All existing and future Intellectual Property rights, title and interest created or developed by you in connection with your employment (whether alone or with others and whether created during or outside of work hours) are vested in the Company. You will undertake all acts and things required to secure Intellectual Property rights of the Company, including assigning to the Company all your existing and future Intellectual Property rights in the Works (whether during or after the cessation of your employment), applying, executing any instrument and undertaking to do all things reasonably requested by the Company to vest the registration of title or other similar protection to the Company and ensuring all Intellectual Property rights in the Works become the absolute property of the Company.

You consent to any act or omission by the Company (for its own benefit) which would otherwise constitute an infringement of your Moral Rights in all Works created or developed by you in connection with your employment.

In this clause, the following terms have the following meanings:

"**Intellectual Property**" means all forms of intellectual property rights whether registered or unregistered and whether existing under statute, at common law or in equity throughout the world, including without limitation copyright, registered patent, designs, trademarks and Confidential Information including know-how and trade- secrets;

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“**Moral Rights**” has the meaning given to it in the *Copyright Act 1968* (Cth) and includes rights of integrity of authorship, rights of attribution of authorship and similar rights that exist or may come to exist anywhere in the world; and

“**Works**” means all information, ideas, concepts, improvements, discoveries and inventions, whether patentable or not, which are conceived, made, developed or acquired by you or which are disclosed or made known to you, individually or in conjunction with others, during your employment with the Company and which relate to the Company’s business, products or services (including all such information relating to corporate opportunities, research, financial and sales data, pricing and trading terms, evaluations, opinions, interpretations, acquisition prospects, the identity of clients or customers or their requirements, the identity of key contacts within the client or customers’ organizations or within the organization of acquisition prospects, or marketing and merchandising techniques, prospective names and marks). This includes all drawings, memoranda, notes, records, files, correspondence, manuals, models, specifications, computer programs, maps and all other writings or materials of any type embodying any of such information, ideas, concepts, improvements, discoveries and inventions (and in each case whether electronic or in any other material form).

15. Non-solicitation and Non-compete Obligations

During your employment with the Company you will be in a position to develop and maintain relationships on behalf of the Company, with the Company and its related entities, clients, employees, vendors, agents and other business associates and will have access to confidential information, including commercially sensitive, conceptual, financial and structural knowledge of the Company. On this basis, you acknowledge that certain restrictions are necessary for the protection of the Confidential Information, the reputation and goodwill of the Company and apply during your employment and when your employment with the Company ceases.

In consideration of the TFR provided to you under this Contract, you agree that during your employment and for one (1) year following termination of your employment you will not:

a) canvass, solicit, entice or otherwise induce any employee or contractor of the Company to act in breach of their contract with the Company or to leave the employment of or end their engagement with the Company (as applicable); or
b) induce, encourage or solicit any of the Company’s clients, suppliers or candidates with whom you have had dealings and influence over in the preceding twelve (12) months, to end or restrict their trade or commercial relationship with the Company.

Each restriction described in this letter (above and under the heading of Non-solicitation and Non-compete Obligations) are separate, distinct and severable from the other restrictions. If any such restriction is found to be unenforceable in whole or in part, such unenforceable restriction will be severed from this letter and the enforceability of the remainder of the restrictions and any other restriction will not be affected.

16. Acknowledgements

You agree that each of the restraints are reasonable in their extent (as to duration, geographical area and restrained conduct) having regard to the legitimate business interests of the Company and go no further than is reasonably necessary to protect the ongoing business and goodwill of the Company.

You also acknowledge that you have sought professional advice in relation to the contents of this Contract including the restraints set out at paragraphs (a) to (b) in clause 15 above.

You acknowledge that any breach by you of your obligations under this Agreement with respect to Confidentiality, Intellectual Property Rights and Non-poaching and Non-compete Obligations will be regarded as very serious matters by the Company, may result in you being dismissed immediately without any entitlement to notice or pay in lieu of notice; and/or may result in the Company seeking an injunction against you as you acknowledge that damages may not be an adequate remedy in such circumstances.

17. Termination of Employment

You are required to give three (3) months’ written notice of resignation. The Company may terminate your employment by giving you three (3) months’ written notice.

The Company may elect to pay out all of the notice period or provide a combination of part notice and part payment in lieu of notice. Payments in lieu of notice are calculated on the basis of your usual weekly remuneration.

The Company may terminate your employment immediately and without notice or without payment in lieu of notice if you engage in any of the following conduct that, in the Company’s opinion, justifies your summary dismissal, which includes but is not limited to:

a) serious misconduct (including, but not limited to theft, fraud or assault);
b) gross negligence or otherwise being incompetent in the performance of your position;
c) committing a serious or persistent breach of the terms of this Agreement;
d) engaging in conduct that causes a serious risk to health or safety;
e) breaching fit for work requirements;
f) refusing to carry out a lawful and reasonable direction;
g) becoming bankrupt;
h) being restricted from performing your duties due to breach of any restraint provision with a former employer or failing to obtain any required visas, work permits, licences, registrations, or memberships;
i) committing a crime which in the reasonable opinion of the Company, may either seriously impact on your ability to perform your duties or is likely to significantly damage the reputation or business of the Company; and/or
j) breaching the Confidentiality, Intellectual Property Rights, and/or Non-poaching and Non-compete Obligations provisions of this Agreement.

On either party giving notice of termination, the Company may, in its absolute discretion and for all or part of the notice period require you to perform duties different to those duties which you performed during your employment, only some of your duties, or no duties at all, which you agree will not constitute a repudiation of this Agreement. During any such period, you will remain an employee of the Company, you must remain ready, willing and able to perform any duties as required by the Company, and except as specified in this clause, all terms and conditions of this Agreement will continue to apply to you.

18. Right to Deduct

You expressly authorise and agree that the Company may deduct from your salary any money and costs:

a. as overpayments made by the Company to you including, without limitation, due to any payroll or other administrative error or mistake, because of unauthorised absences where you have not accrued such entitlement or negative leave balances;
b. directly incurred by the Company as a result of your voluntary private use of particular property of the Company including, for example, the cost of items purchased on a corporate credit card for personal use, the cost of personal calls on a Company mobile phone or the cost of petrol purchased for the private use of a Company vehicle;
c. if you fail to give the required notice to the Company, being an amount not exceeding the amount you would have been paid under this Agreement in respect of your period of notice less any period of notice actually given by you to the Company; and
d. for which the Company is legally entitled to deduct, or which you have specifically asked the Company to deduct from your wages and that is for your benefit, including, for example, salary sacrifice payments, reimbursable relocation expenses, and gym membership or health insurance fees.

Where the Company has a right to deduct monies from your salary and a written authority from you is required, you undertake to provide this authority as requested by the Company.

19. General Provisions

In this Agreement, a reference to the Company includes the Company's related entities.

Your obligations under this Agreement concerning Return of Property, Confidentiality, Intellectual Property Rights, Non-poaching and Non-compete Obligations, Acknowledgements and this clause continue after termination of this Agreement and your employment.

This Agreement supersedes and replaces all prior representations and agreements concerning your employment with the Company. Any change to this Agreement must be agreed between you and the Company and in writing.

The failure by the Company to insist on performance of any term of this Agreement is not a waiver of its right at any later time to insist on performance of that or any other terms of this letter.

Each provision of this Agreement is separable from the others and the severance of a provision does not affect the remainder of the Agreement.

This Agreement is governed by the laws of the State of Victoria.

You acknowledge that you have the right to seek legal advice in relation to this Agreement.

20. Acceptance of Offer

Please sign below (and initial each page) the duplicate copy of this Agreement to signify your understanding and acceptance of the terms and conditions of your appointment with the Company. The AECOM Code of Conduct and the AECOM Global Ethical Business Conduct policies enclosed with this Agreement are important to us as they guide our professional behaviour. By signing this Agreemen,t you also acknowledge you have received, read and understand your obligations arising out of these policies and agree to comply with them during, and if applicable after, your employment with AECOM.

I understand, acknowledge and accept the terms and conditions of employment with the Company.

Signed by Lara Poloni

Signature: /s/ Lara Poloni

Date: 10/19/20

On behalf of AECOM:

Signed by /s/ Steven A. Kandarian
Steven A. Kandarian
Chairman of the Compensation and Organization Committee

Date: 9/29/20

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Fair Work OMBUDSMAN

Fair Work Information Statement

Employers must give this document to new employees when they start work

IMPORTANT INFORMATION ABOUT YOUR PAY AND CONDITIONS

Employees in Australia have entitlements and protections at work, under:

FAIR WORK LAWS	AWARDS	ENTERPRISE AGREEMENTS	EMPLOYMENT CONTRACTS
• minimum entitlements for all employees • includes the National Employment Standards	• set minimum pay and conditions for an industry or occupation • cover most employees in Australia	• set minimum pay and conditions for a particular workplace • negotiated and approved through formal process	• provide additional conditions for an individual employee • can't reduce or remove minimum entitlements

Find your award at **www.fairwork.gov.au**. Check if your workplace has an enterprise agreement at **www.fwc.gov.au/agreements**

PAY

Your minimum pay rates are in your award or enterprise agreement. If there is no award or agreement for your job, you must get at least the National Minimum Wage. **You can't agree to be paid less.** Minimum pay rates are usually updated yearly.

Find out what you should get at **www.fairwork.gov.au/minimum-wages**

NATIONAL MINIMUM WAGE FROM 1 JULY 2019

$19.49/hour full-time or part-time

$24.36/hour casual

This is the adult rate for employees with no award or enterprise agreement. Lower rates may apply to juniors, apprentices and employees with disability.

Use our free calculators to check your pay, leave and termination entitlements at: **www.fairwork.gov.au/pact**

NATIONAL EMPLOYMENT STANDARDS

These are minimum standards for all employees. Rules and exclusions may apply. **Your award or agreement may provide more.** Find more information on the National Employment Standards at **www.fairwork.gov.au/NES**

	Full-time and part-time employees	Casual employees
Annual leave	✓ 4 weeks paid leave per year (pro rata for part-time employees) + 1 week for eligible shift workers	✗
Personal leave* (sick or carer's leave)	✓ 10 days paid leave per year	✗
Carer's leave	✓ 2 days unpaid leave per permissible occasion (if no paid personal leave left)	✓ 2 days unpaid leave per permissible occasion
Compassionate leave	✓ 2 days paid leave per permissible occasion	✓ 2 days unpaid leave per permissible occasion
Family & domestic violence leave	✓ 5 days unpaid leave per 12 months	✓ 5 days unpaid leave per 12 months
Community service leave • Jury service	✓ 10 days paid leave with make up pay + unpaid leave as required	✓ Unpaid leave as required
• Voluntary emergency management activities	✓ Unpaid leave as required to engage in the activity	✓ Unpaid leave as required to engage in the activity
Long service leave	✓ Paid leave (amount and eligibility rules vary between states and territories)	• Varies between states and territories
Parental leave eligible after 12 months employment	✓ 12 months unpaid leave - can extend up to 24 months with employer's agreement	✓ 12 months unpaid leave for regular and systematic casuals - can extend up to 24 months with employer's agreement
Maximum hours of work	✓ Full-time employees – 38 hours per week + reasonable additional hours Part time and casual employees – 38 hours or employee's ordinary weekly hours (whichever is less) + reasonable additional hours	
Public holidays	✓ A paid day off if you're normally work. If asked to work you can refuse, if reasonable to do so	✓ An unpaid day off. If asked to work you can refuse, if reasonable to do so
Notice of termination	✓ 1-5 weeks notice (or pay instead of notice) based on length of employment and age	✗
Redundancy pay eligible after 12 months employment	✓ 4 - 16 weeks pay based on length of employment	✗

*Applications have been made to the High Court to appeal a recent decision on the method of accruing and taking paid personal/carer's leave under the National Employment Standards. This document currently reflects the state of the law as it applies to affected employees, but is subject to any changes at law. For details see **www.fairwork.gov.au/leave/sick-and-carers-leave***

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Australian Government Fair Work OMBUDSMAN

Fair Work Information Statement

Employers must give this document to new employees when they start work

IMPORTANT INFORMATION ABOUT YOUR PAY AND CONDITIONS

FLEXIBILITY

After 12 months employment, you can make a written **request for flexible working arrangements** if you're 55 or over, a carer, have a disability, are experiencing violence from a family member (or are supporting a family or household member who is), or are the parent of, or have caring responsibilities for, a child of school age or younger. This includes employees returning from parental or adoption leave asking to work part-time to care for the child. Your employer must respond in writing within 21 days. They can only say no on reasonable business grounds.

You and your employer can also **negotiate an individual flexibility arrangement**. This would change how certain terms in your award or enterprise agreement apply to you. An individual flexibility arrangement must be a genuine choice – it can't be a condition of employment – and it must leave you better off overall. Find out more at:

www.fairwork.gov.au/flexibility

DID YOU KNOW?

You can create a free My account to save your workplace information in one place at:
www.fairwork.gov.au/register

You can find free online courses to help you start a new job or have difficult conversations at work, visit:
www.fairwork.gov.au/learning

The Record My Hours app makes it quick and easy to record the hours you work. It's free on the App Store and Google Play.

ENDING EMPLOYMENT

When your employment ends, your final pay should include all **outstanding entitlements**, such as wages and unused annual leave and long service leave.

You may be entitled to **notice of termination**, or pay instead of notice. If you're dismissed for serious misconduct, you're not entitled to notice. If you resign you may have to give your employer notice. To check if notice is required and what should be in your final pay visit:

www.fairwork.gov.au/ending-employment

If you think your **dismissal was unfair** or unlawful, you have **21 calendar days** to lodge a claim with the Fair Work Commission. Rules and exceptions apply. Find out more at:

www.fairwork.gov.au/termination

PROTECTIONS AT WORK

All employees have protections at work. You can't be treated differently or worse because you have or exercise a workplace right, for example, the right to request flexible working arrangements, take leave or make a complaint or enquiry about your employment.

You have the right to join a union or choose not to, and to take part in lawful industrial activity or choose not to.

You also have protections when temporarily absent from work due to illness or injury, from discrimination, bullying and harassment, coercion, misrepresentation, sham contracting, and undue influence or pressure. Find out more at:

www.fairwork.gov.au/protections

AGREEMENT MAKING

Enterprise agreements are negotiated between an employer, their employees, and any employee representatives (e.g. a union). This process is called 'bargaining' and has to follow set rules. The Fair Work Commission checks and approves agreements. For information about making, varying, or terminating an enterprise agreement visit:

www.fwc.gov.au/agreements

TRANSFER OF BUSINESS

If a transfer of business occurs, your employment with your old employer ends. If you're employed by the new employer within three months to do the same (or similar) job, some of your entitlements might carry over to the new employer. This may happen if, for example, the business is sold or work is outsourced. Find out more at:

www.fairwork.gov.au/transfer-of-business

RIGHT OF ENTRY

Union officials with an entry permit can enter the workplace to talk to workers that they're entitled to represent, or to investigate suspected safety issues or breaches of workplace laws.

They must comply with certain requirements, such as notifying the employer, and can inspect or copy certain documents. Strict privacy rules apply to the permit holder, their organisation and your employer. Find out more at:

www.fwc.gov.au/entry-permits

WHO CAN HELP?

FAIR WORK OMBUDSMAN

- information and advice about pay and entitlements
- free calculators, templates and online courses
- help resolving workplace issues
- investigates and enforces breaches of workplace laws.

www.fairwork.gov.au - 13 13 94

FAIR WORK COMMISSION

- hears claims of unfair dismissal, unlawful termination, bullying, discrimination or 'adverse action' at work
- approves, varies and terminates enterprise agreements
- issues entry permits and resolves industrial disputes.

www.fwc.gov.au - 1300 799 675

If you work in the commercial building industry the Australian Building and Construction Commission can help.
www.abcc.gov.au - 1800 003 338

______Initials

SEPARATION AND RELEASE AGREEMENT

AECOM and Steve Morriss ("you" or "your") hereby enter into this SEPARATION AND RELEASE AGREEMENT ("Agreement"), dated as of October 2, 2020.

WHEREAS, AECOM, its subsidiaries, and affiliates (herein referred to collectively as the "Company") is engaged in the business of professional technical and management support services (the "Company Business");

WHEREAS, you are a key employee of the Company and an "Eligible Employee" as such term is defined in the Company's Senior Leadership Severance Plan (the "SLSP" or the "Plan");

WHEREAS, pursuant to Section 6 of the SLSP, in order to receive benefits under the Plan, an Eligible Employee must execute a Separation and Release Agreement in the form provided by the Company in its sole discretion, which shall contain provisions including but not limited to a general waiver and release of claims and various post-employment covenants as stated in Sections 6(a), 6(b) and 6(c) of the SLSP; and

WHEREAS, the covenants provided herein are material, significant and essential to the Company's provision of benefits to you under the Plan, and good and valuable consideration under the Plan has been and will be transferred from the Company to you in exchange for such covenants.

NOW, THEREFORE, in consideration of the foregoing recitals, the terms and provisions of this Agreement, the SLSP, and the agreements and instruments related thereto, the receipt and sufficiency of such consideration being hereby acknowledged by the parties hereto, the parties hereto agree as follows:

1. STATUS OF EMPLOYMENT

Your employment with the Company will end on October 2, 2020 (the "Separation Date"). The Company will pay you all accrued salary and all accrued and unused paid time off earned through the Separation Date, subject to standard payroll deductions and withholdings. From the Separation Date to and including the Consulting End Date (as defined below), you have agreed to make yourself available as needed as a "consultant" to the Company to assist in the orderly transition of your duties and responsibilities, as directed by Lara Poloni (the "Consulting Period"). During the Consulting Period, you shall be paid a monthly consulting fee equal to your gross monthly base salary in effect prior to the Separation Date (the "Monthly Consulting Fee"), which fees shall be payable to you no later than fifteen (15) days following the end of each month during the Consulting Period. For any partial months during the Consulting Period, you shall be paid a *pro rata* amount of the Monthly Consulting Fee, calculated by multiplying the Monthly Consulting Fee by a fraction, the numerator of which is the number of days that you were engaged to provide consulting services in the month and the denominator of which is the total number of calendar days in the month. For purposes of this Agreement, the "Consulting End Date" shall be the date on which either you or the Company notify the other of your or its decision to terminate the consulting relationship. For the avoidance of doubt, during the Consulting Period, you shall continue to comply fully with all laws and regulations applicable to the business of the Company, however you will not have access to the Company's electronic mail, office(s), computer systems or records, and you agree not to communicate, for business purposes, with any employee, customer or client or other business relation of the Company other than at the direction of Ms. Poloni.

If you are currently participating in the Company's group health insurance plan, you will continue to receive employer-subsidized health insurance at your current election through October 31, 2020. Thereafter, you may elect to receive continuation coverage in the Company's health insurance plan pursuant to the provisions of the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended ("COBRA") at your own expense. COBRA continuation coverage shall in all respects be subject to the requirements and limitations of COBRA and of the Company's health insurance plans, which may be amended from time to time.

2. <u>SEPARATION BENEFITS</u>

a. **Severance Payment.** In consideration for the promises in this Agreement, including but not limited to your consent to and non-revocation of the release set forth in paragraph 4 below, you will receive a severance payment in the amount of $1,331,709.10, less all applicable income tax withholdings and other lawful deductions (the "Severance Payment"). The Severance Payment represents the sum of amounts described in Sections 5(a)(i), 5(a)(ii) and 5(a)(iii) of the SLSP. The Severance Payment will be subject to standard payroll deductions and withholdings and will be direct deposited in a lump sum as soon as reasonably practicable following the Effective Date of this Agreement (as such term is defined in paragraph 9 below) and no later than sixty (60) days following the Separation Date subject to the effectiveness of the Agreement and paragraph 18 below. By signing this Agreement, you authorize AECOM to direct deposit any payments under this Agreement into your bank, savings and loan or credit union account that was previously authorized by you for payroll purposes. If you have not provided an authorized account for direct deposit, a check for any such amounts will be mailed to your home address on file.

b. **Additional Service Credit for Equity Award Vesting.** In consideration for the promises in this Agreement, including but not limited to your consent to and non-revocation of the release set forth in paragraph 4 below, your outstanding equity awards listed in the annexed <u>Schedule A</u> shall be considered vested as set forth therein reflecting the crediting of additional service in accordance with Sections 5(b)(i), 5(b)(ii) and 5(b)(iii) of the SLSP (the "Additional Service Credit").

c. You agree that you would not be entitled to the separation benefits outlined above (collectively, the "Separation Benefits"), including the Severance Payment and the Additional Service Credit, in the absence of your execution and non-revocation of this Agreement, and, therefore, the Separation Benefits provided for under this Agreement are greater than what you would be legally entitled to receive in the absence of this Agreement.

d. You understand and agree that the Separation Benefits outlined above shall not be duplicative of any other payments and benefits provided by the Company in connection with your separation from employment with the Company, including but not limited to any pay in lieu of notice, severance benefits or other payments or benefits that may be required by any federal, state or local law, including the laws of any jurisdiction outside of the United States, relating to severance, plant closures, terminations, reductions-in-force, or plant relocations. If the Company provides you with any such other payments or benefits, then the Severance Payment described above shall be reduced by the amount of any such payment(s); provided, however, that coordination with benefits (if any) under the CIC Plan (as such term is defined in the SLSP), shall be in accordance with Section 5(c) of the SLSP. Notwithstanding the foregoing, in no event shall the gross amount you receive in Severance Payment be less than $500.00.

3. <u>ACKNOWLEDGEMENTS</u>

a. You acknowledge that with the payment of your final pay check, which includes any accrued but unused paid time off ("PTO"), and the Company's reimbursement to you of certain Relocation/Mobilization costs, as listed in the annexed <u>Schedule B</u>, no other compensation, wages, bonuses, commissions, overtime, expenses, PTO, and/or benefits are due to you except for the benefits and payments described in paragraph 2.

b. You represent that you have reported to the Company any and all work-related injuries or illnesses incurred by you during employment with the Company.

c. You understand and acknowledge that per the terms of AECOM's Severance Policy, in the event you are rehired as a full-time or part-time regular employee of AECOM, or you are hired into a comparable position by a vendor, contractor, customer, or successor, during the number of weeks of severance for which you received under this Agreement (the "Severance Pay Period"), the Company reserves the right to seek repayment related to time beyond the date of rehire; provided, however, that in no event shall the severance pay be reduced to less than $500. For the purposes of this paragraph, the Severance Pay Period is based on your prior regular earnings and is defined as the equivalent time frame over which payment would have been made if you had not received severance in a lump sum payment.

d. You acknowledge and represent that during your employment and through the date you sign this Agreement, you have made full and truthful disclosures to the Corporate SVP, Human Resources and/or the Corporate EVP, Chief Legal Officer the Company about any misconduct of which you may have been aware by or on behalf of the Company or any of its employees, officers, directors, consultants, agents or other third-parties.

e. You acknowledge that, if you are an officer of, or serve in any elected or appointed position for the Company or any of its subsidiaries or affiliates, then your signature on this Agreement constitutes your resignation, effective as of the Separation Date, from any and all such offices or positions. You agree that you will execute such further documents as the Company may request to more specifically reflect your resignation from each and every entity of which you are or were a director or officer.

4. **WAIVER AND RELEASE**

In exchange for the Separation Benefits outlined above, including the Severance Payment and the Additional Service Credit, you, on behalf of yourself, your heirs, beneficiaries, executors, administrators, representatives, assigns, and agents hereby fully release, acquit, and forever discharge the Company, its past, present, and future predecessors, successors, parent companies, subsidiary companies, affiliated entities, related entities, operating entities, and its and their past, present, and future officers, directors, shareholders, members, investors, partners, employees, agents, attorneys, insurers, reinsurers, and all of its and their past, present, and future compensation and employee benefits plans (including trustees, fiduciaries, administrators, and insurers of those plans) (collectively, the “Released Parties”) from any and all causes of action, lawsuits, proceedings, complaints, charges, debts, contracts, judgments, damages, claims, attorney’s fees, costs, expenses, and compensation whatsoever, of whatever kind or nature, in law, or equity or otherwise, whether known or unknown, vested or contingent, suspected or unsuspected, that you may now have, have ever had, or hereafter may have relating directly or indirectly to your employment with the Company, the separation of your employment with the Company, the benefits or attributes of your employment with the Company, and/or any other act, omission, event, occurrence, or non-occurrence involving the Company or any of the Released Parties. Without limiting the foregoing and to the fullest extent allowed by law, you agree that this release includes, but is not limited to any and all claims arising from any violations or alleged violations of federal, state or local human rights, fair employment practices and/or other laws by any of the Released Parties for any reason under any legal theory including, but not limited to, the Age Discrimination in Employment Act; the Americans With Disabilities Act of 1990 (“ADA”); COBRA; the Dodd-Frank Wall Street Reform and Consumer Protection Act (“Dodd-Frank”); the Employee Retirement Income Security Act of 1974 (“ERISA”); the Equal Pay Act (“EPA”); the Fair Labor Standards Act (“FLSA”); the Fair Credit Reporting Act (“FCRA”); the Family and Medical Leave Act (“FMLA”); the Genetic Information Nondiscrimination Act (“GINA”); the Immigration Reform and Control Act (“IRCA”); the Lilly Ledbetter Fair Pay Act; the National Labor Relations Act (“NLRA”); the Labor Management Relations Act (“LMRA”); the Occupational Safety and Health Act (“OSHA”); the Older Workers Benefit Protection Act; the Rehabilitation Act of 1973; the Sarbanes-Oxley Act of 2002 (“SOX”); the Uniformed Services Employment and Reemployment Rights Act of 1994 (“USERRA”); Sections 1981 through 1988 of Title 42 of the United States Code; Title VII of the Civil Rights Act of 1964; the Civil Rights Act of 1991; the Worker Adjustment and Retraining Notification Act (“WARN”), and/or all other federal, state, or local laws (including, without limitation, the California Fair Employment and Housing Act and the California Labor Code) statutes, ordinances, constitutions, rules, orders or regulations, all as they may be amended. You also forever waive, release, discharge and give up all claims, real or perceived and now known or unknown, for breach of implied or express contract, breach of promise, breach of the covenant of good faith and fair dealing, wrongful or retaliatory discharge, discrimination, harassment, promissory estoppel, assault, battery, false imprisonment, defamation, libel, slander, intentional and negligent infliction of emotional distress, duress, fraudulent and negligent misrepresentation, defamation, violation of public policy, negligence, and all other claims or torts arising under any federal, state or local law, regulation, constitution, ordinance or judicial decision; and any claim concerning wages, benefits, severance payments, bonus payments, payments pursuant to any agreement with the Company, stock, stock options, or stock option agreement, including but not limited to your Employment Offer Letter, dated as of April 23, 2015 ("Employment Offer Letter"). You also agree to waive any right you have to pursue any claim or grievance through any internal channel of the Company and/or its affiliates. You understand and agree that your waivers include both claims that you know about and those you may not know about which have arisen on or before the date on which you sign this Agreement.

5. **STATE LAW WAIVER**

If you have worked or are working in California, you agree to expressly waive all rights under Section 1542 of the Civil Code of the State of California, up to and including the date you sign this Agreement. Section 1542 provides as follows:

> **A general release does not extend to claims which a creditor or releasing party does not know or suspect to exist in his or her favor at the time of executing the release and that, if known by him or her, would have materially affected his or her settlement with the debtor or released party.**

You further agree and represent that you have had an opportunity to consult with an attorney over the meaning and significance of this Civil Code § 1542 waiver and that you knowingly and voluntarily waive your rights under this statute.

6. **EXCLUSIONS FROM WAIVERS AND RELEASE OF CLAIMS**

Notwithstanding anything else stated in this Agreement, you understand and agree that:

a. Nothing in this Agreement is intended to limit or restrict any rights that you may have to enforce this Agreement or to interfere with or affect a waiver of any other right that cannot, by express and unequivocal terms of law, be limited, waived, or extinguished. This Agreement also does not apply to any claims that the controlling law clearly states may not be released by private agreement.

b. This Agreement does not affect your non-forfeitable rights to your accrued benefits (within the meaning of Sections 203 and 204 of ERISA) under the Company's ERISA-covered employee benefits plans.

c. This Agreement shall not apply to rights or claims that may arise after the date you execute this Agreement.

d. This Agreement does not preclude filing a charge with or participating in an investigation or proceeding conducted by the Equal Employment Opportunity Commission, the U.S. Department of Labor, the National Labor Relations Board or any other federal, state, or local labor board or agency charged with enforcing employment laws (including, the California Fair Employment and Housing Commission). However, by signing this Agreement, you understand and agree that you are waiving any right to recover money or other individual relief based on claims asserted in such a charge in any proceeding brought by you or on your behalf.

e. This Agreement does not preclude your ability to report fraud, waste or abuse to federal officials regarding the Company's management of public contracts, or your obligation to cooperate with any government authorities.

f. This Agreement does not limit any statutory rights you may have to bring an action to challenge the terms of this Agreement or contest the validity of the release contained in this Agreement under the Age Discrimination in Employment Act (“ADEA”) or the Older Workers Benefits Protection Act (“OWBPA”).

g. This Agreement does not limit or waive your right to file an application for an award for original information submitted pursuant to Section 21F of the Securities Exchange Act of 1934.

h. This Agreement does not limit or waive your rights as a stockholder of the Company, or any rights you may have to indemnification under the Company’s governing documents and coverage under its director and officer insurance policies.

7. **NON-ADMISSION OF LIABILITY**

You agree that this Agreement shall not in any way be construed as an admission that any of the Released Parties, as defined in paragraph 4 above, owe you any money or have acted wrongfully, unlawfully, or unfairly in any way towards you. In fact, you understand that the Released Parties specifically deny that they have violated any federal, state, or local law or ordinance or any right or obligation that they owe or might have owed to you at any time and maintain that they have at all times treated you in a fair, lawful, non-discriminatory and non-retaliatory manner.

8. **PROMISE NOT TO SUE**

You have not, at any time up to and including the date on which you sign this Agreement, commenced, and will not in the future commence, to the fullest extent permitted by law, any action or proceeding, or file any action, of any nature arising out of the matters released by this Agreement, and you waive to the fullest extent permitted by law, any right to any monetary or equitable relief in any proceeding that may relate to the matters released by this Agreement. However, nothing in this paragraph will preclude either party from bringing a claim to enforce this Agreement or challenge the validity of this Agreement.

9. **REVIEW AND REVOCATION PERIODS**

a. You acknowledge that you were advised that you can take up to twenty-one (21) days from the date this Agreement was given to you to review this Agreement and decide whether to enter into this Agreement (the “Review Period”). You understand and agree that any changes to this Agreement, whether material or immaterial, do not restart the running of this twenty-one (21) day Review Period. To the extent that you have elected to enter into this Agreement prior to such time, you have done so voluntarily, and have knowingly waived such twenty-one (21) day Review Period.

b. You understand that you may revoke this Agreement within a period of seven (7) calendar days after its execution, except that if the last day of this period falls on a Saturday, Sunday or holiday observed by the Company you have until the conclusion of the next immediate business day (“Revocation Period”), by delivery of a written notice of revocation (“Revocation Notice”) before the end of the last day comprising the Revocation Period to pam.hoebener@aecom.com, ATTN: Corporate SVP, Human Resources. This Agreement shall become automatically irrevocable, and fully enforceable, upon the expiration of the Revocation Period (the “Effective Date”) if you do not timely revoke it in the aforesaid manner.

c. In the event that you do not execute this Agreement during the Review Period, or if you execute and then revoke the Agreement within the Revocation Period, or if for any other reason the Agreement or any portion of the Agreement is held to be unenforceable, all checks, instruments, funds, or other such payments received by you pursuant to the terms of this Agreement shall immediately be returned or reimbursed to the Company and you shall have no right to the benefits and consideration described in paragraph 2 of the Agreement. In the event the Company is required to institute litigation to enforce the terms of this paragraph, the Company shall be entitled to recover reasonable costs and attorneys' fees incurred in such enforcement.

10. **NON-SOLICITATION**

a. You agree that, for a period of one (1) year after the Separation Date, you shall not, directly or indirectly, solicit any work competitive to the Company Business from any customer or client about which you had Confidential Information, as defined in paragraph 11(a) below, as a result of your employment with the Company and (a) for which the Company is rendering services as of the Separation Date; (b) for which the Company has rendered services at any time during the six (6) months preceding the Separation Date; or (c) to which the Company has made a proposal to perform or render services to or for within one (1) year prior to the Separation Date.

b. You further agree that, for a period of one (1) year after the Separation Date, you shall not, directly or indirectly,

(i) solicit, attempt to solicit, induce or otherwise cause any existing or future customer or client or other business relation of the Company about which you had Confidential Information, as defined in paragraph 11(a) below, as a result of your employment with the Company, to terminate, fail to extend or renew, reduce the funding of, or fail to provide additional funding for, any contract, proposal or work with the Company or otherwise divert business away from the Company; or

(ii) solicit, attempt to solicit, induce or otherwise cause any existing or prospective employee of the Company, to terminate or abort his or her employment with the Company, or hire or attempt to hire any existing or prospective employee of the Company whether for yourself or for any firm, organization, business, partnership, corporation, or association with which you shall have an association.

c. You agree that the terms and conditions set forth in this paragraph are fair and reasonable and are reasonably required for the protection of the interests of the Company.

11. **CONTINUED OBLIGATION NOT TO USE OR DISCLOSE CONFIDENTIAL INFORMATION; CONFIDENTIALITY OF THIS AGREEMENT**

a. You acknowledge that during your employment with the Company you acquired certain confidential, proprietary or otherwise non-public information concerning the Company, which may include, without limitation, intellectual property, trade secrets, financial data, strategic business or marketing plans, and other sensitive information concerning the Company and its past or present employees, directors, executives, officers, agents, or customers ("Confidential Information"). You agree that you have not, and will not, disclose any Confidential Information to any person or entity, except as required by law.

b. Without limiting the generality of the foregoing, you further promise and agree:

i. to protect and safeguard the Confidential Information against unauthorized use, publication, or disclosure;
ii. not to use any of the Confidential Information except as specifically authorized in writing by the Company;
iii. not to, directly or indirectly, reveal, report, publish, disclose, transfer, or otherwise use any of the Confidential Information except as specifically authorized in writing by the Company; and
iv. not to use any Confidential Information to unfairly compete or obtain an unfair advantage against the Company in any commercial activity, which may be comparable to the Company's actual or anticipated business, research or development.

c. You will not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that—(A) is made (i) in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (B) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. Accordingly, you have a right to disclose in confidence trade secrets to the Federal, State, and local government officials, or to an attorney, for the sole purpose of reporting or investigating a suspected violation of law. You also have the right to disclose trade secrets in a document filed in a lawsuit or other proceeding, but only if the filing is made under seal and protected from public disclosure. Nothing in this Agreement is intended to conflict with 18 U.S.C. § 1833(b) or create liability for disclosures of trade secrets that are expressly allowed by 18 U.S.C. § 1833(b).

d. You have not and will not discuss or otherwise reveal to anyone the existence or terms of this Agreement, or discussions with any authorized Company representative about it, except when necessary to enforce this Agreement or required by law, or after obtaining their agreement to keep all such information confidential, to your attorneys, financial advisors, or accountants or immediate family members.

12. **UNEMPLOYMENT BENEFITS**

The Company will not contest your filing for unemployment benefits, provided, however, that the Company reserves the right to correct any misstatements made in connection with any such filings and to respond truthfully to any requests from government authorities.

13. **COOPERATION WITH LEGAL PROCEEDINGS**

Upon reasonable notice, you will provide information and proper assistance to the Company and/or its counsel (including truthful testimony and document production) in any litigation or potential litigation in which you are, or may be, a witness, or as to which you possess, or may possess, relevant information. The Company will pay your reasonable out-of-pocket expenses incurred in complying with this paragraph, provided that such expenses are pre-approved by the Company.

14. **NON-DISPARAGEMENT**

Since receiving a copy of this Agreement, you have not, and will not, make any statements or take any actions materially detrimental to the interests of the Company, including, without limitation, negatively commenting on, disparaging, or calling into question the business operations or conduct of the Company or its past or present clients, shareholders, directors, executives, officers, employees or agents.

15. **RETURN OF COMPANY PROPERTY**

You acknowledge and agree that all documents, records, and files (electronic, paper or otherwise), materials, software, equipment, and other physical property, including but not limited to laptop computers, iPads, mobile phones, electronic devices, peripherals, security access badges, ID cards, building and office access cards, entry badges, keys, access codes, passwords and log-in credentials, software, hardware, and databases, and all copies of the foregoing, including but not limited to all such items containing Confidential Information of the Company, that you have received, acquired, or which have come into your possession, custody or control or been produced by or to you in connection with your employment (collectively, "Company Property"), have been and remain the sole property of the Company. You agree that by no later than ten (10) days following the Separation Date, you will conduct a thorough and diligent search for, and shall return to the Company, all tangible Company Property, with the exception of documents relating to your compensation and benefits to which you are entitled to retain, and that you will not retain any copies or duplicates of any such Company Property. You further agree that by no later than ten (10) days following the Separation Date, you will conduct a thorough and diligent search for, and permanently and irrevocably delete, any intangible and/or digital

Company Property that exists or is stored: (a) in any email account; (b) in any "cloud" account; or (c) on any computer, laptop, tablet, mobile device, cellular phone, smartphone, PDA or other electronic storage device, the foregoing of any of which are accessible, possessed, controlled or owned by you (and not by the Company).

16. **REMEDIES FOR BREACH OF CERTAIN COVENANTS**

You agree and acknowledge that the Company will be irreparably harmed by any breach, or threatened breach, by you of the Non-Solicitation, Non-Disparagement, Return of Company Property or Confidentiality sections of this Agreement and that monetary damages would be grossly inadequate. Accordingly, you agree that in the event of a breach, or threatened breach, by you of the Non-Solicitation, Non-Disparagement, or Confidentiality sections of this Agreement, the Company shall be entitled to immediate injunctive or other preliminary or equitable relief, as appropriate, without being required to post a bond, in addition to all other remedies available at law and equity.

You agree that in the event you violate the Non-Solicitation, Non-Disparagement, Return of Company Property or Confidentiality sections of this Agreement, the Company will have no further obligation to pay or provide any unpaid Separation Benefits provided by this Agreement, and that you will immediately return to the Company all of the Separation Benefits previously paid or provided under the terms of this Agreement, except for $100 of the Severance Pay as consideration for the release in paragraph 4 of this Agreement. Provided, however, that nothing in this paragraph shall limit the Company's right to pursue any additional remedies available at law or in equity, including but not limited to injunctive relief, for your violation of those provisions. Despite any breach by you, your other obligations under this Agreement, including your waivers and releases, will remain in full force and effect.

Failure by either party to enforce any term of condition of this Agreement at any time shall not preclude that party from enforcing that provision, or any other provision, at a later time.

In the event Company is required to institute litigation to enforce the Non-Solicitation, Non-Disparagement, Return of Company Property or Confidentiality sections of this Agreement, the Company shall be entitled to recover reasonable costs and attorneys' fees incurred in such enforcement.

17. **VOLUNTARY ACCEPTANCE OF AGREEMENT; GOVERNING LAW; DISPUTE RESOLUTION**

a. You have reviewed the terms of this Agreement and acknowledge that you have entered into this Agreement freely and voluntarily. The terms described in this Agreement constitute the entire agreement between you and the Company and may not be altered, modified or amended other than in writing signed by you and the Company. No promise, inducement or agreement not expressed herein has been made to you in connection with this Agreement, and this Agreement supersedes all prior written or oral agreements, arrangements, communications, commitments or obligations between yourself and the Company, except any confidentiality, non-disclosure, non-solicitation, trade secret, assignment of inventions, and other intellectual property provisions to which your employment was subject to, which will remain in effect subsequent to the execution of this Agreement.

b. It is the desire and intent of the parties hereto that the provisions of this Agreement be enforced to the fullest extent permissible under the laws and public policies of each jurisdiction in which enforcement is sought. If any provision of this Agreement is adjudicated to be invalid or unenforceable, such provision, without any action on the part of the parties hereto, shall be deemed amended to delete or to modify (including, without limitation, a reduction in duration, geographical area or prohibited business activities) the portion adjudicated to be invalid or unenforceable, such deletion or modification to apply only with respect to the operation of such provision in the particular jurisdiction in which such adjudication is made, and such deletion or modification to be made only to the extent necessary to cause the provision as amended to be valid and enforceable, leaving the remainder of this Agreement in full force and effect.

c. This Agreement is intended to be governed by and will be construed in accordance with ERISA and, to the extent not preempted by ERISA, the laws of the State of Delaware, without regard to any conflict of laws provision. Should any provision of this Agreement be declared illegal or unenforceable by any court of competent jurisdiction and cannot be modified to be enforceable, such provision shall become null and void and severed from this Agreement, leaving the remainder of this Agreement in full force and effect.

d. To the fullest extent permitted by law, any and all disputes, claims, and causes of action, in law or equity, arising from or relating to this Agreement (other than with respect to the Company's enforcement of the Non-Solicitation, Non-Disparagement, Return of Company Property or Confidentiality covenants as described in paragraph 16 above), or any dispute arising out of or relating to this Agreement, will be settled by binding arbitration in accordance with Section 9(h) of the SLSP.

e. You also acknowledge that you fully understand your right to discuss this Agreement with an attorney before accepting this Agreement, that the Company has advised you of this right, that the time afforded to you to review this Agreement provides you sufficient time to consult with an attorney should you wish to do so, that you have carefully read and fully understand this entire Agreement, and that you are voluntarily entering into this Agreement of your own free will, act and deed. You also agree that no promises, statements or inducements have been made to you which caused you to sign this Agreement, except as expressly set forth in writing herein.

f. No waiver of any provision of this Agreement shall constitute a waiver of any other provision hereof (whether or not similar), nor shall such waiver constitute a continuing waiver unless otherwise expressly provided. The failure by either party to enforce any term or condition of this Agreement at any time shall not preclude that party from enforcing that provision, or any other provision, at a later time. Nothing in this Agreement, express or implied, is intended to confer upon any third person (other than the Company, its affiliates and their respective successors, which parties are hereby expressly made third-party beneficiaries of this Agreement) any rights or remedies under or by reason of this Agreement.

g. Any notices provided for herein shall be given in writing and shall be deemed effectively given upon receipt or, in the case of notices delivered by the Company to you, five (5) days after deposit in the United States mail, postage prepaid, addressed to you at the last address you provided in writing to the Company. Notices to the Company shall be delivered to AECOM, ATTN: Corporate SVP, Human Resources, pam.hoebener@aecom.com.

18. **SECTION 409A OF THE CODE**

Any Severance Payment, provision of benefits, equity settlement, or other amounts payable under this Agreement and the SLSP remain subject to the terms and conditions set forth in Sections 5 and 8 of the SLSP related to compliance with Section 409A of the Internal Revenue Code. The parties hereto acknowledge and agree that the Severance Payments and any other amounts under this Agreement shall be subject to the provisions of Section 8(c) of the SLSP if and to the extent applicable.

Please execute and return the signed agreement by electronic means (i.e., through electronic mail) to pam.hoebener@aecom.com within the Review Period, but no earlier than October 3, 2020. This Agreement may be executed in counterparts, which together shall be effective as if they were a single document. If this Agreement is transmitted by electronic means, it will be treated as an original copy and have the same force and effect as if it was delivered by mail with the original wet signature.

I have read and understand the terms and conditions set forth in the Agreement above, including but not limited to the waiver and release of claims contained herein. By signing below, I hereby voluntarily accept and agree to those terms and conditions in exchange for the Separation Benefits offered to me.

/s/ Steven Morriss
Steven Morriss
Date (Must be signed on or after October 3, 2020): November 18,2020

Schedule A

Vested Equity Awards

Award Date	**Type of Award**	**Number of Units, Options or Restricted Shares**	**Vested Percentage Immediately Prior to Termination**	**Total Vested Percentage Based on Additional Service Crediting Under Plan**
12/15/2017	RSU18SCT	10,832	0%	100%
12/15/2017	PEP18SCT	16,247	0%	100%

All other unvested awards shall be forfeited in accordance with the terms of the applicable plan.

Schedule B

Relocation/Mobilization costs

Should you elect to depart the United States for the United Kingdom following your Separation Date and on or prior to October 1, 2022, the Company will reimburse you for the following Relocation/Mobilization costs (the "R/M Allowances"):

(i) the cost of shipment and insurance of your household goods via air and sea freight (up to a 40' container), in the amount of Seventeen Thousand Six Hundred Fifty Dollars and Zero Cents ($17,650.00);

(ii) the cost of temporary housing upon arrival in the United Kingdom for up to sixty (60) days, in the amount of Thirty Thousand Dollars and Zero Cents ($30,000.00);

(iii) the cost of direct business-class airfare for you and your immediate family from Los Angeles International Airport to London Heathrow Airport; and

(iv) the cost of excess luggage fees (up to 2 bags per person).

The foregoing amounts specified in subparagraphs (i) and (ii) above shall be paid by the Company reasonably promptly following the Effective Date of this Agreement (as such term is defined in Paragraph 9 above), provided that for the avoidance of doubt, such R/M Allowances may be subject to offset consistent with applicable law to repay any amounts that the Company in good faith and exercising reasonable business judgment, after consultation with you, determines to be due by you to the Company or any taxing authority, and you hereby expressly consent to any such offset. The foregoing amounts specified in subparagraphs (iii) and (iv) above shall be reimbursed reasonably promptly by the Company, but not later than December 31 of the year following the year in which the expense was incurred. The amount of any such payments eligible for reimbursement in one year shall not affect the payments or expenses that are eligible for payment or reimbursement in any other taxable year, and your right to such payments or reimbursement shall not be subject to liquidation or exchange for any other benefit.

SEPARATION AND RELEASE AGREEMENT

AECOM and Randall A. Wotring ("you" or "your") hereby enter into this SEPARATION AND RELEASE AGREEMENT ("Agreement"), dated October 2, 2020.

WHEREAS, AECOM, its subsidiaries, and affiliates (herein referred to collectively as the "Company") is engaged in the business of professional technical and management support services (the "Company Business");

WHEREAS, you are a key employee of the Company and an "Eligible Employee" as such term is defined in the Company's Senior Leadership Severance Plan (the "SLSP" or the "Plan");

WHEREAS, pursuant to Section 6 of the SLSP, in order to receive benefits under the Plan, an Eligible Employee must execute a Separation and Release Agreement in the form provided by the Company in its sole discretion, and shall contain provisions including but not limited to a general waiver and release of claims and various post-employment covenants as stated in Sections 6(a), 6(b) and 6(c) of the SLSP; and

WHEREAS, the covenants provided herein are material, significant and essential to the Company's provision of benefits to you under the Plan, and good and valuable consideration under the Plan has been and will be transferred from the Company to you in exchange for such covenants.

NOW, THEREFORE, in consideration of the foregoing recitals, the terms and provisions of this Agreement, the SLSP, and the agreements and instruments related thereto, the receipt and sufficiency of such consideration being hereby acknowledged by the parties hereto, the parties hereto agree as follows:

1. STATUS OF EMPLOYMENT

Your last day of active, full-time employment will be December 31, 2020 (the "Separation Date") and you will continue to receive your base salary through that date. From the date you receive this Agreement through December 31, 2020 (such period hereinafter referred to as the "Transition Period"), you will continue to remain employed by the Company as an "at-will" employee. During the Transition Period, you shall: (i) continue to report to the Company's office, or work remotely as applicable, on your regular schedule; (ii) use your best efforts to carry out your duties and responsibilities in a professional and competent manner, along with such other duties as may be reasonably assigned to you by the Company's Chief Executive Officer; (iii) continue to comply fully with and be bound by all policies and procedures in effect for Company employees, and all laws and regulations applicable to the business of the Company; and (iv) cooperate fully and in good faith with the Company to assist in the orderly transition of your duties and responsibilities, as determined by the Company in its discretion. For the avoidance of doubt, the Company may elect to place you on paid leave for any part of the Transition Period, in its discretion, during which time you will remain on payroll and agree to continue to make yourself reasonably available to the Company, by phone, to assist in the transition of your duties and responsibilities as the Company may deem necessary and appropriate, although you shall not report to the Company's offices during any such paid leave. Notwithstanding the foregoing, and for the further avoidance of doubt, if you fail to sign this Agreement before the expiration of the Review Period set forth in paragraph 9 below, or should you revoke your consent during the Revocation Period set forth in paragraph 9 below, the Company may terminate your employment at any time, without any additional notice, such last date of employment being your Separation Date.

If you are currently participating in the Company's group health insurance plan, you will continue to receive employer-subsidized health insurance at your current election through the Separation Date. Thereafter, you may elect to receive continuation coverage in the Company's health insurance plan pursuant to the provisions of the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended ("COBRA") at your own expense. COBRA continuation coverage shall in all respects be subject to the requirements and limitations of COBRA and of the Company's health insurance plans, which may be amended from time to time.

2. SEPARATION BENEFITS

a. **Severance Payment.** In consideration for the promises in this Agreement, including but not limited to your consent to and non-revocation of the release set forth in paragraph 4 below and your consent to and non-revocation of the supplemental release and waiver in the form annexed hereto as Exhibit A (the "Supplemental Release"), you will receive a severance payment in the amount of $1,976,928 less all applicable income tax withholdings and other lawful deductions (the "Severance Payment"). The Severance Payment represents the sum of amounts described in Sections 5(a)(i), 5(a)(ii) and 5(a)(iii) of the SLSP and your target bonus for fiscal year 2020. The Severance Payment will be subject to standard payroll deductions and withholdings and will be direct deposited in a lump sum as soon as reasonably practicable following the Supplemental Release Effective Date (as such term is defined in Exhibit A) and no later than sixty (60) days following the Separation Date subject to the effectiveness of the Agreement and paragraph 18 below. By signing this Agreement, you authorize AECOM to direct deposit any payments under this Agreement into your bank, savings and loan or credit union account that was previously authorized by you for payroll purposes. If you have not provided an authorized account for direct deposit, a check for any such amounts will be mailed to your home address on file.

b. **Additional Service Credit for Equity Award Vesting.** In consideration for the promises in this Agreement, including but not limited to your consent to and non-revocation of the release set forth in paragraph 4 below and your consent to and non-revocation of the Supplemental Release, your outstanding equity awards listed in the annexed Schedule A shall be considered vested as set forth therein reflecting the crediting of additional service in accordance with Sections 5(b)(i), 5(b)(ii) and 5(b)(iii) of the SLSP (the "Additional Service Credit").

c. You agree that you would not be entitled to the separation benefits outlined above (collectively, the "Separation Benefits"), including the Severance Payment and the Additional Service Credit, in the absence of your execution and non-revocation of this Agreement and the Supplemental Release, and, therefore, the Separation Benefits provided for under this Agreement are greater than what you would be legally entitled to receive in the absence of this Agreement.

d. You understand and agree that the Separation Benefits outlined above shall not be duplicative of any other payments and benefits provided by the Company in connection with your separation from employment with the Company, including but not limited to any pay in lieu of notice, severance benefits or other payments or benefits that may be required by any federal, state or local law, including the laws of any jurisdiction outside of the United States, relating to severance, plant closures, terminations, reductions-in-force, or plant relocations. If the Company provides you with any such other payments or benefits, then the Severance Payment described above shall be reduced by the amount of any such payment(s); provided, however, that coordination with benefits (if any) under the CIC Plan (as such term is defined in the SLSP), shall be in accordance with Section 5(c) of the SLSP. Notwithstanding the foregoing, in no event shall the gross amount you receive in Severance Payment be less than $500.00.

3. ACKNOWLEDGEMENTS

a. You acknowledge that with the payment of your final pay check, which includes any accrued but unused paid time off ("PTO"), no other compensation, wages, bonuses, commissions, overtime, expenses, PTO, and/or benefits are due to you except for the benefits and payments described in paragraph 2.

b. You represent that you have reported to the Company any and all work-related injuries or illnesses incurred by you during employment with the Company.

c. You understand and acknowledge that per the terms of AECOM’s Severance Policy, in the event you are rehired as a full-time or part-time regular employee of AECOM, or you are hired into a comparable position by a vendor, contractor, customer, or successor, during the number of weeks of severance for which you received under this Agreement (the “Severance Pay Period”), the Company reserves the right to seek repayment related to time beyond the date of rehire; provided, however, that in no event shall the severance pay be reduced to less than $500. For the purposes of this paragraph, the Severance Pay Period is based on your prior regular earnings and is defined as the equivalent time frame over which payment would have been made if you had not received severance in a lump sum payment.

d. You acknowledge and represent that during your employment and through the date you sign this Agreement, you have made full and truthful disclosures to the Corporate SVP, Human Resources and/or the Corporate EVP, Chief Legal Officer the Company about any misconduct of which you may have been aware by or on behalf of the Company or any of its employees, officers, directors, consultants, agents or other third-parties.

e. You acknowledge that, if you are an officer of, or serve in any elected or appointed position for the Company or any of its subsidiaries or affiliates, then your signature on this Agreement constitutes your resignation, effective as of the Separation Date, from any and all such offices or positions. You agree that you will execute such further documents as the Company may request to more specifically reflect your resignation from each and every entity of which you are or were a director or officer.

4. WAIVER AND RELEASE

In exchange for the Separation Benefits outlined above, including the Severance Payment and the Additional Service Credit, you, on behalf of yourself, your heirs, beneficiaries, executors, administrators, representatives, assigns, and agents hereby fully release, acquit, and forever discharge the Company, its past, present, and future predecessors, successors, parent companies, subsidiary companies, affiliated entities, related entities, operating entities, and its and their past, present, and future officers, directors, shareholders, members, investors, partners, employees, agents, attorneys, insurers, reinsurers, and all of its and their past, present, and future compensation and employee benefits plans (including trustees, fiduciaries, administrators, and insurers of those plans) (collectively, the “Released Parties”) from any and all causes of action, lawsuits, proceedings, complaints, charges, debts, contracts, judgments, damages, claims, attorney’s fees, costs, expenses, and compensation whatsoever, of whatever kind or nature, in law, or equity or otherwise, whether known or unknown, vested or contingent, suspected or unsuspected, that you may now have, have ever had, or hereafter may have relating directly or indirectly to your employment with the Company, the separation of your employment with the Company, the benefits or attributes of your employment with the Company, and/or any other act, omission, event, occurrence, or non-occurrence involving the Company or any of the Released Parties. Without limiting the foregoing and to the fullest extent allowed by law, you agree that this release includes, but is not limited to any and all claims arising from any violations or alleged violations of federal, state or local human rights, fair employment practices and/or other laws by any of the Released Parties for any reason under any legal theory including, but not limited to, the Age Discrimination in Employment Act; the Americans With Disabilities Act of 1990 (“ADA”); COBRA; the Dodd-Frank Wall Street Reform and Consumer Protection Act (“Dodd-Frank”); the Employee Retirement Income Security Act of 1974 (“ERISA”); the Equal Pay Act (“EPA”); the Fair Labor Standards Act (“FLSA”); the Fair Credit Reporting Act (“FCRA”); the Family and Medical Leave Act (“FMLA”); the Genetic Information Nondiscrimination Act (“GINA”); the Immigration Reform and Control Act (“IRCA”); the Lilly Ledbetter Fair Pay Act; the National Labor Relations Act (“NLRA”); the Labor Management Relations Act (“LMRA”); the Occupational Safety and Health Act

("OSHA"); the Older Workers Benefit Protection Act; the Rehabilitation Act of 1973; the Sarbanes-Oxley Act of 2002 ("SOX"); the Uniformed Services Employment and Reemployment Rights Act of 1994 ("USERRA"); Sections 1981 through 1988 of Title 42 of the United States Code; Title VII of the Civil Rights Act of 1964; the Civil Rights Act of 1991; the Worker Adjustment and Retraining Notification Act ("WARN"), and/or all other federal, state, or local laws (including, without limitation, the Maryland Fair Employment Practices Act), statutes, ordinances, constitutions, rules, orders or regulations, all as they may be amended. You also forever waive, release, discharge and give up all claims, real or perceived and now known or unknown, for breach of implied or express contract, breach of promise, breach of the covenant of good faith and fair dealing, wrongful or retaliatory discharge, discrimination, harassment, promissory estoppel, assault, battery, false imprisonment, defamation, libel, slander, intentional and negligent infliction of emotional distress, duress, fraudulent and negligent misrepresentation, defamation, violation of public policy, negligence, and all other claims or torts arising under any federal, state or local law, regulation, constitution, ordinance or judicial decision; and any claim concerning wages, benefits, severance payments, bonus payments, payments pursuant to any agreement with the Company, stock, stock options, or stock option agreement, including but not limited to your expired Employment Agreement dated as of January 1, 2015 ("Employment Agreement"). You also agree to waive any right you have to pursue any claim or grievance through any internal channel of the Company and/or its affiliates. You understand and agree that your waivers include both claims that you know about and those you may not know about which have arisen on or before the date on which you sign this Agreement.

5. STATE LAW WAIVER

If you have worked or are working in California, you agree to expressly waive all rights under Section 1542 of the Civil Code of the State of California, up to and including the date you sign this Agreement. Section 1542 provides as follows:

> **A general release does not extend to claims which a creditor or releasing party does not know or suspect to exist in his or her favor at the time of executing the release and that, if known by him or her, would have materially affected his or her settlement with the debtor or released party.**

You further agree and represent that you have had an opportunity to consult with an attorney over the meaning and significance of this Civil Code § 1542 waiver and that you knowingly and voluntarily waive your rights under this statute.

6. EXCLUSIONS FROM WAIVERS AND RELEASE OF CLAIMS

Notwithstanding anything else stated in this Agreement, you understand and agree that:

a. Nothing in this Agreement is intended to limit or restrict any rights that you may have to enforce this Agreement or to interfere with or affect a waiver of any other right that cannot, by express and unequivocal terms of law, be limited, waived, or extinguished. This Agreement also does not apply to any claims that the controlling law clearly states may not be released by private agreement.

b. This Agreement does not affect your non-forfeitable rights to your accrued benefits (within the meaning of Sections 203 and 204 of ERISA) under the Company's ERISA-covered employee benefits plans.

c. This Agreement shall not apply to rights or claims that may arise after the date you execute this Agreement.

d. This Agreement does not preclude filing a charge with or participating in an investigation or proceeding conducted by the Equal Employment Opportunity Commission, the U.S. Department of Labor, the National Labor Relations Board or any other federal, state, or local labor board or agency charged with enforcing employment laws (including the Maryland Commission on Civil Rights). However, by signing this Agreement, you understand and agree that you are waiving any right to recover money or other individual relief based on claims asserted in such a charge in any proceeding brought by you or on your behalf.

e. This Agreement does not preclude your ability to report fraud, waste or abuse to federal officials regarding the Company's management of public contracts, or your obligation to cooperate with any government authorities.

f. This Agreement does not limit any statutory rights you may have to bring an action to challenge the terms of this Agreement or contest the validity of the release contained in this Agreement under the Age Discrimination in Employment Act ("ADEA") or the Older Workers Benefits Protection Act ("OWBPA").

g. This Agreement does not limit or waive your right to file an application for an award for original information submitted pursuant to Section 21F of the Securities Exchange Act of 1934.

h. This Agreement does not limit or waive your rights as a stockholder of the Company, or any rights you may have to indemnification under the Company's governing documents and coverage under its director and officer insurance policies.

7. **NON-ADMISSION OF LIABILITY**

You agree that this Agreement shall not in any way be construed as an admission that any of the Released Parties, as defined in paragraph 4 above, owe you any money or have acted wrongfully, unlawfully, or unfairly in any way towards you. In fact, you understand that the Released Parties specifically deny that they have violated any federal, state, or local law or ordinance or any right or obligation that they owe or might have owed to you at any time and maintain that they have at all times treated you in a fair, lawful, non-discriminatory and non-retaliatory manner.

8. **PROMISE NOT TO SUE**

You have not, at any time up to and including the date on which you sign this Agreement, commenced, and will not in the future commence, to the fullest extent permitted by law, any action or proceeding, or file any action, of any nature arising out of the matters released by this Agreement, and you waive to the fullest extent permitted by law, any right to any monetary or equitable relief in any proceeding that may relate to the matters released by this Agreement. However, nothing in this paragraph will preclude either party from bringing a claim to enforce this Agreement or challenge the validity of this Agreement.

9. **REVIEW AND REVOCATION PERIODS**

a. You acknowledge that you were advised that you can take up to twenty-one (21) days from the date this Agreement was given to you to review this Agreement and decide whether to enter into this Agreement (the "Review Period"). You understand and agree that any changes to this Agreement, whether material or immaterial, do not restart the running of this twenty-one (21) day Review Period. To the extent that you have elected to enter into this Agreement prior to such time, you have done so voluntarily, and have knowingly waived such twenty-one (21) day Review Period.

b. You understand that you may revoke this Agreement within a period of seven (7) calendar days after its execution, except that if the last day of this period falls on a Saturday, Sunday or holiday observed by the Company you have until the conclusion of the next immediate business day ("Revocation Period"), by delivery of a written notice of revocation ("Revocation Notice") before the end of the last day comprising the Revocation Period to pam.hoebener@aecom.com, ATTN: Corporate SVP, Human Resources. This Agreement shall become automatically irrevocable, and fully enforceable, upon the expiration of the Revocation Period (the "Effective Date") if you do not timely revoke it in the aforesaid manner.

c. In the event that you do not execute this Agreement during the Review Period, or if you execute and then revoke the Agreement within the Revocation Period, or you do not execute (or you otherwise revoke) your Supplemental Release, or if for any other reason the Agreement or any portion of the Agreement is held to be unenforceable, all checks, instruments, funds, or other such payments received by you pursuant to the terms of this Agreement shall immediately be returned or reimbursed to the Company and you shall have no right to the benefits and consideration described in paragraph 2 of the Agreement. In the event the Company is required to institute litigation to enforce the terms of this paragraph, the Company shall be entitled to recover reasonable costs and attorneys' fees incurred in such enforcement.

10. **<u>RESTRICTIVE COVENANTS</u>**

a. You agree that, for a period of one (1) year after the Separation Date, you shall not, directly or indirectly,

(i) obtain any interest in, own, manage, operate, control, participate in, become connected with (whether as a stockholder (other than as a stockholder of less than five percent (5%) of the issued and outstanding stock of a publicly held corporation), joint venturer, officer, director, representative, partner, employee or consultant), or otherwise engage, invest or participate in any activity, project, contract or business that competes with the Company Business in any area or subject where you have worked on, supervised, assisted in or have special knowledge of such Company Business or similar activity for the Company;

(ii) solicit or accept any work competitive to the Company Business from: (a) any person or entity for whom the Company is rendering services as of the Separation Date; (b) any person or entity for whom the Company has rendered services at any time during the six (6) months preceding the Separation Date; or (c) any person or entity to whom the Company has made a proposal to perform or render services to or for within one (1) year prior to the Separation Date; or

(iii) become connected with, or otherwise engage or invest or participate in any bid, proposal, contract or project of a competitor of the Company Business that (i) has been awarded to such competitor after the Separation Date and (ii) competes with the Company Business.

b. You further agree that, for a period of one (1) year after the Separation Date, you shall not, directly or indirectly,

(i) solicit, attempt to solicit, induce or otherwise cause any existing or future customer or client or other business relation of the Company, to terminate, fail to extend or renew, reduce the funding of, or fail to provide additional funding for, any contract, proposal or work with the Company or otherwise divert business away from the Company; or

(ii) solicit, attempt to solicit, induce or otherwise cause any existing or prospective employee of the Company, to terminate or abort his or her employment with the Company, or hire or attempt to hire any existing or prospective employee of the Company whether for yourself or for any firm, organization, business, partnership, corporation, or association with which you shall have an association.

c. You agree that the terms and conditions set forth in this paragraph are fair and reasonable and are reasonably required for the protection of the interests of the Company.

11. CONTINUED OBLIGATION NOT TO USE OR DISCLOSE CONFIDENTIAL INFORMATION; CONFIDENTIALITY OF THIS AGREEMENT

a. You acknowledge that during your employment with the Company you acquired certain confidential, proprietary or otherwise non-public information concerning the Company, which may include, without limitation, intellectual property, trade secrets, financial data, strategic business or marketing plans, and other sensitive information concerning the Company and its past or present employees, directors, executives, officers, agents, or customers (“Confidential Information”). You agree that you have not, and will not, disclose any Confidential Information to any person or entity, except as required by law.

b. Without limiting the generality of the foregoing, you further promise and agree:

i. to protect and safeguard the Confidential Information against unauthorized use, publication, or disclosure;
ii. not to use any of the Confidential Information except as specifically authorized in writing by the Company;
iii. not to, directly or indirectly, reveal, report, publish, disclose, transfer, or otherwise use any of the Confidential Information except as specifically authorized in writing by the Company; and
iv. not to use any Confidential Information to unfairly compete or obtain an unfair advantage against the Company in any commercial activity, which may be comparable to the Company’s actual or anticipated business, research or development.

c. You will not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that—(A) is made (i) in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (B) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. Accordingly, you have a right to disclose in confidence trade secrets to the Federal, State, and local government officials, or to an attorney, for the sole purpose of reporting or investigating a suspected violation of law. You also have the right to disclose trade secrets in a document filed in a lawsuit or other proceeding, but only if the filing is made under seal and protected from public disclosure. Nothing in this Agreement is intended to conflict with 18 U.S.C. § 1833(b) or create liability for disclosures of trade secrets that are expressly allowed by 18 U.S.C. § 1833(b).

d. You have not and will not discuss or otherwise reveal to anyone the existence or terms of this Agreement, or discussions with any authorized Company representative about it, except when necessary to enforce this Agreement or required by law, or after obtaining their agreement to keep all such information confidential, to your attorneys, financial advisors, or accountants or immediate family members.

12. UNEMPLOYMENT BENEFITS

The Company will not contest your filing for unemployment benefits, provided, however, that the Company reserves the right to correct any misstatements made in connection with any such filings and to respond truthfully to any requests from government authorities.

13. <u>COOPERATION WITH LEGAL PROCEEDINGS</u>

Upon reasonable notice, you will provide information and proper assistance to the Company and/or its counsel (including truthful testimony and document production) in any litigation or potential litigation in which you are, or may be, a witness, or as to which you possess, or may possess, relevant information. The Company will pay your reasonable out-of-pocket expenses incurred in complying with this paragraph, provided that such expenses are pre-approved by the Company.

14. <u>NON-DISPARAGEMENT</u>

Since receiving a copy of this Agreement, you have not, and will not, make any statements or take any actions materially detrimental to the interests of the Company, including, without limitation, negatively commenting on, disparaging, or calling into question the business operations or conduct of the Company or its past or present clients, shareholders, directors, executives, officers, employees or agents.

15. <u>RETURN OF COMPANY PROPERTY</u>

You acknowledge and agree that all documents, records, and files (electronic, paper or otherwise), materials, software, equipment, and other physical property, including but not limited to laptop computers, iPads, mobile phones, electronic devices, peripherals, security access badges, ID cards, building and office access cards, entry badges, keys, access codes, passwords and log-in credentials, software, hardware, and databases, and all copies of the foregoing, including but not limited to all such items containing Confidential Information of the Company, that you have received, acquired, or which have come into your possession, custody or control or been produced by or to you in connection with your employment (collectively, “Company Property”), have been and remain the sole property of the Company. You agree that by no later than ten (10) days following the Separation Date, you will conduct a thorough and diligent search for, and shall return to the Company, all tangible Company Property, with the exception of documents relating to your compensation and benefits to which you are entitled to retain, and that you will not retain any copies or duplicates of any such Company Property. You further agree that by no later than ten (10) days following the Separation Date, you will conduct a thorough and diligent search for, and permanently and irrevocably delete, any intangible and/or digital Company Property that exists or is stored: (a) in any email account; (b) in any “cloud” account; or (c) on any computer, laptop, tablet, mobile device, cellular phone, smartphone, PDA or other electronic storage device, the foregoing of any of which are accessible, possessed, controlled or owned by you (and not by the Company).

16. <u>REMEDIES FOR BREACH OF CERTAIN COVENANTS</u>

You agree and acknowledge that the Company will be irreparably harmed by any breach, or threatened breach, by you of the Restrictive Covenants, Non-Disparagement, Return of Company Property or Confidentiality sections of this Agreement and that monetary damages would be grossly inadequate. Accordingly, you agree that in the event of a breach, or threatened breach, by you of the Restrictive Covenants, Non-Disparagement, or Confidentiality sections of this Agreement, the Company shall be entitled to immediate injunctive or other preliminary or equitable relief, as appropriate, without being required to post a bond, in addition to all other remedies available at law and equity.

You agree that in the event you violate the Restrictive Covenants, Non-Disparagement, Return of Company Property or Confidentiality sections of this Agreement, the Company will have no further obligation to pay or provide any unpaid Separation Benefits provided by this Agreement, and that you will immediately return to the Company all of the Separation Benefits previously paid or provided under the terms of this Agreement, except for $100 of the Severance Pay as consideration for the release in paragraph 4 of this Agreement. Provided, however, that nothing in this paragraph shall limit the Company’s right to pursue any additional remedies available at law or in equity, including but not limited to injunctive relief, for your violation of those provisions. Despite any breach by you, your other obligations under this Agreement, including your waivers and releases, will remain in full force and effect.

Failure by either party to enforce any term of condition of this Agreement at any time shall not preclude that party from enforcing that provision, or any other provision, at a later time.

In the event Company is required to institute litigation to enforce the Restrictive Covenants, Non-Disparagement, Return of Company Property or Confidentiality sections of this Agreement, the Company shall be entitled to recover reasonable costs and attorneys' fees incurred in such enforcement.

17. **VOLUNTARY ACCEPTANCE OF AGREEMENT; GOVERNING LAW; DISPUTE RESOLUTION**

a. You have reviewed the terms of this Agreement and acknowledge that you have entered into this Agreement freely and voluntarily. The terms described in this Agreement constitute the entire agreement between you and the Company and may not be altered, modified or amended other than in writing signed by you and the Company. No promise, inducement or agreement not expressed herein has been made to you in connection with this Agreement, and this Agreement supersedes all prior written or oral agreements, arrangements, communications, commitments or obligations between yourself and the Company, except any confidentiality, non-disclosure, non-competition, non-solicitation, trade secret, assignment of inventions, and other intellectual property provisions to which your employment was subject, including but not limited to Article IV (Restrictive Covenants) in your Employment Agreement, which will remain in effect subsequent to the execution of this Agreement.

b. It is the desire and intent of the parties hereto that the provisions of this Agreement be enforced to the fullest extent permissible under the laws and public policies of each jurisdiction in which enforcement is sought. If any provision of this Agreement is adjudicated to be invalid or unenforceable, such provision, without any action on the part of the parties hereto, shall be deemed amended to delete or to modify (including, without limitation, a reduction in duration, geographical area or prohibited business activities) the portion adjudicated to be invalid or unenforceable, such deletion or modification to apply only with respect to the operation of such provision in the particular jurisdiction in which such adjudication is made, and such deletion or modification to be made only to the extent necessary to cause the provision as amended to be valid and enforceable, leaving the remainder of this Agreement in full force and effect.

c. This Agreement is intended to be governed by and will be construed in accordance with ERISA and, to the extent not preempted by ERISA, the laws of the State of Delaware, without regard to any conflict of laws provision. Should any provision of this Agreement be declared illegal or unenforceable by any court of competent jurisdiction and cannot be modified to be enforceable, such provision shall become null and void and severed from this Agreement, leaving the remainder of this Agreement in full force and effect.

d. To the fullest extent permitted by law, any and all disputes, claims, and causes of action, in law or equity, arising from or relating to this Agreement (other than with respect to the Company's enforcement of the Restrictive Covenants, Non-Disparagement, Return of Company Property or Confidentiality covenants as described in paragraph 16 above), or any dispute arising out of or relating to this Agreement, will be settled by binding arbitration in accordance with Section 9(h) of the SLSP.

e. You also acknowledge that you fully understand your right to discuss this Agreement with an attorney before accepting this Agreement, that the Company has advised you of this right, that the time afforded to you to review this Agreement provides you sufficient time to consult with an attorney should you wish to do so, that you have carefully read and fully understand this entire Agreement, and that you are voluntarily entering into this Agreement of your own free will, act and deed. You also agree that no promises, statements or inducements have been made to you which caused you to sign this Agreement, except as expressly set forth in writing herein.

f. No waiver of any provision of this Agreement shall constitute a waiver of any other provision hereof (whether or not similar), nor shall such waiver constitute a continuing waiver unless otherwise expressly provided. The failure by either party to enforce any term or condition of this Agreement at any time shall not preclude that party from enforcing that provision, or any other provision, at a later time. Nothing in this Agreement, express or implied, is intended to confer upon any third person (other than the Company, its affiliates and their respective successors, which parties are hereby expressly made third-party beneficiaries of this Agreement) any rights or remedies under or by reason of this Agreement.

g. Any notices provided for herein shall be given in writing and shall be deemed effectively given upon receipt or, in the case of notices delivered by the Company to you, five (5) days after deposit in the United States mail, postage prepaid, addressed to you at the last address you provided in writing to the Company. Notices to the Company shall be delivered to AECOM, ATTN: Corporate SVP, Human Resources, pam.hoebener@aecom.com.

18. SECTION 409A OF THE CODE

Any Severance Payment, provision of benefits, equity settlement, or other amounts payable under this Agreement and the SLSP remain subject to the terms and conditions set forth in Sections 5 and 8 of the SLSP related to compliance with Section 409A of the Internal Revenue Code. The parties hereto acknowledge and agree that the Severance Payments and any other amounts under this Agreement shall be subject to the provisions of Section 8(c) of the SLSP if and to the extent applicable.

Please execute and return the signed agreement by electronic means (i.e., through electronic mail) to pam.hoebener@aecom.com within the Review Period. This Agreement may be executed in counterparts, which together shall be effective as if they were a single document. If this Agreement is transmitted by electronic means, it will be treated as an original copy and have the same force and effect as if it was delivered by mail with the original wet signature.

I have read and understand the terms and conditions set forth in the Agreement above, including but not limited to the waiver and release of claims contained herein. By signing below, I hereby voluntarily accept and agree to those terms and conditions in exchange for the Separation Benefits offered to me.

Randall A. Wotring
____
Randall A. Wotring
Date: 10-2-20

Schedule A

Vested Equity Awards

Award Date	Type of Award	Number of Units, Options or Restricted Shares	Vested Percentage Immediately Prior to Termination	Total Vested Percentage Based on Additional Service Crediting Under Plan
12/15/2017	RSU	27,079	100.0%	100.0%
12/17/2018	RSU	40,000	0.0%	100.0%
12/16/2019	RSU	25,546	0.0%	0.0%
12/15/2017	PEP	40,618	100.0%	100.0%
12/17/2018	PEP	60,000	0.0%	100.0%
12/16/2019	PEP	38,319	0.0%	0.0%

EXHIBIT A

SUPPLEMENTAL RELEASE

(to be signed after the Separation Date)

In consideration of the obligations of AECOM (together with its parents, subsidiaries and affiliates, herein collectively referred to as the "Company") set forth in my Separation Agreement and Release ("Agreement"), including the Severance Payment and the Additional Service Credit, and for other good and valuable consideration, I, Randall A. Wotring, on behalf of myself, my heirs, beneficiaries, executors, administrators, representatives, assigns, and agents hereby fully release, acquit, and forever discharge the Company, its past, present, and future predecessors, successors, parent companies, subsidiary companies, affiliated entities, related entities, operating entities, and its and their past, present, and future officers, directors, shareholders, members, investors, partners, employees, agents, attorneys, insurers, reinsurers, and all of its and their past, present, and future compensation and employee benefits plans (including trustees, fiduciaries, administrators, and insurers of those plans) (collectively, the "Released Parties") from any and all causes of action, lawsuits, proceedings, complaints, charges, debts, contracts, judgments, damages, claims, attorney's fees, costs, expenses, and compensation whatsoever, of whatever kind or nature, in law, or equity or otherwise, whether known or unknown, vested or contingent, suspected or unsuspected, that I may now have, have ever had, or hereafter may have relating directly or indirectly to my employment with the Company, the separation of my employment with the Company, the benefits or attributes of my employment with the Company, and/or any other act, omission, event, occurrence, or non-occurrence involving the Company or any of the Released Parties, through the date of this Supplemental Release. Without limiting the foregoing and to the fullest extent allowed by law, I agree that this release includes, but is not limited to any and all claims arising from any violations or alleged violations of federal, state or local human rights, fair employment practices and/or other laws by any of the Released Parties for any reason under any legal theory including, but not limited to, the Age Discrimination in Employment Act ("ADEA"); the Americans With Disabilities Act of 1990 ("ADA"); the Consolidated Omnibus Budget Reconciliation Act ("COBRA"); the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank"); the Employee Retirement Income Security Act of 1974 ("ERISA"); the Equal Pay Act ("EPA"); the Fair Labor Standards Act ("FLSA"); the Fair Credit Reporting Act ("FCRA"); the Family and Medical Leave Act ("FMLA"); the Genetic Information Nondiscrimination Act ("GINA"); the Immigration Reform and Control Act ("IRCA"); the Lilly Ledbetter Fair Pay Act; the National Labor Relations Act ("NLRA"); the Labor Management Relations Act ("LMRA"); the Occupational Safety and Health Act ("OSHA"); the Older Workers Benefit Protection Act ("OWBPA"); the Rehabilitation Act of 1973; the Sarbanes-Oxley Act of 2002 ("SOX"); the Uniformed Services Employment and Reemployment Rights Act of 1994 ("USERRA"); Sections 1981 through 1988 of Title 42 of the United States Code; Title VII of the Civil Rights Act of 1964; the Civil Rights Act of 1991; the Worker Adjustment and Retraining Notification Act ("WARN"), and/or all other federal, state, or local laws (including, without limitation, the Maryland Fair Employment Practices Act), statutes, ordinances, constitutions, rules, orders or regulations, all as they may be amended. I also forever waive, release, discharge and give up all claims, real or perceived and now known or unknown, for breach of implied or express contract, breach of promise, breach of the covenant of good faith and fair dealing, wrongful or retaliatory discharge, discrimination, harassment, promissory estoppel, assault, battery, false imprisonment, defamation, libel, slander, intentional and negligent infliction of emotional distress, duress, fraudulent and negligent misrepresentation, defamation, violation of public policy, negligence, and all other claims or torts arising under any federal, state or local law, regulation, constitution, ordinance or judicial decision; and any claim concerning wages, benefits, severance payments, bonus payments, payments pursuant to any agreement with the Company, stock, stock options, or stock option agreement, including but not limited to my Employment Agreement. I also agree to waive any right I have to pursue any claim or grievance through any internal channel of the Company and/or its affiliates. I understand and agree that my waivers include both claims that I know about and those I may not know about which have arisen on or before the date on which I sign this Supplemental Release.

I agree to expressly waive all rights under Section 1542 of the Civil Code of the State of California, up to and including the date I sign this Supplemental Release. Section 1542 provides as follows:

> **A general release does not extend to claims which a creditor or releasing party does not know or suspect to exist in his or her favor at the time of executing the release and that, if known by him or her, would have materially affected his or her settlement with the debtor or released party.**

I further agree and represent that I have had an opportunity to consult with an attorney over the meaning and significance of this Civil Code § 1542 waiver and that I knowingly and voluntarily waive my rights under this statute.

I hereby represent and warrant that I have not, at any time up to and including the date on which I sign this Supplemental Release, commenced, and will not in the future commence, to the fullest extent permitted by law, any action or proceeding, or file any action, of any nature arising out of the matters released by the Agreement or this Supplemental Release, and I waive to the fullest extent permitted by law, any right to any monetary or equitable relief in any proceeding that may relate to the matters released by the Agreement or this Supplemental Release. However, nothing in this paragraph will preclude either party from bringing a claim to enforce the Agreement or the Supplemental Release or challenge the validity of the Agreement or the Supplemental Release. Notwithstanding the foregoing, this Supplemental Release does not preclude me from filing a charge with or participating in an investigation or proceeding conducted by the Equal Employment Opportunity Commission, the U.S. Department of Labor, the National Labor Relations Board or any other federal, state, or local labor board or agency charged with enforcing employment laws (including, for example, the Maryland Commission on Civil Rights). However, by signing this Supplemental Release, I understand and agree that I am waiving any right to recover money or other individual relief based on claims asserted in such a charge in any proceeding brought by me or on my behalf.

I acknowledge this Supplemental Release does not limit or waive my right to file an application for an award for original information submitted pursuant to Section 21F of the Securities Exchange Act of 1934.

I acknowledge that I fully understand my right to discuss this Supplemental Release with an attorney before accepting this Supplemental Release, that the Company has advised me of this right, that the time afforded to me to review this Supplemental Release provides me sufficient time to consult with an attorney should I wish to do so, that I have carefully read and fully understand this entire Supplemental Release, and that I am voluntarily entering into this Supplemental Release of my own free will, act and deed. I also agree that no promises, statements or inducements have been made to me which caused me to sign this Supplemental Release, except as expressly set forth in writing herein and in the Agreement. I further acknowledge and agree that no compensation, wages, bonuses, commissions, overtime, expenses, PTO, and/or benefits are due to me.

I acknowledge that I was advised that I could take up to twenty-one (21) days from the Separation Date to review this Supplemental Release and decide whether to enter into this Supplemental Release. I understand and agree that any changes to this Supplemental Release, whether material or immaterial, do not restart the running of this twenty-one (21) day review period. To the extent that I have elected to enter into this Supplemental Release prior to such time, I have done so voluntarily, and have knowingly waived such twenty-one (21) day review period.

I understand that I may revoke this Supplemental Release within a period of seven (7) calendar days after its execution, except that if the last day of this period falls on a Saturday, Sunday or holiday observed by the Company I have until the conclusion of the next immediate business day (“Supplemental Release Revocation Period”), by delivery of a written notice of revocation (“Supplemental Release Revocation Notice”) before the end of the last day comprising the Supplemental Release Revocation Period to pam.hoebener@aecom.com, ATTN: Corporate SVP, Human Resources. This Supplemental Release shall become automatically irrevocable, and fully enforceable, upon the expiration of the Supplemental Release Revocation Period (the “Supplemental Release Effective Date”) if I do not timely revoke it in the aforesaid manner.

In the event that I do not execute this Supplemental Release during the review period, or if I execute and then revoke the Supplemental Release within the Supplemental Release Revocation Period, or if for any other reason the Supplemental Release is held to be unenforceable, all checks, instruments, funds, or other such payments received by you pursuant to the terms of this Agreement shall immediately be returned or reimbursed to the Company, and I shall have no right to the benefits and consideration described in paragraph 2 of the Agreement. In the event the Company is required to institute litigation to enforce the terms of this paragraph, the Company shall be entitled to recover reasonable costs and attorneys' fees incurred in such enforcement.

Agreed to and Accepted:

Randall A. Wotring

Date (Must be signed after the Separation Date):

EXHIBIT 21.1

AECOM Global, LLC, a Delaware Limited Liability Company
AECOM Global II LLC, a Delaware Limited Liability Company
AECOM, C&E, Inc., a Delaware Corporation
AECOM Technical Services, Inc., a California Corporation
AECOM USA, Inc., a New York Corporation
AECOM Asia Company Limited*
AECOM Canada Ltd*
AECOM South Africa Group Holdings Pty Ltd*
AECOM Design Build Limited*
AECOM Global Ireland Services Limited*
AECOM Infrastructure & Environment UK Limited*
Flint Energy Services, Inc., a Delaware Corporation
Hunt Construction Group Inc., an Indiana Corporation
The Hunt Corporation, an Indiana corporation
Oscar Faber PLC*
URS Holdings, Inc., a Delaware Corporation
URS Corporation, a Nevada Corporation
URS Group, Inc. a Delaware Corporation
URS Corporation—Ohio, an Ohio Corporation
URS Global Holdings Inc., a Nevada Corporation
URS Operating Services, Inc., a Delaware corporation
URS Resources, LLC, a Delaware limited liability company
URS Corporation Southern, a California corporation
URS Construction Services, Inc., a Florida corporation
URS Alaska, LLC, an Alaska limited liability company
URS Corporation – New York, a New York corporation
URS Corporation – North Carolina, a North Carolina corporation
Tishman Construction Corporation, a Delaware Corporation
Tishman Construction Corporation of New York, a Delaware Corporation
AECOM Intercontinental Holdings UK Limited*
AECOM Services, Inc., a California corporation
AECOM International, Inc., a Delaware corporation
AECOM International Projects, Inc., a Nevada corporation
AECOM Great Lakes, Inc., a Michigan corporation
EDAW, Inc., a Delaware corporation
The Earth Technology Corporation (USA), a Delaware corporation
Cleveland Wrecking Company, a Delaware corporation
Aman Environmental Construction, Inc., a California corporation
E.C. Driver & Associates, Inc., a Florida corporation
B.P. Barber & Associates, Inc., a South Carolina corporation
Forerunner Corporation, a Colorado corporation

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*Foreign

EXHIBIT 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements (Form S-8 Nos. 333-237237, 333-167047, 333-142070, 333-199453, 333-208964, 333-209890, 333-216442, and 333-230214) pertaining to various stock incentive, purchase and retirement plans of AECOM of our reports dated November 18, 2020, with respect to the consolidated financial statements and schedule of AECOM and to the effectiveness of internal control over financial reporting of AECOM included in this Annual Report (Form 10-K) of AECOM for the year ended September 30, 2020.

/s/ Ernst & Young LLP

Los Angeles, California
November 18, 2020

EXHIBIT 31.1

Certification Pursuant to
Rule 13a-14(a)/15d-14(a)

I, W. Troy Rudd, certify that:

1. I have reviewed this Annual Report on Form 10-K of AECOM;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: November 18, 2020

/s/ W. Troy Rudd
W. Troy Rudd
Chief Executive Officer
(Principal Executive Officer)

EXHIBIT 31.2

Certification Pursuant to
Rule 13a-14(a)/15d-14(a)

I, Gaurav Kapoor, certify that:

1. I have reviewed this Annual Report on Form 10-K of AECOM;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

    (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: November 18, 2020

Gaurav Kapoor
Gaurav Kapoor
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32

Certification Pursuant to
18 U.S.C. Section 1350

In connection with the Annual Report of AECOM (the "Company") on Form 10-K for the fiscal year ended September 30, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), we, W. Troy Rudd, Chief Executive Officer of the Company, and Gaurav Kapoor, Chief Financial Officer of the Company, hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to our knowledge:

1. The Report fully complies with the requirements of Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934, as amended; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

W. Troy Rudd
W. Troy Rudd
Chief Executive Officer
November 18, 2020

Gaurav Kapoor
Gaurav Kapoor
Chief Financial Officer
November 18, 2020

EXHIBIT 95

Section 1503 of the Dodd-Frank Wall Street Reform and Consumer Protection Act requires domestic mine operators to disclose violations and orders issued under the Federal Mine Safety and Health Act of 1977 (the Mine Act) by the federal Mine Safety and Health Administration (MSHA). We do not act as the owner of any mines but we may act as a mining operator as defined under the Mine Act where we may be a lessee of a mine, a person who operates, controls or supervises such mine, or as an independent contractor performing services or construction of such mine.

The following table provides information for the year ended September 30, 2020.

Mine(1)	Mine Act §104 Violations(2)	Mine Act §104(b) Orders(3)	Mine Act §104(d) Citations and Orders(4)	Mine Act §110(b)(2) Violations(5)	Mine Act §107(a) Orders(6)	Proposed Assessments from MSHA (In dollars ($))	Mining Related Fatalities	Mine Act §104(e) Notice (yes/no)(7)	Pending Legal Action before Federal Mine Safety and Health Review Commission (yes/no)(8)
Black Thunder Project	0	0	0	0	0	$ 0.00	0	No	No
Bayer Quantzite Quarry	1	0	0	0	0	$ 0.00	0	No	Yes

(1) United States mines.

(2) The total number of violations received from MSHA under §104 of the Mine Act, which includes citations for health or safety standards that could significantly and substantially contribute to a serious injury if left unabated.

(3) The total number of orders issued by MSHA under §104(b) of the Mine Act, which represents a failure to abate a citation under §104(a) within the period of time prescribed by MSHA.

(4) The total number of citations and orders issued by MSHA under §104(d) of the Mine Act for unwarrantable failure to comply with mandatory health or safety standards.

(5) The total number of flagrant violations issued by MSHA under §110(b)(2) of the Mine Act.

(6) The total number of orders issued by MSHA under §107(a) of the Mine Act for situations in which MSHA determined an imminent danger existed.

(7) A written notice from the MSHA regarding a pattern of violations, or a potential to have such pattern under §104(e) of the Mine Act.

(8) The following Pending Legal Action Table provides information for the year ended September 30, 2020.

Mine	Number Pending Legal Actions	Contests of Penalty Assessments	Legal Actions Initiated	Legal Actions Resolved
Black Thunder Project	0	0	0	0
Bayer Quantzite Quarry	1	0	1	0

Los Angeles County
Sanitation Districts

June 10, 2021

AECOM

Cost Proposal

ON-CALL ENGINEERING SERVICES

Bid No.
03956

AECOM
Schedule of Fees and Charges (Rate Table) for Engineering Services for the LACSD On-Call Engineering Services

This Schedule of Fees and Charges shown in the labor classification table below is for the period of July 1, 2021 through June 30, 2022. It will be escalated annually not to exceed the Consumer Price Index (CPI) – Los Angeles Region for the preceding year as indicated in the RFP.

PERSONNEL CHARGES*

The charge for all time required in the performance of the Scope of Service, including office and field, will be at the Unit Price Hourly rates set forth below for the labor classifications:

LABOR CLASSIFICATION

Professional Staff	Hourly Rate
Cost Estimator 2	$165
Cost Estimator 1	$190
Design Engineer 3	$110
Design Engineer 2	$130
Design Engineer 1	$150
Environmental Planner 2	$155
Environmental Planner 1	$180
Registered Electrical Engineer 3	$145
Registered Electrical Engineer 2	$165
Registered Electrical Engineer 1	$190
Registered Structural Engineer 3	$165
Registered Structural Engineer 2	$190
Registered Structural Engineer 1	$210
Registered Mechanical Engineer 3	$145
Registered Mechanical Engineer 2	$165
Registered Mechanical Engineer 1	$190
Registered Civil Engineer 3	$145
Registered Civil Engineer 2	$165
Registered Civil Engineer 1	$190
Task Manager 2/ Principal Engineer 2/ Architect 2	$230
Task Manager 1/ Principal Engineer 1/ Architect 1	$260
Project Manager	$280
Principal-in-Charge / QA/QC Manager	$300
Technical Staff	**Hourly Rate**
Drafter/GIS/Graphics 3	$80
Drafter/GIS/Graphics 2	$90
Drafter/GIS/Graphics 1	$120
Senior Drafter/GIS/Graphics	$145
Design/GIS/Estimator/Scheduler 2	$150
Design/GIS/Estimator/Scheduler 1	$190
Project Support Staff	**Hourly Rate**
Office/Clerical	$80
Project Controls/Assistant	$90
Administrator/Contracts	$100
Project Admin/Contracts	$125
Principal Project Admin/Contract	$145

Level 3 = 5-10 years experience; Level 2 = 11-20 years experience
Level 1 = 21 + years experience

Overtime (hours worked in excess of eight (8) hours per day) by exempt personnel will be charged at the above straight time rate. Overtime by non-exempt personnel will be charged at 1.5 times the above hourly rates.

OTHER PROJECT CHARGES

Subcontractors and Equipment Rental

The cost of services subcontracted by AECOM to others and other costs incurred by AECOM will be charged at 5% mark-up.

Document Reproduction

In-house reproduction will be charged as follows:
8 ½x11 Black & White = $0.09
11x17 Black & White = $0.17
8 ½x11 Color = $0.14
11x17 Color = $0.26
Black & White plot/ square foot = $0.20
Color plot/square foot = $0.26

Vehicles and Mileage

Leased field vehicles (pick-ups, vans, trucks, etc.) used on project assignments will be charged at $85 per day. The mileage charge for personal autos will be the current mileage rate established by the Internal Revenue Service.

Travel time will not be billable as indicated in the RFP. Actual travel cost will be billable without markup.

This fee schedule contains confidential business information and is not to be copied or distributed for any purpose other than the use intended in this contract or proposal.

*The above rates do not include prevailing wages as determined by the Department of Industrial Relations on Public Works projects. Prevailing wages and benefits are billed at a higher rate in comparison to the AECOM rate.
When AECOM staff, appear as expert witnesses at court trials, mediation, arbitration hearings and depositions, their time will be charged at 2.0 times the standard rate. All time spent preparing for such trials, hearings and depositions will be charged at the standard labor rate.

About AECOM

AECOM is the world's trusted infrastructure consulting firm, delivering professional services throughout the project lifecycle — from planning, design and engineering to program and construction management. On projects spanning transportation, buildings, water, new energy and the environment, our public- and private-sector clients trust us to solve their most complex challenges. Our teams are driven by a common purpose to deliver a better world through our unrivaled technical expertise and innovation, a culture of equity, diversity and inclusion, and a commitment to environmental, social and governance priorities. AECOM is a *Fortune 500* firm and its Professional Services business had revenue of $13.2 billion in fiscal year 2020. See how we are delivering sustainable legacies for generations to come at aecom.com and @AECOM.

aecom.com

EXHIBIT B - RFP

LOS ANGELES COUNTY SANITATION DISTRICTS
Converting Waste Into Resources

REQUEST FOR PROPOSALS

ON CALL ENGINEERING SERVICES

BID No. 03956

QUESTCDN No. 7825153

CONTACT: Maribeth Tan, Senior Buyer

DUE DATE & TIME: June 10, 2021 at 11:00 a.m.

LAST DAY FOR QUESTIONS: May 26, 2021

Robert C. Ferrante
Chief Engineer and General Manager

Los Angeles County Sanitation Districts | Purchasing Section | 1955 Workman Mill Road | Whittier, CA 90601
Phone: 562-908-4288 ext. 1400 | Email: bids@lacsd.org

DOC 6171158

Table of Contents

REQUEST FOR PROPOSALS
for
RFP No. 03956 QuestCDN No. 7825153
ON-CALL ENGINEERING SERVICES

May 2021

1. INTRODUCTION AND BACKGROUND

The Los Angeles County Sanitation Districts (Districts) are issuing this Request for Proposal (RFP) requesting Statements of Qualifications (SOQs) and Hourly Rates from qualified engineering consulting firms (Respondents) to provide general engineering design services in support of the Districts' wastewater collection system operations on an as-needed basis for a period of up to three (3) years. Each Proposal shall include SOQs and Hourly rates provided in separate electronic files. In issuing this RFP, the Districts are seeking to identify and prequalify firms possessing the technical expertise and resources to perform the project management, and/or civil, structural, and mechanical design of:

- Sewer Rehabilitation and new sewer construction projects
- Miscellaneous design support tasks, including but not limited to hydraulic modeling, cost estimating for both design and construction, and specialized studies/reports.
- Review and updates to various design guidelines and procedures, including presentation of updates to Districts' staff.

Respondents may propose to subcontract portions of the design services listed above if they are unable to provide all listed services. However, in the selection process, preference will be given to Respondents that can provide the design services using their own forces and an additional bonus will be given to Respondents whose staff work in a Regional Business Enterprise (RBE) as defined in Section 6.3.4.1.

The District encourages participation in its engineering services contracts by all members of the community including Minority Business Enterprises (MBE), Women Business Enterprises (WBE), Disadvantaged Business Enterprises (DBE), Disabled Veterans Business Enterprises (DVBE) and Small Business Enterprises (SBE). The District has established an aspirational goal of 20 percent overall participation by such firms. Although such participation is encouraged, award of a contract is not based on race, gender, disabled, disadvantaged or small business status.

1.1. Background

The Districts are a public agency focused on converting waste into resources like recycled water, energy and recycled materials. The agency consists of 24 independent special districts serving about 5.6 million people in Los Angeles County. The service areas cover approximately 850 square miles and encompass 78 cities and unincorporated areas in the county.

The Districts were created in 1923 to construct, operate, and maintain facilities that collect and treat domestic and industrial wastewater (sewage). The agency operates and maintains a regional wastewater collection system, which includes approximately 1,400 miles of sanitary sewers ranging in diameter from 8- to 144-inches, 48 pumping plants, and 11 wastewater treatment plants that transport and treat about half the wastewater in Los Angeles County. The Sewer Design Section is responsible for the design of sewer rehabilitation and new sewer construction projects.

1.2. Objective

To maximize efficiency and reduce costs, the 24 Sanitation Districts work cooperatively with one administrative staff headquartered at the Joint Administration Office (JAO) near the City of Whittier. The Engineering Department is located at the JAO and includes the Sewer Design Section. The Districts intend to supplement the work of the Sewer Design Section by using qualified and experienced consulting firms to augment the work of the Sewer Design Section due to the large number of projects that have been identified to be completed in the next few years.

2. CONTRACT DETAILS AND ASSIGNMENT OF WORK

The Districts will evaluate the Proposals submitted by the Respondents in response to this RFP and develop a list of engineering consulting firms (Consultants) who, in the Districts' opinion, are most-qualified to provide ALL the listed design services. The overall goal of this RFP process is to enter into Engineering Services Agreements (ESAs) with up to four (4) firms and allocate up to approximately $1,000,000 for each firm to provide on-call engineering design services for the term of the ESA. The Districts anticipates that the selected Consultants may be retained for up to three (3) years after the award date or until the allocated budget has been spent. The Districts' selection of a Consultant and execution of an ESA is NOT a guarantee of any work or quantity of work. Selected Consultants will be hired to perform work under the ESA on an as-needed basis at the sole discretion of the Districts. The Districts hereby reserve the right to use any, all, or none of the funds allocated to each Consultant.

When engineering services are required, a Consultant will be presented with the scope of the project and will be asked to prepare a detailed proposal indicating the time and expenses required to complete the project. The Consultant will be expected to respond to requests for detailed scope proposals in a timely manner. Once the proposal is approved by the Districts, the Consultant will be issued a Task Authorization Form (TAF) that details the agreed-upon scope, budget, schedule, deliverables and associated progress payments (see Attachment A for a sample TAF). No subsequent work shall be performed by the Consultant prior to receiving a written Notice to Proceed from the Districts. If a Consultant fails to respond in a timely manner or is unable to meet the requested project schedule, the Districts reserve the right at its sole discretion to present the work to another Consultant for development of a proposal. As each project may have a completely different scope of work, Respondents are not required to possess expertise in all listed areas.

3. SCOPE OF WORK

The scope of work to be performed by the Consultants awarded an ESA may include civil, structural, and mechanical engineering and design, and construction management support (responding to submittals, RFIs, etc.), for the project types listed below. The Consultants shall provide engineering services in conformance with Districts' standards and in full compliance with all applicable laws, standards, and codes, including the Standard Specifications for Public Works Construction (Greenbook), latest approved edition, and the Districts' amendments thereto. The general design process and typically required deliverables for the Consultant's work are provided for reference in Section 4 of this RFP.

3.1. Sewer Rehabilitation and Construction Projects

Perform preliminary and detailed design of small and large diameter sewer rehabilitation projects and new sewer construction projects. Qualified firms shall have experience in the preparation of design, plans, specifications, cost estimates and contract documents for capital improvement projects involving rehabilitation of small and large diameter sewers by cured-in-place pipe lining, sliplining and other rehabilitation methods, construction of new sewers by open trench construction, jacking and tunneling, construction of new sewer force mains, rehabilitation of existing force mains, preparation of sewer flow studies, environmental documentation, constructability reviews and reports.

3.2. Miscellaneous Design Support and Engineering Tasks

In addition to the engineering design projects, the Consultant may be asked to perform hydraulic modeling of the sewer collection system; provide environmental/planning and construction management support; and perform special engineering studies/reports. Consultants may also be asked to review various design manuals and procedures used bye the Sewer Design Section, including the presentation and training of Districts' staff related to any updates.

4. TYPICAL PROJECT ADMINISTRATION STEPS FOR SEWER REHABILITATION AND CONSTRUCTION PROJECTS

The Districts will approach one of the selected Consultants having the appropriate qualifications to complete a proposed project. The Consultant will have the opportunity at that time to review the scope of the proposed project and provide a preliminary proposal that includes a preliminary cost estimate and project schedule AND a list of key staff members that will be assigned to the project. If the initial Consultant does not have the resources to complete the project within the specified time frame or provides what is deemed an excessive cost proposal, the District can advance to the next available Consultant without any legal or financial impacts to either party. Projects will generally proceed through the following three (3) phases: (1) Preliminary Engineering Phase (including a Pre-Design Evaluation), (2) Detailed Design Phase, and (3) Construction Management Support Phase. However, proposals may be requested for starting at any of the three phases or for support-type projects that do not typically follow said phasing.

Once a preliminary proposal is requested, the Consultant shall coordinate with the Districts and other necessary and appropriate government units, utilities, organizations, and persons in order to ascertain project requirements. Not all projects require the same level of detail and the Districts and Consultant will work together to determine what level of detail is required. The Consultant will then prepare and submit a detailed staffing plan, QA/QC plan, and cost proposal for providing the requested engineering services for the current phase of the proposed project.

The cost proposal shall be broken down to show expected labor hours for each phase of the work and the associated labor costs, including work performed by outside subconsultants. The staffing plan, QA/QC plan, and cost proposal shall be submitted to the Districts for review and approval prior to start of any work. Once the Districts and the Consultant have agreed and accepted the plans and cost proposal, the Consultant and Districts will sign and execute a Task Authorization Form (TAF) that will establish the scope, budget, schedule, staffing, deliverables, and progress payments for that phase of the project. The Consultant shall propose a project manager for each TAF. The Consultant's project manager shall oversee the TAF to the completion of the project and shall not be replaced without the Districts' authorization. The Districts may at any time request that a project manager be replaced. The project manager is responsible for submitting monthly progress reports that will include an earned value analysis of the project. The project manager will immediately notify the Districts of proposed staffing changes, and any major changes in scope, budget or schedule.

4.1. Preliminary Engineering Phase

During this phase, the project scope is defined, general consensus on design parameters is reached, and project constraints are identified, including, but not limited to regulatory and permitting constraints, design and construction schedule, and site conditions. The end goal of this phase is to have a Preliminary Design Report (PDR) or a Work Scope Memo (WSM) that provides the Districts with enough detailed information to make effective decision on the project goals, requirements and costs. Preliminary Engineering generally includes the following tasks:

4.1.1. Scoping Meetings – The purpose of this meeting is to have the project's requestor (Wastewater Collection Systems (WCS) Operations) clarify the scope of work as discussed in the Design Request.

4.1.2. Site Visits – The Consultant's Project Manager, Design Engineer and assigned designers should schedule and conduct a site visit with District's Design and Operations staff to become familiar with the project area and identify constraints. During the site visit, confirm that as-built drawings reflect what is on and below the ground and note any modifications or changes to be surveyed or added electronically to the background drawings.

4.1.3. Existing Conditions and Background Drawings – The District will provide any existing as-built drawings that apply to the project to the Consultant. The Consultant shall investigate, analyze, and measure the existing facilities to the extent necessary to determine the information necessary for project work. The Consultant shall request and obtain substructure information from all utilities within the project area.

4.1.4. Identify additional investigative work required by geotechnical, survey, or other service providers. The District may provide the geotechnical and/or surveying consultant under a separate contract.

4.1.5. For new sewer construction projects, the Consultant shall calculate ultimate flow conditions by performing a sewer area study in accordance with the District's procedures.

4.1.6. CCTV Inspection Review – The District will provide access to CCTV inspection records for the existing sewer. The CCTV records shall be reviewed to confirm the condition of the sewer and to help determine the method of repair, or if repair is necessary.

4.1.7. Relief, Replacement, or Rehabilitation – All available alternatives shall be evaluated based on ultimate flow conditions, sewer condition, available alignments, flow bypass capabilities, and cost. Alternatives may include a new relief sewer and maintaining the existing sewer in service, a replacement sewer and removing the existing sewer from service, a combination of relief and rehabilitation, various methods of rehabilitation, or a combination of the above. An estimate of the costs for the various alternatives should be included.

4.1.8. Preliminary Design and Construction Schedule – Prepare a schedule showing the time frames for developing construction drawings, specifications and other related information for the 50%, 90% and 100% Phases, and the anticipated duration for construction of the selected alternative.

4.1.9. Cost estimate for the proposed design and construction.

4.1.10. The PDR or WSM shall include the following:

4.1.10.1. Background - Include the location and description (optional) of the existing sewer alignment, year(s) constructed, lengths, diameters and materials of pipe, and the reason for the project. Describe the condition of the sewer. Attach a figure(s) showing the existing (and proposed) alignments. Include an aerial photo of the area showing all District's facilities for large or complex projects.

4.1.10.2. Area Study and Flow Capacity- Include the current dry weather peak flow, wet weather peak flow if available, the ultimate peak flows based on land use and 2050 (or identify other year) population with a recommendation for which flows should be used, and the ultimate peak wet weather flows if this can be estimated. Also, include as applicable, the flow capacities for the existing sewer and various pipe size options for relief and/or replacement sewers, together with the percent d/D for the existing sewer and each option. Attach schematic(s) showing pipe size, junctions, current and ultimate peak flows, flow depths and flow capacities of the proposed and existing sewers. For rehabilitation, include the flow capacities and percent d/D of the rehabilitated sewer using the reduced pipe internal diameter and the lower Manning's roughness coefficient as appropriate.

4.1.10.3. Discussion - For relief and/or replacement, discuss and compare the various options, provide tables showing the construction cost for each option, describe the alignment, available corridor or substructure interferences, local sewer and lateral connections, rehabilitation needs, constructability, right of way requirements, indicate if it is in Caltrans or railroad property, upcoming construction in the area, potential contamination along specific alignments, agency requirements, traffic, operations and maintenance (O&M) considerations, and anything else that may have a bearing on the recommendation. For rehabilitation, recommend the extent of rehabilitation based on CCTV and show on a figure. Include a discussion of right of way, rehabilitation method, capacity after lining, pump bypass or flow diversions, manhole condition and recommendation, and cost.

4.1.10.4. Recommendation - Indicate the recommended option and include lengths, diameters, materials, and cost. Also include major considerations for the specific project, such as right of way issues, jacking/tunneling, groundwater, etc. For rehabilitation, indicate the recommended rehabilitation method of the sewer and also include recommended methods for rehabilitation of manholes and structures.

4.1.11. Once the District and the Consultant have reviewed and resolved any outstanding issues, the Consultant will receive a final progress payment according to the TAF.

4.2. Detailed Design Phase

Once the PDR or WSM has been completed, the TAF for the Detailed Design Phase is broken into four (4) specific milestones: 50% Design, 90% Design, 100% Design, and Advertise/Award/Bid. The Consultant shall not proceed from one milestone to the next until so directed by the Districts.

4.2.1 50 Percent Design Milestone

The Consultant shall prepare and submit 50 percent design documents to the District for review. All drawings shall conform to the latest version of the Sewer Design Drafting Standards. At the 50 percent stage the plans should include the following information:

4.2.1.1 Cover sheet with Project Title, General Location map, and Vicinity Map.

4.2.1.2 Data from field survey and geotechnical work.

4.2.1.3 Plan and Profile sheets showing proposed work.

4.2.1.4 Detail sheets showing any necessary manhole, structure, or miscellaneous details.

4.2.1.5 Table of Contents for Special Provisions

4.2.1.6 Updated construction cost estimate and updated construction schedule.

Once the District and the Consultant have reviewed and resolved any outstanding issues identified during the 50 percent design review, the Consultant will be provided with a copy of the Districts' Special Provision Templates which are to be incorporated, as required, into the 90 percent submittal package. The Consultant will receive a progress payment according to the TAF and will be issued an NTP to move to the 90 Percent Design Phase.

4.2.2 90 Percent Design Milestone

The Consultant shall prepare and submit 90 percent design documents to the District for review. These drawings and specifications are expected to be as close to final as possible. No major changes are expected after this phase, only minor drafting and typographical changes/corrections are expected. At the 90 percent stage, the plans should include the following information:

4.2.2.1 Complete electronic set of construction drawings showing all plans, profiles, and details.

4.2.2.2 Draft Special Provisions.

4.2.2.3 Updated construction cost estimate, and updated construction schedule.

Once the District and the Consultant have reviewed and resolved any outstanding issues identified during the near final review of the detailed design and specifications, the Consultant will receive a progress payment according to the

TAF and will be issued an NTP to move to the 100 Percent Design Phase.

4.2.3 100 Percent Design Milestone

The Consultant shall prepare and submit 100 percent Contract Documents and final construction cost estimate to the Districts for review. At the 100 percent stage, the plans and specifications should be complete and ready for inclusion in the Bid Package released to the general public inviting bids on the proposed work. These documents shall be as complete as possible to reflect the level of detail specified in the Preliminary Engineering Phase. Payment for this phase will not be made until the District accepts the Contract Documents as "Complete". All drawings shall be signed and stamped by the Professional Engineer who had responsible charge over the content of the associated construction drawings. Said engineer shall be a professional engineer registered in the State of California in the discipline covered by the drawings.

4.2.4 Advertise/Bid/Award Milestone

The Districts' Design staff will take the lead on this phase of the project, including coordinating advertisement of the Bid Package/Contract Documents, acceptance of bids, and award of contract to the lowest, responsible, responsive bidder. The Consultant shall be responsible for providing answers to RFIs during the bidding phase and shall assist in preparing and producing any addenda required to address contractor questions. The Consultant shall assist in preparing any evaluations and/or recommendations regarding the awarding of the project.

4.3. Construction Management Support Phase

After award of a contract, the Districts' Construction Management (CM) Section will take the lead on management of the project through construction completion. Prior to the start of construction, the Districts and the Consultant will draft and execute a new TAF to establish the budget for construction management support work by the Consultant. This phase will include review and approval of submittals, responding to the contractor's Requests for Information (RFIs), and assisting CM staff with resolution of construction issues. This may also include participation by the Consultant in on-site meetings with CM staff and the contractor. As described below, the Consultant's staff will be required to use Oracle Unifier™ software for transmittal of all correspondence during the construction phase.

4.4. Software Requirements

The Consultants will be required to use MicroStation CONNECT Edition Update 10 or newer to prepare all CAD drawings. The Consultants will be required to use Bluebeam Revu Standard (or better) to distribute all design deliverables for Districts' review thru Bluebeam's Studio Sessions feature, including the PDR, 50 percent design, 90 percent design, and 100 percent design documents. The Consultants will also be required to utilize Oracle Unifier™ software for routing of design-related documents and for all correspondence during the Construction Management Support phase. At the Consultants' sole expense, the Consultants shall provide Bluebeam Revu Standard software for their staff assigned to Districts' projects. The Districts will provide licensing and training for Oracle Unifier™ for the Consultants' staff. The Consultants shall include budget for their staff to attend Unifier™ training in the TAF proposals as appropriate.

5. SOLICITATION INFORMATION AND KEY DATES

5.1. Schedule

Issue RFP	May 7, 2021
Last Day for Questions	May 26, 2021
Proposal Due Date	**No later than 11:00 a.m. on June 10, 2021**
Districts' Board of Directors Approval to Award Contract	Anticipated in August 2021

5.2. Proposal Format

The proposal shall sufficiently describe and demonstrate the Respondent's understanding of and approach to the scope of this RFP.

The Proposal shall include the Solicitation Form with authorized signature provided in Part 5.3 below. Failure to include the signed Solicitation Form with the Proposal will disqualify the Proposal from consideration.

Respondents shall respond to all the Districts' requests for information listed in this RFP in the order in which they appear. All information, calculations, footnotes, comments, text, advertising literature, etc., shall be in the English language. Only English engineering units shall be used. To facilitate the review process, the SOQ and Hourly Rates shall follow the format outlined in the respective sections of this RFP. All pages shall be numbered. Pages in appendices need not be numbered but shall be tabbed for convenient access. Concise language and direct answers are preferred to lengthy discussion and non-pertinent information. Failure of the Respondent to organize the information required by this RFP as outlined may results in the Districts, at its sole discretion, deeming the Proposal nonresponsive.

5.3. Proposal Submittal

Upload Proposals in two (2) separate files to QuestCDN per the below:

1) **Technical Proposal**
2) **Cost proposals**

The Proposal shall be uploaded no later than **11:00 a.m. on Thursday, June 10, 2021** to QuestCDN.com. QuestCDN's clock is the official time. The Districts is not responsible for Internet Service Provider (ISP) transmission interruptions.

https://qap.questcdn.com/qap/projects/prj_browse/ipp_browse_grid.html?projType=all&provider=7047059&group=7047059.

Any Proposals submitted after the above time and date, or to any other person or address will be rejected. Please direct all questions to Ms. Maribeth Tan at btan@lacsd.org. **Last day for questions is Wednesday, May 26, 2021.**

5.4. Solicitation Form

FAILURE TO SIGN AND SUBMIT THIS PAGE WITH PROPOSAL WILL DISQUALIFY YOUR RESPONSE

The Consultant shall identify which general scope(s) of work the firm is agreeing to provide engineering services for by checking the appropriate box(es) below. Failure to identify which scopes(s) are being proposed will disqualify your response.

- ☐ Sewer Rehabilitation and new sewer construction projects
- ☐ Miscellaneous design support tasks, including but not limited to hydraulic modeling and specialized studies/reports

If awarded, the undersigned offers and agrees to furnish the services listed in this RFP at the prices and terms stated, subject to mutually agreed upon terms and conditions. Additionally, the undersigned warrants and represents their authority to bind the firminto an agreement subject to the terms and conditions of this Request for Proposal.

Company Name: ______________________________

Street Address: ______________________________

City, State Zip: ______________________________

Email: ____________________

Telephone: ____________________

By (Authorized Signature): x	Date Signed: x
Print name and title of Authorized Signatory	

ALL SPECIFICATIONS, TERMS, AND CONDITIONS OF THIS PROPOSAL WILL BE INCORPORATED INTO ANY RESULTING AGREEMENT.

6. SOQ REQUIREMENTS

6.1. Cover Letter

The Respondent's SOQ shall include a cover letter of transmittal attesting to its accuracy, signed by an individual authorized to execute binding legal documents on behalf of the proposing firm. The cover letter shall provide the name, address, telephone number of the Respondent along with the name, title, address, telephone number and email address of the executive that has the authority to contract with the Districts.

6.2. General Company/Team Information

The SOQ shall include the ownership, organization, and background of the Respondent.

The following information shall be provided by the respondent:

- Names of partners or officers.
- Name and contact information for the Project Manager who will act as the principal contact person for all Districts' projects. The Project Manager shall be a professional engineer registered in the State of California with no less than ten (10) years of experience in design and/or project management of projects relevant to the Scope of Work in Section 3.
- All names under which the proposing firm has conducted business during the preceding five (5) years.
- Complete organization chart with all key personnel listed, including senior staff responsible for QA/QC. The line of authority and communication for the entire project team shall clearly be shown.
- What portions of the services, if any, will be subcontracted to sub-consultants.

If sub-consultants are proposed, the proposed contractual relationships between the Respondent and sub-consultants shall be outlined in the SOQ. The Respondent shall describe the history of the relationships among team members, including a description of past working relationships.

The Respondent shall recognize that its key employees assigned to this project will be used as a basis for ranking and selecting firms. Therefore, changes to the Respondent's proposed team, including substitution or addition of sub-consultants or key employees, may alter suitability of the project team for project assignments after award of an ESA.

6.3. Qualifications

Respondents to the RFP shall demonstrate their ability by providing the technical qualifications of the Respondent, individual team members, and sub-consultants, if any, relevant to the Scope of Work identified in Section 3. The Districts reserve the right to conduct an independent verification of the Respondent's technical qualifications by contacting project references, accessing public information, or by contacting independent parties. Additional information may be requested during the evaluation of technical qualifications. The Respondent shall provide the following information to demonstrate its technical qualifications:

6.3.1 Company Experience and Past Performance

The Respondent shall provide its experience with designing projects relevant to the proposed Scope of Work identified in Section 3. For each scope area, the Respondent shall provide project descriptions for a minimum of three (3) projects completed in the last ten (10) years within the State of California and/or any other state in the United States of America. For each of the projects identified, provide the following information:

- Name and location of project
- Client (include address and phone number)
- Reference contact of the client
- General description of the referenced project
- General description of the services provided by the respondent
- Status of the project
- Change order rate of the project, as a percentage (total change orders divided by original capital contract amount)
- Key personnel involved with the referenced project with their specific duties including all management personnel
- Applicability and relevance of the referenced project to the services required by the Districts

6.3.2 Key Project Staff Experience

The Respondent shall provide the qualifications of key staff proposed to be assigned to the Districts' project. A brief resume for each key staff member shall be submitted that includes experience relevant to the Scope of Work in Section 3 of this RFP. The same key staff identified in the SOQ shall be used during the assigned design projects. At a minimum, the resumes shall include:

- Staff person's name;
- Labor category;
- Office location;
- Number of years of technical experience;
- Number of years with current firm;
- Areas of expertise and/or experience
- Educational background
- Proposed role in on-call contract

6.3.3 Project Management Method

The Respondent shall provide a narrative describing how the project management would occur within the Respondent's organization. This would include individual staff's roles and responsibilities in various phases of project development, methods of schedule and budget control, QA/QC procedures, etc.

6.3.4 Location of Project Staff

Due to the complexity of the work and the necessity for timely and effective communications during the various phases of the work, the District requires that **ALL** project staff are physically located within the United States of America during the course of the project. Multi-national firms shall not allow work to be performed on the project by staff located outside of the United States of America.

6.3.4.1 Regional Business Enterprise (RBE) Incentive

An RBE is a business that has maintained an office for a minimum of one year within the District's service area and/or the adjacent five counties. Those six counties are as follows: Los Angeles, San Bernardino, Riverside, Orange, San Diego and Ventura. The business must have a business permit or license issued by the local jurisdiction in which it is located. Firms participating as prime Respondents that qualify as an RBE will receive five (5) percentage points toward total scoring points.

6.3.5 Financial Condition

The respondent shall provide full disclosure of information regarding its financial condition and, if applicable, the financial condition of the corporation willing to guarantee the respondent's obligations under the ESA (Project Guarantor). The disclosure shall include a copy of the Respondent's most recent Annual Report. The respondent shall also submit the most current annual financial statement and the financial statements for the two (2) years immediately prior to the current one. Furthermore, the respondent shall identify the number of unpaid judgments against them over $1,000,000 in the past five (5) years. The respondent shall also identify the number of disputed claims over $5,000,000 in the past five (5) years.

7. HOURLY RATES REQUIREMENTS

In a separate electronic file, the Respondent shall submit Hourly Rates for all proposed key project staff. The hourly rate for each classification shall be fully burdened and include all indirect and overhead costs. At a minimum, the rates provided shall include:

- Project Manager
- Registered Civil Engineer
- Registered Structural Engineer
- Registered Mechanical Engineer
- Registered Electrical Engineer
- Design Engineer
- Designer
- Drafter
- Administrative (if applicable)

In addition, the work resulting from the RFP process may involve direct costs (e.g., reproduction, travel, etc.). Direct costs shall be billed at cost plus the selected Consultant's markup. Respondents shall include their proposed markup percentage rates for direct costs with the

Hourly Rates portion of the Proposal. Respondents shall be aware that travel time will not be billable.

Annual cost of living escalators will be allowed for all proposed rates and shall not exceed the Consumer Price Index (CPI) – Los Angeles Region for the preceding year. The rates submitted shall be good through end of June 2022.

8. REVIEW AND EVALUATION OF PROPOSALS

8.1. SOQ

The Districts will evaluate SOQs submitted by the firms in response to this RFP and select a limited number of the most qualified Respondents to be placed on an on-call list to provide engineering services. The following table represents the evaluation criteria and weighted percentage (%) points that will be considered during the evaluation process. Each SOQ will be competitively evaluated on its relative strengths and weaknesses against the following criteria listed below and as described in Section 6:

Evaluation Criteria	Weights
Company Qualifications and Record of Past Performance	35%
Key Personnel and Staff	35%
Project Management Method	10%
Financial Condition of Company(s)	10%
Ability to self-perform all services listed in Section 3	5%
RBE per Section 6.3.4.1	5%
Total	**100%**

8.2. Hourly Rates

Hourly Rates will be reviewed after the SOQs have been review and ranked. The Hourly Rates submitted shall be used to negotiate the fair and reasonable costs for the services. If the Districts are unable to reach an agreement with one or more of the top ranked Respondents, the Districts will terminate negotiations and negotiate with the next highest-ranked Respondent.

8.3. Districts Rights and Options

The Districts, at their sole discretion, reserve the following rights:

- To determine which responsible Respondents, if any, shall be included in the on-call list resulting from this RFP;
- To reject any, or all, Proposal or information received pursuant to this RFP;
- To supplement, amend, substitute or otherwise modify this RFP at any time by means of a written addendum;

- To cancel this RFP with or without the substitution of another RFP or prequalification process;
- To request additional information;
- To verify the qualifications and experience of each respondent;
- To take any action affecting the RFP, the RFP process, or the services or facilities subject to this RFP that would be in the best interests of the Districts;
- To require one (1) or more Respondents to supplement, clarify or provide additional information in order for the Districts to evaluate the SOQs and Hourly Rates submitted; and
- To waive any minor defect or technicality in any SOQ received.

9. TERMS AND CONDITIONS

A) General Contract Conditions

This RFP shall serve as a binding technical and contract document that outlines and prescribes the terms and conditions of the on-call services, and how administrative tasks are to be performed. The Districts' ESA, this RFP, each TAF and subsequent written amendments thereto, and all parts of the Consultants' Proposal and written amendments thereto that are accepted in writing by the Districts shall constitute the sole and exclusive ESA between the Consultant and the Districts. No verbal modifications to the ESA are allowed or recognized. **The Districts do not recognize, or sign contract documents proposed by Consultants.**

B) RFP Headings and Format

The section headings and captions of this RFP are for the sole convenience of the parties. The section headings, captions and arrangement of this RFP do not in any way affect, limit, amplify, or modify the terms and provisions of this RFP. The singular form shall include plural, and vice versa. The RFP shall not be construed as if it had been prepared by one of the parties, but rather as if both parties had prepared it. Any provision thereof that is found court of proper jurisdiction to be ambiguous or inconsistent, either internally or in relation to other provisions contained herein, shall be construed in accordance with a fair and ordinary meaning so as to effectuate the intent of the parties to this RFP and subsequent ESA. Unless otherwise indicated, all references to sections are to this RFP. All exhibits referred to in this RFP are attached to it and incorporated in it by reference. The preamble and all recitals to this RFP are also incorporated herein.

C) Changes in Schedule or Scope of Work

After issuance of a TAF, the Districts reserve the right to change the scope of work at any time during the project. Changes in work scope could include elimination, reduction, or addition of optional or non-optional work tasks. If the Districts want the Consultant to perform work that is not within the scope of services described in the TAF, the Districts shall direct the Consultant to perform such work in writing as an amendment to the TAF. Prior to the performance of any such work requested by the Districts, the Consultant shall provide the Sanitation Districts with a written notification to the Districts detailing the Consultant's understanding of the change in scope and how the Consultant's proposal and/or current project would be affected.

A change in the scope of services is defined as either an increase or decrease in the number of hours beyond the estimated labor hours for an individual(s) working on a task or sub-task or the total number of hours for any given work task or sub-task identified in the TAF, or a change in the individual(s) hourly wages as identified in the Consultant's proposal; and, any outside direct or indirect costs or services). A change in the scope of services also is defined as a change in the Consultant's schedule (either the total estimated time to conduct work, or time for any identified task or sub-task) from the schedule provided in the Consultants TAF.

The Consultant may identify that a change in the scope of services identified in a TAF requires a change, which shall be defined as follows; either a change in the scope of services of an individual sub-task or a major task item; a change in the costs of labor, direct or indirect costs of an individual work task item or major task; or, a change in the proposed schedule of work or deliverables due to the Districts. Should any such change in the scope of services occurs, the Consultant is required to immediately notify the Districts both verbally and in writing. The Consultant shall not proceed with any work activity on this change, or incur any costs or expenses related to the change until the Consultant has identified the nature of the change, the Districts have agreed in writing to the amendment to the TAF conditions, and have issued a formal notice to proceed with such change as agreed. In a separate "stand-alone" letter to the Districts' Project Manager, the Consultant shall state the nature of the out-of-scope work, the proposed cost to perform the out-of-scope work, and any changes to the project schedule from the performance and from the nonperformance of such work. The "stand-alone" letter shall be uniquely identified with a Subject Header in Bold Font Type stating "NOTIFICATION OF CHANGE IN SCOPE". The "stand-alone" letter shall not be combined or concealed with any other form of transmittal, including but not limited to required project transmittal letters, progress letters, reports, drafts, emails or invoices. If the Consultant performs any out-of-scope work without the prior written approval from the Districts' Project Manager, or has not submitted his change in the scope of services in the form as previously identified in this section, the Consultant shall have de facto waived its rights to compensation for performing any such work. The Consultant shall not perform any out-of-scope work without the prior written approval of the Districts.

D) Invoicing and Payment

To allow for regular, continuous budget management, the Consultant shall submit invoices on at least a quarterly basis to invoices@lacsd.org detailing time used, and expenses incurred during completion of each tasks. For each task, each invoice shall include columns totaling (1) current monthly expenses, (2) previously billed expenses, (3) total billed to date, (4) proposed task budget, (5) remaining budget, (6) percent completion for each task, and (7) percent of budget remaining on each task and for the total budget. Failure to submit quarterly invoices may result in delayed and partial payments.

Each quarterly invoice shall detail labor charges, charges for subcontractors' services, and other direct costs. All charges shall be broken down and listed on a per-task basis. Each invoice for any particular month shall list in detail all charges incurred for each specific project and task performed during that quarter.

The Consultant shall expect to be paid on a time and material basis with a not-to-exceed budget for each task. Under the category of labor charges, each invoice shall list the name and project title of each team member who worked on each individual project task during the month that is being invoiced. The number of labor hours worked by each named employee of the Consultant's firm on each individual task and the wage and billing rates per hour for each named employee shall be listed in the invoice. Names, titles (i.e. John Doe, Project Manager, etc.) and labor hours shall be in accordance with the TAF.

Personnel billing rates in accordance with the Consultant's Cost Proposal may be escalated in subsequent years for the duration of the project. Annual percent increases to hourly wages only will be implemented July of every year during the contract based upon the increase in the Consumer Price Index (C.P.I.) for All Urban Consumers for the Los Angeles - Long Beach – Anaheim area using the 1982-84 = 100 base for March to March, according to the following chart:

Increase in C.P.I.	Percent Salary Increase
>0 - 3.0%	3.00%
3.0 - 9.0%	3.00% plus 66 $^{2}/_{3}$% of the increase
from 3.0% to 9.0% in the C.P.I.	
9.0 - 12.0%	7.00% plus 50% of the increase
from 9.0% to 12.0% in the C.P.I.	
12.0 and above	8.50%

A decrease in the C.P.I. will result in no hourly wage increase. A C.P.I. of zero will result in no hourly wage increase.

The Consultant shall be held liable for the output and conduct of their own and of subcontracted personnel, and for lost time or additional personnel-hours and associated costs incurred due to the actions of the Consultant's personnel, subcontracted personnel, the use of inadequate equipment, or for equipment failure. Disputed items of work shall not be paid until resolved. The Districts shall hold these items in abeyance. The Districts' Project Manager shall authorize payments as soon as each invoice has been reviewed and verified, not to exceed thirty days from the date of receipt of the invoice.

The budget for each task shall be tracked and managed separately from the budgets for all of the other tasks. If the Consultant believes that it may not be able to complete the required scope of work for any task within the respective budget for that task, the Consultant shall immediately notify the Districts. Any task that is authorized in writing to be over budget by the Districts shall be denoted as such in the monthly invoices. <u>The invoice shall clearly show the total percentage of completion for each activity; the total amount expended for each activity; the summation of the total amount expended for all activities; the total amount paid as of the date of the invoice; and the total amount due on this invoice.</u>

The invoice(s) shall not include a <u>change in the scope of services</u> as identified in Section C. Changes in the scope of services that have been approved and authorized in writing may be invoiced under a separate, stand-alone invoice in the format previously identified above.

E) Severability

If any term or provision of this RFP and subsequent ESA shall, to any extent, be held invalid or unenforceable, the remainder of this contract shall not be affected.

F) Insurance Requirements

The Consultant shall defend, indemnify and hold free and harmless the Districts, its officers, agents, and employees from and against any and all claims, demands, actions, loss or liability, arising out of negligent errors, omissions or acts of the Consultant or its subcontractors in performing the Consultants obligations herein. This indemnity shall extend to the payment of all costs of litigation including reasonable attorney's fees with respect to any cause of action referred to above.

The Consultant shall secure and maintain until the completion of the on-call services such insurance as shall protect it and the Districts in such a manner and at such amounts as set forth below. The Consultant shall pay the premiums for said insurance coverage.

The Consultant shall furnish to the Districts, certificates of insurance and endorsements verifying the insurance coverage as required by this RFP. These certificates of insurance and endorsements shall be delivered to the Districts within seven (7) days after the Sanitation Districts have awarded an ESA. The Districts reserves the right to require complete and accurate copies of all insurance policies required by this RFP. Coverage provided by Consultant's policies shall be primary coverage. The Districts shall receive thirty (30) days prior written notice of a policy cancellation or reduction in coverage. Insurers shall have at least an "A" policyholders rating and "X" financial rating in accordance with the current Best's Key Rating Guide. The insurance provided under the ESA shall include policies providing coverage to include each of the requirements set forth below in amounts that meet or exceed the minimums set forth herein. The Consultant shall provide insurance coverage through insurers, which meet the following terms:

G) Insurance Coverage

a) General Liability

The Consultant shall maintain General Liability Insurance with an endorsement naming the "Los Angeles County Sanitation Districts" and the applicable property owner(s), to be identified later, as additional insured and a standard cross liability clause or endorsement. The limit of insurance shall not be less than $3,000,000 per occurrence.

b) Automobile Liability

The Consultant shall maintain automobile liability insurance with coverage for any vehicle including those owned, leased, rented or borrowed. The limit amount for this insurance shall be not less than $1,000,000 per occurrence combined single limit.

c) Professional Liability

The Consultant shall maintain professional liability insurance with coverage for wrongful acts, errors, or omissions committed by Consultant in the course of work performed for the Districts under this ESA. This insurance shall include coverage for liability assumed under this ESA when such liability is caused by Consultant's negligent acts, errors, or omissions. The limit for this insurance shall be not less than $1,000,000 per occurrence. The effective dates for this insurance shall start within seven (7) calendar days after the Districts' Board of Directors approves award of an ESA and shall be valid for five (5) calendar years after completion of a TAF subject to this ESA.

d) Workers' Compensation

The Consultant shall maintain Workers' Compensation Insurance as required by law in the State of California and Employer's Liability Insurance (including disease coverage) in an amount not less than $1,000,000 per occurrence. This insurance shall also waive all right to subrogation against the Districts, its employees, representatives and agents.

H) Protection of Property and Existing Facilities

The Consultant shall be held responsible for the preservation of all public and private property on and adjacent to the working areas and shall be required to exercise due caution to avoid and prevent any damage, injury, or nuisance thereto because of this operation.

Should any direct or indirect damage, injury, or nuisance result to any public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or as a consequence of the non-execution thereof, on the part of the Consultant or any of his employees or agents, such property shall be restored by, and at the expense of, the Consultant. The degree of restoration or recompense shall be, at a minimum, equivalent to restore existing conditions before the damage, injury, or nuisance occurred.

I) Cooperation with Others

The Consultant is cautioned that other Consultants or Contractors may be on the job sites at times during this contract. The Consultant shall not willfully or unnecessarily interfere with any ongoing operations, or with Districts' Contractors or other forces engaged in site maintenance or repairs, nor with any other Consultant or Contractor engaged in work for the Districts.

The Consultant shall observe all site speed limits and shall follow safe driving habits.

J) Clean-Up

The Consultant shall remove from the work and storage areas all debris incidentals to his investigation and work. All refuse and debris shall be disposed of at the nearest appropriately permitted disposal facility. The work and storage areas shall be restored to their original condition to the satisfaction of the Districts. At the end of each working day, the Consultant shall ensure that all soil and water generated during the day as well as all supplies incidental to the daily operation shall be properly stored. This daily clean-up is to be completed during the normal working hours, and the Consultant must allow adequate time to complete a proper cleanup of the site during the defined working hours.

K) Interaction with the Public

All persons employed by the Consultant shall display good conduct and maintain a high degree of professionalism. Any questions received by the public regarding the nature of this project should be forwarded to the Districts project personnel.

L) Proposal Requirement Conformance

In submitting a response to this RFP and a subsequent TAF, the Consultant is deemed to understand and agree to the full measure of work specified therein. The Consultant further understands that all services therein shall be provided whether or not a service was specifically responded to in the Consultant's Proposal or TAF. It is further understood that all costs in providing the services specified herein shall be borne by the Consultant. Costs involved in providing a service therein specified shall not be considered as work claims, subject to additional reimbursement unless specifically authorized by the Districts in writing.

M) Damage to Equipment

The Consultant shall be fully responsible for the condition of and proper maintenance and operation of equipment appropriate for this investigation and the site conditions and shall neither have nor make any claim for damage that may occur to equipment as a result of the requirements of this investigation.

N) Electronic Format Submittal Requirements

The RFP shall be in PDF text-searchable format (Adobe Acrobat latest version). It is preferred that all documents be transferred to the PDF format from its native application. If this is not possible, then the documents shall be scanned in a PDF format.

The file size must not exceed 75MB. If a chapter or section is too large to achieve a file size that does not exceed 75MB, a chapter/section may be logically divided with each division being a separate file.

All material shall be scanned at a minimum resolution of 300 dpi. For color text, charts, drawings, graphs, and/or photographs, the scanned image shall be in color. For black and white text, charts, drawings, graphs, and/or photographs, the images shall be scanned in black and white unless a particular item requires a grey scale for a superior quality image. Gray scale shall never be used for the entire document.

All scanning shall conform with the following ANSI/AIIM standards: ANSI/AIIM MS44-1988 (R1933), Recommended Practice for Quality Control of Image Scanners, and AIIM TR38-1996, Compilation of Test Targets for Document Imaging Systems.

O) Termination

The Districts shall have the right to terminate the ESA without cause upon its giving the Consultant thirty (30) days advance written notice of its election to do so. The ESA may be terminated by either party hereto upon thirty (30) days advance written notice to the other party hereto in the event of substantial failure by said other party to perform in accordance with the terms of the ESA through no fault of the terminating party. No such termination for cause shall be effected unless the other party is given: (1) not less than ten (10) calendar days written notice (delivered by certified mail return receipt requested) of intent to terminate; and, (2) an opportunity for consultation with the terminating party before the said thirty (30) days' notice. Late payment by the Districts of approved invoices shall not constitute a substantial failure to perform unless the Districts has received written notification of overdue payment and payment is not made within fourteen (14) days after receipt of such notification. Consultant agrees not to terminate due to delays of up to one (1) year caused by the Districts. However, in the event of delays in excess of six (6) months, caused by other than the Consultant, the Consultant's compensation and schedule for performance shall be subject to renegotiation.

In the event of termination by the Districts without cause, the Consultant shall cease all work and the District will compensate the Consultant for all agreed upon services performed and costs incurred up to the effective date of termination for which the Consultant has not been previously compensated. The Consultant shall be entitled to payment of all costs incurred to the date of termination and that portion of the fees prorated to the date of termination based on the percentage of the total hours and work completed as approved by the Districts.

In the event of termination for cause, the rights and obligations of the parties shall be determined in accordance with applicable principles of law and equity. Upon receipt of notice of termination from the Districts, the Consultant shall promptly stop its services, unless otherwise directed, and deliver to the Districts all data, drawings, reports, estimates, engineering calculations, summaries and such other information and materials as may have been accumulated by the Consultant in the performance of any TAF associated with this ESA whether completed or in progress. Any use by the Districts of incomplete information and materials shall be at the sole risk of the Districts.

P) Non-Disclosure Agreement

The Consultant shall not divulge to any third party, without the prior written consent of the Districts, any information developed or obtained through the Districts, in connection with the performance of this RFP unless: a) the information is known to the Consultant prior to obtaining the same from the Districts; b) the information is, at the time of disclosure by the Consultant, then in the public domain; or c) the information is obtained by the Consultant from a third party that did not receive the same, directly or indirectly, from the Districts.

Q) Ownership of Documents

All reports as well as original reports, plans, studies, memoranda, computation sheets, survey data, computer hardware or software developed or purchased specifically for the work under this RFP, and other documents assembled or prepared by the Consultant, or furnished to the Consultant in connection with this RFP shall be the property of the Districts. Copies of said documents may be retained by the Consultant but shall not be made available by the Consultant to any individual or organization without the prior written approval of Districts. Any reuse of said documents on an extension of a project or on any other project by the Districts without written verification or adaptation by the Consultant for the specific purpose intended shall be at Districts' sole risk and without liability or legal exposure to the Consultant, and the Districts shall indemnify and hold the Consultant harmless from all claims, damages, losses and expenses including attorney's fees, arising out of or resulting from any such reuse by the Districts. Any preliminary or working drafts, notes, or inter-agency or intra-agency memoranda which are not expected to be retained by the Consultant or the Sanitation Districts in the ordinary course of business shall be exempt from disclosure to any public entity under provisions of the Public Records Act.

R) Access to Work and Records

Representatives of the Districts shall be allowed access to the work whenever it is in preparation or in progress. The Consultant shall provide proper facilities for such access and inspection.

The Districts, or any authorized representatives of the Districts, shall have access to any books, documents, papers, and records of the Consultant that are pertinent to the Project for the purpose of making audit, examination, excerpts, and transcriptions.

The Consultant shall maintain and make available for reasonable inspection by the Districts accurate detailed records of its costs, disbursements and receipts with respect to items forming any part of the basis for billings to the Districts. Such inspections may be made during regular office hours at any time until one (1) year after the final payment under this ESA is made.

S) Notices

All notices or other communications to either party by the other shall be deemed given when made in writing and delivered or mailed (not e-mailed) to such party at their respective addresses as follows:

County Sanitation Districts of Los Angeles County
1955 Workman Mill Road
Whittier, California 90601
ATTN: Mr. Anthony Howard, Division Engineer
Sewer Design Section

Consultant's Name
Consultant's Address
ATTN: Consultant's Point of Contact

Either party may change its address or representative for such purpose by giving notice thereof to the other in the same manner.

T) Litigation

Should litigation be necessary to enforce any term or provision of this ESA, or to collect any portion of the amount payable under this ESA, then the prevailing party shall be entitled to recover reasonable attorney's fees in addition to any other relief to which the prevailing party would otherwise be entitled.

U) Compliance

The selected Consultant shall abide by and obey all applicable Federal, State, and local laws, rules, regulations and ordinances.

V) Governing Laws and Requirements

Performance of services herein shall be governed and construed in accordance with the laws of the State of California. The selected Consultant hereby agrees that in any action relative to the performance of said services, venue shall be in the County of Los Angeles, State of California.

W) Confidentiality

The Consultant and its Project team shall not release information or documentation associated with work under this RFP to anyone outside the Sanitation Districts without the express written consent of the Districts.

ATTACHMENTS

ATTACHMENT A

SAMPLE - TASK AUTHORIZATION FORM (TAF)
LOS ANGELES COUNTY SANITATION DISTRICTS
BLANKET ORDER NO. ###
(Consultant Name)

COMPLETED BY DISTRICT:

TAF No. ### **Project Title**	**(Consultant Name)** **Proposal No.: ###**
District's Project/Task Number	**####### / ##-##-##**

District's Project Contact Information			
Title	Name	email	Phone No.
Districts Project Manager	Name	name@lacsd.org	(562)908-4288 x ####
Districts Project Engineer/Task Leader	Name	name@lacsd.org	(562)908-4288 x ####

TASK DESCRIPTION/PURPOSE: The District has requested a proposal to
SCOPE OF WORK:
MATERIALS PROVIDED BY DISTRICTS:
DELIVERABLES FROM CONSULTANT:

COMPLETED BY CONSULTANT

(Consultant's Name) Project Contact Information			
Title	Name	email	Phone No.
Project Manager	Name		(###) ###-#### x ####
Project Engineer/Task Leader	Name		(###) ###-#### x ####
Project Engineer	Name		(###) ###-#### x ####
Project Designer	Name		(###) ###-#### x ####
Subconsultant 1	Name		(###) ###-#### x ####
Subconsultant 2	Name		(###) ###-#### x ####

PROPOSED TASKS AND DELIVERABLES:

Consultant will complete the following tasks and provide associated deliverables:

SCHEDULE FOR COMPLETION OF TASK:

Consultant will begin work upon receiving notice to proceed. Anticipated completion dates for completing above listed tasks and providing associated deliverables:

TOTAL ESTIMATED COST TO COMPLETE TASK:

Consultant will perform the tasks described above on a time-and-materials basis in accordance with the 2020 Professional Fee Schedule from our on-call contract with the District, as amended. (Note that work outside standard working hours (e.g. nights and/or weekends) will only be charged at increased labor rates if preauthorized by the District's Project Manager.)

Consultant Lead Assignments and Hourly Rates:

Project Manager .... $XXX

Senior Engineer .... $XXX

Project Engineer .... $XXX

Professional Staff .... $XXX

Technician .... $XXX

CADD Operator .... $XXX

Word Processor .... $XXX

Total Hours:

Project Manager .... XX **hrs**

Senior Engineer.. XX **hrs**

Project Engineer .... XX **hrs**

Professional Staff .... XX **hrs**

Technician.. XX **hrs**

CADD Operator .... XX **hrs**

Word Processor .... XX **hrs**

Estimated costs for the corresponding scope items; summarized below.

Consultant Labor:	$XXX
Consultant Expenses:	$XXX
Subcontractor Costs:	$XXX
Total:	$XXX

ATTACHMENT B

LOS ANGELES COUNTY SANITATION DISTRICTS
Converting Waste Into Resources

RFP No. 03956

ON-CALL ENGINEERING SERVICES

NON-COLLUSION DECLARATION
(Public Contract Code §7106)

I,____, declare, as follows:

I am the____________________________of

___________________________________,the party making the attached bid.

I know of my own personal knowledge and declare under penalty of perjury, that the attached bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone will refrain from bidding; that the bidder has not in any manner, directly or indirectly sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted its bid price or any breakdown of the bid price, or the contents of his bid, or divulged information or data relative to its bid, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent of any such corporation, partnership, company, association, organization, or bid depository to effectuate a collusive or sham bid.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

____
(Date)

____
(Location)

____
(Signature of Bidder)

LOS ANGELES COUNTY SANITATION DISTRICTS
Converting Waste Into Resources

Robert C. Ferrante
Chief Engineer and General Manager

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
(562) 699-7411 • www.lacsd.org

May 28, 2021
RFP No.: 03956

ADDENDUM NO. ONE

RFP 03956 – ON-CALL ENGINEERING SERVICES, dated May 7, 2021.

PART 1
GENERAL INFORMATION – CHANGES AND REVISIONS

1. Section 9. Terms and Conditions

INSERT: X) Prevailing Wages
Pursuant to applicable provisions of the Labor Code of the State of California, not less than the general prevailing rate of per diem wages and not less than the general prevailing rate of per diem wages for legal holiday and overtime work, for each craft or type of workman needed to execute the work contemplated under this agreement, as ascertained by the Director of the Department of Industrial Relations, shall be paid to all workmen performing field work on said work by the Consultant or by any subcontractor doing or contracting to do any part of said work.

A copy of the listing of the general prevailing wage rates may be obtained from the State of California Department of Industrial Relations, Office of Policy, Research, and Legislation, P.O. Box 420603, San Francisco, California, 94142-0603, or by visiting their website at www.dir.ca.gov.

2. Section 2. CONTRACT DETAILS AND ASSIGNMENT OF WORK; first paragraph, second sentence add the following to the end:

INSERT: (see Attachment C for a sample ESA)

3. Attachments

INSERT: ATTACHMENT C: SAMPLE ENGINEERING SERVICES AGREEMENT ESA

PART 2
GENERAL INFORMATION – QUESTIONS AND CLARIFICATION

The following questions were received by the Districts' and below are the answers.

1. **QUESTION:** RFP Section 1 states "preference will be given to Respondents that can provide the design services using their own forces". Section 4.1.4 states "District may provide the geotechnical and/or survey or other service providers". Is LACSD expecting firms to propose Geotechnical,

Surveying and other field services in their response? Would a proposal not be given preference if subs are proposed for these roles?

ANSWER: *Preference to Respondents that can provide the design services using their own forces is referring to the design engineers/managers such as Civil Mechanical, Electrical, and Structural engineers that will be working on the projects and the designers/drafters that will be preparing the plans. Necessary field work such as survey and geotechnical investigations (i.e. performing exploratory borings) does not need to be performed by each consultant's in-house staff; sub-consultants for the field work will be acceptable. It is not necessary to propose the firms but would like to know in the proposal if such subconsultants will be utilized if necessary and would like to know the Respondents ability to obtain these services in a timely manner. The Districts have obtained On-Call Survey Consultants and have On-Call Geotechnical Consultants (managed by our Structural Design Section) and in some cases, the Districts may require the use of these services; however the Districts would like the flexibility of using these services or the Consultant's (subconsultant's) services if necessary.*

2. **QUESTION:** Regarding Section 4.1.5, can LACSD provide the "sewer area study" procedure? Is there a need to have flow monitoring capabilities or other flow monitoring field service folks to complete a study?

   ANSWER: *If an area study is required for a particular project, the Districts will provide the procedures and guidance as necessary. Alternatively, the District's may provide the design flows. The District's Wastewater Collection System have flow monitoring at some locations and flow monitoring can be requested if necessary; however, some special projects may require flow monitoring field service to complete a study and the Consultants can propose flow monitoring field service if required; subconsultants will be allowed for this work.*

3. **QUESTION:** CCTV subconsultant –Should we include this on our team, or will the Districts be handling this through a separate contract?

   ANSWER: *As stated in Section 4.1.6 of the RFP for CCTV Inspection Review – The Districts will provide access to CCTV inspection records for the existing sewer and therefore, a CCTV subconsultant is not necessary.*

4. **QUESTION:** Potholing - Should we include this on our team, or will the Districts be handling this through a separate contract?

   ANSWER: *No, potholing if required for a specific project/task will be handled using District's potholing contractors.*

5. **QUESTION:** RFP Section 6.3.5 – We are a private corporation and do not have an annual report to disclose, but we are able to provide financial statements for the prior years as requested. Will that be acceptable?

   ANSWER: *Providing financial statements for prior years in lieu of an annual report to determine the respondent's financial condition is acceptable.*

6. **QUESTION:** RFP Section 6.3.5 – Will the LA County Sanitation Districts accept the financial statements as a separate (3rd) electronic document listed as "Confidential and Proprietary"?

   ANSWER: *The Districts will accept the submission of the financial statements as a separate electronic document listed as "Confidential and Proprietary".*

7. **QUESTION:** RFP Page 1 – The RFP states that "The District has established an aspirational goal of 20 percent overall participation by such firms." Is there a DBE goal requirement?

   ANSWER: *The 20 percent aspirational goal refers to overall participation in all members of the community including Minority Business Enterprises (MBE), Women Business Enterprises (WBE), Disadvantaged Business Enterprises (DBE), Disabled Veterans Business Enterprises (DVBE) and Small Business Enterprises (SBE). This overall goal includes DBE and is not a specific goal requirement. As stated in the RFP, participation is encouraged but award of a contract is not based on race, gender, disabled, disadvantaged or small business status. Evaluation Criteria is referenced in Section 8 of the RFP.*

8. **QUESTION:** RFP Section 7 – In the cost proposal, is the respondent expected to assign an hourly rate to each specific key individual and list their names, or is it acceptable to simply assign hourly rates to each labor classification?

   ANSWER: *In the cost proposal, the respondent is not expected to list specific names; it is acceptable to assign hourly rates to the classification (i.e. Project Manager, Civil Engineer, Designer, etc.).*

9. **QUESTION:** Is a draft Engineering Services Agreement (ESA) is available for review?

   ANSWER: *See Attachment C: Sample Engineering Services Agreement ESA, attached hereto.*

All other items remain the same.

Very truly yours,

Maribeth Tan

Maribeth Tan
Senior Buyer

BT:ee
Attachment: ATTACHMENT C: SAMPLE ENGINEERING SERVICES AGREEMENT ESA

ATTACHMENT C

ENGINEERING SERVICES AGREEMENT

This Engineering Services Agreement ("Agreement") is dated __________ ("Effective Date") and is between District No. 2, a county sanitation district organized and existing under the County Sanitation District Act, Health and Safety Code Section 4700 *et seq.*, (the "District") and <Consultant> ("Engineer"). The District and the Engineer are collectively referred to in this Agreement as the "Parties."

The District requested proposals for consulting firms to provide engineering services on an on-call basis for various existing and future projects (the "Project"). Engineer's proposal to provide such services under this Agreement is set forth in Exhibit "A" to this Agreement (the "Proposal"). The services to be provided by Engineer pursuant to the Proposal are set forth in the District's Request for Proposals ("RFP") for the Project (Exhibit "B" to this Agreement) and constitute the "Work."

The Parties therefore agree as follows:

1. Agreement

The RFP and the Proposal are incorporated into this Agreement. In the event that there is any conflict or inconsistency between the provisions of the RFP, the Proposal and/or this Agreement, the provisions of this Agreement will prevail.

This Agreement may be executed in any number of counterparts and all such counterparts shall constitute a single instrument. Delivery of an executed counterpart by facsimile or electronic transmission (in .pdf format or other electronic imaging) shall have the same force and effect as delivery of an original counterpart.

2. Engineer's Services

2.1 Scope of Services by Engineer. The Engineer shall provide engineering services as described in this Agreement. In performance of the Work, Engineer shall comply with all applicable Federal, State and local laws, rules, regulations, ordinances, and industry practices.

2.2 Engineer's Standard of Care. The standard of care applicable to Engineer's Work under the Agreement will be the degree of skill and diligence ordinarily employed by engineers performing the same or similar services, under the same or similar circumstances, in the State of California. The Engineer shall re-perform any Work not meeting this standard without additional compensation.

2.3 Engineer's Estimates and Projections. Engineer's opinions regarding the potential cost, financial analyses, economic feasibility projections, and schedules for potential future construction of the project are projections only and do not reflect: the ultimate cost or price of labor and material; unknown or latent conditions of existing equipment or structures that may affect operation and maintenance costs; competitive bidding procedures and market conditions; time or quality of performance of third parties; quality, type, management, or direction of operating personnel; and other economic and operational factors that may materially affect the ultimate project cost or schedule. Engineer does not warrant that the District's actual project costs, financial aspects, economic feasibility, or schedules will not vary from Engineer's opinions, analyses, projections, or estimates, but Engineer shall provide such projections in accordance with the standard of care set forth in Section 2.2 of this Agreement.

3. District's Obligations

3.1 District-Provided Information and Services. The District shall furnish the Engineer available drawings, studies, reports and other data pertinent to Engineer's services and obtain or authorize Engineer to obtain additional reports and data as required. The Engineer is entitled to use and rely upon all such information and services provided by the District or others in performing Engineer's services under the Agreement except as otherwise stated by the District in connection with the information and services provided.

3.2 **Access**. The District shall arrange for access to and make all provisions for Engineer to enter upon public and private property as required for Engineer to perform services hereunder. Engineer shall comply with all applicable laws and with the District's requirements for persons on the District's premises.

4. Compensation and Payment for Engineering Services

4.1 **Engineer's Compensation**: The Task Authorization Form (TAF) system shall be used to issue the Work under this Agreement. When engineering services are required, Engineer will be presented with the project scope and will be asked to prepare a detailed Project Plan indicating the Project Manager, key personnel, and the time and expenses required to complete the Work. Once the Project Plan is approved by the District, the Engineer will be issued a TAF that details the agreed-upon scope, budget, schedule, deliverables and associated progress payments. The compensation payable by the District for the engineering services performed by the Engineer shall be per the final signed TAF for the Work. The total not-to-exceed budget for all Work performed by the Engineer is $1,000,000. The breakdown of expenses for each TAF shall be as follows.

a. **Direct Costs.** Direct Costs will be the hourly rates paid by the Engineer to its employees for time directly chargeable to the Project, exclusive of the costs for fringe benefits for those employees and other payroll costs. Engineer shall ensure that its employees maintain accurate records of the time chargeable to the Project.

b. **Overhead Costs.** Overhead Costs will be all business expenses allocated by the Engineer for rendering engineering services for the Project, including the fringe benefits for the employees who will be utilized on the Project. The Engineer's overhead cost will be charged to the District as a fixed percentage of the Direct Costs.

c. **Indirect Costs.** Indirect Costs will be all other identifiable costs of the Engineer directly chargeable to the Project, including, but not limited to, reproduction of reports, plans, specifications and other documents; preparation for meetings; travel costs; computer services; supplies used in the work; and communication expenses, that are necessary for the Engineer to fulfill its responsibilities for the Project.

d. **Subconsultant Costs.** Subconsultant Costs will be the costs paid by the Engineer to Subconsultants for providing services as required to assist the Engineer in the design and preparation of the deliverables for this Project.

e. **Fixed Fee.** The Fixed Fee shall be the profit of the Consultant and shall be a fixed percentage of the direct and overhead cost for each component of the Project.

4.2 **Payment to Engineer**. Engineer shall be compensated in accordance with Section 9 (D) of the RFP.

5. Duration, Schedule and Delay

5.1 **Duration**. Engineer's performance of the Work shall commence on the date identified in the District's Notice to Proceed. Engineer shall complete the Work in accordance with the agreed-upon schedule defined in each TAF (TAF Project Schedule).

5.2 **Delay**. The Engineer shall perform its services with due diligence and agrees to use its best efforts to complete the work involved in the Project in accordance with the TAF Project Schedule. The Engineer shall immediately advise the District of any delay in the TAF Project Schedule resulting from causes within or beyond its control. In the event of any such delay by causes within the Engineer's control, the Engineer shall promptly outline and implement appropriate actions required to overcome such delay, including, but not limited to, one or more of the following:

- Assignment of additional personnel to the Project;

- Utilization of overtime at no increase in compensation by the District; and
- Change in management structure or approach.

The foregoing is not intended to relieve the Engineer of responsibility for delay for which it would be responsible under this Agreement.

In the event of delay by causes beyond its control, the Engineer shall promptly provide the District with written notice of the delay and take all reasonable action to mitigate the effect of such delay. If the delay is beyond Engineer's control and without its fault or negligence, the time for the performance of its services may be equitably adjusted by written amendment subject to the District's approval of the extent of such delay. If the District determines that the Engineer has suffered additional costs that could not reasonably have been avoided, the District will compensate the Engineer for those additional costs.

Neither of the Parties will be responsible for delays in the performance of their obligations hereunder caused by strikes, action of the elements, acts and/or decisions of any governmental agency or by third parties, other than either Parties' consultants or subconsultants, which could not reasonably have been foreseen, or by civil disturbances, or any other cause beyond its reasonable control. Engineer will not be responsible for any delay by the District in supplying information and reviewing submittals by the Engineer.

6. Changes and Extra Work

The District may make changes within the general scope of this Agreement and may request the Engineer to perform additional services not covered by the original scope of work defined in a TAF. If the Engineer believes that any proposed change or direction given by the District causes an increase or decrease in the cost and/or the time required for the performance of the Work defined in a TAF or this Agreement, the Engineer shall so notify the District no later than five days after the date of receiving notification of a proposed change or the changed direction. The Engineer shall perform such services and will be paid for such services pursuant to a negotiated and mutually agreed change order signed by the Parties to this Agreement. If the Engineer determines that any work beyond the Work is necessary for completion of the Project, the Engineer shall notify the District and receive written approval prior to starting that work. If the Parties do not agree whether the Engineer is entitled to additional compensation or the extent of such compensation for work the Engineer determines is extra or changed work, the Engineer shall proceed with the work and the issue of the compensation shall be reserved for later determination as provided in Section 9 of this Agreement.

7. Personnel Assignment

Engineer agrees to utilize the key personnel as submitted to the District in its Project Plan, including its Project Manager. The Project Manager will be the primary contact for the District and should have a thorough knowledge of all aspects of the Project and its status. During the term of this Agreement, no replacement of the Project Manager or any of the key personnel of Engineer's Project team or its sub-consultants may be made without the written approval of the District, which approval will not be unreasonably withheld. Nothing in this Section is intended to or may be construed to prevent Engineer from employing or hiring as many employees as Engineer deems necessary for the proper and efficient performance of its services.

The District may request a change in the assignment of the key personnel. Engineer shall change key personnel to the satisfaction of the District within 30 days following written direction to change by the District.

8. Notices

All notices or other communications regarding this Agreement to either party by the other shall be deemed given when made in writing and delivered or mailed (not e-mailed) to such party at their respective addresses as follows:

Los Angeles County Sanitation Districts
1955 Workman Mill Road
Whittier, California 90601
ATTN: Samuel Espinoza

<Consultant>
<Mailing Address>
<City, State, Zip Code>
ATTN: <Project Manager>

Either party may change its address or representative for such purpose by giving notice thereof to the other in the same manner.

9. Governing Law, Dispute Resolution and Litigation

Engineer's performance of this Agreement shall be governed and construed in accordance with the laws of the State of California. Except as provided with respect to termination in Section 9 (O) of the RFP, if any dispute arises between the Parties with respect to the Work, compensation for the Work, or any other matter with respect to this Agreement, the Parties shall, if both agree, submit the matter to non-binding mediation. If the mediation does not resolve the dispute, the dispute shall be resolved through litigation. Venue for any action relating to this Agreement will be in the County of Los Angeles, State of California.

10. Third Parties

The services to be performed by Engineer are intended solely for the benefit of the District. No person or entity not a signatory to the Agreement may rely on Engineer's performance of its Work under this Agreement, and no third party will obtain any right to assert a claim against the Engineer by assignment of indemnity rights or otherwise accrue to that party as a result of this Agreement or Engineer's performance of the Work.

11. Entire Agreement

This Agreement represents the entire understanding between District and Engineer as to those matters contained herein. No prior oral or written understanding is of any force or effect with respect to those matters covered in this Agreement.

12. Action by Chief Engineer

Except as otherwise provided in this Agreement, the Chief Engineer and General Manager of the District ("Chief Engineer") may take all actions on behalf of the District in connection with any approvals or actions required of or by the District under this Agreement, and Engineer may rely on any such actions by the Chief Engineer as having been approved or required by the District under all applicable laws.

<CONSULTANT>

____
Signature

Name

Title

DISTRICT NO. 2 OF THE

LOS ANGELES COUNTY SANITATION DISTRICTS

By: ______________________________

Chairperson

Attest:

____

Secretary

Approved as to Form:

Lewis Brisbois Bisgaard & Smith LLP

By: ______________________________

District Counsel