



Roll Call Number

21-1536

Agenda Item Number

6

Date October 18, 2021

APPROVING SUPPLEMENTAL AGREEMENT NO. 1 TO THE PROFESSIONAL SERVICES AGREEMENT (PSA) WITH CDM SMITH, INC. FOR ADDITIONAL PROFESSIONAL SERVICES FOR PHASE 2 OF THE CITY-WIDE STORMWATER MASTER PLAN STUDY, NOT TO EXCEED \$566,592.

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DES MOINES, IOWA: That Supplemental Agreement No. 1 between the City of Des Moines and CDM Smith, Inc., Anthony B. Bouchard, President, 75 State Street, Suite 701, Boston, MA 02109, for an additional amount not to exceed \$566,592, based on hourly rates and reimbursable costs, to provide additional professional services for Phase 2 of the City-Wide Stormwater Master Plan Study, a copy of which is on file in the office of the City Clerk, is hereby approved as to form and content.

BE IT FURTHER RESOLVED: That the Mayor and City Clerk are hereby authorized and directed to execute and attest, respectively, said Supplemental Agreement No. 1 for and on behalf of the City of Des Moines, Iowa.

(Council Letter Number 21-445 attached) Activity ID 01-2020-016

Moved by Boesen to adopt.

FORM APPROVED: s/Kathleen Vanderpool

Kathleen Vanderpool Deputy City Attorney

SLN PW

Funding Source: 2021-2022 CIP, Page 96, City-wide Storm Water Utility Projects, SM057

Table with 5 columns: COUNCIL ACTION, YEAS, NAYS, PASS, ABSENT. Rows include COWNIE, BOESEN, GATTO, GRAY, MANDELBAUM, VOSS, WESTERGAARD, and TOTAL. Includes 'MOTION CARRIED' and 'APPROVED' signatures.

CERTIFICATE

I, P. Kay Cmelik, City Clerk of said City hereby certify that at a meeting of the City Council of said City of Des Moines, held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal the day and year first above written.

Signature of P. Kay Cmelik

City Clerk

**CITY OF DES MOINES
SUPPLEMENTAL AGREEMENT NO. 1
TO AGREEMENT FOR PROFESSIONAL SERVICES
CITY-WIDE STORMWATER MASTER PLAN
Activity ID 01-2020-016**

WHEREAS, on July 13, 2020, by Roll Call No. 20-1088, the City of Des Moines, Iowa, hereinafter referred to as the "City", and CDM Smith, Inc., Anthony B Bouchard, President, 75 State Street, Suite 701, Boston, MA 02109, hereinafter referred to as the "Consultant", entered into a Professional Services Agreement (the Agreement) in connection with the City-Wide Stormwater Master Plan, not to exceed \$597,122.00; and

WHEREAS, the City staff has negotiated a Supplemental Agreement No. 1 for additional professional services with the Consultant for City-Wide Stormwater Master Planning - Phase 2

NOW, THEREFORE, IT IS MUTUALLY AGREED, that the Agreement for Professional Services, City-Wide Stormwater Master Plan is amended as follows:

SECTION 2 - SCOPE OF SERVICES, Paragraph A, SERVICES PROVIDED BY CONSULTANT, is amended by adding the following:

"Consultant shall provide additional professional engineering services as set forth in Attachment 1 to this Supplemental Agreement."

SECTION 3 - COMPENSATION, Paragraph A, is amended by adding the following:

"Compensation for services under this Supplemental Agreement shall be in accordance with the terms of said original Professional Services Agreement for an additional not-to-exceed amount of \$566,592 to be paid on the basis of hourly labor rates and reimbursable costs as shown in Attachment 2 to this Supplemental Agreement."

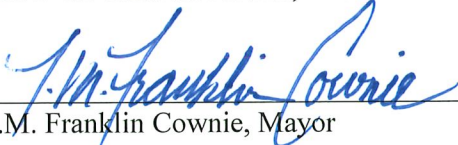
SECTION 4 - COMPLETION OF WORK, is amended by adding the following:

"The Consultant shall complete all services outlined in Supplemental Agreement No. 1 on or before July 31, 2022, providing no unforeseen delays are experienced beyond the control of the Consultant."

BE IT FURTHER AGREED, that all other terms and conditions of the original July 13, 2020 Agreement shall remain in full effect except as modified by this Supplemental Agreement No. 1.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, in triplicate, as of this 18th day of October, 2021.

CITY OF DES MOINES, IOWA



T.M. Franklin Cownie, Mayor

CDM SMITH, INC.



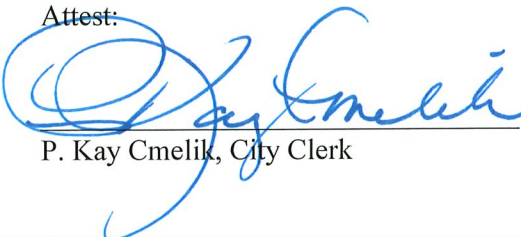
Jessica Veach, Client Service Leader

Form Approved:



Kathleen Vanderpool, Deputy City Attorney

Attest:



P. Kay Cmelik, City Clerk

[Type here]

**ATTACHMENT 1
SCOPE OF SERVICES
CITY OF DES MOINES
SUPPLEMENTAL AGREEMENT NO. 1
TO AGREEMENT FOR PROFESSIONAL SERVICES
CITY-WIDE STORMWATER MASTER PLAN
Activity ID 01-2020-016**

Phase 2 – System Analysis and Capital Planning: Scope of Work

The City of Des Moines, IA (City) seeks to develop a comprehensive Stormwater Master Plan (SMP) to mitigate flooding of public and private property, manage the operation, maintenance, and renewal of City stormwater assets, and reduce impacts of stormwater on water quality, all while delivering stormwater services at the lowest life-cycle cost. The City desires a phased approach to the development of the SMP. Phase 1 of the SMP, the Stormwater Needs Assessment and Data Review, was completed in May 2021. Under this Phase 2 SMP Scope of Work, the CONSULTANT shall implement the following priority recommendations of the Phase 1 SMP:

1. City-wide Desktop Analysis of Asset Risk
 - a. Initial Asset Condition Rating
 - b. Initial Asset Performance Rating
 - c. Consequence of Failure Rating
 - d. Risk Scoring Algorithms
2. Lucity Integration for Inspections, Maintenance, and Operations
 - a. Data Management of Asset Risk Criteria
 - b. Field Inspection/Assessment Forms
 - c. Recurring Inspection and Preventative Maintenance (PM) Templates
 - d. Closed-circuit Television (CCTV) Inspection Data Management
 - e. Pump Station Equipment Inventory and Assessment
 - f. Lucity and/or Geographical Information System (GIS) 3rd Party Integration
 - g. Review and Standardization of Problem, Cause, and Action Codes
 - h. Illicit Discharge Detection and Elimination (IDDE) Tracking
 - i. Construction Project Tracking
 - j. Dashboard Development
 - k. Lucity Training
3. Assessment and Capital Planning in Priority Catchments
 - a. Selection of Priority Catchments
 - b. Formal Risk Assessment and Problem Identification
 - c. Maintenance and Capital Project Identification and Prioritization
4. Future Funding and Policy Considerations
 - a. Operation, Maintenance, and Administration Resources
 - b. Long-Term (25-year) Financial Plan

Task 8.1 Initial Asset Condition Rating

The CONSULTANT shall apply the risk framework developed for the Phase 1 SMP to provide an initial assessment of the physical and operational condition of each stormwater asset. The CONSULTANT shall use the following approach for each class of assets.

Storm Sewers

Asset age and material will serve as the primary criteria for assigning an initial condition rating, supplemented by findings of recent CCTV, pole camera, and/or visual inspections where available from the City. The CONSULTANT shall make reasonable assumptions for any gravity main missing material and/or age data based on systemwide statistics. Manholes, inlets, catch basins, and other storm sewer assets will be assumed to have the same age as its connecting gravity main. Pump station age, operational records and recent inspections will serve as the primary criteria for assigning an initial condition rating to these assets.

Stream Crossings

The City currently has limited data about stream crossings. GIS shall be used to identify suspected stream crossing locations at points where roadways cross blue-line streams mapped in the GIS. Recent bridge and culvert inspection records available to the City from local and state transportation agencies shall be used as the basis for the initial condition rating.

Open Channels and Streams

The CONSULTANT shall delineate stream segments along minor blue-line streams and channels mapped in the City's GIS (approximately 208 miles). Each segment shall be delineated by confluences, stream crossings, and known physical structures. The CONSULTANT shall then use GIS, recent LiDAR, and aerial photographs to establish an approximate stream corridor and erosion hazard zone along each stream segment (assume a 60-foot setback on either side of the stream), identify steep streambank slopes within this corridor, and identify buildings in or near the corridor.

Stormwater Controls

The CONSULTANT shall perform a visual inspection of the 39 stormwater control facilities owned and operated by the City to establish an initial condition rating, using inspection forms/assessment criteria developed under Task 9.2. The location and type of any private stormwater controls available from the City shall also be mapped with GIS to help identify areas served by these controls.

Task 8.2 Initial Asset Performance Rating

The CONSULTANT shall apply the risk framework from the Phase 1 SMP and existing data to establish an initial performance rating for each asset, where possible. The following approach shall be used.

Reported Problems

A GIS database shall be created based on the Phase 1 SMP stormwater survey, historic service requests to the City, and work orders from the City's Lucity CMMS. Information in these records shall be used to characterize stormwater problem locations, types, sources, causes, and impacts and associate each problem with a specific stormwater asset, where possible. In addition, buildings and roadways within delineated FEMA floodplains or previous hydrologic and hydraulic (H&H) studies by the City shall be identified and associated with the stormwater asset draining these areas. Also, the location and damages to properties reporting repetitive flood loss to the City shall be mapped and associated with the stormwater asset serving the property.

Task 9.1 Data Management of Asset Risk Criteria

The CONSULTANT shall meet with the City to discuss the options for where Risk scores should reside and what is the best method for keeping them current and accessible to users. Options identified to date include storing the information in Lucity and/or the GIS or using a database like SQL Server to store and perform analysis on the related data. The platform or tool chosen should be one the City is comfortable with and can modify and maintain in the future. If the tool is stored outside of Lucity, the CONSULTANT shall work with City staff to ensure proper data transfer protocols.

After renewal has been performed on an asset a workflow, preferably automated, is needed to update COF, LOF and Risk scores in the chosen platform and pushed to Lucity for the Asset Management (AM) dashboard.

Task 9.2 Field Inspection/Assessment Forms

The CONSULTANT shall develop inspection forms within Lucity to collect inspection data for the following assets using the criteria defined in Phase 1. Where appropriate a single form may be used for more than one asset type.

Category	Type
Storm Sewer Assets	Inlets Catch Basins Manholes Outfall/End Structure Force Mains Valves
PS Equipment	12 types as listed in Phase 1
Channels	Open Riparian & Floodplain Swales/Constructed
Crossings	Culverts Embankment End Structures
Control Structures	Basin Storage/Pollution Control/Embankment/Discharge Control/Valves & Gates/Gross Solids Control
Stormwater Problem Evaluation	For characterizing eyewitness accounts of flooding, erosion, water quality, and/or structural deterioration, based on criteria in the Phase 1 SMP stormwater survey.

Task 9.3 Recurring Inspection and Preventative Maintenance (PM) Templates

Identify up to 5 different types of scheduled preventative maintenance (PM) templates and create the recurring templates in Lucity to be used as examples for future recurring inspections or work. An example of one recurring PM template that will be created is for assets needing to be monitored for condition at certain intervals rather than put on a project immediately. Another example is to inspect all structures in a catchment on an established frequency.

Task 9.4 Closed-Circuit Television (CCTV) Inspection Data Management

The CONSULTANT shall meet with City staff to determine the volume, types, of existing closed-circuit television (CCTV) data and documents that could be imported into Lucity. Criteria to be considered or evaluated are the age of the data and documents, the current naming conventions and physical accessibility to the data, and the completeness and value the data will add to the asset management program. If it is determined there is value in making the existing data available in Lucity, a plan shall be developed for implementation of the import/integration of the existing data.

In addition, the CONSULTANT shall develop a workflow to integrate new/future Pipeline Assessment Certification Program (PACP) CCTV inspections performed by City staff and consultants that would include developing a Lucity template for loading new PACP CCTV data into the Computerized Maintenance Management System (CMMS). Up to three (3) meetings shall be conducted with City staff

Task 9.9 Construction Project Tracking

The CONSULTANT shall conduct a requirements session to understand the City's current Project workflow and milestone tracking as it relates to SMP efforts and review the feasibility of utilizing the Project Tracking modules in Lucity as a short and/or long-term solution. If it is determined Lucity would be a viable solution it could be implemented in a future phase.

Task 9.10 Dashboard Development

The CONSULTANT shall conduct up to three (3) workshops/meetings to collaborate with the City to identify the information needed and desired to be available on a Dashboard to support the on-going management of the SMP Asset Management Program (AMP). After the first workshop is completed, a draft dashboard shall be presented for discussion and refinement. The last workshop shall occur after the field collection and asset prioritization has occurred so actual data and outcomes can be used to review any changes or additions that might have come to light during the Phase 2 SMP.

Task 9.11 Lucity Training

The CONSULTANT shall conduct four (4) 90-minute training sessions with Des Moines staff on the use of Lucity. Three sessions would be with field staff focused on field activities performed using Lucity as the data repository on a mobile or web browser. City shall determine which platform will be presented in training. The fourth session would focus on SMP AM workflows and management dashboards in Lucity Web.

Basis of Estimate for Task 9 Lucity Integration for Inspections, Maintenance, and Operations

- Lucity integration will build upon the findings and recommendations of the Phase 1 SMP.

Deliverables for Task 9 Lucity Integration for Inspections, Maintenance, and Operations

- Memorandum documenting the workflow for calculating and updating risk scores.
- An import and update script to import risk scores into Lucity if they are analyzed and calculated in a different platform.
- Inspection forms for each of the asset categories and/or types
- Five (5) scheduled PM templates in Lucity
- Memorandum defining plan for integrating existing CCTV data or documenting reasons not to link existing CCTV data.
- Configured pump station equipment inventory and inspection forms and an updated dashboard.
- One (1) training session on importing PACP data into Lucity.
- One (1) Lucity import template for PACP data import.
- Configured IDDE tracking forms and grids, one dashboard and security groups to access the information.
- One (1) 90-minute training session on IDDE tracking via Zoom or Teams conferencing

for approximately 200 structures and 20,000 LF of storm pipe. Additional data collected by City staff will be identified and incorporated into the study design. Exact quantities are dependent on location of structures to pipes and accessibility and ease of setup.

Next, the CONSULTANT shall conduct the field assessments assigned in the data collection and inspection plan, using the field inspection/assessment forms developed under Task 9.2. Stormwater asset field inspections shall be collected within a web-based data collection and data management platform in accordance with the established protocol. Structures and associated pipes must be accessible or have right of entry to property secured and provided by the City. Traffic safety precautions shall be followed in accordance with City expectations and all field technicians shall wear safety vest or work shirts that are designed for high visibility to allow for greater protection for themselves and the public. The following field data collection protocol are envisioned:

- **Structure Inspections.** Storm sewer structures shall be field inspected to complete system characterization and condition assessments of stormwater assets. Field technicians shall confirm system network connectivity, add newly identified structures, and collect asset inventory information in accordance with the established inspection criteria. Network and data QA/QC checks shall be performed and updates to the GIS network shall be completed. Each structural component of the structure shall be documented and assigned a rating in accordance with the established inspection criteria.
- **Enclosed Storm Pipe CCTV Inspection.** Enclosed storm pipe CCTV inspection shall be completed for this phase of the project using industry standard equipment. The camera will be moved through the system in either direction at a uniform rate, stopping when necessary, to ensure proper documentation of the pipe conditions. If during the inspection, the camera will not pass through the pipe, equipment shall be reset in a manner so the inspection can be performed from the opposite direction. Debris, if encountered, shall be reported to the City for removal by City crews. All informational data on the sewer system pipes will be collected in NASSCO PACP format.
- **Open Channel Inspection.** It is understood that open channel inspections will be performed by the City using protocol recommended in Phase 1 SMP. The CONSULTANT shall provide two days of training – one in the classroom and one in the field. Inspection results shall be provided to the CONSULTANT Team for evaluation and risk assessment.

The CONSULTANT shall develop condition criteria scores from field assessment data collected under this task. A GIS database of condition assessment scores shall be prepared by the CONSULTANT.

Hydraulic and Environmental Performance Assessment

The CONSULTANT shall apply USEPA SWMM and the modeling methodology included in the Phase 1 SMP to build hydrologic and hydraulic (H&H) models of stormwater assets within each priority catchment/subcatchment at a level of detail necessary to evaluate identified problems and support evaluation of potential solutions. The evaluation will focus on gravity mains, open channels, culverts, and control structures – explicit H&H modeling of storm inlets/catch basins is not envisioned. Data for building these models will be drawn from the City’s GIS, other regional/national geographic data sources, and supplemental field data collection performed under Task 10.2. The H&H model will be used to estimate flood extents, depths, and durations during a range of design storm events, and to estimate impact severity to buildings, roads, and property. Model results shall be compared with available eyewitness accounts of flooding and adjusted as necessary to yield a reasonable comparison. The Phase 1

strategy will be the strategy with the highest cost-effectiveness score. The CONSULTANT shall conduct a virtual workshop with City staff to review the findings of the alternative definition and evaluation, receive City feedback, refine the recommended strategy accordingly, and discuss implementation requirements and priorities.

- **Implementation Requirements:** Measures necessary to implement the preferred strategy shall be defined, including capital project concepts/estimated costs, system maintenance and asset renewal requirements / costs, floodplain management/stream protection considerations, and implementation phasing and sequencing.
- **Project Prioritization:** A priority shall be assigned to each recommended capital project based on its cost-effectiveness score, implementation requirements, and other key considerations (e.g., project urgency, other synergistic opportunities). Highest priority projects will be considered for near-term implementation, while lower priority projects will be inventoried for future implementation phases.
- **Project Area Summaries:** Findings of this task shall be summarized for each project area at a level of detail appropriate to support future project implementation activities (e.g., generate maintenance work orders, develop capital improvement plans, support acquisitions, etc.). Each project area summary shall be prepared using a consistent, modular format that can be both assembled into a Phase 2 SMP report and provided separately to City staff and/or contractors responsible for implementation.

Basis of Estimate for Task 10 Assessment and Capital Planning in Priority Catchments

- Five (5) priority catchments or subcatchments shall be selected for study under this task.
- The level of effort for these studies is limited to a total of 2,000 pipe segments, open channel, or control facility assets.
- For budgeting purposes, the field data collection and condition assessment plan prepared in Task 10.2 includes a budget allocating the allowance of \$102,000 to specific field activities.
- Asset maintenance and capital project recommendations shall be developed for 10 of the project areas identified under Task 10.3

Deliverables for Task 10 Assessment and Capital Planning in Priority Catchments

- Re-prioritization of catchments/subcatchments for asset assessment and capital planning studies.
- A field data collection and condition assessment plan.
- Formal risk assessment of assets within the priority catchments/subcatchments selected for study.
- A prioritized list of recommended capital projects.
- A Project Area Summary memo for each project area selected for alternative development/evaluation, including approximate flood inundation and water surface elevation profiles under existing conditions, future development conditions, and with the recommended alternative implemented.

Basis of Estimate for Task 11 Future Funding and Policy Considerations

- Data required for this task will be developed under previous tasks.
- Project costs will be developed at a conceptual planning level appropriate for long-term financial planning.

Deliverables for Task 11 Future Funding and Policy Considerations

- Long-term (25-year) Financial Strategy
- Near-term (5-year) Capital Improvement Plan with sample RFP for project design
- Four (4) policies with implementation guidance
- One (1) virtual workshop to review the 25-year financial plan and identify specific projects for near-term implementation.

Task 12 Phase 2 SMP Report

The purpose of this task is to integrate the findings of Tasks 8 through 11 into final Phase 2 SMP Report.

Task 12.1 Prepare Phase 2 SMP Report Outline

The CONSULTANT shall prepare an outline of the Phase 2 SMP report, incorporating the findings and key deliverables of Tasks 8 through 11. It is anticipated that the outline will be prepared near the completion of Task 8, following selection of priority catchments for study under Task 10. The outline shall be provided to the City for review, and comments shall be addressed in the final outline.

Task 12.2 Prepare Draft Phase 2 SMP Report

The findings of Tasks 8 through 11 shall be summarized in a draft final Phase 2 SMP Report and submitted to the City for review. The City will provide a consolidated set of comments to the draft Phase 2 SMP Report, resolving conflicting comments. The CONSULTANT shall provide a written response to each comment and, as appropriate, incorporate revisions into the appropriate report section. A teleconference shall be conducted with the City to resolve remaining comments.

Task 12.3 Finalize Phase 2 SMP Report

The CONSULTANT shall consolidate revisions to the draft Phase 2 SMP Report into a final Report, addressing City comments as necessary.

Basis of Estimate for Task 12 Phase 2 SMP Report

- It is envisioned that the report will consist of a technical volume with supporting appendices and a separate Executive Summary for elected officials and key stakeholders.

Deliverables for Task 12 Phase 2 SMP Report:

- Report Outline
- Draft Final Phase 2 SMP Report

Attachment 2
CDM Smith Billing Rate Sheet

<u>Position Classification</u>	<u>Billing Rate</u>
Principal in Charge	\$180- \$275
Project Manager	\$175- \$275
Task Manager	\$180- \$275
Engineer 1-2	\$90- \$125
Engineer 3-4	\$100- \$150
Engineer 5-6	\$125- \$200
Engineer 7-8	\$175- \$300
GIS Specialist	\$80- \$130
Graphics	\$80- \$110
Project and Admin Support	\$80- \$110