PROFESSIONAL SERVICES TASK ORDER

Task Order Number: 006
Task Order Date: March 17, 2021

Subject to the Master Services Agreement between *the City of Dalton, Georgia* [**Client**] and *Arcadis U.S., Inc.* [**Arcadis**], dated March 1, 2020, Client hereby authorizes Arcadis to perform services as specified in this Task Order and in accordance with the above-mentioned Agreement.

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1. Project Description: A description of Client's Project for which work is requested is provided in Attachment 1, incorporated into this Task Order.

Client's Project Number: _____

Project Name: Stormwater Infrastructure Strategy – City of Dalton, GA

Client's Representative: Andrew Parker, P.E.

2. Scope of Work: Arcadis shall perform its services as described in Attachment 1, incorporated into this Task Order.

Arcadis's Job Number: _____

Arcadis's Representative: Richard Greuel, P.E.

3. Time Schedule: Arcadis shall use reasonable efforts to complete its work by: 6 months from receipt of surveying data or Notice to Proceed whichever is greater.

4. Compensation: Arcadis's Compensation authorized under this Task Order, which shall not be exceeded without prior written authorization of Client, is:

$269,560 This Task Order's Method of Payment is incorporated and attached as Attachment 2.

5. Special Conditions: This Task Order is subject to the special provisions as described in Attachment 3, attached, and incorporated into this Task Order:

6. Amendment: [_____] This Task Order amends a previously executed Task Order:

Previous Task Order Number: _____ Previous Task Order Date: _____

ISSUED AND AUTHORIZED BY:
Client

By: _____

Title: _____

ACCEPTED AND AGREED TO BY:
Arcadis, INC.

By: _____

Title: _____

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Attachment 1
Description of Project & Scope of Work

Introduction
The City of Dalton Public Works Department has requested that Arcadis prepare this Task Order to assist the city with development of a stormwater infrastructure strategy for addressing infrastructure needs related to the city's stormwater system.

Scope of Services

Arcadis will develop a stormwater infrastructure strategy for the City of Dalton, GA (the City) to address issues with aging infrastructure, streambank degradation and erosion, and known flooding. The plan will include the following components:

- Stormwater System Operation and Maintenance Plan
- Maintenance Capital Projects Plan of Action
- Flood Abatement Plan
- Funding Plan
- In-situ Lining Bid Assistance

The goal of project will be to develop a stormwater infrastructure / capital improvements plan (CIP) that recommends operations and maintenance (O&M) practices and stormwater rehabilitation and replacement improvements to improve system performance, enhances cost efficiency, meets regulatory compliance, and protects the health, safety, and welfare of local residents. The stormwater infrastructure strategy will build upon the work recently completed by the city in developing the "Stormwater Area of Concern Catalog: Off Right-of-Way" as well as recent Arcadis task orders that have addressed more targeted areas of concern.

1.0 Stormwater System Operation and Maintenance Plan

The Stormwater Operation and Maintenance (O&M) Plan will summarize the City's existing programs, practices, and recommend a comprehensive O&M plan with specific procedures and schedules. The budget for this task includes a kickoff meeting and site visits over five (5) workdays to the City-owned assets, identified areas of concern, and a representative sample of private assets. Tasks include:

1.1 Evaluation/Enhancement of O&M Activities

This task will include holding a kick-off meeting with the City to gather existing information on current O&M activities for the programs listed below and recommend enhancements that can improve performance and cost efficiency:

- Street sweeping / Leaf Ccollection
- Inlet & Pipe Cleaning
- Ditch / Channel Maintenance
- Inspection Schedules
- Drainage System Repair
- BMP Maintenance

The City will provide GIS inventory of stormwater assets, a listing of all equipment used or available to perform these O&M functions, the procedures utilized, the frequency with which these functions are currently performed, and copies of the applicable regulatory requirements regarding these activities. Additionally, the City will provide information regarding asset history (where available) to include, but not be limited to age and installation information, repair history, condition, and design information. The operations and maintenance plan will be limited to those areas that are physically mapped within City's stormwater system GIS database.

1.2 Development of O&M Schedule

Arcadis will develop recommended O&M schedules for the following programs:

- Street sweeping / Leaf collection
- Inlet & Pipe Cleaning
- Ditch / Channel Maintenance
- City-owned best management practices (BMPs)
- Drainage System Inspection Schedules

This task includes the preparation of recommended storm sewer cleaning and inspection schedule. Additionally, Arcadis representatives will accompany City personnel on a site visit to several BMP facilities to gather information, discuss historical challenges to maintaining proper performance of these facilities, and to understand the City's current O&M practices at these facilities.

1.3 Development of Stormwater O&M Plan

Based on the materials developed under Tasks 1.1 and 1.2, Arcadis will prepare an O&M Plan that includes recommended O&M procedures and schedules. To assist with standardization across city-owned assets, a detailed inspection log will be developed.

TASK 1 Deliverable:

Stormwater Asset Management Operations and Maintenance Plan that includes a recommended plan for maintenance procedures, and schedules, and inspection and maintenance logs.

2.0 Maintenance Capital Projects Plan of Action

Task 1 will focus on development of an operations and maintenance plan that will help to maintain and maximize the performance of the City's existing stormwater assets. However, it is understood that the City currently has or will have infrastructure rehabilitation needs that will fall beyond the needs of a typical drainage system maintenance or minor repair effort. For the purposes of this Task Order, it is assumed that if a drainage system component requires maintenance of a more substantial scope or replacement, it will be considered a capital project. These projects often require special funding allocations given that they often fall outside the scope of routine maintenance.

Known stormwater maintenance needs within the public right-of-way will be part of the evaluation as directed by Public Works staff, and those on private property as defined in the "Stormwater Area of Concern Catalog: Off Right-of-Way," developed by Arcadis in October 2020. The plan will include recommendations for improvements, cost categories for repairs or replacement of assets or mitigation, and a schedule for these improvements. Initial site visits have been included under Task 1 above. A three (3)-day site visit is included under this Task to gather any additional information, as needed, to complete this task.

2.1 Evaluation of Public Stormwater Infrastructure

This task will include a desktop review of available information on City-owned stormwater facilities, and conduct interviews with city staff to understand the identified areas of concern. Where feasible, construction drawings, recorded maintenance agreements, and previous inspection reports (if any), will be reviewed for each site to be inspected. Budget for up to 20 field inspections has been included under this sub-task for more in depth review.

Potential repair or replacement options for each identified area of concern and planning level cost estimates for these improvements will be developed. Planning level replacement costs will be based on unit costs per BMP type (example: $10/square foot for bioretention facilities, $1/lf/in conveyance piping, etc).

2.3 Evaluation of Private Stormwater Facilities

Using the "Stormwater Area of Concern Catalog: Off Right-of-Way" developed by Arcadis as a guide, this task will include a review of available information on the privately-owned stormwater facilities identified in the catalog, available complaint logs, and potential interviews with property owners, where feasible and as scheduled by the city, to understand the identified area of concern. Where feasible, Arcadis will review readily available construction drawings, maintenance agreements with the city, and previous inspection reports (if any) for each site to be inspected.

To account for areas that may not have been previously identified, up to three (3) additional locations not included in the "Stormwater Area of Concern Catalog: Off Right-of-Way" may be evaluated under this sub-task. Stormwater facilities located on single family residential properties that only manage stormwater from that property will not be considered under this task.

Arcadis will develop an evaluation of potential repair/replacement options by BMP type and planning level costs for these improvements will be developed. Planning level replacement costs will be based on unit costs per BMP type (example: $10/square foot for bioretention facilities, $1/lf/in conveyance piping, etc).

2.4 Prioritization Plan

Working with the City staff, we will first develop a basis for prioritization of the potential projects and then using that basis, develop a prioritized list of projects for the locations identified in the above sub tasks.

Task Deliverable: Updated catalog of known stormwater areas of concern which includes areas both on and off the public right-of-way. The report will catalog these areas / potential projects into defined tiers that outline an actionable path forward to address the identified issues. Recommended improvements and recommendations for further detailed analysis will be provided in these recommendations, as well as planning-level cost estimates. The project plan will be developed to maximize the city's available budget, while providing meaningful positive impact in the community.

3.0 Flood Abatement Plan

The Flood Abatement Plan's goal will be to develop a model(s) that can assist in identifying where the City can implement effective controls to help reduce the impacts of urbanization and flooding. The plan will include:

- Development of a hydrologic model for planning-level analysis of the existing stormwater systems
- Evaluation of traditional stormwater controls (grey infrastructure) as well as innovative control alternatives (combination of grey/green infrastructure)
- Development of planning level cost estimates and prioritization of capital improvements
- Discussion of implementation considerations including construction feasibility, cost effectiveness, regulatory impact, etc.

3.1 Data Collection

3.1.1 Desktop Investigation

With assistance from the City, Arcadis will gather readily available information on the drainage areas including:

- Spatial/Geographic Information System (GIS) data including aerial photos, topography, soil types, land use, rights-of-way, easements, property lines, open channel systems, closed conveyance systems, flood protection measures/structures, best management practices, stormwater management facilities, etc.
- Subdivision plans, maps and drawings of drainage system components including as-built records, etc.
- LIDAR data, when available
- FEMA floodplain data
- Past studies such as Comprehensive or Watershed Implementation Plans, historic problem (flooding and water quality) documentation, high water marks, citizen complaint records, and other relevant data, where available.

<u>It is noted that LIDAR data for the city is critical for this task. The task cannot proceed without LIDAR data which is being acquired separately by the city.</u>

After review of record documents, the findings will be discussed with the City staff to compare documented stormwater information versus current staff knowledge. Undocumented stormwater features and firsthand information concerning flooding issues will be noted for inclusion in the evaluation.

3.1.2 Develop Preliminary Base Map

Based on the information collected in Task 3.1.1, we will develop an overall base map and individual maps of each major drainage basin. The drainage area maps will be developed at a hydrologic planning-level scale, and will not comprise all open channel systems, closed conveyance systems, flood protection measures/structures, best management practices, and other relevant structures. Size and material of structures, where required for model inputs, will be obtained from readily-available data sources (GIS, as-built plans, etc.). Generally, Arcadis will attempt to identify primary drainage paths from city owned infrastructure under public roadways to the municipal boundaries of the city.

It is assumed that the City will contract a local surveying firm to collect surveying data required for any modeling effort.

3.2 Hydrologic and Hydraulic Modeling

Based on the data gathered in Task 3.1, we will create hydrologic and hydraulic models for the city's watersheds including the areas immediately upstream and downstream of the city to simulate existing flooding problems, where watershed boundaries dictate the need. U.S. EPA's Stormwater Management Model (SWMM) and/or the US Army Corps of Engineer's HEC-HMS or HEC-RAS model will be used for this project since they are available in the public domain and well-suited to analyze the conditions anticipated within the watersheds. It is anticipated that the modeling will evaluate the 1, 2, 5, 10, 25, 50, and 100-year 24-hour storm events. This task includes the effort to model the addition of flood control stormwater infrastructure as necessary for evaluation of flood control specified in Task 3.3.

3.3 Evaluations and Recommendations

3.3.1 Identify/Evaluate Flood-Control Alternatives

The next step will be to identify potential flood-control alternatives consisting of stormwater controls, green infrastructure, as well as innovative control alternatives such as real-time controls, sensors, etc. that are technically feasible and could significantly improve flood mitigation.

The hydrologic model will be used to evaluate and determine the feasibility of the flood-control alternatives at the desired level-of-service. This will likely be an iterative process. The analysis of up to three alternatives for each drainage

area is included in this task. Current aerial photography and information from the previous tasks will be used to develop an initial concept layout for the recommended alternative for each drainage area.

3.3.2 Alternatives Prioritization

Similar to the process outlined in Task 2.4, Arcadis will develop a refined list of alterative concepts that are prioritized based on a number of factors that are meant to optimize available funding, schedule, constructability, and impact on the network. Refined concept layouts will include conceptual plan views of the recommended improvements. Preparation of 3D drawings/renderings are not included in this task, but existing graphics may be used to demonstrate similar engineering concepts.

3.4 Flood Abatement Plan

Task Deliverable

This Plan will document the tasks performed in Task 3 and recommend green (natural solutions that mimic nature), gray (traditional structural engineering) improvements, or a combination, that can be implemented to abate flooding within the defined watershed areas. The Plan will include site mapping with proposed improvements and conceptual cost estimates.

Task Limitations

This task has been designed to provide the necessary modeling for identifying opportunities to construct flood control / abatement facilities within the City of Dalton. This task is not intended to produce design drawings for any identified opportunities nor will it include flood extents modeling such as FEMA floodplain modeling. All modeling will be limited to conceptual modeling / analysis and will serve as the basis to develop plans and specifications for later design / construction efforts.

4.0 Funding Plan

This is an important task because it is anticipated that the City will require outside funding to fully implement the anticipated capital project needs. Our evaluation of funding opportunities will include leveraging multiple sources with the goal to be efficient with the city's investment and expenditures. Opportunities to be considered will include federal/ state grants, low/ no-interest loans, tax incentives, and special financing programs. Programs evaluated may include but not be limited to FEMA disaster recovery and hazard mitigation assistance grants and state revolving loan funds.

Arcadis will use information from Tasks 1 through 3 to prepare a Technical Memorandum summarizing the project-specific funding analysis and providing a recommended timeline for funding pursuits.

Task Deliverable

A Technical Memorandum will be prepared describing relevant funding sources that meet the city's needs, specific projects that meet eligibility requirements, and recommendations to pursue specific funding programs in the near-term.

5.0 In-situ Lining Bid Assistance

Arcadis understands that the City desires to hire an on-call contractor(s) to provide construction services related to installation of centrifugally cast concrete and cured in place pipe linings. Arcadis will provide support to the City with development of technical specifications for each lining type as well as payment and performance specifications for the

execution of the work. Arcadis will also provide review for the following:

- Bid Advertisement
- Bid Qualifications
- Bid Tender Form
- Bid Review and Recommendation

It is assumed that any efforts related to the development of the RFP and associated documents outside of those mentioned above will be handled by the City's procurement team / city attorney / public works director.

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Attachment 2

Task Order Payment Terms

All work will be completed on a time and materials basis for a fee not to exceed the amount listed in this Task Order based on the 2021 rate table below.

Task	Description	Estimated Cost
1	Stormwater System Operation and Maintenance Plan	$25,220
2	Maintenance Capital Projects Plan of Action	$36,380
3	Flood Abatement Plan	$162,200
4	Funding Plan	$27,960
5	In-situ Lining Bid Assistance	$17,800

2021 Rate Schedule

Title	Rate $/hr
Project Administrative Assistant	$70
Project Assistant	$90
Sr Project Assistant	$120
Project Manager	$215
Engineering Technician I	$90
Engineering Technician II	$110
Staff Engineer/Scientist/Architect I	$90
Staff Engineer/Scientist/Architect II	$100
Staff Engineer/Scientist/Architect III	$110
Project Engineer/Scientist/Architect I	$120
Project Engineer/Scientist/Architect II	$135
Project Engineer/Scientist/Architect III	$150
Senior Engineer/Scientist/Architect I	$165
Senior Engineer/Scientist/Architect II	$180
Senior Engineer/Scientist/Architect III	$195
Principal Engineer/Scientist/Architect I	$240
Principal Engineer/Scientist/Architect II	$265
Principal Engineer/Scientist/ Architect III	$290
Sr Engineer – GEC	$150
GEC Tech III	$50
GEC Tech II	$40
GEC Tech I	$30
Registered Land Surveyor	$150
2-man Survey Crew	$150
3-man Survey Crew	$225

* A rate schedule will be provided with each Task Order proposal based on the specific services that will be provided and the rates effective at that time.

*All direct expenses will be billed at cost plus 10%

*Mileage will be billed at the current federal mileage rate

* Additional Services requested by the City beyond those in Scope of Work will be billed on an hourly basis in accordance with this rate schedule

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Attachment 3
Special Conditions

None.