

PROFESSIONAL SERVICES TASK ORDER

Task Order Number: 005
Task Order Date: February 10, 2021

Subject to the Master Services Agreement between *the City of Dalton, Georgia* [Client] and *Arcadis U.S., Inc.* [Arcadis], dated _____, 20__, Client hereby authorizes Arcadis to perform services as specified in this Task Order and in accordance with the above-mentioned Agreement.

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: 631 N. Glenwood Avenue
Client's Representative: Andrew Parker

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: 120 days 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:

\$ 55,830 [] 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

ACCEPTED AND AGREED TO BY:
Arcadis, INC.

By: _____ By: _____

Title: _____ 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 proposal to provide engineering analysis and support to address known flooding issues in the vicinity of 631 N. Glenwood Avenue, south of the intersection with East Matilda Street. It is our understanding that the properties have experienced flooding in the past and that the property owners have requested that the City of Dalton (city) identify potential improvements that could reduce the severity / frequency of flooding on the subject properties, and in the general location. The following scope of work has been developed to assist with the first phase of a potential project to implement drainage improvements within the drainage basin.

Phase 1 – Alternatives Evaluation

The purpose of Phase 1 is to analyze the drainage system's existing conditions and test different solutions to relieve flooding of properties along Glenwood Avenue, in the areas just south of East Matilda Street. Arcadis proposes that the work be divided into the following tasks:

Task 1 – Existing Conditions Analysis

Task 2 – Alternatives Analysis

Task 3 – Report

Each task is described below. Please note that this work authorization only includes the efforts necessary to identify a preferred solution by the City. Additional efforts will be required to design the preferred solution once identified. A second phase of the project, to be authorized at a later date, would follow upon completion of Phase 1 of the project. Phase 2, if authorized, will address the development of a full set of construction drawings for the preferred alternative as well as permitting necessary to move forward with a construction project. Phase 2 is not included in this scope of work and accompanying fee proposal.

Task 1 – Existing Conditions Analysis

Task 1 will consist of development of appropriate hydrologic and hydraulic computer models to quantify the nature of the drainage conditions that currently exist within the basin. Arcadis will use PCSWMM to conduct the hydrologic and hydraulic (H&H) modeling needed for both this task and Task 2. Arcadis will coordinate with the Whitfield County Stormwater Engineer to obtain geographic information systems (GIS) data for the drainage area's pipes and structures. It is assumed that any surveying efforts required for this effort will be secured by the City separately and coordinated with Arcadis staff to ensure efficient collection of data. As such, surveying is not included in this work authorization.

The focus of the study will be the portion of the drainage system that runs south from East Long St. within Glenwood Avenue and North from 631 N. Glenwood Avenue, converging at an inlet on the eastern side of N. Glenwood Avenue in front of 698 N. Glenwood Avenue. Refer to "City of Dalton, GA: Stormwater Area of Concern Catalog: Off Right-of-Way – Figure 8" for a graphical depiction of the study area.

The ultimate downstream point of analysis for the H&H modeling will be at the existing outfall of the 42-inch RCP that discharges from N Elm Street. Arcadis staff will also conduct a limited field reconnaissance (subject to travel restrictions) within the project area to assess existing drainage patterns including open channel and culvert connectivity.

Arcadis will develop an existing conditions model based on the data collected or provided. The following 24-hour storms will be modeled; 1-year, 2-year, 5-year, 10-year, 25-year, 50-year, and 100-year. The results will be analyzed and discussed with City staff.

Assumptions:

- Data transfer from County and City will be via electronic means.
- Pipe and structure survey will be conducted by others.
- Land use will be based on existing conditions.

Deliverables:

- Limited Technical Memorandum outlining means and methods as well as results of the analysis.

Task 2 – Alternatives Analysis

The purpose of this task is to test different alternatives' flood reduction effectiveness. Four scenarios have been discussed with City staff and are described below:

Scenario A –Increasing Existing Drainage System Capacity in Place (3 Iterations)

Scenario A will evaluate the impacts of upgrading pipes and open channels of the existing drainage system within the right-of-way, downstream of the assets located on 631 N. Glenwood Avenue, to provide additional hydraulic capacity for the system. This will likely be an iterative process to evaluate whether the additional capacity will result in flooding downstream. The intent of this scenario would be to develop an analysis of system upgrades without altering the assets located on 631 N. Glenwood Avenue.

A target level of service for the upgraded system capacity will be determined before the evaluations are performed based on discussions with City staff. Arcadis will compare the results of the Scenario with the existing conditions modeling results.

Please note that this system will need to evaluate the downstream hydrologic impacts to properties. The analysis will study the outfall on 622 N. Elm Street with the ultimate downstream point of analysis for the H&H modeling at the existing 42-inch RCP discharging from N Elm Street.

Scenario B –N. Glenwood Avenue Disconnect (2 Iterations)

Scenario B will model the impacts of the disconnecting of the upper reaches of the conveyance system from the main trunkline that passes through 698 N. Glenwood Avenue. The disconnected network, consisting of the trunkline that flows from Mitchell Street, would be routed eastward on Matilda Street, and outfall to either the existing outfall location to the rear of 622 N. Elm Street or to an alternate location in the area.

This will likely be an iterative process to evaluate whether the additional capacity from the disconnected storm drainage system will result in flooding downstream. A target level of service for the new system capacity will be determined before the evaluations are performed based on discussions with City staff. As was the case with Scenario A, Arcadis will compare the results of Scenario B with the existing conditions modeling results.

Please note that this system will need to evaluate the downstream hydrologic impacts to properties. The analysis will study the outfall on 622 N. Elm Street with the ultimate downstream point of analysis for the H&H modeling at the existing 42-inch RCP discharging from N Elm Street.

Scenario C – Conveyance Network Realignment (1-2 Iterations)

Scenario C will evaluate the impacts and conceptual sizing of a realigned and redesigned conveyance network within the drainage area. The alignment would evaluate the feasibility of abandoning the existing pipe network on private property, and realigning and upgrading the are conveyance network. This scenario will evaluate an option that collects runoff within the N. Glenwood Avenue right-of-way, and conveys flows eastward on Matilda Street.

This will likely be an iterative process to evaluate whether the additional capacity from the redesigned storm drainage

system will result in flooding downstream. A target level of service for the new system capacity will be determined before the evaluations are performed based on discussions with City staff. As was the case with Scenarios A & B, Arcadis will compare the results of Scenario C with the existing conditions modeling results.

Please note that this system will need to evaluate the downstream hydrologic impacts to properties. The analysis will study the outfall on 622 N. Elm Street with the ultimate downstream point of analysis for the H&H modeling at the existing 42-inch RCP discharging from N Elm Street.

Scenario D – Green Stormwater Infrastructure (3-5 Iterations)

Scenario D will include a preliminary analysis that explores the feasibility of constructing green stormwater infrastructure (GSI) within the right-of-way of Glenwood Avenue and/or N. Elm Street. GSI, if feasible, may provide volume control and upstream detention that would alleviate the burden on the conveyance network. GSI features within the right-of-way that will be explored may consist of roadside bio swales, tree trenches, and underground detention.

This will be an iterative process, and may be combined with and / all iterations within Scenarios A-C.

Please note that this system will need to evaluate the downstream hydrologic impacts to properties. The analysis will study the outfall on 622 N. Elm Street with the ultimate downstream point of analysis for the H&H modeling at the existing 42-inch RCP discharging from N Elm Street.

Assumptions:

- City will provide survey data requested by Arcadis

Meetings and Deliverables:

- Up to two remote meetings to discuss findings

Task 3 – Report

Arcadis will submit a draft technical memorandum summarizing the methodology utilized to conduct the analysis as well as the results of the alternative analysis outlined in Task 2. A final version of the report will be submitted two weeks after receipt of City comments. Following completion of the draft report, we will schedule a meeting with city staff to discuss the report prior to finalization.

Assumptions:

- Draft and final reports will be electronic format.

Deliverables:

- Draft Report
- Final Report that incorporates appropriate revisions resulting from City comments received.

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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 2020 rate table below.

2020 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
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

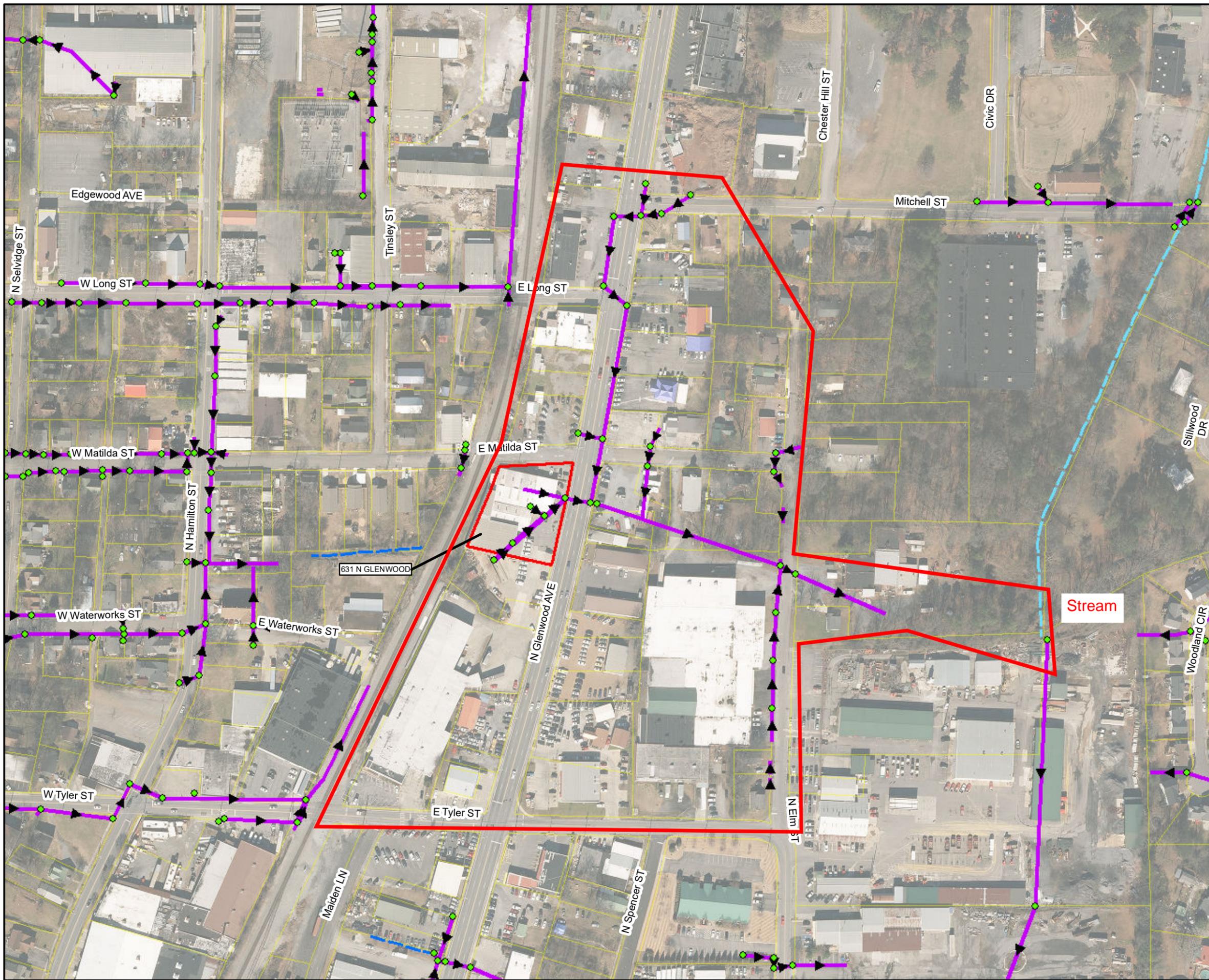
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Attachment 3
Special Conditions

None.

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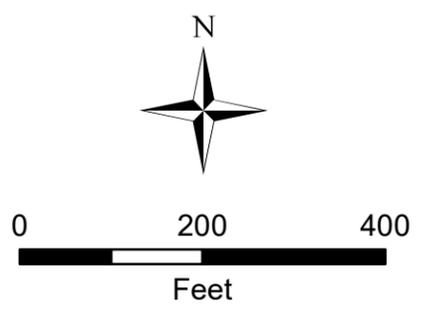
Attachment 4
Project Area Map



Legend

- Stormwater Structure
- ▶ Stormwater Pipes
- Stormwater Ditches
- Streams
- Roadway Centerline Elevations
- Survey Area
- Storm System Only Survey Area
- Parcels

Survey areas within private property and right of ways include the collection of the following items: above ground items (i.e. buildings, roadways, utility poles, etc) Topo - 2' contours, ditch/stream top of bank and toe of bank locations and elevations, utilities, storm sewers, building footprints and finish floor elevations.



CITY OF DALTON
STORMWATER SURVEY EXHIBIT

North Glenwood Ave Drainage Study Survey

