

**PROFESSIONAL SERVICES TASK ORDER**

**Task Order Number: 004**  
**Task Order Date: February 22, 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: Ridge Street Drainage Study  
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:

\$ 68,625.00 [ ] 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: \_\_\_\_\_

## **PROFESSIONAL SERVICES TASK ORDER**

**Task Order Number: 004**

### **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 at residential properties along Ridge St. and McFarland Ave. from West Emery St. to West Franklin St. 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. The following scope of work will also include an evaluation of the private conveyance system, consisting of piping and open channels, behind the residential properties along Valley Drive from West Franklin Street to Walnut Avenue (State Route 52), as illustrated in Figure 29 of the City of Dalton, GA Stormwater Area of Concern Catalog: Off Right-of-Way, dated October 2020 (catalog). 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. The analysis prepared in accordance with this scope of work will be completed in consideration of all areas of concern noted in the catalog.

##### *Phase 1 – Alternatives Evaluation*

The purpose of Phase 1 is to analyze the drainage system's existing conditions and test different solutions in order to relieve flooding of residential properties along Ridge St. and McFarland Ave. from West Emery St. to West Franklin St. 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, and will include an evaluation of the private conveyance system, consisting of piping and open channels, behind the residential properties along Valley Drive from West Franklin Street to Walnut Avenue (State Route 52), (Catalog Figure 29). 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. Arcadis has reviewed the survey data provided by the City for the proposed study and believes it to be sufficient to conduct the study. As such, surveying is not included in this work authorization. If additional survey is required, it is assumed that the City will coordinate this effort with the previously selected surveyors.

The main focus of the modeling effort will be the portion of the drainage system that runs south from West Emery St. behind the residential properties along Ridge St. and McFarland Ave. and the drainage system along West Franklin and Valley Dr. downstream to the West Walnut Ave. and Willow Park intersection. Refer to the Attachment 4 figure, 612 Ridge Street Survey, which depicts the area and details of survey collected by the City separately. The ultimate downstream point of analysis for the H&H modeling will be at the existing culvert at the intersection of Willow Park Dr. and Thornton Place. Arcadis staff will also conduct a limited field reconnaissance 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. Five 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 in place between the West Emery St. and West Franklin St. 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. 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 immediately adjacent to the project site. This downstream analysis will be limited to a point downstream at the existing culvert at the intersection of Willow Park Dr. and Thornton Place.

*Scenario B –Installation of Drainage System Along Ridge Street (3 Iterations)*

Scenario B will model the impacts of the conceptual construction of a new storm drainage system along Ridge Street south to the existing open channel drainage system at the western end of West Franklin Ave. This scenario will also analyze the impacts to the open channel conveyance system located at the terminus of Ridge Street (Catalog Figure 16) to the private pipe system located at the rear of 622 McFarland Avenue (Catalog Figure 13). This will likely be an iterative process to evaluate whether the additional capacity from the new 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 immediately adjacent to the project site. This downstream analysis will be limited to a point downstream at the existing culvert at the intersection of Willow Park Dr. and Thornton Place.

*Scenario C – Upstream Regional Detention (2 Iterations)*

Scenario C will evaluate the impacts and conceptual size of a regional detention facility north of West Emery St. to mitigate flooding downstream in the study area. This will likely be an iterative process to evaluate the detention area needed to mitigate flooding downstream. Two target levels of service for detention 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 C with the existing conditions modeling results. Please note that this evaluation will be

conceptual in nature to determine the storage volume required to provide reduction of flows downstream. This effort will not include actual siting of facilities.

*Scenario D – Upstream Regional Detention and Increase Existing System Capacity*

Scenario D will include a conceptual sized regional detention pond from Scenario C and existing drainage system upgrades from Scenario A. It will evaluate the needed downstream pipe and open channel upgrades for areas that still show flooding even with a conceptual sized regional detention pond. This scenario will also primarily target limiting downstream impacts to peak discharges using a balance of detention and system upgrades. This will likely be an iterative process to evaluate whether the additional system upgrades will result in flooding downstream. A target level of service for 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 D with the existing conditions modeling results.

Please note that this system will need to evaluate the downstream hydrologic impacts to properties immediately adjacent to the project site. This downstream analysis will be limited to a point downstream at the existing culvert at the intersection of Willow Park Dr. and Thornton Place.

*Scenario F – Upstream Regional Detention and Ridge Street System*

Scenario F will include a conceptual sized regional detention pond from Scenario C and new drainage system capacity from Scenario B. It will evaluate the needed new drainage system capacity for areas that still show flooding even with a conceptual sized regional detention pond. This scenario will also primarily target limiting downstream impacts to peak discharges using a balance of detention and new system capacity. This will likely be an iterative process to evaluate whether the new drainage system will result in flooding downstream. A target level of service for new drainage 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 F with the existing conditions modeling results.

Please note that this system will need to evaluate the downstream hydrologic impacts to properties immediately adjacent to the project site. This downstream analysis will be limited to a point downstream at the existing culvert at the intersection of Willow Park Dr. and Thornton Place.

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.



## PROFESSIONAL SERVICES TASK ORDER

**Task Order Number: 004**

### 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.

### 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
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

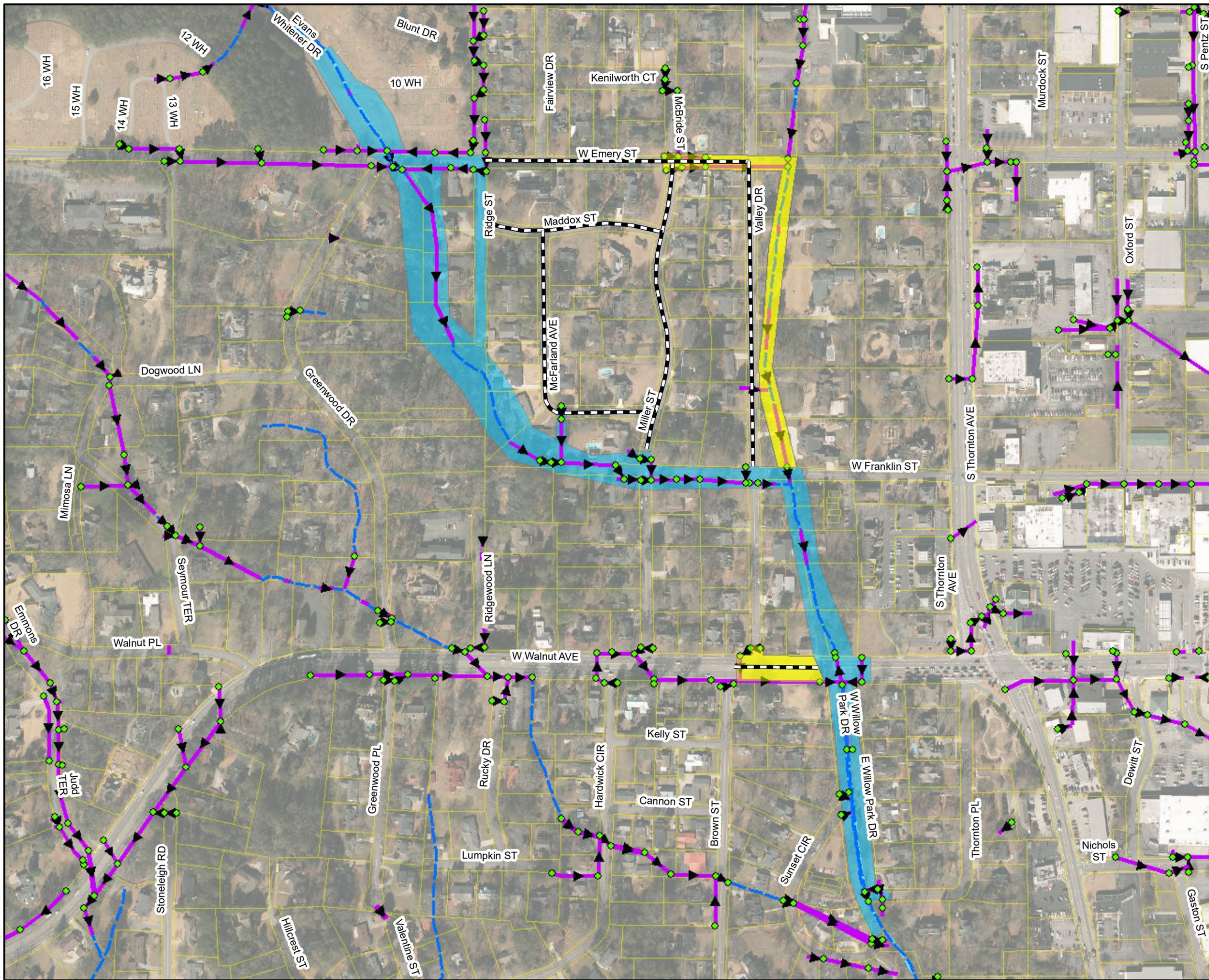
**PROFESSIONAL SERVICES TASK ORDER**  
**Task Order Number: 004**

**Attachment 3**  
**Special Conditions**

None.

**PROFESSIONAL SERVICES TASK ORDER**  
**Task Order Number: 004**

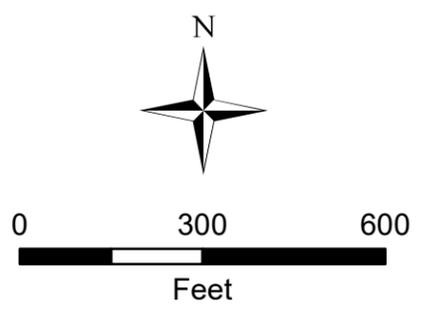
**Attachment 4**  
**Project Area Map**



### 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

**Ridge Street Drainage Study Survey**