

# Cartegraph OMS – Implementation Scope of Work

Implementation of the Operations Management System (OMS) includes the following professional services:

## Setup

- Cartegraph will setup a hosted, test and production OMS environment.
- Cartegraph will provide an overview, up to two (2) hours, of Cartegraph and ArcGIS Online user-based logins and User/Role functionality.
- Cartegraph will provide a template file to be utilized by your staff to populate Roles and Users to be utilized for OMS.
- Cartegraph will utilize the template to create users and roles in OMS. (Note: Subsequent User and/or Role changes will be your administrator's responsibility.)
- Cartegraph will provide documentation and guidance, up to four (4) hours, for your technical GIS staff to configure Esri Basemap Services for OMS integration. Guidance will be geared towards OMS/Esri integration functionality and requirements.
- Cartegraph will setup the OMS Platform, including the Request, Work, Resource, and Asset Management areas of the software. *Asset Management solutions will be setup for all solutions referenced in the Assets section of the scope unless otherwise noted.*

## Consulting

- Cartegraph will provide a three-day (3-day) onsite requirement gathering workshop to increase our understanding of your business and functional goals. Through workshops and interviews, Cartegraph will identify best fit scenarios for OMS and provide a brief including any challenges as well as recommendations for OMS best practices relevant to your implementation.

## Training

- Cartegraph will provide remote train-the-trainer training, up to four (4) hours, on overall system navigation and functionality to help familiarize your staff with the software environment and its common functions. Training topics include:
  - Dashboards
  - Standard KPI/ROI Gadgets
  - Logins/Permission
  - Layers
  - Filters
  - Maps
  - Grids
  - System Navigation
  - Views (List & Detail)
  - Standard Reports
  - Attachments
  - Requests, Work, Assets, Resources, Reports, and Administrator Tabs

- Cartegraph will provide remote train-the-trainer training, up to two (2) hours, on OMS Esri integration functionality. Training topics include:
  - OMS Esri integration configuration options
  - Integration functionality (basemap and feature)
  - Overall Esri integration requirements, considerations, and Cartegraph recommended best practices
  
- Cartegraph will provide a three-day (3-day) onsite "train-the-trainer" training event. The training agenda will be defined and agreed upon by both Cartegraph and your project manager. Topics may include any of the following:
  - Request Management:
    - Requests
    - Requesters
    - Task Creation from Requests
    - Issue library (including settings such as Applies to Asset and Non-Location)
    - Cartegraph recommended best practices for Request and Requester Management
  
  - Work Management:
    - Create Task(s) (Asset/Non-Asset)
    - Assignments (Add, Edit, Remove)
    - Task Menu Actions
    - Related Work Items
    - Create Work Order
    - Associate Task to WO
    - Repeat Work Orders
    - Work Order Menu Actions
    - Enter Resources
    - Timesheets
    - Activity library (including settings such as Applies to Asset, Inspection, Key Dates, Cost, and Productivity)
    - Cartegraph recommended best practices for Work Management
  
  - Asset Management:
    - Asset Details
    - Preventative Maintenance Plans
    - Inspections
    - Linked assets (if applicable)
    - Container/Component Relationships (if applicable)
    - Cartegraph recommended best practices for Asset Management

*To avoid redundancy, and to utilize service time efficiently, training may cover a subset of the assets listed in the Asset section of the scope.*
  
  - Resource Management:
    - Resource Details
    - Labor/Equipment Rates
    - Material Management (Stock, Usage, Adjustments)
    - Vendor Price Quotes
    - Cartegraph recommended best practices for Resource Management
  
  - Cartegraph Mobile:
    - Overall system functionality (Navigation, Interface, Maps, Attachments, Sorting)

- Work Management
      - Create and Update Tasks (Asset/Non-Asset)
      - Assign Tasks
      - Enter Resources
      - Inspections
    - Asset Management
      - Create and Update Assets
    - Request Management
      - View and Update Requests
      - View Requester information
      - Create Task from Request
    - Offline use for Cartegraph for iPad
    - Cartegraph recommended best practices for mobile device use
  - Administrator:
    - Administrator:
      - User Administration, Role Administration, Asset Administration, Record Filter Administration, Import/Export, Scheduled Process Log, Error Log
    - Settings:
      - System Settings, Map Administration, Geocode Settings, GIS Integration settings, Asset Color Manager
    - Manager:
      - Layout Manager, Library Manager, Preventative Maintenance, Asset Condition Manager, Notification Manager, Structure Manager, Automation Manager
- Cartegraph will provide remote train-the-trainer training, up to six (6) hours, on OMS Reporting functionality. Training topics include:
  - Security/Roles
  - Report Designer
    - Report Types, Report Styling, Filtering\Parameters, Basic Formulas, Grouping/Sorting
  - Report Viewer
  - Reporting best practices and solution tips/tricks.
- Cartegraph will provide remote train-the-trainer training, up to four (4) hours, on Preventative Maintenance Plans functionality. Training topics include:
  - Preventative Maintenance
  - Cartegraph recommended best practices for proactive asset management

*To avoid redundancy, and to utilize service time efficiently, training may cover a subset of the assets listed in the Asset section of the scope.*

- Cartegraph will provide remote train-the-trainer training, up to four (4) hours, on Advanced Inspections and Asset Condition Manager functionality. Training topics include:
  - Performance Management
    - Prediction Groups
    - Minimum Condition Groups
    - Activities and Impacts
    - Criticality Factor
    - Install/Replaced Dates
  - Cartegraph recommended best practices for advanced inspections and condition management

*To avoid redundancy, and to utilize service time efficiently, training may cover a subset of the assets listed in the Asset section of the scope.*

## Go-Live Support

- Cartegraph will provide a three-day (3-day) onsite event for Go-Live Support. The agenda will be defined, and agreed upon, by both your and Cartegraph's project managers. Topics may include any of the following:
  - Refresher training for items listed in the scope of work
  - Software and process support for staff during production roll out
  - Field, Layout, and Report configuration guidance, if applicable

## Data Services

- Cartegraph will provide one test and one production data load service through standard import/export functionality. Cartegraph will provide template documents for data population. Once populated by your staff, Cartegraph will load the data into your test or production OMS environment. Data loads may include data such as:
  - Parent level asset records
  - Asset location (spatial x/y) attributes
  - Parent level resource (Labor, Equipment Material, Vendor) records
  - Resource Rate (Labor, Equipment, Material) records
  - Standard system libraries

## Configuration Services

- Cartegraph will provide configuration services to import current usage information from collection logs to drive proactive work and preventative maintenance.
  - Cartegraph will assist in configuring a standardized spreadsheet for use in the collection of:
    - Values:
      - Hourmeter
      - Time of check
      - Alarms
      - Switch
      - Operator
      - MGD
      - Totalizer
    - On the following asset types:
      - Pumps
      - Meters
      - Generators
      - Aerators
      - Wells
  - Cartegraph will configure an import file that can be manually run on a daily basis to import the values collected in the standardized spreadsheets referenced above onto the corresponding asset ID.

- Cartegraph will configure automations that calculate the current usage value of each asset type above based on the daily readings. This value can then be used to drive preventative maintenance and proactive work.

## Assets

Asset implementation includes the following professional services:

- Cartegraph will provide installation and training on the following forty-six (46) asset types:
  - Sanitary Sewer (7)
    - Sewer Cleanout; Sewer Facility; Sewer Force Main; Sewer Lateral; Sewer Main; Sewer Manhole; Sewer Pump
  - Water Distribution (9)
    - Water Backflow; Water Facility; Water Hydrant; Water Lateral; Water Main; Water Meter; Water Pump; Water Valve; Water Storage Tank
  - Wastewater Treatment Plant (16)
    - Wastewater Treatment Plant Blowers; Wastewater Treatment Plant Compressors; Wastewater Treatment Plant Conveyors; Wastewater Treatment Plant Electrical Generator; Wastewater Treatment Plant Facility; Wastewater Treatment Plant HVAC Equipment; Wastewater Treatment Plant Instrumentation; Wastewater Treatment Plant Motors; Wastewater Treatment Plant Presses; Wastewater Treatment Plant Processes; Wastewater Treatment Plant Pump; Wastewater Treatment Plant Screens; Wastewater Treatment Plant Structure; Wastewater Treatment Plant UV; Wastewater Treatment Plant Valves; Wastewater Treatment Plants; Wastewater Treatment Plant Floor
- Cartegraph will provide up to five (5) field configurations for each asset type listed above.

## Integration Services

- Cartegraph staff will provide the following standard, uni-directional (one-way) integration service between SCADA and Cartegraph.
  - The standard integration includes the following:
    - Cartegraph will provide the following integration points:
      - Retrieve specified alarm logs and trigger a Task creation upon receipt of a new log entry.
      - Retrieve specified asset usage log data, and associate logs to the corresponding asset to support standard OMS preventative maintenance trigger and scheduling functionality.
    - Cartegraph will provide an error logging capability to easily identify potential integration issues.
    - Cartegraph will provide a customer-configurable time interval to manage integration frequency.

## Assumptions

- Customer staff will be responsible for populating required Tag values utilized to support integration triggers.
  - All data must be accessible to the Cartegraph service from a SQL DB, SQL View, Comma Delimited File
- Cartegraph will provide the following uni-directional (one-way) integration service of water meter billing and work data between MUNIS and Cartegraph.
  - The integration includes the following:
    - Integration points:
      - MUNIS Water Meter inventory and meter status is integrated with Cartegraph Water Meters using the customer account number.
      - Cartegraph Tasks are generated based on the MUNIS Water Meter status
      - Cartegraph Tasks are generated based on Service Orders generated in MUNIS

### **Assumptions**

- Data must be provided to the Cartegraph service via flat file format (.csv or .txt)
- Any round trip import of data back into MUNIS is the responsibility of the customer
- Cartegraph will provide an error logging capability to easily identify potential integration issues
- Cartegraph will provide a customer-configurable time interval to manage integration frequency

Cartegraph will provide all services remotely via audio; video; and web conferences unless otherwise noted.

### **Exclusions**

The following service items are not included in the scope of this project:

- Implementation of any custom modification or integration developed by Cartegraph; your internal staff; or any third-party is not included in the scope of this project unless specifically listed above.
- Data conversion services from other software system(s) or sources (including Cartegraph Navigator databases) are not included in the scope of this project unless specifically listed above.
- Any service items discussed during demonstrations; conference calls; or other events are not included in the scope of this project unless specifically listed above.