SCOPE
FACILITIES ASSET MANAGEMENT PROGRAM SUPPORT
CITYWORKS ENHANCEMENTS PHASE 1
CITY OF LEE'S SUMMIT
5/14/19

SCOPE OF SERVICES

This scope of services describes the work to be performed by HDR on behalf of the City of Lee's Summit, to add vertical asset types to CityWorks CMMS. This task is intended to aid the City in implementing Facilities Asset Management Program (FAMP) Initiative CityWorks Enhancements, Phase 1.

TASK 1 – Review Design of Asset and Condition Data for Readiness for Migration

This task will include an assessment of current vertical asset data sets for suitability for migrating into CityWorks CMMS. The primary concern is to what extent the source data may need restructuring in order to be adequate for the new purpose.

It is assumed that:
1. Prior work by City and HDR has resulted in a substantially complete asset inventory, including appropriate attributes.
2. A feature class already exists for the primary asset types, or at a minimum that an X,Y coordinate is available to build a point feature within a new geodatabase feature class.

The outcome of this task will be a conceptual data model for vertical asset management within the geodatabase asset registry of CityWorks. The model will document:
1. The recommended set of primary asset types that will become feature classes within the geodatabase. These will (a) provide a graphic feature that will generate the map representation of asset types participating in the asset hierarchy, and (b) become the base feature class upon which geodatabase relationships will be built to implement hierarchical associations.
2. The recommended set of subordinate asset types to be associated with each primary feature class.
3. The distribution of attribute data within each hierarchy.
4. Placeholder for data to be imported in future from SCADA (such as run times)
5. Architectural decisions regarding structure of relationship classes to be utilized for implementation of vertical asset registry, and the corresponding GIS system requirements.

The data model will also flag remaining gaps in data availability, for possible data collection before initial load into CityWorks or for future tasks.

Services Provided by HDR:
- Review existing vertical asset data, in spreadsheets and AMTools.
- Develop data model for implementation in geodatabase.
- Identify potential issues regarding consolidation of source data sets in preparation for loading into the geodatabase.
- Identify concerns about the graphic representations of primary asset types
- Identify program data to include in initial CityWorks asset information to capture asset and facility information, e.g. consequence of failure, equipment condition, useful life estimates, etc.
- Identify recommended future enhancements to support programmatic activity that would not be included in initial implementation
- Producing recommendations for restructuring existing elements of the City geodatabase, for review and approval by City data governance processes
- Facilitate and conduct review meeting

Deliverables:
Data Model
Memo documenting concerns about current data inventory
Recommendations for changes to existing geodatabase contents

Meetings:
Workshop -- 1 Review Meeting

TASK 2 – Prepare Source Data for Migration

This task will include consolidation of current vertical asset data into a series of Comma-Separated Values (CSV) files, ready for loading into geodatabase. Data will be restructured as identified in Task 1, as part of the restructuring. Work will be performed using utilities within Excel or Access.

If necessary, existing geodatabase classes will also be modified so as to support the vertical asset data model. NOTE: Changes to the existing elements within the City geodatabase must have been approved in advance by the City.

The outcome will be a set of CSV flat files ready for import into Esri's geodatabase. (This may be thought of as equivalent to a staging area for the Extract, Transform, and Load process.)

Services Provided by HDR:
- Create CVS files corresponding to data model
- Extract data from sources into CVS files
- Reconcile conflicts in source data (for example, duplicate assets or conflicting attribution in different source data sets) in collaboration with City staff

Deliverables:
Set of CVS files (These are HDR working files and not formal deliverables. However, they will be made available to City for their files if desired.)

Meetings:
None

TASK 3 – Create Vertical Asset Registry in City Geodatabase

This task will include loading vertical asset data from CSV files into geodatabase, then setting up geodatabase relationships among the resulting geodatabase classes. Existing preventative maintenance Work Order types will be modified to work with the new asset registry contents.

One representative facility will be chosen for a pilot project. This facility will be set up using the vertical asset registry approach, in a TEST environment. It will be reviewed with City staff by (a) linking up existing preventative maintenance Work Orders to the new asset registry structure, (b) exercising the Cityworks vertical asset extension against the pilot project data, and (c) documenting lessons learned.

When approved, the approach to creating the vertical asset registry will be utilized to create the production geodatabase contents.

The outcome will be a set of populated data structures within Esri's geodatabase. This will correspond to the data model produced in Task 1.

Services Provided by HDR:
- Import CVS files and modified geodatabase elements into temporary geodatabase using ArcTools and ArcCatalog functionality.
- Define geodatabase relationships among these feature and object classes
- Supplementing database administration efforts such as generating and loading domains for specific attributes, based on the source data we collected
- Collaborate with City technical staff in loading the additional geodatabase contents and integration with CityWorks.
- Modify existing preventative maintenance Work Orders to work with new geodatabase contents
- Validate resulting geodatabase for valid structure
- Confirm geodatabase corresponds to data model

Deliverables:
Export of geodatabase contents representing vertical assets, ready for loading into City production geodatabase by City staff.
Memo providing documentation of how these contents were developed.

Meetings:
One meeting to review pilot project.

TASK 4 – Project Management

Services Provided by HDR:
- Project management and administration (project setup)
- Budget and invoice management

Deliverables:
Project invoices
Monthly status reports

Meetings:
None