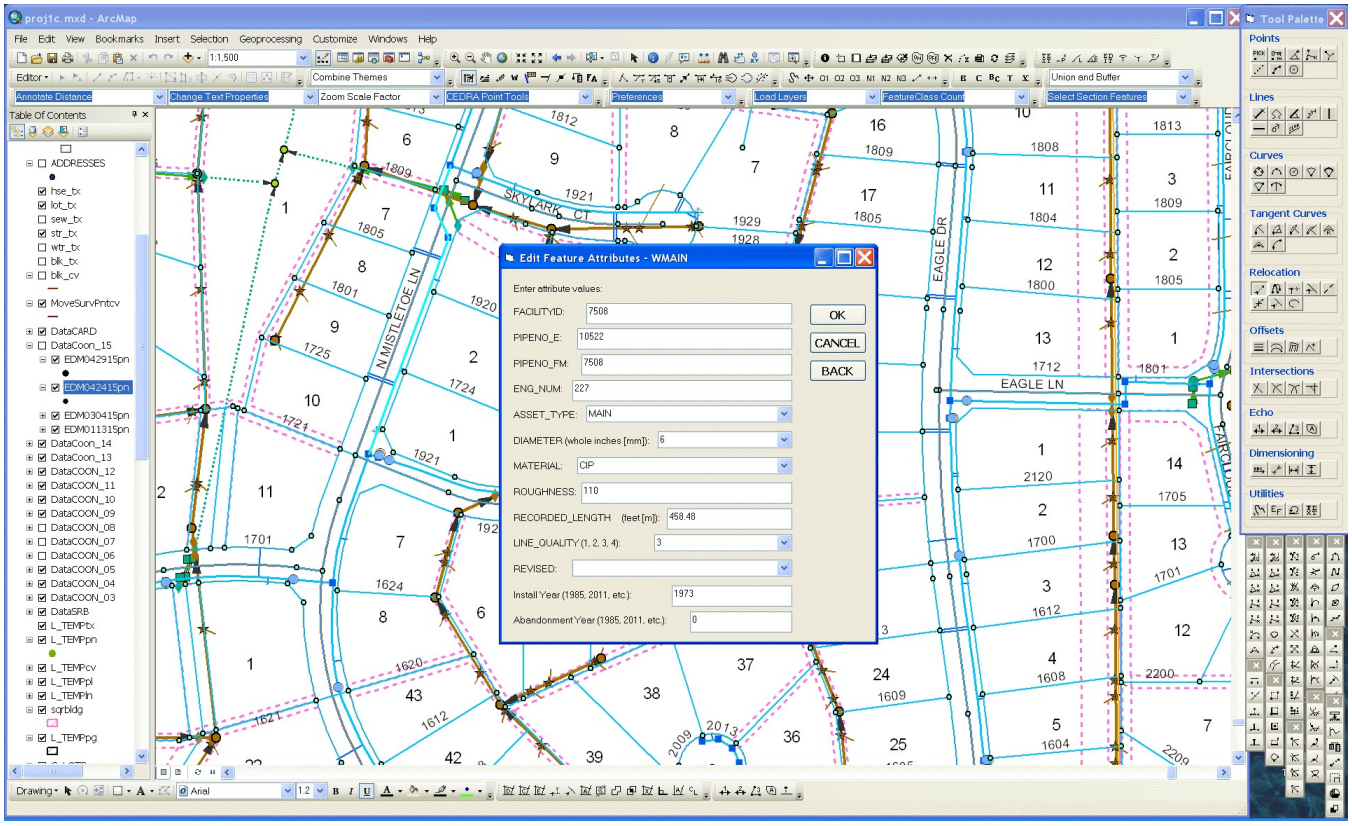
The City of Edmond a Case Study for Asset Collection and Asset Inventory System Implementation

The CEDRA Corporation offers to municipalities, utility companies and consulting engineering firms ArcGIS based software extensions as well as consulting and application development services. An example of the types of services that CEDRA provides can be seen in the City of Edmond, Oklahoma (City), the northern neighbor to Oklahoma City. Edmond's population is approximately 81,500, and the utility services involves more than 27,000 water and 36,000 electric accounts.

In 1996, the City began creating a geographic information system (GIS) designed to assist in the mapping of water, wastewater and storm water assets, and in the development of related utility applications. Over the past 19 years, the City's GIS has grown to become an integral part of its daily operations. The City utilizes an ArcGIS enterprise license and is currently implementing several ArcGIS applications. The water, wastewater, and storm water databases of the City were initially created by converting as-built drawings, microfilm and other record information in conjunction with field G P S surveydata for the water, wastewater and storm water features. Three dimensional locations o f m anholes and valves along with invert drop measurements were picked up in the field. The field information, provided by local engineering/surveying firms, was then introduced into the City's GIS by CEDRA utilizing said available record information.

The City's GIS, in the beginning, was coverage and shapefile based. Today, the City employs a SQL Server enterprise-based GIS that includes more than 12,000 water mains, 28,000 services, 10,000 sewer manholes, 28,000 wyes and 10,000 storm water structures (manholes, inlets, end treatments, etc.). In addition to the ArcGIS Desktop applications, the City hosts a number of ArcGIS Server web-based applications offering viewing, editing, querying and mapping functionality for a number of departments throughout the City. To ensure that the water, wastewater and storm water databases are kept up-to-date, the City has a data update and maintenance agreement with The CEDRA Corporation.

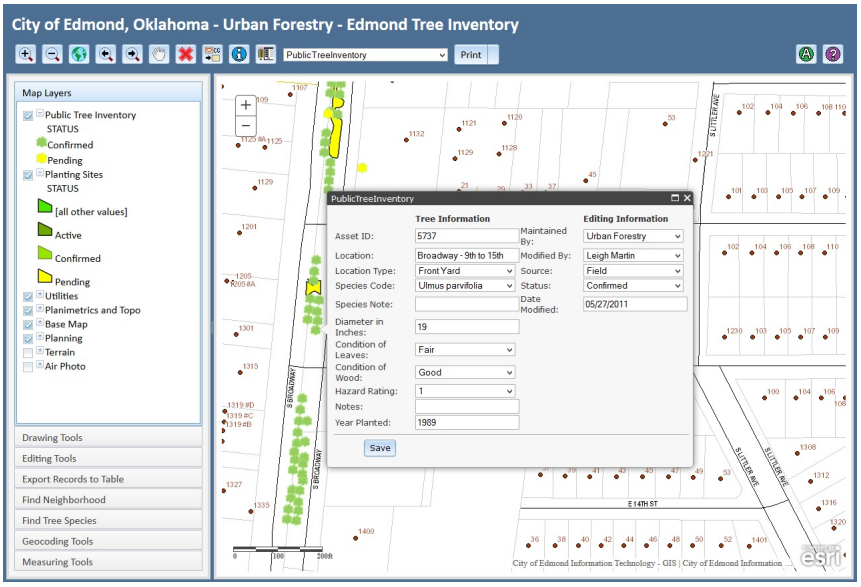


Additionally, the City utilizes CEDRA to maintain the City's parcel and easement layers, which are composed of close to 40,000 parcels and 9,700 easements. All the City's data layers are in Oklahoma state plane coordinates, enabling the city to overlay other data layers in a common coordinate system. Color aerial photography, which is updated periodically, is used to provide real-life background to the data.

Complementing CEDRA's consulting services, the City has a site license of the CEDRA-AGsuite software, which is composed of the CEDRA-AVcad, CEDRA-AVcogo, CEDRA-AVland, CEDRA-AVparcel, CEDRA-AVsand, CEDRA-AVwater, CEDRA-DataEditor and CEDRA-DxfExport software packages This software provides the City with CAD, COGO, deed transcription, parcel mapping, surveying, contouring, traverse adjustment, cross-section and profile stripping/plotting, stakeout, roadway design, earthwork calculations, site development, plan and profile drawing assembly, sanitary, storm, combined sewer modeling, water distribution modeling, data editing/maintenance, and DXF export functionality.

The City uses the CEDRA-AVcad and CEDRA-DataEditor software to maintain its electrical data, street centerline, and planning layers. The CEDRA-AVcad software offers a number of geometric tools useful in establishing the geometry of the electric lines and street centerlines. The CEDRA-DataEditor software is a powerful data entry tool used extensively for assigning data to the various features. Using this software, City staff is able to build custom dialog boxes for different feature classes that enable control of which attributes appear in the dialog box and the order. Single and multicolumn dialog boxes can be established with data line fields, as well as drop-down or choice list fields. The CEDRA-DataEditor software is also web-based and has been incorporated into the City's ArcGIS Server urban forestry, project editing, and emergency management applications to name a few.

The City takes advantage of the software's ability to define equations for a feature that generate and save attribute values using the values of other attributes. The use of conditional clauses in the equations provides the city with the ability to generate unique IDs for work orders. The City handles coded domain values so that values displayed in the custom dialog box are actually stored in the database with another corresponding value that is defined by the City.



The City of Edmond began its GIS program in August 1996 with the goal of making it an enterprise GIS. This system now provides extensive information about the City's infrastructure including water, sewer, storm drainage, streets and the electric distribution system. Information from planning, zoning, parks and recreation, and many other departments is included within the GIS, along with data from federal, state, and local agencies.

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