GIS BASED SOFTWARE SOLUTIONS from
The CEDRA Corporation

Corporate Overview

CEDRA™ provides state-of-the-art software for public works agencies, tax assessors, engineers, surveyors, utilities and others for querying, analyzing and maintaining geographic data bases. CEDRA's AVseries™ suite of software work directly within ESRI's GIS software (ArcView® GIS and ArcGIS® 9.x or 10.x), thus eliminating the need to switch back and forth between various software packages.

CEDRA's AVseries software bridges engineering and GIS by addressing a wide range of applications including CAD, surveying, COGO, roadway and site design, tax mapping and land parcel management. CEDRA users can also create engineering databases of water distribution and sanitary/storm/combined sewer systems, and model them, and maintain them all within any of the above referenced ESRI's GIS software in a tightly integrated environment.

The CEDRA AVseries software provides interoperability for small, medium and large municipalities, and engineering design offices that want to establish, explore, query, analyze and maintain a central database which serves both the public works and GIS departments.

Since 1985, CEDRA has been located in upstate New York, and is an ESRI Authorized Developer and Reseller.

CAD Tools for ArcMap

CEDRA-AVcad™ is an extension to all versions of **ArcView GIS** and **ArcGIS**. It provides more than 100 menu, button and tool commands for creating and editing point, line, polyline, polygon and curve features, as well as
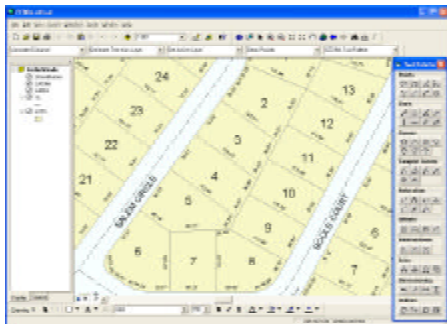

annotation features in a CAD like environment. Besides the wide range of geometric commands, one of the major strengths of this software is its various abilities to generate and manipulate text strings, and create in mass point, line curve and polygon annotations.

Because of its robustness, **CEDRA-AVcad**™ can be thought of as a "lite" COGO or Parcel Mapping product. In addition to being a stand-alone extension, it is an integral component of **CEDRA-AVcogo**™ and **CEDRA-AVparcel**™, which are described below.
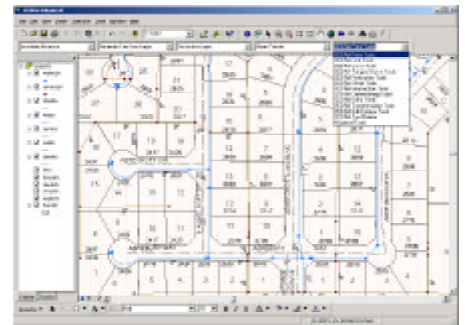
COGO Tools for ArcMap

CEDRA-AVcogo™ is an extension to all versions of **ArcView GIS** and **ArcGIS**, which provides all of the functionality of the **CEDRA-AVcad**™ and **CEDRA-DataEditor**™ extensions plus a multitude of additional geometric commands to assist in the creation and editing of points, lines, curves and polygons, including intersections, tangencies, projections, and other geometric operations. In all, more than 150 commands are available to the user for creating and editing geometric and annotation features.
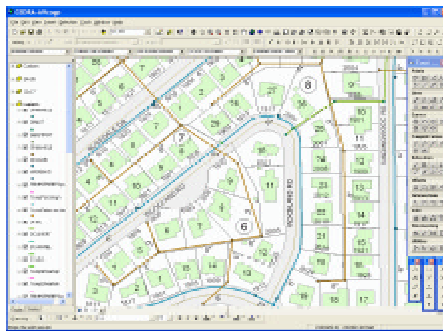
This extension is of particular interest to those involved in the building and maintenance of base maps, in which geometric command flexibility is desired in establishing precise geometric configurations of existing or new features, and to those in general desiring an extensive suite of commands to solve geometric problems. A variety of built-in formats for the import of field survey and GPS observations make this extension an indispensable tool in the building and maintenance of infrastructure databases. A three dimensional database is supported.

Parcel Mapping and Maintenance

CEDRA-AVparcel™ is an extension to all versions of **ArcView GIS** and **ArcGIS**, which enables the user to create, edit and manage two and three dimensional (high-rise condominiums) topological polygons of parcels for tax (cadastral) mapping, parcel maintenance and other applications that involve the manipulation of polygons and/or boundary information. All functionality of the **CEDRA-AVcad**™ and of the **CEDRA-DataEditor**™ extensions is included.

Roadway Design

CEDRA-AVland™ is an extension to all versions of **ArcView GIS** and **ArcGIS**, which provides the engineer functionality to perform surveying, COGO, contouring, traverse adjustments, stakeout, road design, earth work, tax mapping and site modeling applications in an environment that integrates Civil Engineering and GIS. **CEDRA AVland** offers the engineer the ability to take a project from field collection through design, drawing preparation, construction and facility maintenance. Automatic lot subdivision in accord with local zoning regulations is available. All functionality of the **CEDRA-AVcad**™ and **CEDRA-DataEditor**™ extensions is included.
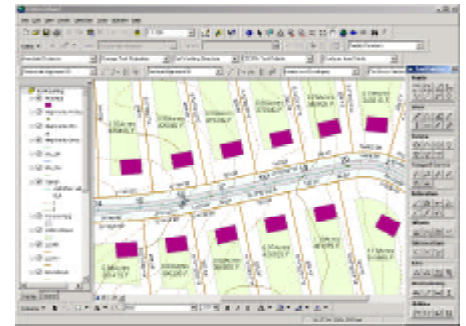
Sewer Modeling

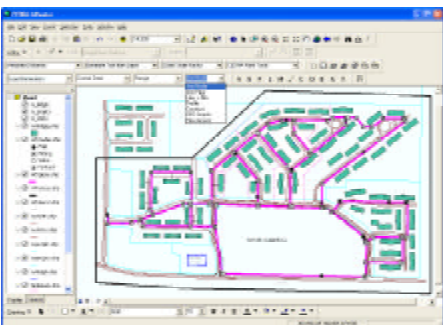**CEDRA-AVsand**™ is an extension to all versions of **ArcView GIS** and **ArcGIS**. It enables the engineer to create the geometric model of a storm water, wastewater or combined system, impose associated loads, and model the flow performance. Custom peaking factors to average daily contributions may be applied. Open
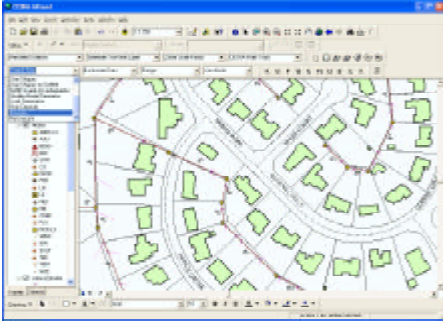
channel and closed conduit flows may be computed, system adequacy determined, flow hydrographs generated, and stage-storage curves developed. Fully annotated sewer profiles can be created. Over thirty built-in conduit shapes are available, as well as the ability to define custom shapes. Static, dynamic, and backwater analysis with one of the available modelers, **CEDRA-AVsand**™ or USEPA **SWMM** (Versions 4.31 and 4.4h) can be performed. After performing a dynamic analysis, the user is able to generate a variety of time related graphs.

Water Distribution Modeling

CEDRA-AVwater™ is an extension to all versions of **ArcView GIS** and **ArcGIS**. It enables the engineer to define the geometric configuration of a water distribution network, establish the materials inventory, introduce supply and demand loads, perform analyses and display pertinent results in graphic and/or tabular format. Storage tanks, pressure regulating, sustaining and open/close valves, pumps, meters, etc. can be included in the model. Static and Extended Period Simulations with one of the available modelers, **EPANET**™ (Versions 1 and 2), can be performed. The user also has the capability to generate time related graphs (pressure vs. time, flow rate vs. time, velocity vs. time, etc.) as well as, fully annotated water profiles.


Data Entry and Maintenance

CEDRA-DataEditor™ is an extension to all versions of **ArcView GIS** and **ArcGIS**, which facilitates the editing of feature attribute data. It is an ideal tool for those involved with facility maintenance and/or data capture applications, or for those who wish to enhance the native table editing functionality of **ArcView**.
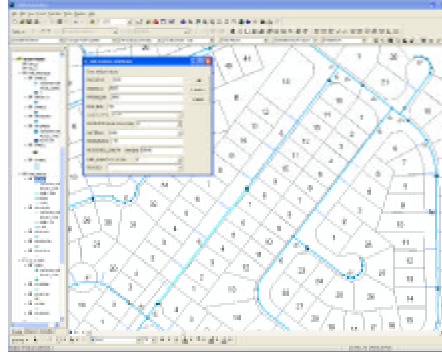
The user creates an ASCII based file that contains the desired attribute labels and default values or equations for each attribute within a theme to be edited. There is no limit to the number of attributes or themes that can be specified. When the user selects a feature for editing, a customized dialog box is displayed with the specified attribute labels and default values. An attribute's default value may be a specific value, or may be computed as the feature's area or perimeter. Ranges of allowable numeric attribute values, as well as, attribute drop-down lists may be specified.

DXF Exporting

CEDRA-DxfExport™ is an extension to all versions of **ArcView GIS** and **ArcGIS**, which enables the user to create an AutoCAD Drawing Interchange File (DXF file) for all visible features in the current map. Unlike other DXF export utilities, which process only one theme (layer) at a time, the CEDRA-DxfExport software processes all visible themes (shapefiles, personal geodatabases, enterprise geodatabases and coverages). In addition, the CEDRA DxfExport software will process annotation features and graphic text elements. As such, a DXF file created by CEDRA-DxfExport can include features and text.
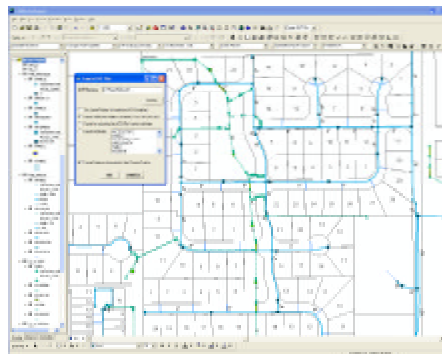
In creating a DXF file, note the following:

- If a theme has selected features then only the selected features are processed, if there are no selected features then all features in the theme will be processed. If the option *Export Features displayed in the Current Extent* is selected then all visible features in the current view will be exported.

- If there are selected MARKER, PEN, FILL and/or TEXT graphic elements then these graphic elements will be processed (if the user desires) and placed in separate layers in the DXF file.

- The name of the theme will serve as the name of a layer in the DXF file.

- The user has the ability to select one or more attributes from a theme for inclusion in the DXF file, if desired.

Avenue Wraps

Avenue Wraps is a book which a developer can use in the migration of Avenue based applications to **ArcGIS**, be it the 8.x, 9.x or 10.x environments. Additionally, the book is an ideal tool for developing brand new applications within **ArcGIS**. Avenue Wraps provides a simplified approach to programming with ArcObjects™ and includes a CD with sample code and a Dynamically Linked Library (DLL), which the developer can utilize immediately. Efficient conversion of Avenue code is achieved by providing a "one to one" mapping with the most popular Avenue requests. More than 300 Avenue requests have been converted to ArcObjects. In so doing, Avenue developers can migrate and develop software in the ArcGIS environment using an "Avenue like" approach. Avenue Wraps discusses a wide range of topics from VB/VBA syntax differences to application deployment. Using Avenue Wraps *can cut one's conversion effort by more than 70%*.