GASB 34 ArcPad Demo

Fact Sheet

Size	198 KB
Software	ArcPad 6.0.2
Database	Shapefiles
Optional Software	ArcPad Application Builder 6.0.2
ArcPad Platforms Tested	Windows CE 2.11, 2.12, 3.0; Windows 95, 98, NT, 2000, XP
ArcPad Application Builder Platforms Tested	Windows 98, ME, NT 4, 2000 (Server and Professional), XP
Special Functionality	This demo shows how ArcPad can be used as a tool in a GASB 34 inventory project. Tools, scripts, forms, and an extension have been customized to meet the GASB 34 project demand.
Audience	Federal, state, and local governments where field inventories are incorporated within the enterprise GIS. Any industry interested in a field data collection solution.

Purpose

This application demonstates how ArcPad can be used as a tool to support the GASB 34 initiative (See Brief). It shows the many customization options made that are available in ArcPad 6.0.2 through the ArcPad Application Builder 6.0.2. Configurations, Applets, Toolbars, Tools, Forms, and VBScripts have all been customized and implemented.

Brief

GASB 34, which stands for Government Accounting Standards Board statement #34, emphasizes that state and local governments throughout the United States must generate new annual reports that are more comprehensive, easier to understand, and more effective to use. Although the GASB measures current assets and liabilities, there is an initiative to inventory new information about long-term capital assets. This will help governments to not only make better comparisons between each other, but also to understand the extent at which they have invested in highways, roads, bridges, signs, culverts, and other infrastructure assets. To learn more about GASB and statement #34, visit at www.gasb.org/new/index.html.

This demonstration illustrates a typical GASB 34 project and exemplifies how ArcPad improves inventory processes. Providing a digital solution for a very monotonous project has exposed many advantages. Ultimately, all government owned infrastructures must be inventoried, and eliminating steps will help cut production costs. Since ArcPad can store the collected data in Shapefiles and dBASEfiles, the data entry and post processing tasks typically necessary in most field data collection projects, have been eliminated.

Data Sources and Descriptions

The only data necessary to complete this demo are the empty Shapefiles that have been provided. They are fictitious Shapefiles that contain the dBASE files that store all the necessary data in the appropriate attribute fields.

File	Description
AutoGate.shp	Auto Gates, aka Cattle Guards
Bridge.shp	Bridges
Culvert.shp	Culverts
NameSign.shp	Road Name Signs
RegSign.shp	Regulatory Signs
WarnSign.shp	Warning Signs
Bground.sid	Background image downloaded from the TerraServer

The NameSign, RegSign, and WarnSign Shapefiles contain identical fields. The idea here is that all of the signs could be merged into one Sign Shapefile.

Contents

Applets Folder

- The applet (GASB34.apa) and VBScript (GASB34.vbs) used to extend ArcPad functionality.
- Bitmaps (.bmp)—All of the images and icons used by the toolbars and forms.

System Folder

ArcPad.apx—System configuration file that alters the available tool buttons.

Demo Setup

1. The following installation instructions assume that the following software is already installed in the default directories and functioning properly.
   - Required Software: ArcPad 6.0.2
   - Optional Software: ArcPad Application Builder 6.0.2
2. Start.apm must reside in the same root as the data.
3. Copy all of the contents in the <install_dir> \Applets folder to the \Program Files\ArcPad\Applets directory.

Note: If you have changed the Applets File Path in the ArcPad Options, then paste the contents of the <install_dir> \Applets into that directory instead.
4. Copy the Arcpad.apx file located in the <install_dir> \System folder to the \Program Files\ArcPad\System directory. Note: If you have changed the System File Path in the ArcPad Options, then paste this file into that directory instead.

To Run This Demo

Use the entry in the Programs Menu Start | Programs | ArcGIS 8.3 Demos > GAS34B ArcPad > Start Demo, or start the demo by double clicking the Start.apm file in the installation folder. This will start ArcPad and open the associated demo project. Remember, the data layers, by default, contain no features. Therefore, your map display will be empty except for the background image unless you have pre-populated the shapefiles.

Demo Script

Data Preparation—You will notice that when ArcPad opens that the traditional interface has been modified. Take a moment to realize that if a configuration file (Arcpad.apx) was generated and placed into the System folder that ArcPad would read this file on start up to alter ArcPadís available tool buttons.

The idea here is that a typical field data collector may not have many computer skills. So the interface has been modified to meet this technical limitation. The user interface has been simplified and exposes only the tools and menus necessary for completing the tasks. The first toolbar or top toolbar represents this simplification.

Simplified ArcPAD toolbar

The second toolbar represents the Applet (GASB34.apa) that was loaded and will extend ArcPadís functionality to meet the GASB34 project demands. Mention that if the customized applet (GASB34.apa) is placed in the Applets folder, then the toolbar appears on the interface.

Custom GASB 34 toolbar

The tools from left to right are: Sign Inventory, Culvert Inventory, Auto-Gate Inventory, and Bridge Inventory. If you choose to demo utilizing a GPS unit, then you will need to assign a projection file to the map.

You can do this by clicking on the Layers button, which will open the layers dialog box. On the right side of this box click the Choose a layer definition file button . Navigate to a .prj file of a Shapefile, or choose one from the C:\Program Files\ArcPad\Coordinate Systems directory. Included on the altered Main toolbar are the core GPS tools. All of the necessary tools to implement GPS functionality have been provided. However, adding GPS point, line, and polygon functionality has been removed.

Collect Data

The premise for collecting GASB 34 data is to trek over as much ground as possible to efficiently and accurately acquire as much infrastructure data as possible. Having exact location is not as important as just having a general location and details about the type of infrastructure. Data collectors will travel in vehicles with GPS units attached causing the map display to always center on their location.

However, it is not crucial to use a GPS unit for this demo. When they drive by the infrastructure, the user will assume the infrastructureís location, and then click on the map display, which creates a point feature that the user can collect information about. The demo script will walk through each of the four tools for this demonstration. Although four types of infrastructure are being inventoried for this demonstration, there are other types of infrastructure that could be inventoried as well.

Sign Inventory

Warning Sign

1. Select the Sign Inventory tool .
2. Click the location of the sign in the map display.
3. Select Warning as sign type. Click OK.

Warning Sign

4. The point feature is added to the map display.
5. Collect detailed information in the Edit Form.
   a. The SubType contains the standard code for specific types of warning signs.
   b. The Condition indicates sign appearanceÖa ìPoorî sign may need to be replaced.
   c. Additional Signs allow users to inventory signs residing on the same sign pole.
   d. Additional details about the sign or area around the sign may be included in the Comments text box.
6. Click OK to accept the edits in the edit form.

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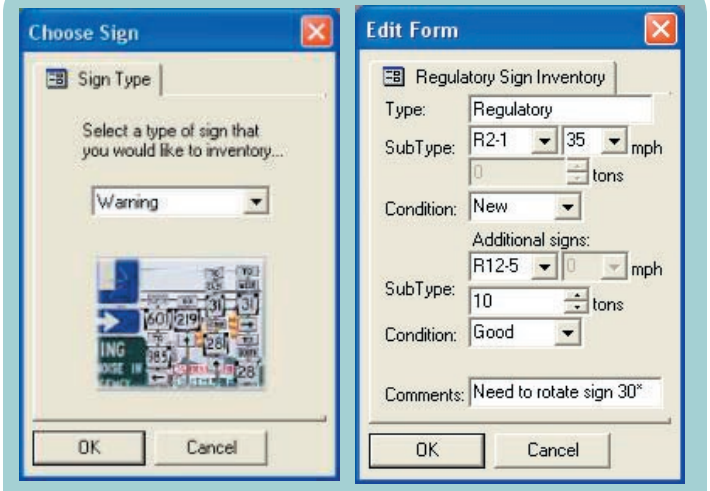
7. Choose and Click the location of another sign in the map display.
8. Select Regulatory when asked to choose the sign type. Click OK.
9. The point feature is added to the map display.

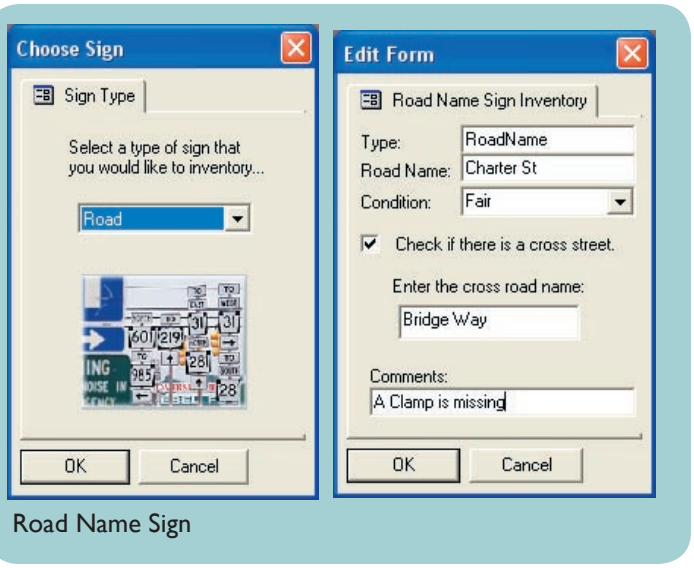


Road Name Sign

10. Collect detailed information in the Edit Form.
    a. The SubType contains the standard code for specific types of regulatory signs.
    b. The applet enables the mph combo box when R2-1 is chosen in the SubType, indicating that R2-1 is a speed limit sign. If R12-5 is chosen, then the tons combo box becomes enabled, indicating that R12-5 is bridge weight
11. Click OK to accept the edits in the edit form.

Road Name Sign

12. Choose and Click the location of another sign in the map display.
13. Select Road when asked to choose the sign type. Click OK.
14. Collect detailed information in the Edit Form. The Road Name contains a text box limited to 10 characters that allows the user to enter the name of the road. If a cross street exists, then check the check box and enter the name of the cross street in the text box that appears below the checkbox.
15. Click OK to accept the edits in the edit form.



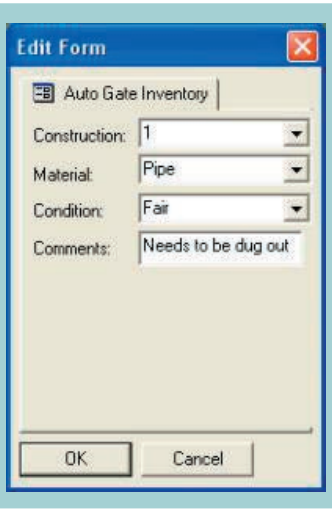
Road Name Sign

Culvert Inventory

16. Select the Culvert Inventory tool .
17. Choose and Click the location of the sign in the map display. The point feature appears in the map display and the edit form is automatically displayed.
18. Collect detailed information in the Edit Form.
    a. The Size indicates the diameter of the culvert pipe in inches.
    b. The Length indicates total pipe length in feet.
    c. The Material is represented by either Corrugated Metal Pipe (CMP) or Concrete Reinforced Pipe (CRP).
19. Click OK to accept the edits in the edit form.

Auto-Gate Inventory

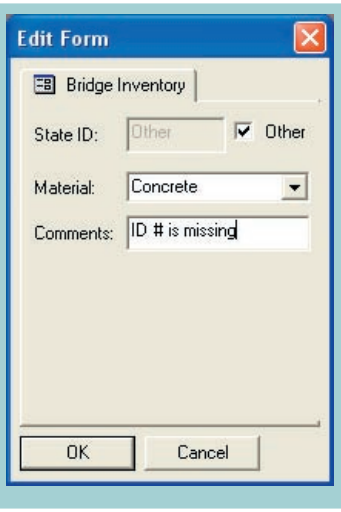
1. Select the Auto-Gate Inventory tool .
2. Choose and Click the location of the sign in the map display. The point feature appears in the map display and the edit form is automatically displayed.
3. Collect detailed information in the Edit Form.
   a. The Construction specifies the width of the Auto-Gate. A ì1î indicates that the Auto-Gate is a single car wide and a ì2î indicates the Auto-Gate is a double car wide.
   b. The Material indicates the type of material the Auto-Gate is made of.
4. Click OK to accept the edits in the edit form.



Auto-Gate Inventory

Bridge Inventory

1. Select the Bridge Inventory tool . 
2. Choose and Click the location of the sign in the map display. The point feature appears in the map display and the edit form is automatically displayed
3. Collect detailed information in the Edit Form.
   a. The State ID specifies the State ID number assigned to that bridge. If the Other check box is checked then the bridge is probably too small to have been assigned a State ID number.
   b. The Material indicates the type of material the bridge is made of.
4. Click OK to accept the edits in the edit form.



Bridge Inventory

Conclusion:

The demonstration of these four tools concludes the illustration of how ArcPad can be used in a GASB 34 project. This demonstration sets up an example of how field data collectors can go into the field and efficiently inventory data about capital assets owned by a government. From this point, the collected data now in a digital format can be quickly synced into the desktop database. The data inventoried will help governments have a better understanding the extent at which they invest in capital assets and comparing the investments with other government organizations. Further more, fulfilling the initiative of statement #34 defined by GASB.