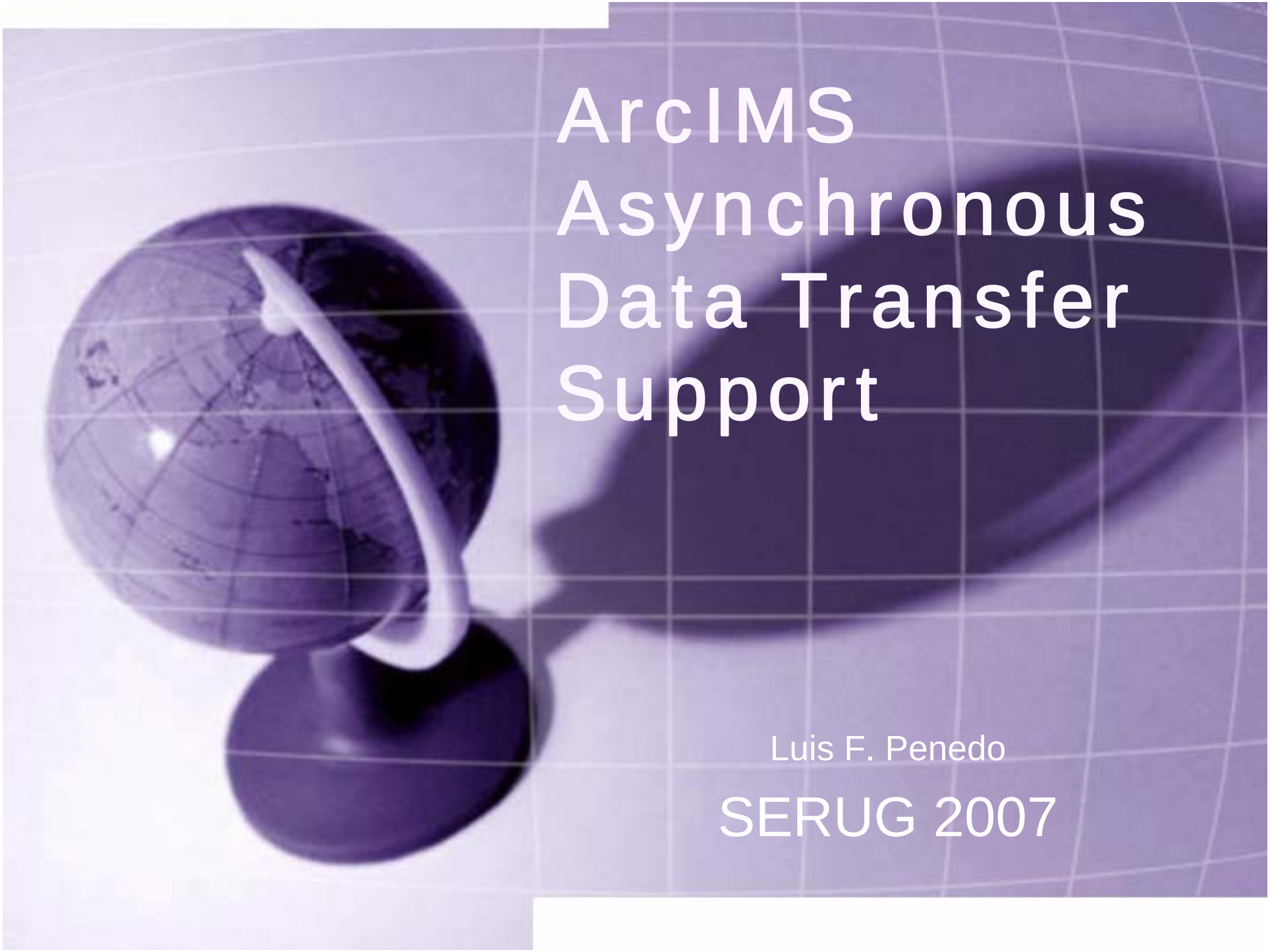


ArcIMS Asynchronous Data Transfer Support

Luis F. Penedo

SERUG 2007

Background

- **What is Enterprise Data Integration?**
  - Linking organization's data with its core functions
  - One core function in every organization is communications.
  - One critical activity in communications is keeping communication channels to one important organization's component:

Its Customers

- **What is Asynchronous Transfer?**
  - Sending or receiving data from server resources without rendering the web page
- **Why do we use asynchronous data transfer?**
  - To enable communications between JavaScript code and ASP.NET script files

The Problem

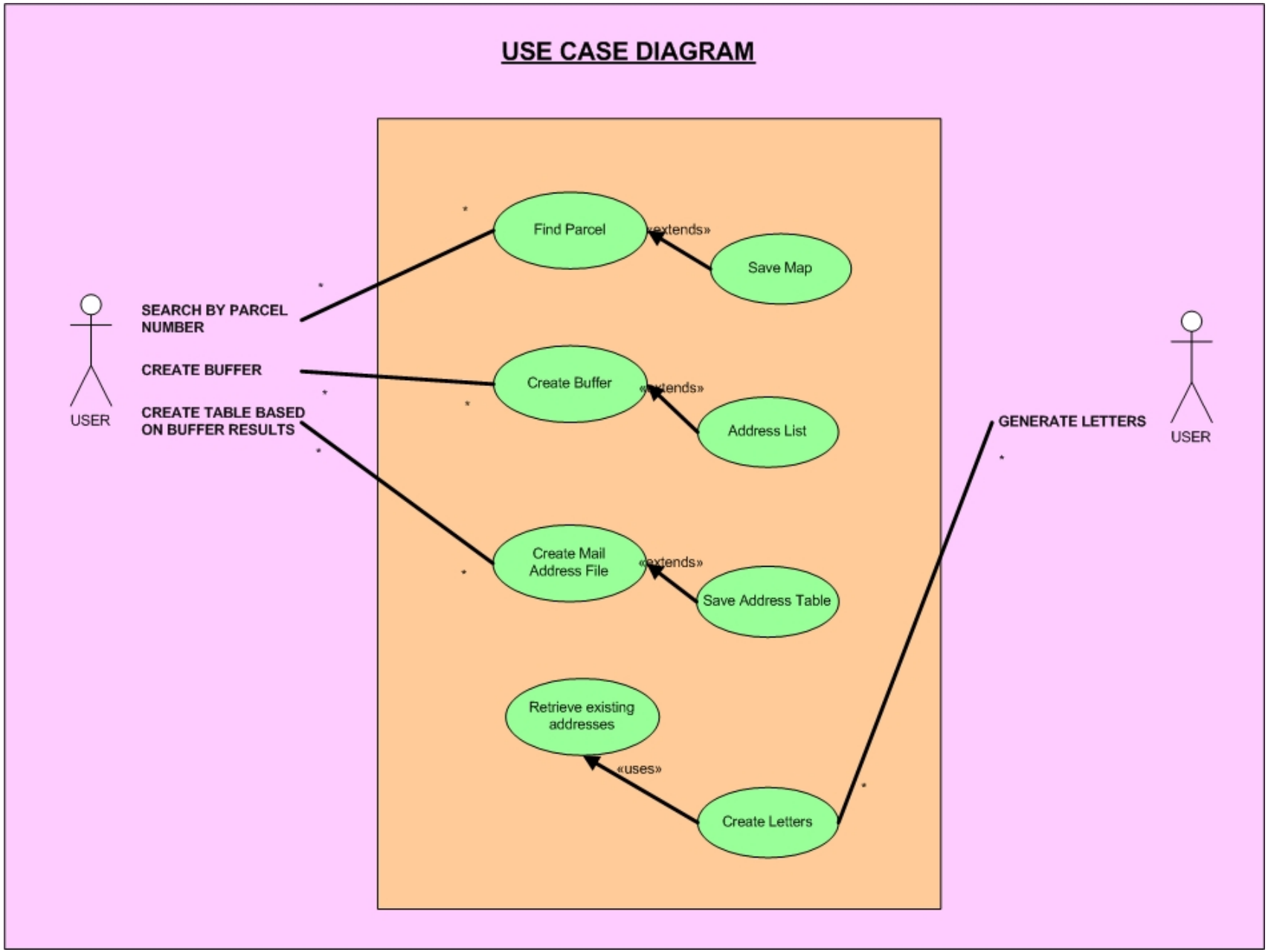
- Receives application for zone change of a property
- Notify owners of properties 500 feet around questioned property and invite them to public hearing
- Keep record of notifications in case a citizen complains of not receiving letter

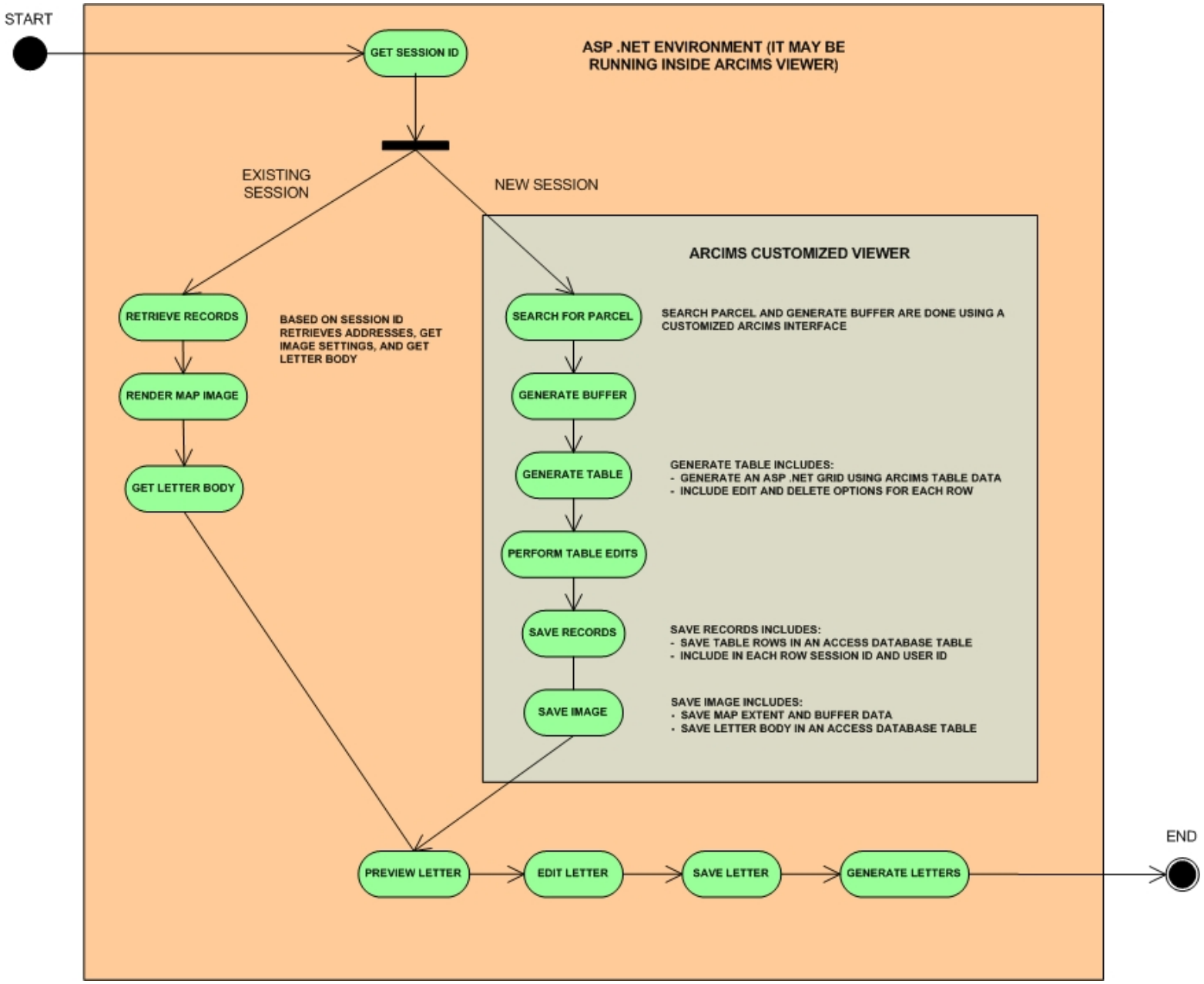
Existing Conditions

- Parcel search
- Property owners list
- Data Edit: Delete redundant data or correct wrong data (save Excel file).
- Use Crystal Reports to generate letters (save Crystal Reports file).
- Trace map or print one showing area of interest.

Proposed Solution

- Program to perform property search in a buffer area around property
- Same program inserts letter body
- Saves property owners list in database
- Renders map showing buffer and properties
- Uses saved data to generate letters (mail merge)
- Recoverability: saves data and settings

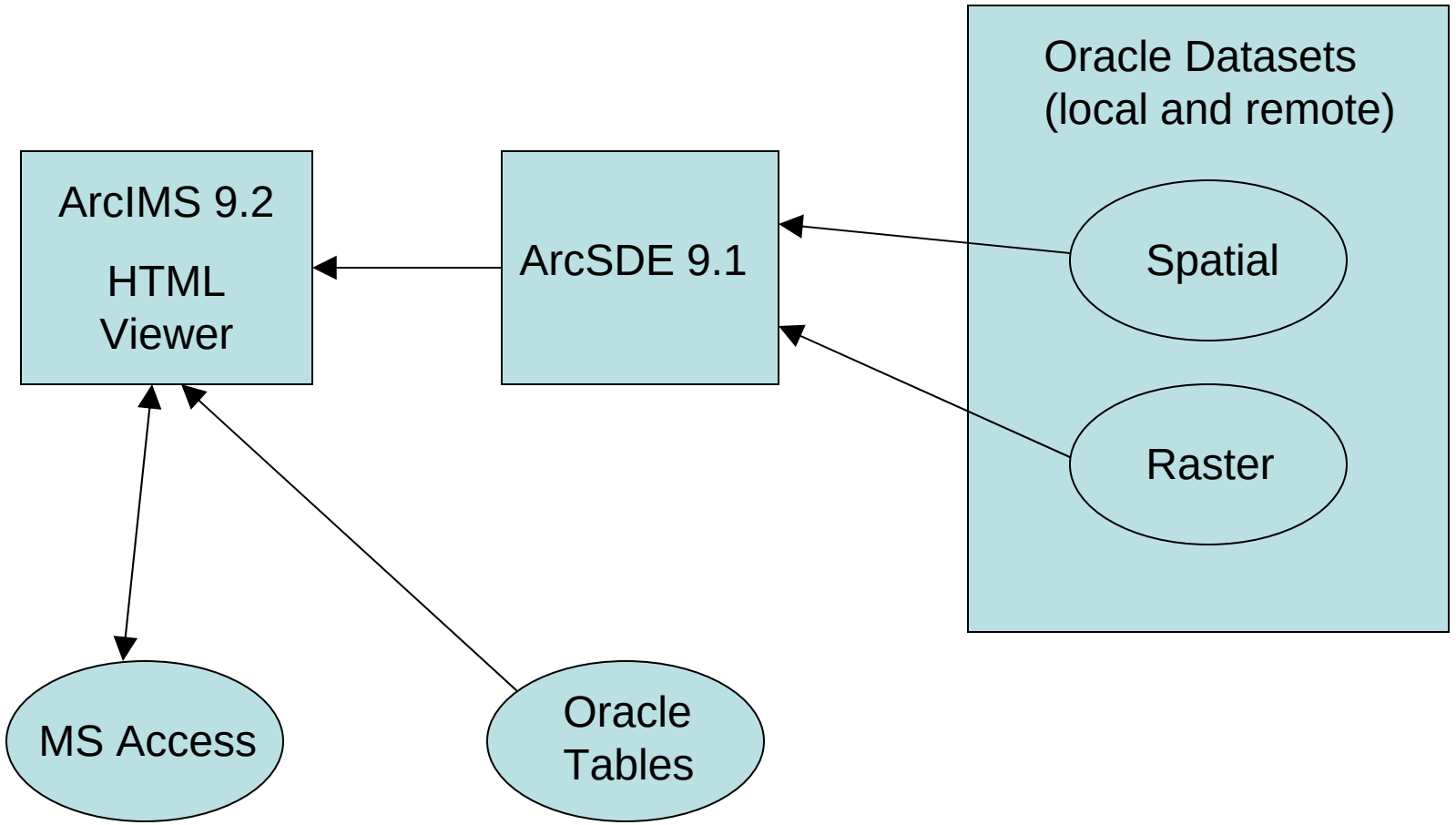

USE CASE DIAGRAM
USER
SEARCH BY PARCEL NUMBER
CREATE BUFFER
CREATE TABLE BASED ON BUFFER RESULTS
Find Parcel
«extends»
Save Map
Create Buffer
«extends»
Address List
Create Mail Address File
«extends»
Save Address Table
Retrieve existing addresses
«uses»
Create Letters
GENERATE LETTERS
USER


START
GET SESSION ID
ASP .NET ENVIRONMENT (IT MAY BE RUNNING INSIDE ARCIMS VIEWER)
EXISTING SESSION
NEW SESSION
ARCIMS CUSTOMIZED VIEWER
RETRIEVE RECORDS
BASED ON SESSION ID RETRIEVES ADDRESSES, GET IMAGE SETTINGS, AND GET LETTER BODY
RENDER MAP IMAGE
GET LETTER BODY
SEARCH FOR PARCEL
SEARCH PARCEL AND GENERATE BUFFER ARE DONE USING A CUSTOMIZED ARCIMS INTERFACE
GENERATE BUFFER
GENERATE TABLE
GENERATE TABLE INCLUDES:
- GENERATE AN ASP .NET GRID USING ARCIMS TABLE DATA
- INCLUDE EDIT AND DELETE OPTIONS FOR EACH ROW
PERFORM TABLE EDITS
SAVE RECORDS
SAVE RECORDS INCLUDES:
- SAVE TABLE ROWS IN AN ACCESS DATABASE TABLE
- INCLUDE IN EACH ROW SESSION ID AND USER ID
SAVE IMAGE
SAVE IMAGE INCLUDES:
- SAVE MAP EXTENT AND BUFFER DATA
- SAVE LETTER BODY IN AN ACCESS DATABASE TABLE
PREVIEW LETTER
EDIT LETTER
SAVE LETTER
GENERATE LETTERS
END

Solution: Implementation

- Customized ArcIMS 9.2 HTML viewer:
  - JavaScript
  - ASP.NET
  - AJAX
- Spatial data through ArcSDE 9.1
  - Local: BoCC
  - Remote: PAO through fiber optic line
- Read Oracle database tables

Architecture



XMLHttpRequestObject

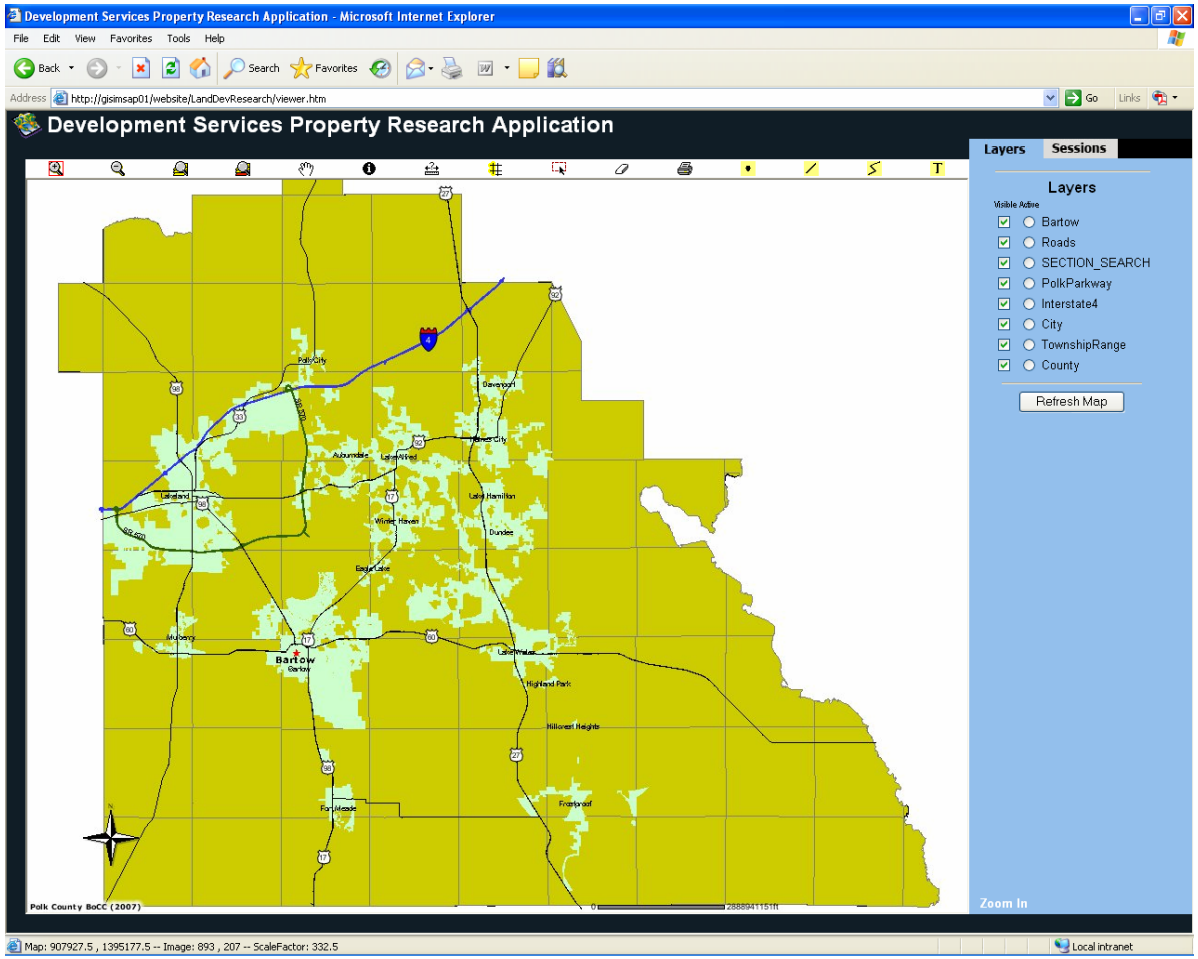
- Code is available in ESRI ArcScripts website: do search using “AJAX” keyword.
- XMLHttpRequestObject is used to send or get data from JavaScript to server side script file (ASP.NET).
- Gets attributes in displayAttributeData Function and stores them in global variable.
- Code in that function calls ASP.NET page that sends data to server using post method.
- Or code calls server side script from JavaScript file as shown in example.

XMLHttpRequestObject Example

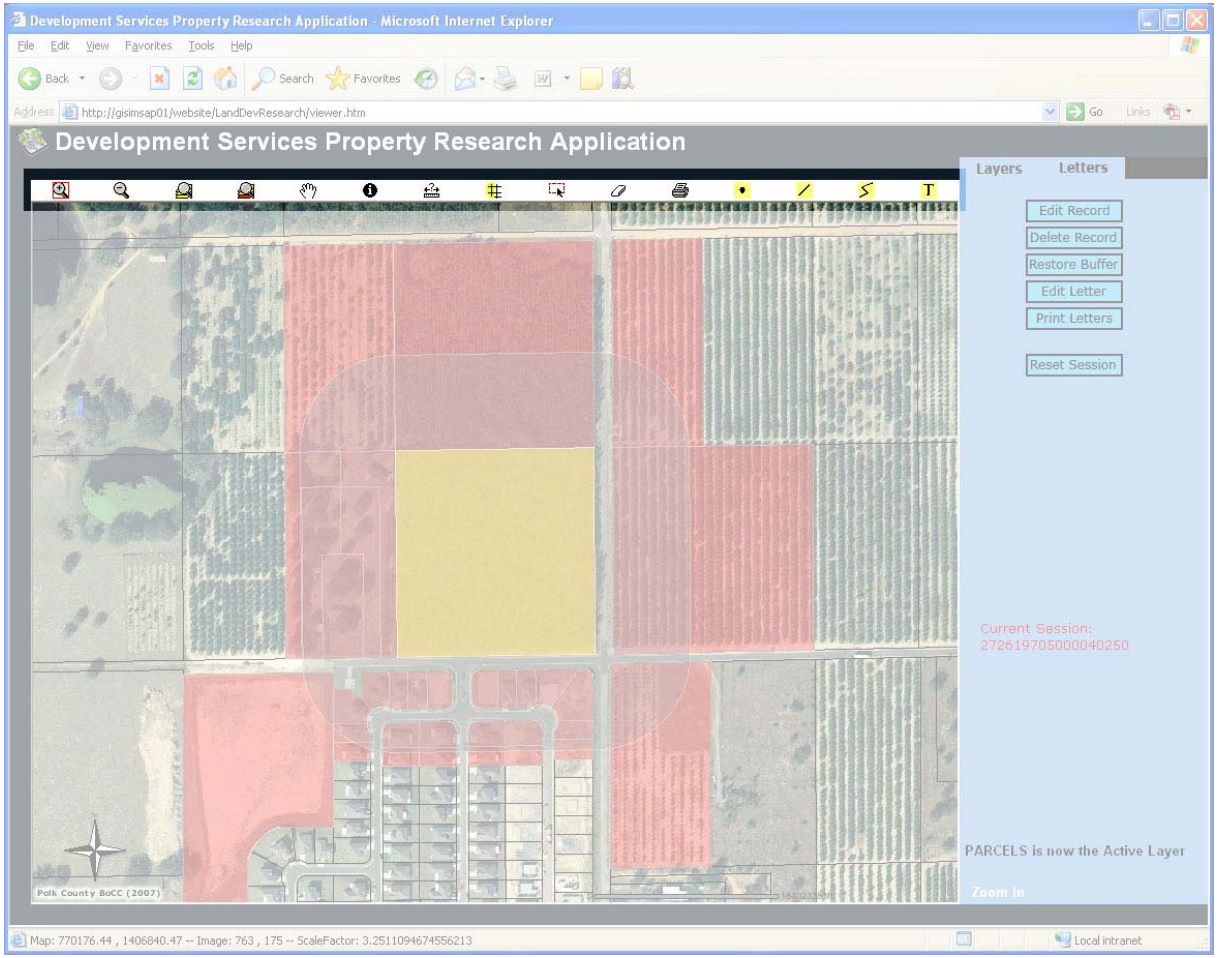
```
// This function zooms to the parcel associated to a session
// This is a post back to the form restoreParcel.aspx that queries an access table to get the  parcel ID
// This function is called by the function openExistingSession in the page setSessionID.aspx
function zoomToMyParcel() {
   var XMLHttpRequestObject;
   if (window.XMLHttpRequest) {
      XMLHttpRequestObject = new XMLHttpRequest();
   } else if (window.ActiveXObject) {
      XMLHttpRequestObject = new ActiveXObject("Microsoft.XMLHTTP");
   }

   var url = "http://mssrknig/website/LandDevResearch/restoreParcel.aspx?time=" + Date();
   XMLHttpRequestObject.open("POST", url, true);
   XMLHttpRequestObject.setRequestHeader("Content-Type", "application/x-www-form-urlencoded");
   XMLHttpRequestObject.onreadystatechange = function() {
      if(XMLHttpRequestObject.readyState==4 && XMLHttpRequestObject.status==200) {
         var result = XMLHttpRequestObject.responseText;
         parcelIDText=result; // this variable is the default value of the text in add text window
         var thisString = "DXF_TEXT=" + result;
         sendQueryString(thisString);
      }
   }
   XMLHttpRequestObject.send();
}
```

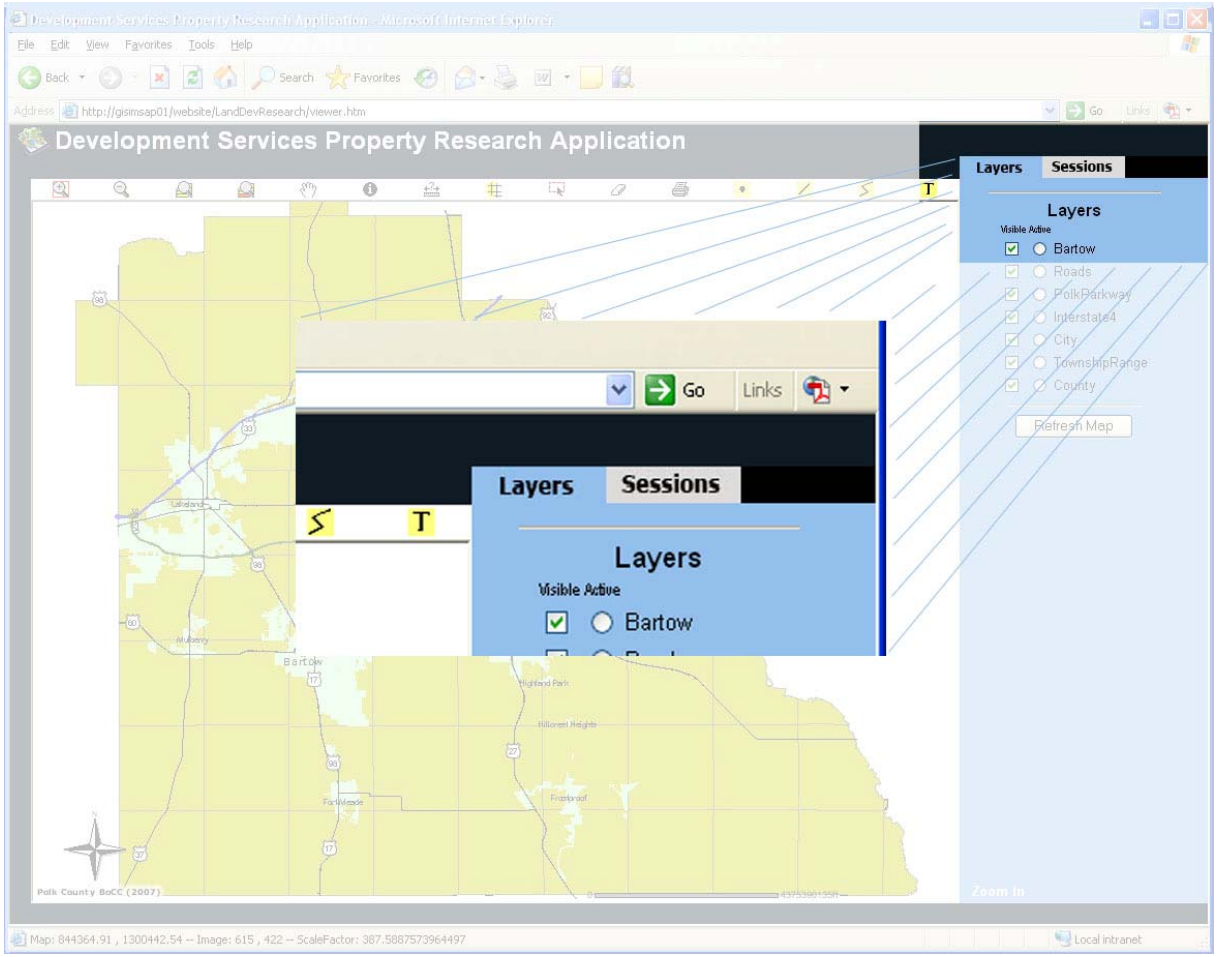
Graphic Interface



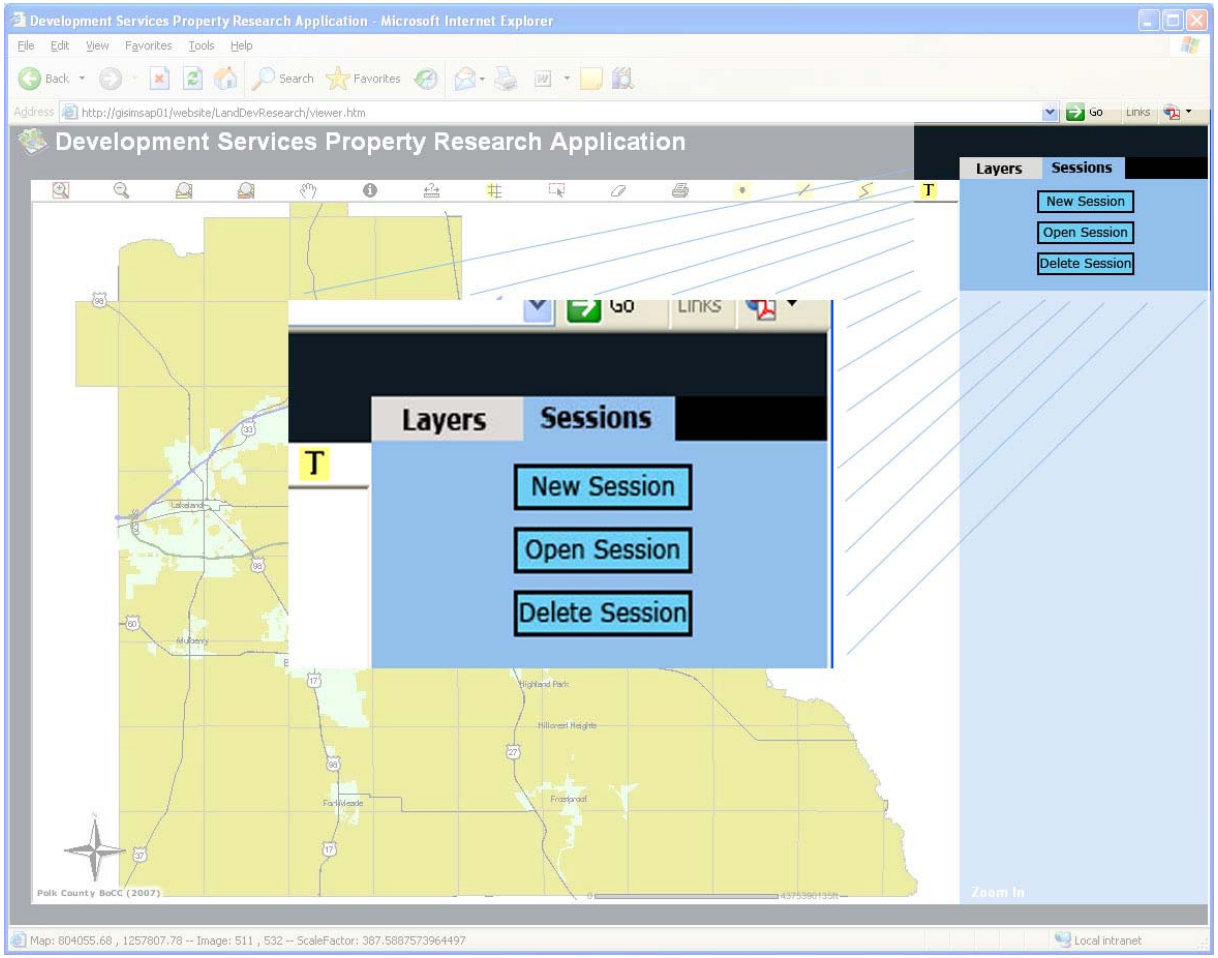
Map Tools


Development Services Property Research Application - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://gisimsap01/website/LandDevResearch/viewer.htm
Go Links
Development Services Property Research Application
Layers
Letters
Edit Record
Delete Record
Restore Buffer
Edit Letter
Print Letters
Reset Session
Current Session:
272619705000040250
PARCELS is now the Active Layer
Zoom In
Polk County BoCC (2007)
Map: 770176.44 , 1406840.47 -- Image: 763 , 175 -- ScaleFactor: 3.2511094674556213
Local intranet

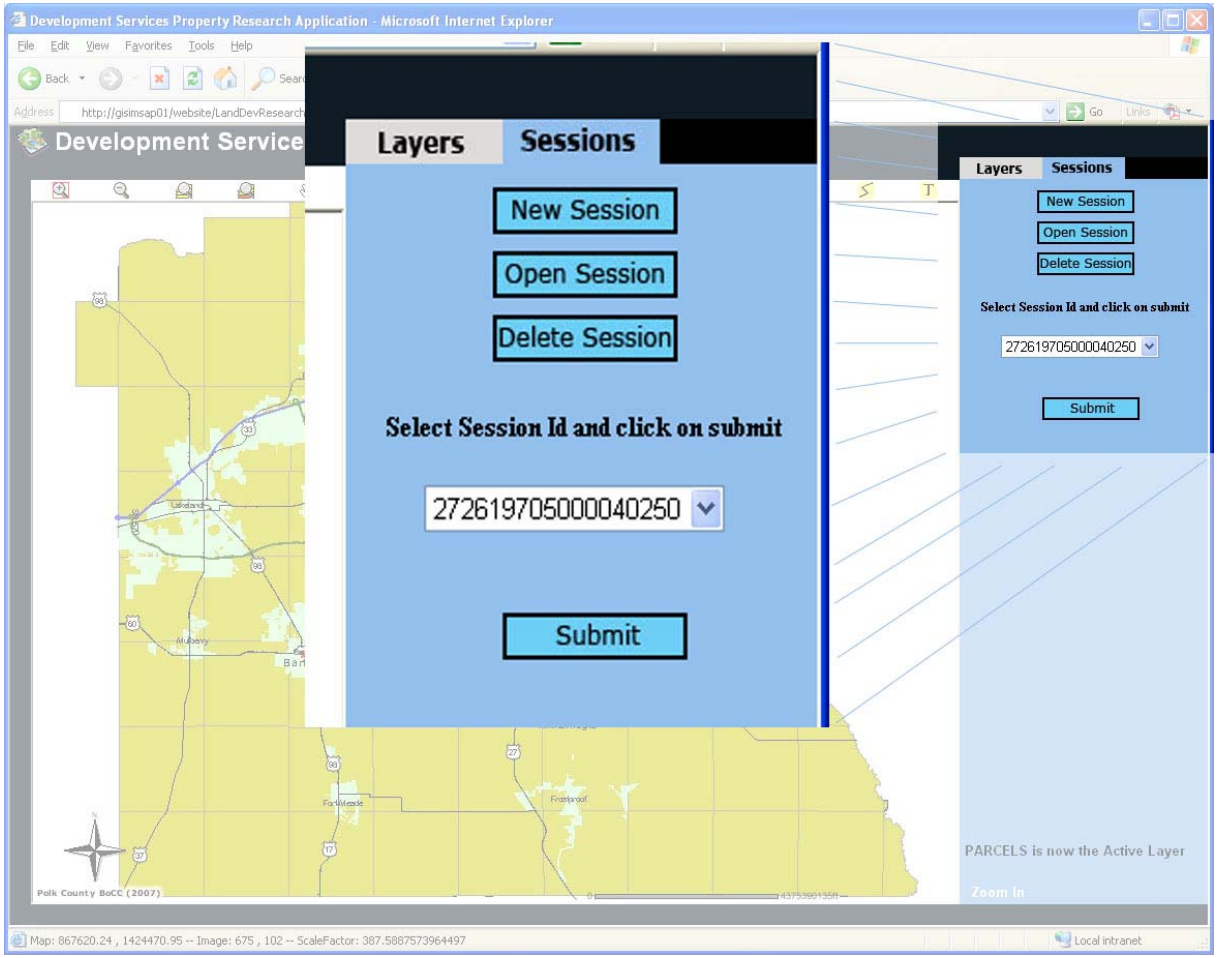
Data Tools


Development Services Property Research Application
Layers
Sessions
Layers
Visible Active
Bartow
Roads
PolkParkway
Interstate4
City
TownshipRange
County
Refresh Map
Go
Links
Zoom In

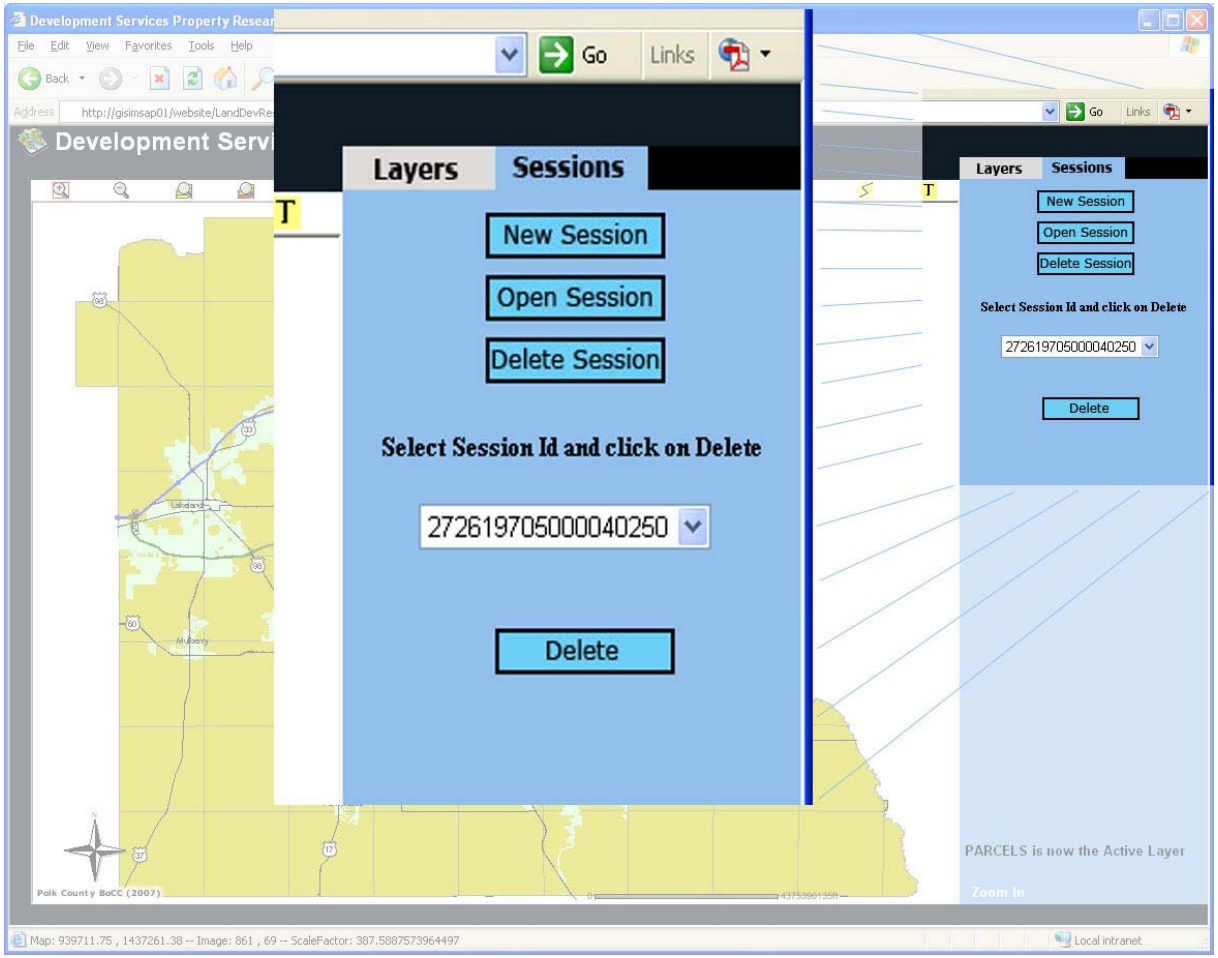
Sessions


Development Services Property Research Application - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://gisimsap01/website/LandDevResearch/viewer.htm
Go Links
Development Services Property Research Application
Layers Sessions
New Session
Open Session
Delete Session
T
Zoom In
Polk County BoCC (2007)
Map: 804055.68 , 1257807.78 -- Image: 511 , 532 -- ScaleFactor: 387.5887573964497
Local intranet

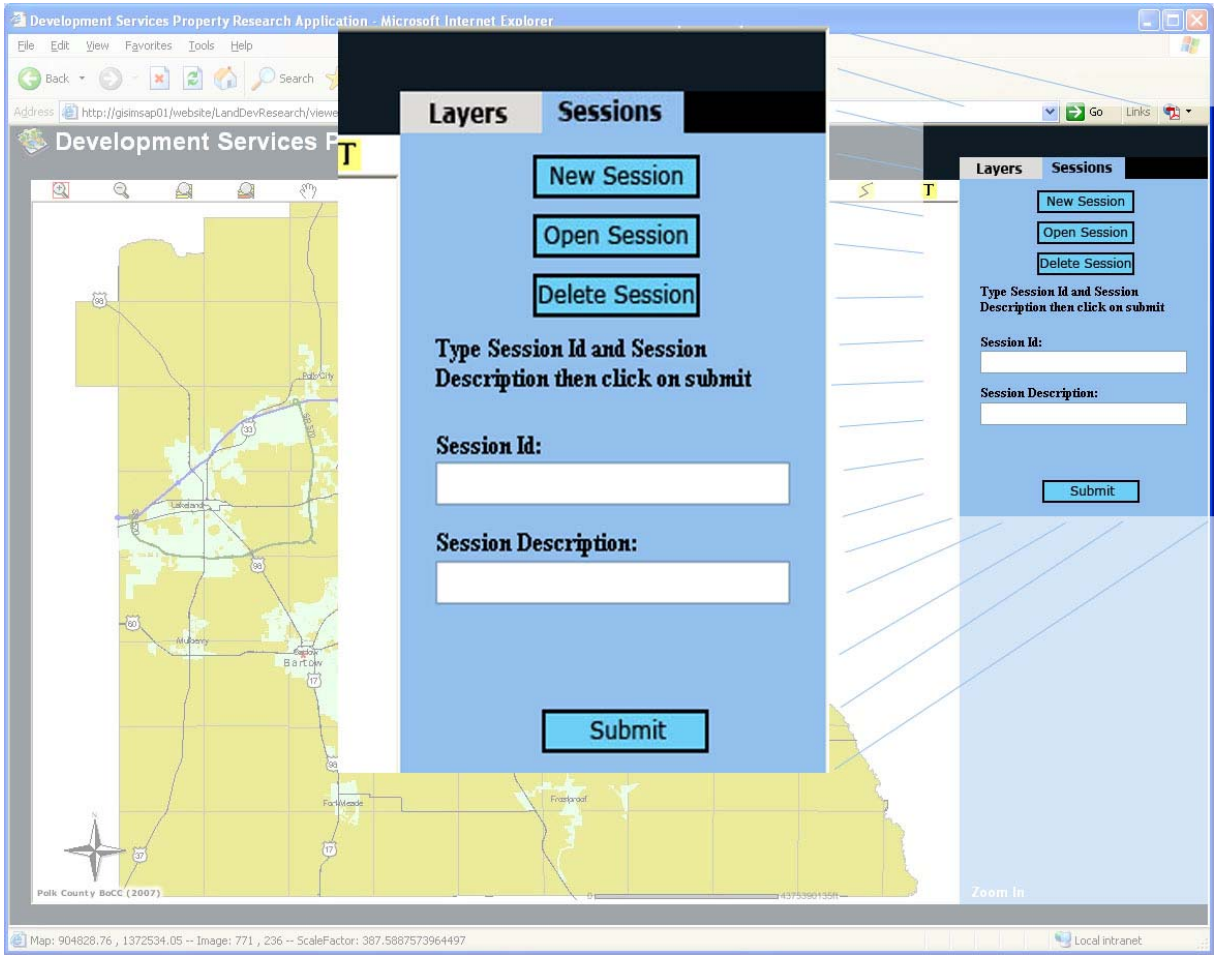
Open Existing Sessions



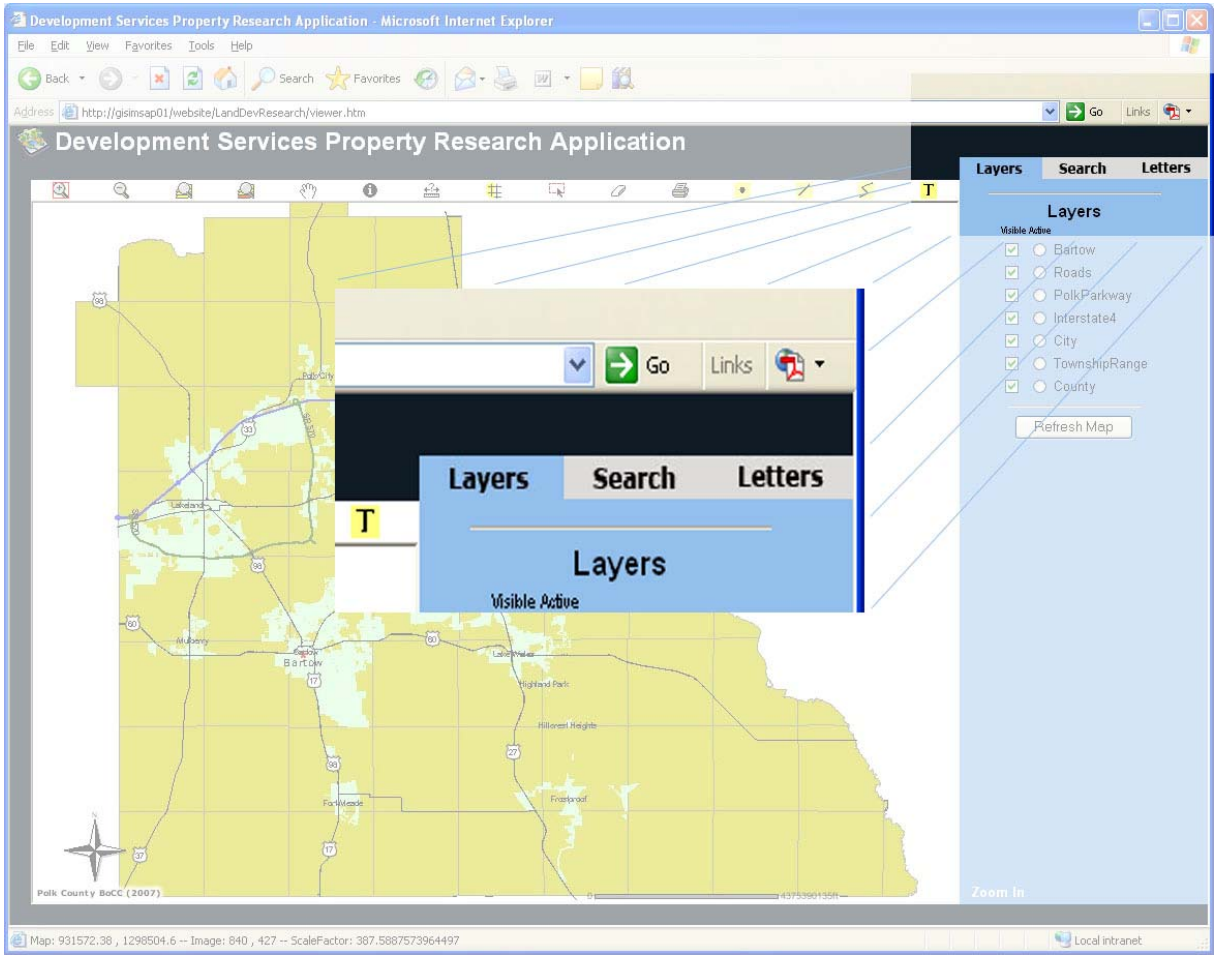
Delete Session



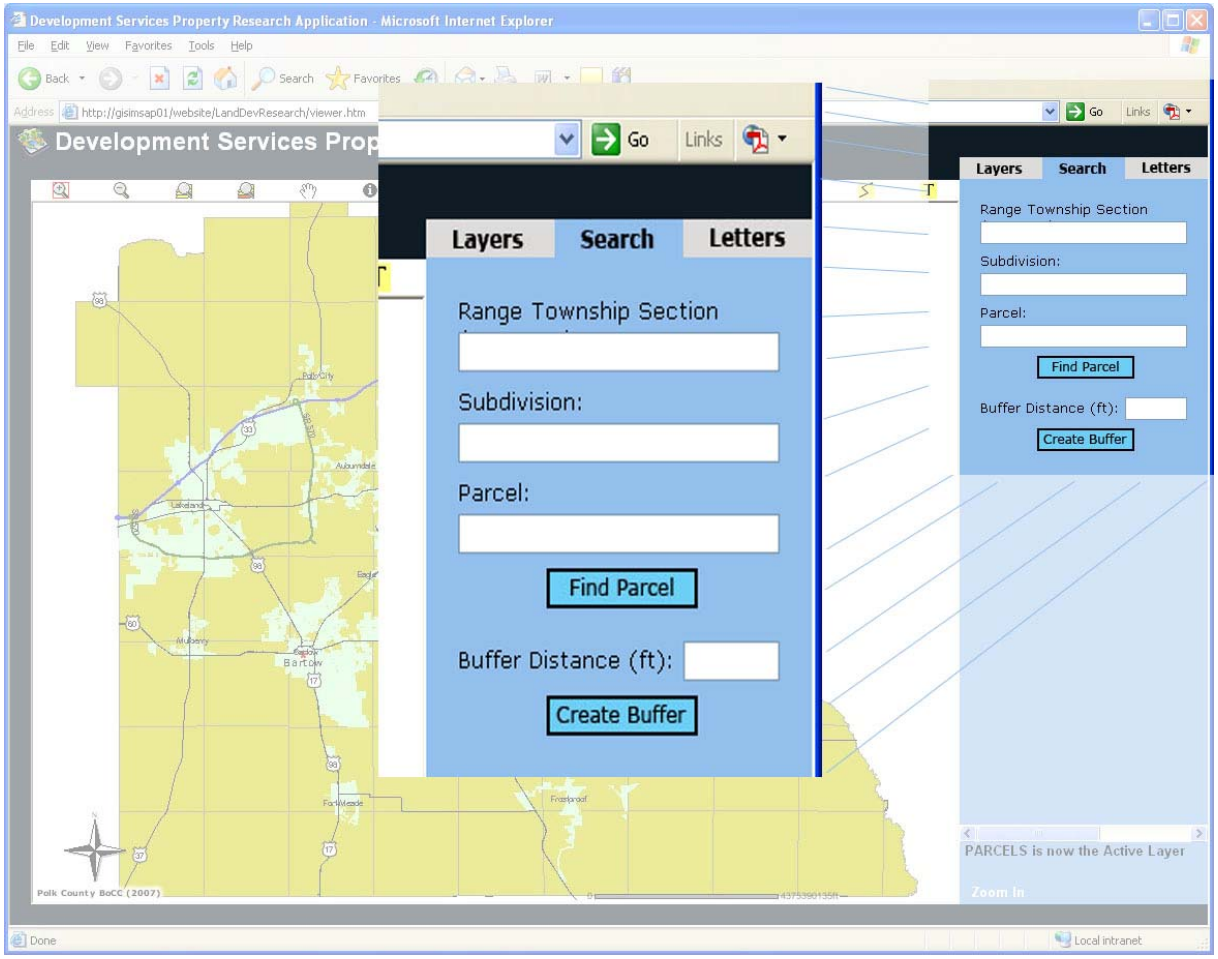
Create New Session



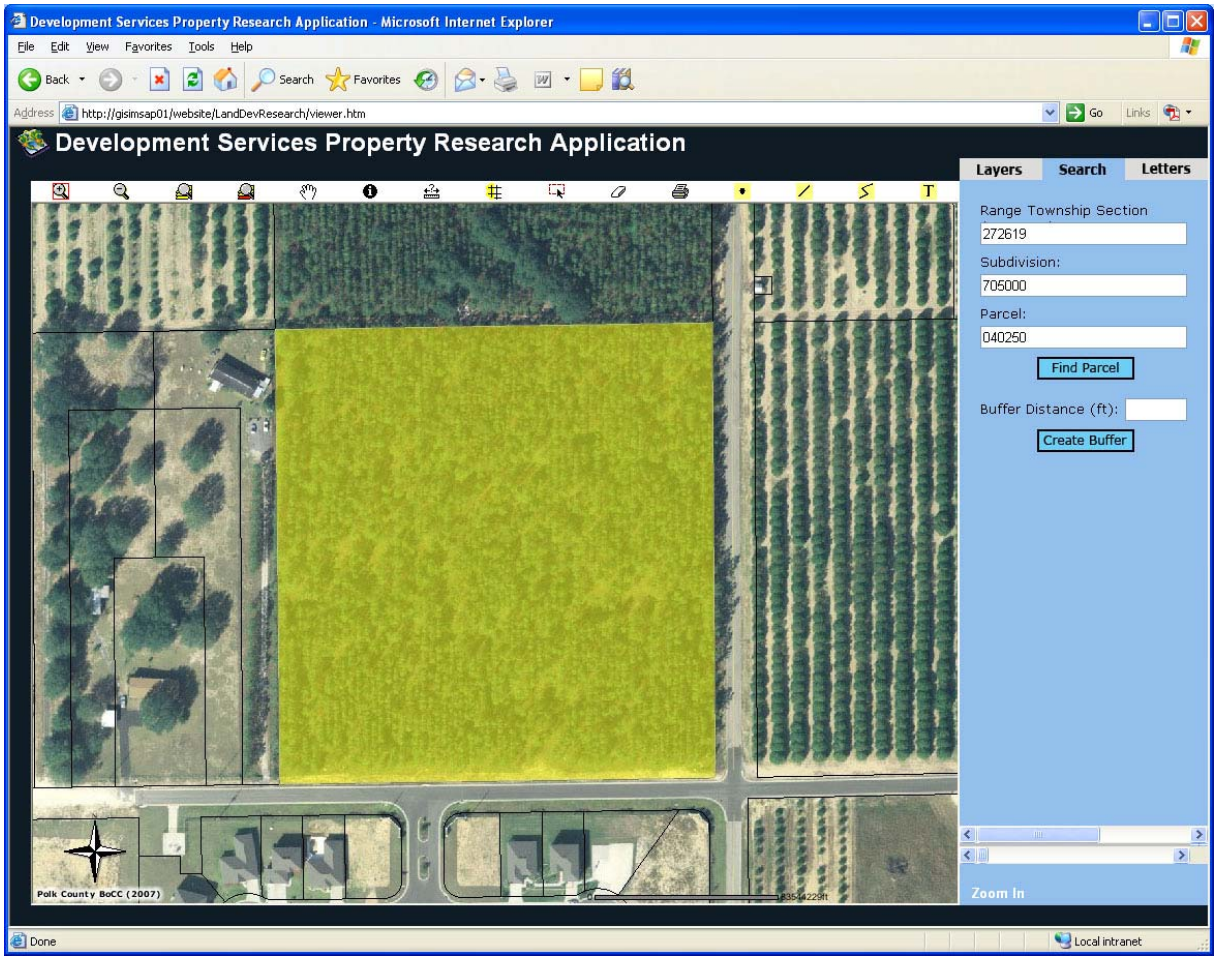
New Session Toolbar



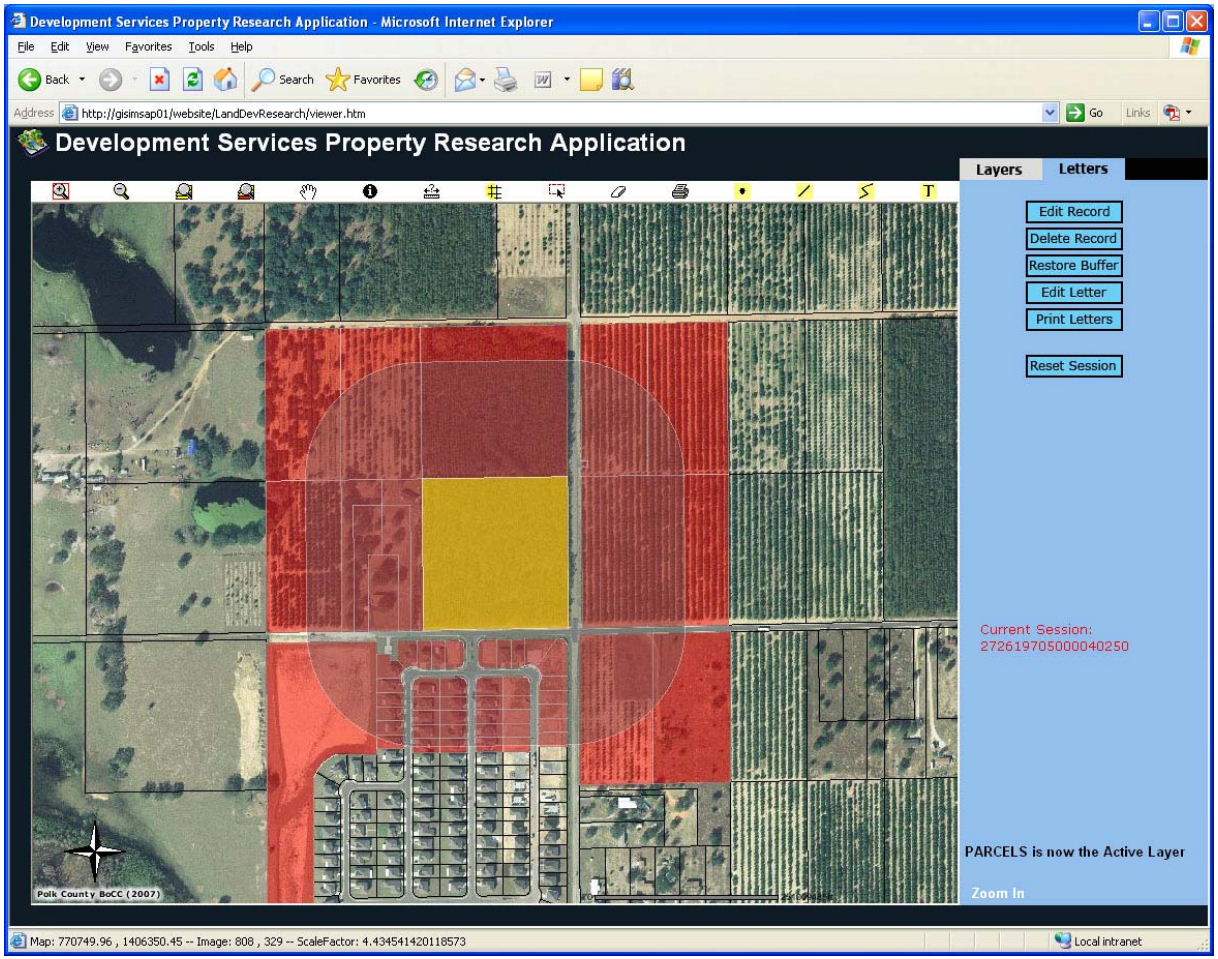
Search by Parcel ID



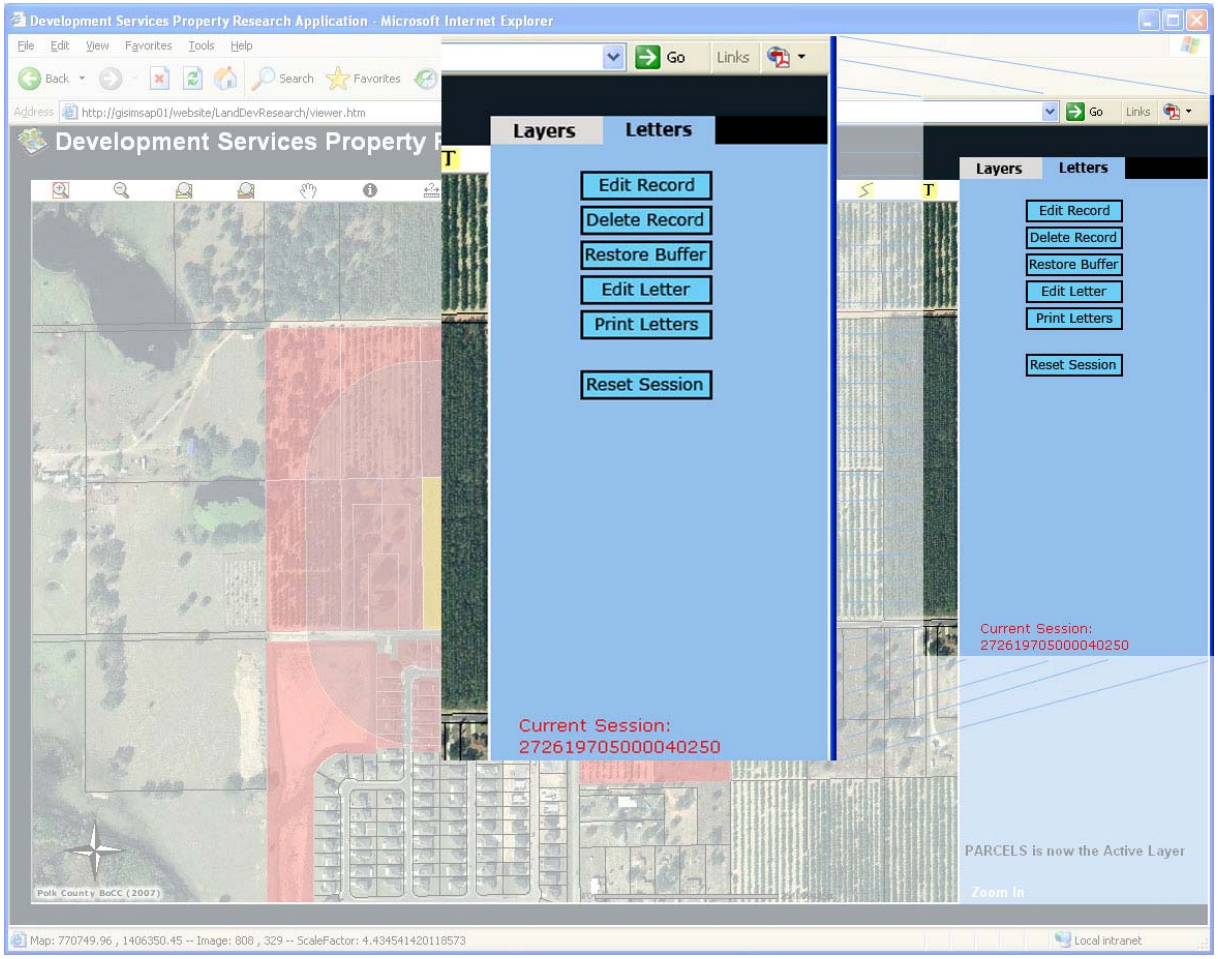
Search by Parcel ID Result



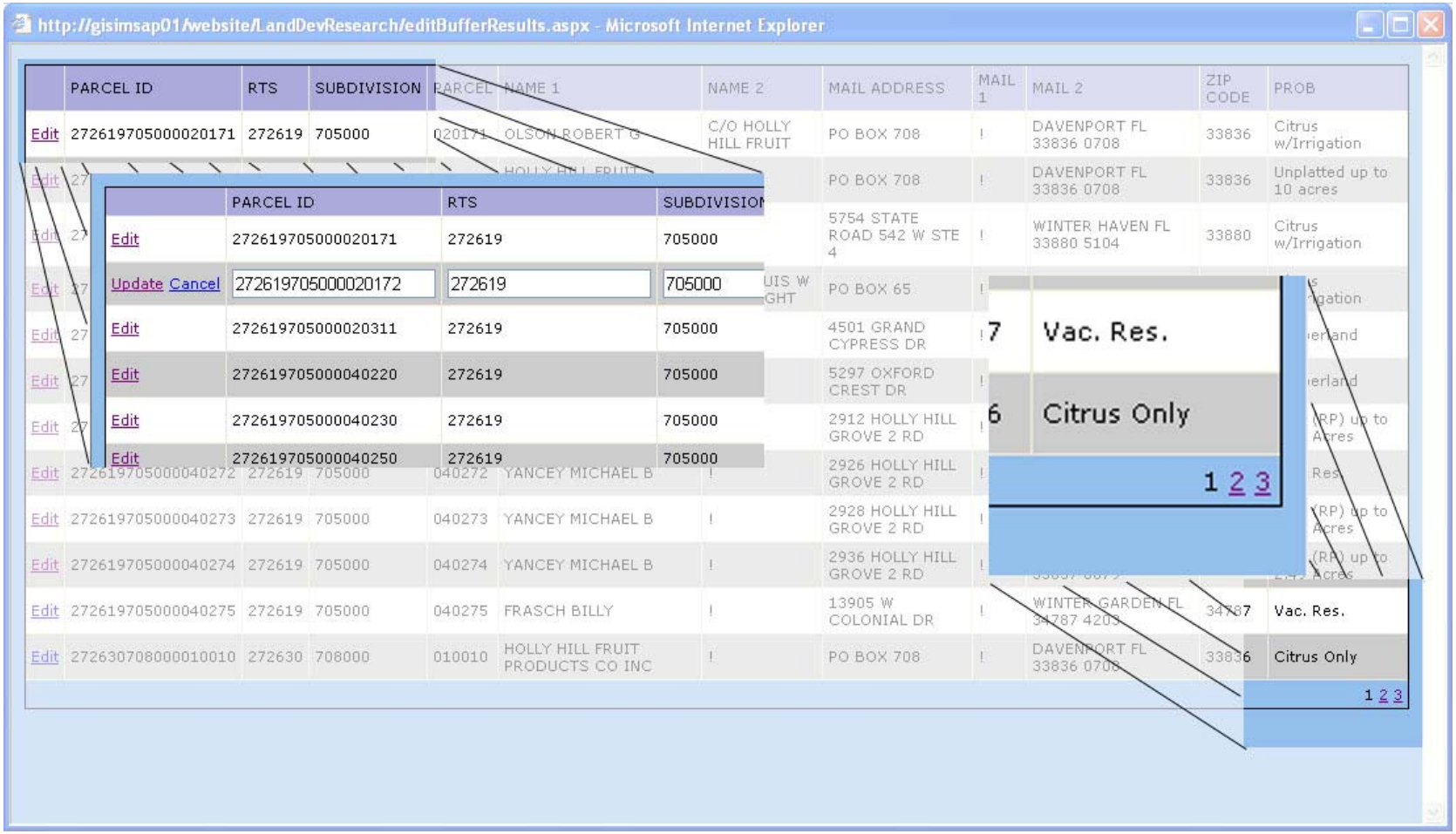
Add/Restore Buffer



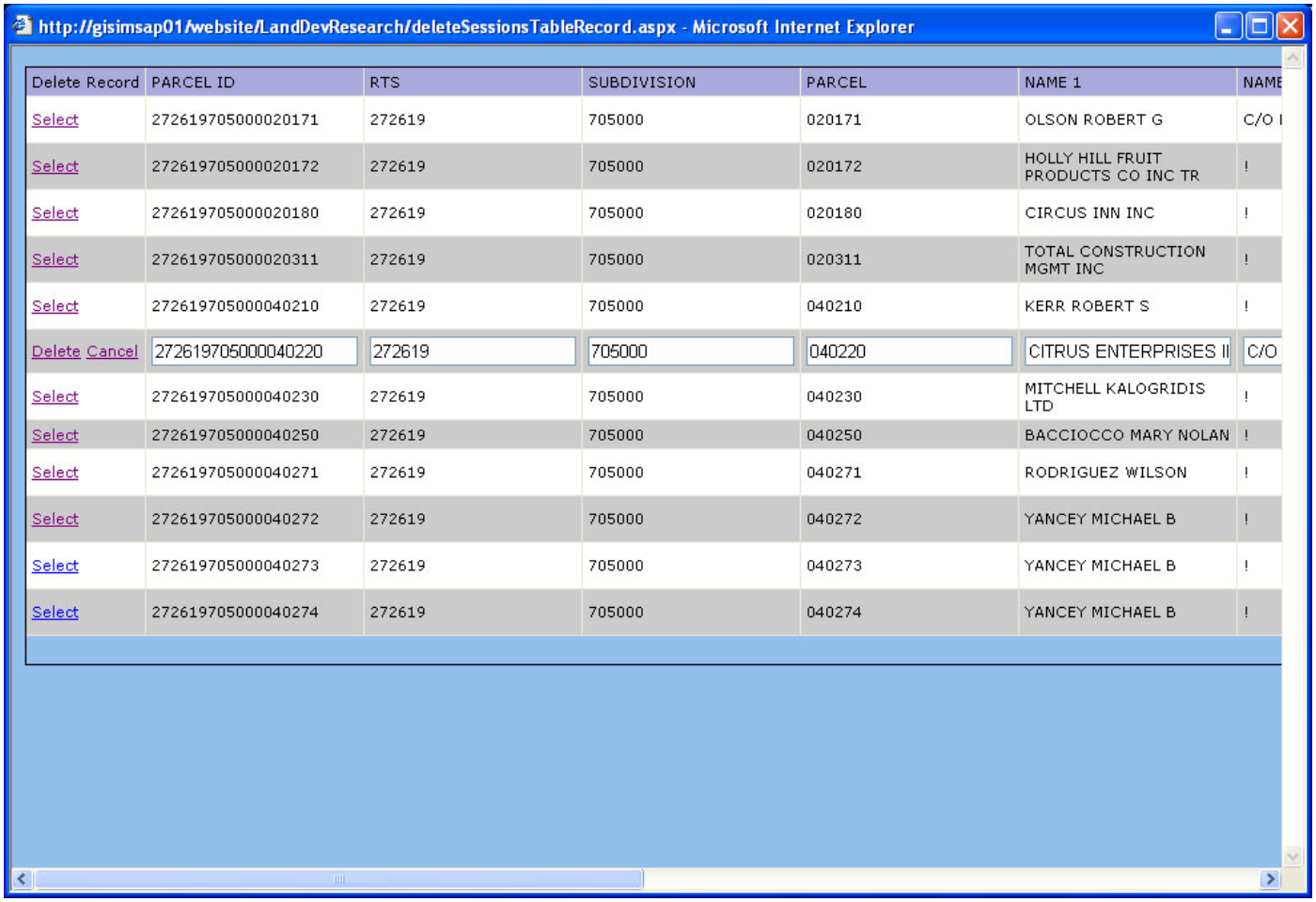
Letters Tab


Development Services Property Research Application - Microsoft Internet Explorer
Layers
Letters
Edit Record
Delete Record
Restore Buffer
Edit Letter
Print Letters
Reset Session
Current Session:
272619705000040250
PARCELS is now the Active Layer
Zoom In

Edit Record

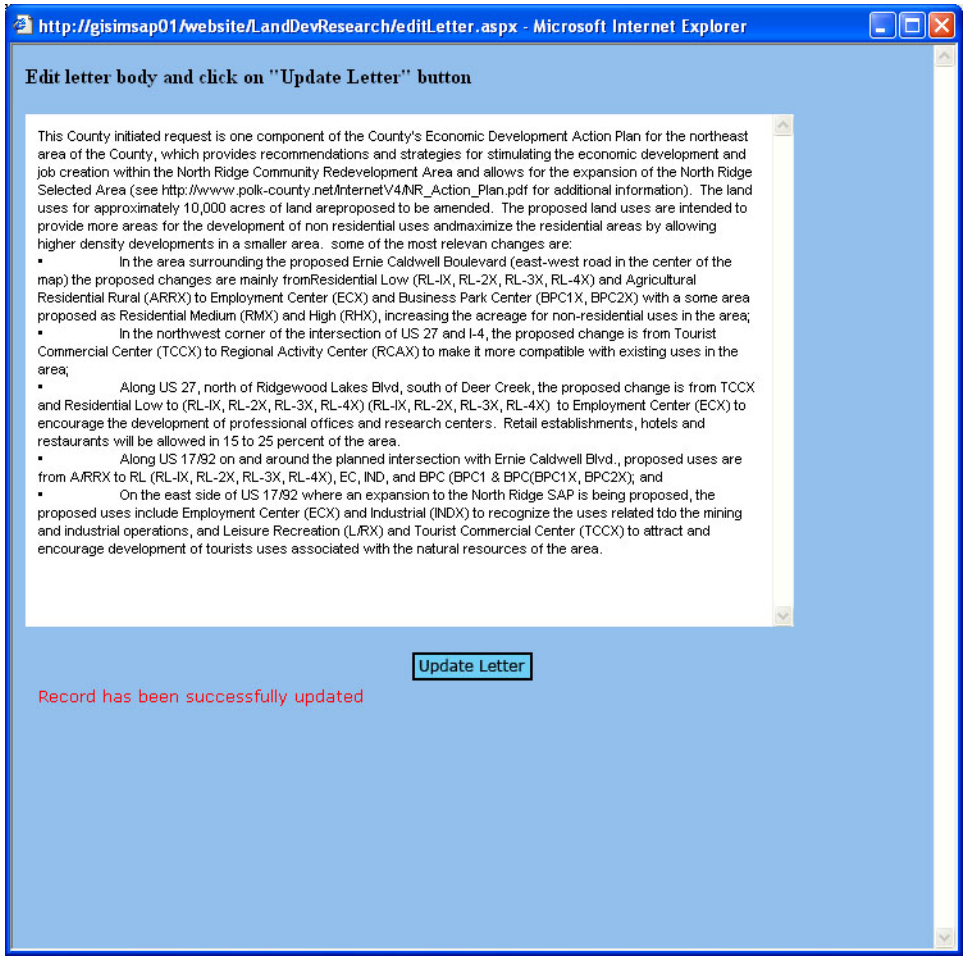

http://gisimsap01/website/LandDevResearch/editBufferResults.aspx - Microsoft Internet Explorer
PARCEL ID
RTS
SUBDIVISION
Edit
Update Cancel
Vac. Res.
Citrus Only
1 2 3

Delete Record

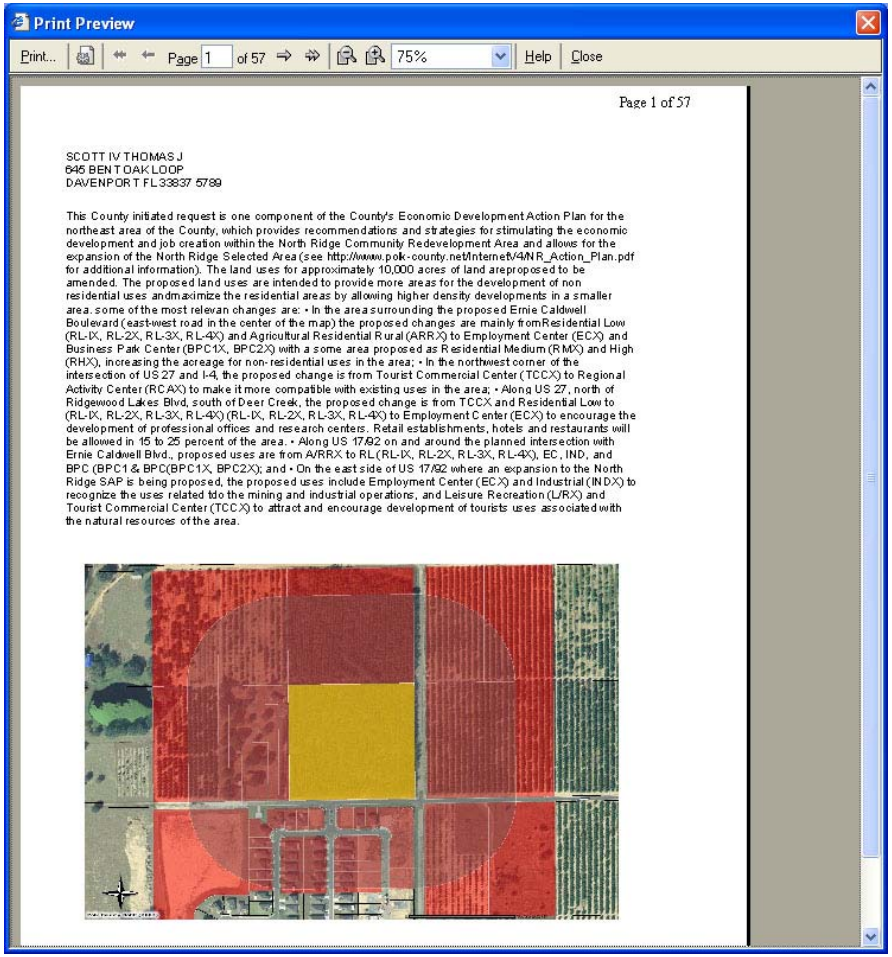


Delete Record	PARCEL ID	RTS	SUBDIVISION	PARCEL	NAME 1	NAME
Select	272619705000020171	272619	705000	020171	OLSON ROBERT G	C/O I
Select	272619705000020172	272619	705000	020172	HOLLY HILL FRUIT PRODUCTS CO INC TR	!
Select	272619705000020180	272619	705000	020180	CIRCUS INN INC	!
Select	272619705000020311	272619	705000	020311	TOTAL CONSTRUCTION MGMT INC	!
Select	272619705000040210	272619	705000	040210	KERR ROBERT S	!
Delete Cancel	272619705000040220	272619	705000	040220	CITRUS ENTERPRISES II	C/O
Select	272619705000040230	272619	705000	040230	MITCHELL KALOGRIDIS LTD	!
Select	272619705000040250	272619	705000	040250	BACCIOCCO MARY NOLAN	!
Select	272619705000040271	272619	705000	040271	RODRIGUEZ WILSON	!
Select	272619705000040272	272619	705000	040272	YANCEY MICHAEL B	!
Select	272619705000040273	272619	705000	040273	YANCEY MICHAEL B	!
Select	272619705000040274	272619	705000	040274	YANCEY MICHAEL B	!

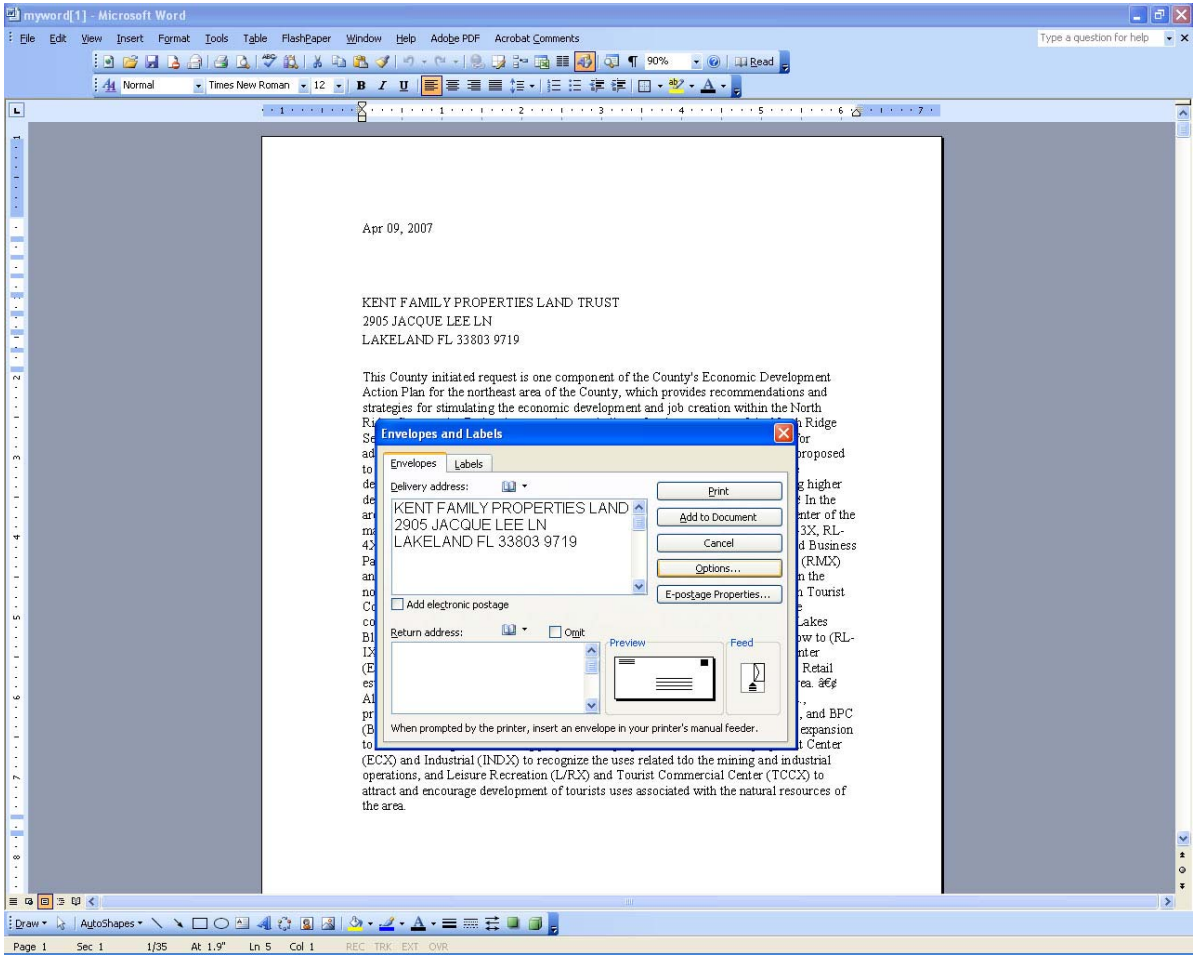
Edit Letter


http://gisimsap01/website/LandDevResearch/editLetter.aspx - Microsoft Internet Explorer
Edit letter body and click on "Update Letter" button
This County initiated request is one component of the County's Economic Development Action Plan for the northeast area of the County, which provides recommendations and strategies for stimulating the economic development and job creation within the North Ridge Community Redevelopment Area and allows for the expansion of the North Ridge Selected Area (see http://www.polk-county.net/InternetV4/NR_Action_Plan.pdf for additional information). The land uses for approximately 10,000 acres of land areproposed to be amended. The proposed land uses are intended to provide more areas for the development of non residential uses andmaximize the residential areas by allowing higher density developments in a smaller area. some of the most relevan changes are:
▪ In the area surrounding the proposed Ernie Caldwell Boulevard (east-west road in the center of the map) the proposed changes are mainly fromResidential Low (RL-IX, RL-2X, RL-3X, RL-4X) and Agricultural Residential Rural (ARRX) to Employment Center (ECX) and Business Park Center (BPC1X, BPC2X) with a some area proposed as Residential Medium (RMX) and High (RHX), increasing the acreage for non-residential uses in the area;
▪ In the northwest corner of the intersection of US 27 and I-4, the proposed change is from Tourist Commercial Center (TCCX) to Regional Activity Center (RCAX) to make it more compatible with existing uses in the area;
▪ Along US 27, north of Ridgewood Lakes Blvd, south of Deer Creek, the proposed change is from TCCX and Residential Low to (RL-IX, RL-2X, RL-3X, RL-4X) (RL-IX, RL-2X, RL-3X, RL-4X) to Employment Center (ECX) to encourage the development of professional offices and research centers. Retail establishments, hotels and restaurants will be allowed in 15 to 25 percent of the area.
▪ Along US 17/92 on and around the planned intersection with Ernie Caldwell Blvd., proposed uses are from A/RRX to RL (RL-IX, RL-2X, RL-3X, RL-4X), EC, IND, and BPC (BPC1 & BPC(BPC1X, BPC2X); and
▪ On the east side of US 17/92 where an expansion to the North Ridge SAP is being proposed, the proposed uses include Employment Center (ECX) and Industrial (INDX) to recognize the uses related tdo the mining and industrial operations, and Leisure Recreation (L/RX) and Tourist Commercial Center (TCCX) to attract and encourage development of tourists uses associated with the natural resources of the area.
Update Letter
Record has been successfully updated

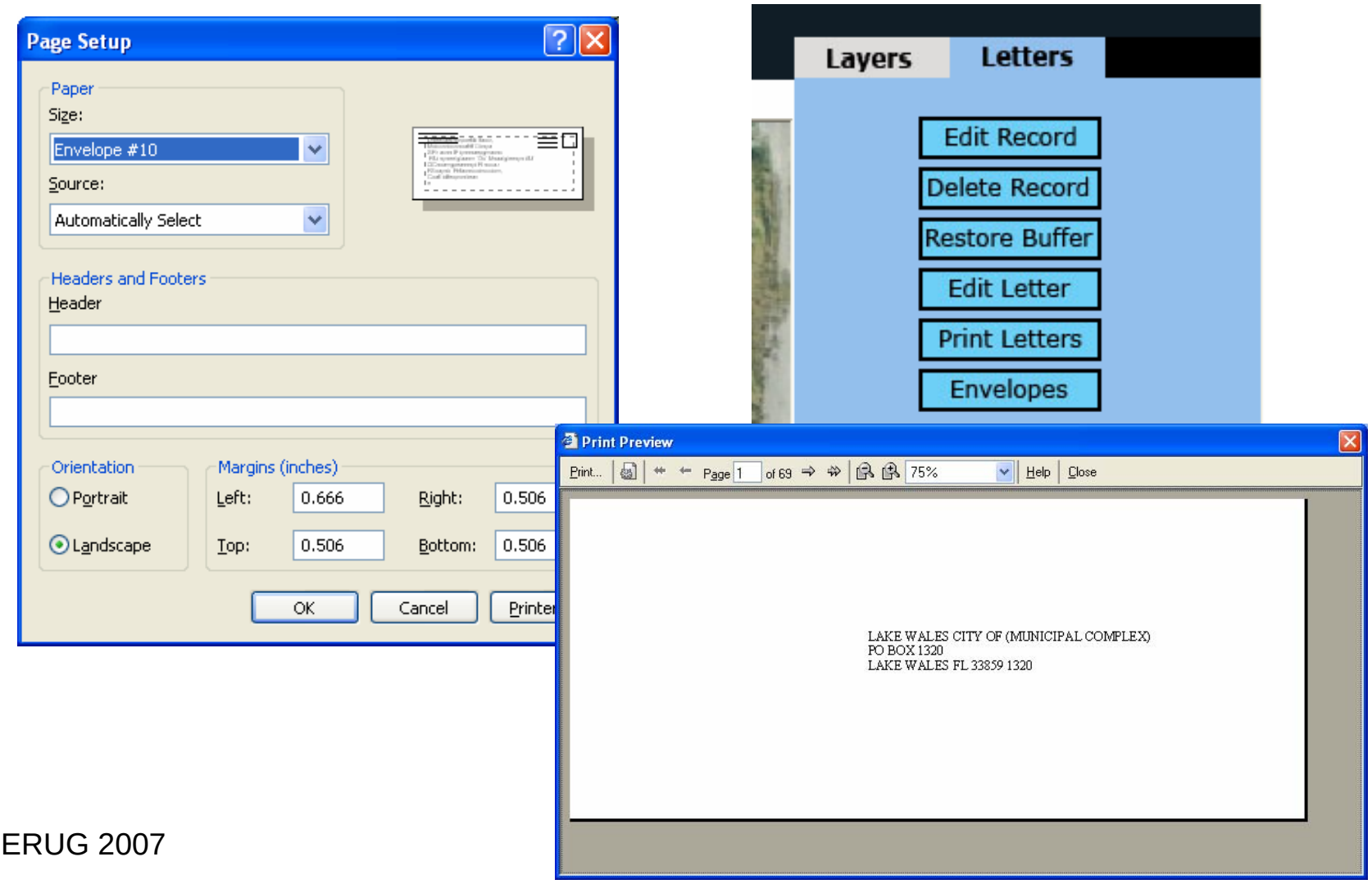
HTML Print Preview



Word Print Preview



Envelopes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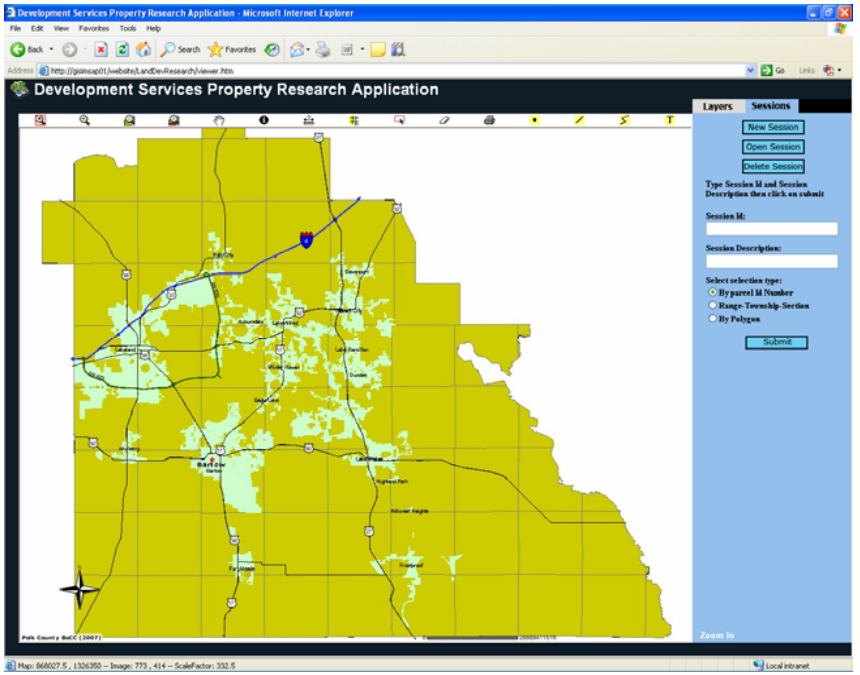
Envelope #10
Source:
Automatically Select
Headers and Footers
Header
Footer
Orientation
Portrait
Landscape
Margins (inches)
Left: 0.666
Right: 0.506
Top: 0.506
Bottom: 0.506
OK
Cancel
Layers
Letters
Edit Record
Delete Record
Restore Buffer
Edit Letter
Print Letters
Envelopes
Print Preview
Print...
Page 1 of 69
75%
Help
Close
LAKE WALES CITY OF (MUNICIPAL COMPLEX)
PO BOX 1320
LAKE WALES FL 33859 1320

Future Work

- Save PDF files.
- Add search by Section Township and Range.
- Search by Polygon.
- Extend functionality for other departments that need to contact public due to a georeferenced event.



QUESTIONS

?