Map and Geographic Information Center 2.0

http://magic.lib.uconn.edu

Digitizing the Past to Empower 21st Century Research
The University of Connecticut Libraries’ Map and Geographic Information Center (MAGIC) collaborates with university departments and state agencies to provide the citizens of the state of Connecticut and researchers across the globe with access to Connecticut focused geographic information. With a focus on providing access to maps, geographic data and resources MAGIC is committed to “Digitizing the Past to Empower 21st Century Research” through providing online access to Connecticut geographic data via the world wide web with tools and resources which enable anyone to explore our resources.

MAGIC’s Mission
MAGIC 2.0 – What is it?

• Online ability to browse and display geospatial data
• Anyone can quickly explore data and create customized maps
• Flexible – enables visualization of shapefiles, rasters, coverages, CAD, and other spatial data formats
MAGIC 2.0 – User Focused Features

- Create customized .pdf maps
- Searching – town level
- Keyhole tool
- Display layers with one click
- Fast map updating
- Web Mapping Services (WMS)
- Mash-up Friendly
Welcome to MAGIC Historical Mapping Online now in Beta.
Browsing MAGIC's online geo-referenced map collection is as easy as:

1. Select the map you wish to view
2. Click on "Go Map"
3. Browse the online map using a variety of tools

Also, you can add layers to a map by clicking the check box and hitting the refresh button. As you zoom into a map more features will appear.

Questions? Email us at magic@uconn.edu

To start select a map and Click on "Go Map!"

Important Information for users:
By clicking "Go" users understand that this site is for reference purposes only and should not be used as an official document.

When viewing geospatial data on our site please understand that the maps and data come from a variety of sources and were created at different scales using different methodologies. Therefore, at times maps may not "line up" perfectly.

For more information or questions please contact MAGIC at 860-486-4680
Sharing Data Online

• Provide data to advanced users through the web
• Web Mapping Services (WMS) are underutilized in the GIS world, especially in Connecticut
• Users will be able to read our datasets in, as an image file, into ArcGIS or even Google Earth
• What about coordinate systems or projections?
  – Data is served in WGS 84
  – Users won’t have to worry about NAD 83 feet or meters, reprojecting data or altering coordinate systems
Web Map Service

- Publishing raster based data
- Users receive a streaming JPG file in their GIS program
- Data cannot be edited—it acts as a background image
- Depending on your Internet connection speeds are good for end users
Adding WMS Data in ArcMap 9.3

- In the Add WMS Server Window enter MAGIC's WMS address in the URL window

MAGIC's WMS address - http://www.econmap.com/wms/wms.exe?

- Leave the Version window set as Default

- Click OK to view the available layers
Adding WMS Data to ArcMap

- In the Add Data Window, the available layers will appear.
- Select the desired layer and click OK.
Adding MAGIC WMS Data into Google Maps

- Through some simple javascript and html programming users can take MAGIC’s streaming WMS data and read it into a Google Map.
Embedding MAGIC WMS layers into Google Maps allows users to view and create custom maps using MAGIC’s data combining it with kml files, Google markers, xml data or other WMS layers, all while taking advantage of the Google Map tools.
Adding the MAGIC Script

• MAGIC, with the help of Cadcorp, developed a script to read in the MAGIC WMS into the Google Map API

• Simple and easy to create mash-ups from the MAGIC WMS

```html
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
  <title>MAGIC Mash-Up</title>
  <script src="http://maps.google.com/maps?file=ap ENTER YOUR API CODE HERE" type="text/javascript"></script>
  <script src="http://magic.lib.uconn.edu/mash_up/wms_script.js" type="text/javascript"></script>
</head>
<body>
</body>
</html>
```
Adding MAGIC WMS Code

• MAGIC then provides the code to the user that adds the WMS layer to the Google API

• Users can change the code to view a number of different WMS layers, Google Map layers or their own markers and kml files
The Basic Mash-Up

• Users can take advantage of several Google Map tools:
  – Address Search
  – Zoom Controls
  – Google Map Layers

• Add a number of MAGIC WMS data layers
  – 1934 aerial photos
  – USGS topo sheets
  – Historical maps
Add Layer and Connect to MAGIC WMS

```javascript
// set up of the tiles for the EXAMPLE Layers
var tileEXAMPLE = new GTileLayer(new GCopyrightCollection(""), 1, 19);
// Enter the WMS layer you wish to have in your mash-up.
tileEXAMPLE.myLayers = '_1934 Connecticut Aerial Photography-Map2';
// Set the image format for your map-jpg or png (PNG enables transparency)
tileEXAMPLE.myFormat = 'image%2fjpg';
// Connect to the MAGIC WMS
tileEXAMPLE.myBaseUrl = 'http://www.econmap.com/wms/wms.exe?';
tileEXAMPLE.getTileUrl = CustomGetTileUrl;

// Set the image format for your map-jpg or png (PNG enables transparency)
towns.myFormat = 'image%2fjpg';
// Connect to the MAGIC WMS
towns.myBaseUrl = 'http://www.econmap.com/wms/wms.exe?';
towns.getTileUrl = CustomGetTileUrl;

// set the layers to be viewed in your map. The last layer is the first layer viewed on the map
var layer = [tileEXAMPLE, towns];
var customMap = new GMapType(layer, G_SATellite_MAP.getProjection(), "USGS Topos", G_SATellite_MAP);

// these lines create the map
var map = new GMap(document.getElementById("map"),
[maptypes:[customMap]]);

// Set the center of your map. This can be customized to a specific location you are interested in.
// The second number is the WMS zoom level. 0 allows you to view the whole world while 17 is a
// zoomed in view.
map.setCenter(new GLatLng(41.5, -72.75), 9);
// Add map controls for more information on map controls visit
// http://code.google.com/apis/maps/documentation/controls.html
map.addControl(new GLargeMapControl());
map.addControl(new GMapTypeControl());
```

Viewing Multiple WMS Layers

- Users can add vector layers or other raster datasets from MAGIC’s WMS into a single page
- Can turn on multiple maps using simple controls
Add additional Layers from the WMS to the map

```javascript
// Add an additional WMS layer to your image
var towns= new GTileLayer(new GCopyrightCollection('""'),1,19);
// Enter the WMS layer you wish to have in your mash-up
towns.myLayers='Town';
// Set the image format for your map-jpg or png (PNG enables transparency)
towns.myFormat='image&2fpng';
// Connect to the MAGIC WMS
towns.myBaseUrl='http://www.econmap.com/wms/wms.exe?';
towns.getTileUrl=CustomGetTileUrl;
```

```javascript
// Set the layers to be zoomed in your map. The first layer is the first layer to be zoomed on the map
var layer=[tileEXAMPLE, towns];
var custommap1 = new GMapType(layer, G_SATELLITE_MAP.getProjection(), "USGS Topos", G_SATELLITE_MAP);

// These lines create the map
var map = new GMap(document.getElementById("map"),
{maptypes:[custommap1]})
;

// Set the center of your map. This can be customized to a specific location you are interested in.
// The second number is the WMS zoom level. 0 allows you to view the whole world while 17 is a
// zoomed in view.
map.setCenter(new SLatLng(41.5,-72.75), 0);
// Add map controls for more information on map controls visit
// http://code.google.com/apis/maps/documentation/controls.html
map.addControl(new SLargeMapControl());
map.addControl(new SMapTypeControl());
```
Adding Markers

Google markers are easy to add and manipulate. Users can customize the marker and the information that appears in the info balloon.

```javascript
var point = new GLatLng(41.806869, -72.251461);
var marker = createMarker(point, '<div style="width:240px">University of Connecticut</div>
Map and Geographic Information Center
View our growing collection of mash-ups</a>');
map.addOverlay(marker);
```
Adding KML Data

KML files, generated in ArcGIS or by the user can be served through their own web server into a MAGIC mash-up.

```javascript
var gx = new GGeoXml("http://magic.lib.uconn.edu/magic/data/download/adimg_project/campus_buildings6.kml");
map.addOverlay(gx);
```
Many Maps, Countless Possibilities

magic.lib.uconn.edu/mash_up
Data Sharing & Collaborating

• MAGIC is interested in collaborating with any agency that has Connecticut geospatial data which can be shared publicly.

• Willing to collaborate on grants and other opportunities which enhance public access to spatial data and maps for Connecticut.
Questions?

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