Town of Concord GIS News

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1. How I Use GIS: Russ and the Saga of the 2020 US Census

For a GIS professional, Russ doesn't actually get to use our GIS very much – he's too busy building it, upgrading it, fixing it…very "IT". However, when the US Census Bureau got in touch for GIS assistance in preparing address data for the 2020 Census, Russ decided to jump in. Here's his story:

"My Name is LUCA…"

LUCA is the acronym for **Local Update of Census Addresses**. Last year, Town Clerk Kaari Tari was approached by the U.S. Census bureau about an effort to ensure that the address list the census uses to contact residents is up to date, in preparation for the 2020 decennial census. Every other town, city, county, tribal administration, etc. in the US was also invited to do the LUCA. All natural 'persons' are counted, as constitutionally mandated. So not just citizens, homeowners or voters, but everyone who lives here should be located with some kind of address, no matter how hard they are to find.

The Census Bureau provided their 2010 address list to start with, along with some purpose-designed software ("GUPS"). I volunteered to be the designated LUCA liaison, partly because it looked interesting, partly because it required some legal responsibilities that I didn't want to foist off on Jill *(JM: Thank you very much!)*, and largely because I thought GUPS would make it quick and easy. Concord has both a Master Address Table (MAT) that includes rental units and condos, and a GIS Parcel layer with Assessor's data attached to the parcels and residential land use codes. Between our data and GUPS, I thought it would be simple enough. I was wrong!

First, the software turned out to be pretty rough around the edges: I got all the way to page 50 in their user manual and still hadn't found out how to update an address. Then when I *did* figure that out from various online resources (and excellent help from the UMass Donohue Center folks, who are experienced with Census updates), *the software just failed*. The technicians I worked with couldn't fix it, and time was slipping away -- each municipality has a rolling deadline to complete LUCA in order for the Census Bureau to process what they get back from so many local governments, and Concord's was coming up fast.

I reverted to using ArcGIS and Concord's MAT and Parcels data. I managed to extract the Census official address list from GUPS so I could compare their list with ours. Simple enough, right? Wrong again!

E-v-e-n-t-u-a-l-l-y I was able to glom all of our MAT addresses to parcel data tables and filter out *most* non-residential addresses. But I also needed to locate and include places like schools with teacher dorms, residential caretaker housing on conservation land or government property, the MCI Concord & Northeast Correctional Center, and assisted living, long-term rehab and other live-in facilities that are not coded as a residence in the land use codes. Finally I needed to compare with the Census list and update it where it had records with no locations, had wrong locations, needed address corrections, or was missing addresses .

> *(I had no way to include addresses for the homeless, for reasons that should be clear, but they do count if located. High School students at boarding schools are the only persons that don't count in Concord, because they are supposed to be counted at their permanent homes. Hotel guests, campers, etc. are generally not permanent enough to count within a municipality.)*

When I submitted the results, I learned that I had not included the unique Census IDs which would have been generated in the GUPS software. Two steps back. I located the IDs and after much gnashing of teeth and ear-smoke, was able to attach the right IDs to the old addresses, and put in codes for those added, changed or deleted (action codes A, C, or D in the images below). Resubmitted again. All good now.
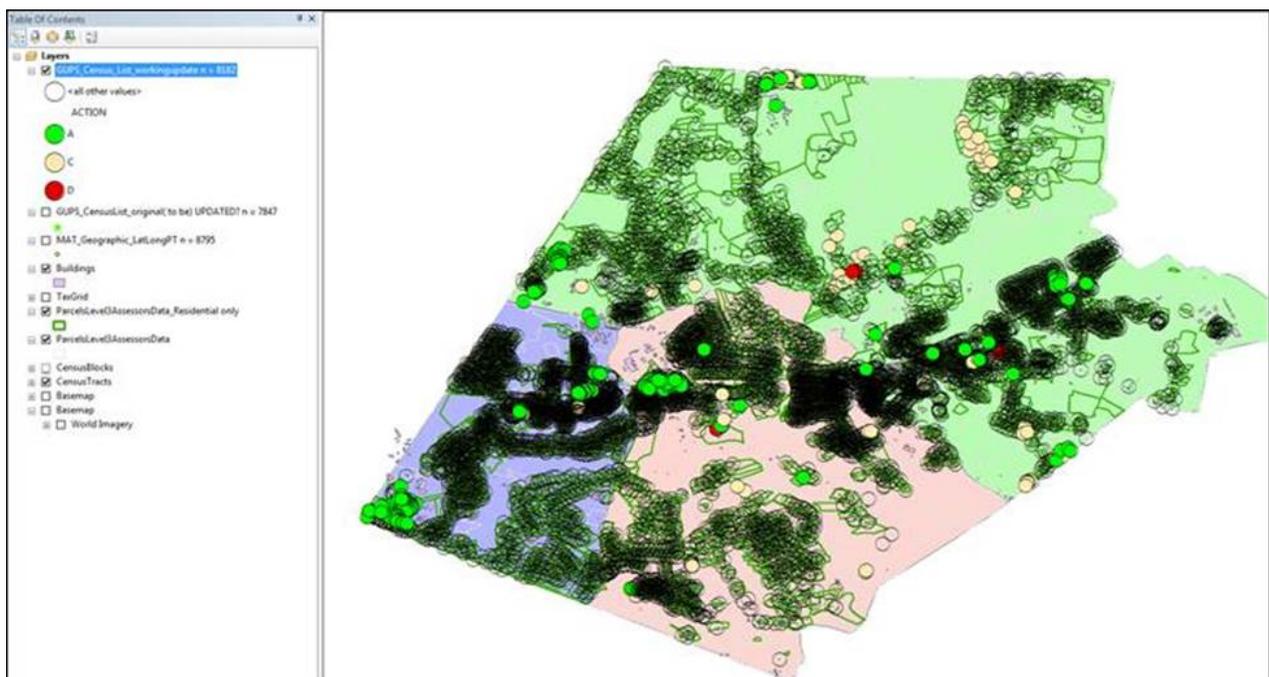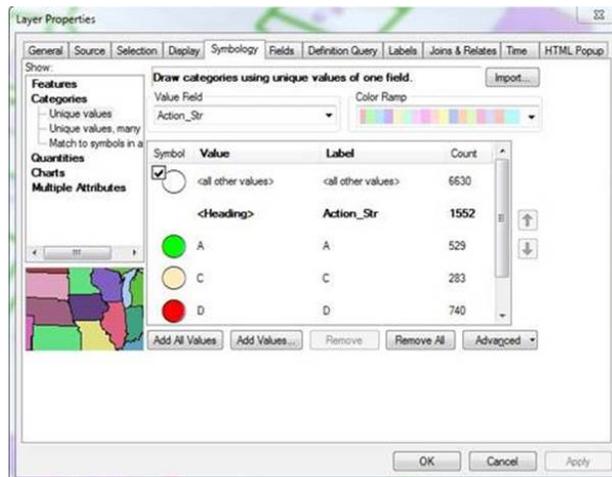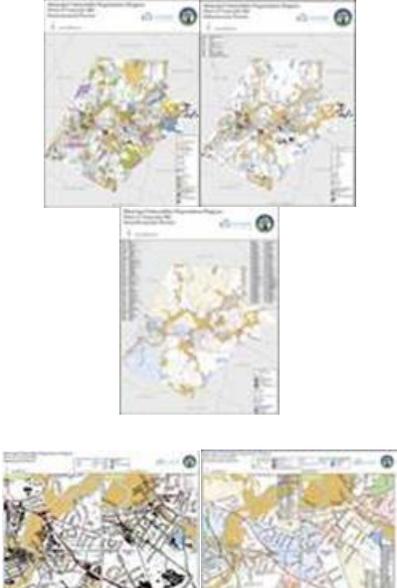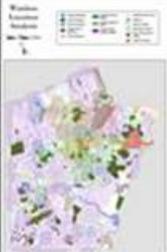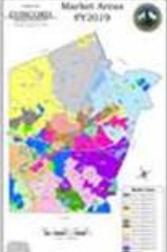
Although this turned out to be a **lot** more involved than I had anticipated, it will benefit the town to have an accurate, current and more complete list for canvassers to use in locating Concordians in many ways... And OK, it was kind of fun, I like a challenge!

2. Map Gallery

CTRL-Click on a thumbnail to view, download or print the full-sized map
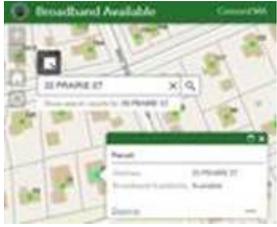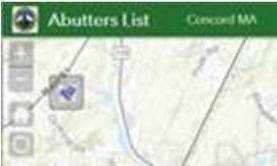
Municipal Vulnerability Preparedness Workshops		Concord town management worked with a consultant to plan and conduct Municipal Vulnerability Preparedness workshops this past summer. To assist participants with visualizing multiple data types in three focus areas – Environmental, Infrastructure and Socio-Economic preparedness – three town-wide maps were requested, along with some zoomed-in panels for data-dense areas in Concord Center and West Concord. Forty-two different data layers across five maps – whew!!
Wireless Analysis		Planning requested a map that would demonstrate how wireless communication regulations affect where cell towers can be placed in Concord. Several 1000-foot buffers are involved, and a goodly collection of map layers as well. A fun project.
Market Areas		Each year our Assessor reviews comparable home sales and determines, for each of over a dozen neighborhoods, what the neighborhood adjustment factor will be for valuation purposes. The Market Areas map shows neighborhoods and adjustment factors – and is quite colorful too.

3. App Gallery

Concord GIS is now in the business of creating Web Maps and Web Apps for embedding in Town of Concord CivicPlus web pages, to provide additional tools for citizens and staff. Check out these samples!

|		
[Web App: Broadband Availability](#)		To spiff up the Broadband team's web page, I developed a web app to show property owners whether Broadband service is available to them. Every address has a red (N for No) or green (Y for Yes) symbol, so availability is evident for the whole area. There's also a pop-up with the Broadband Availability results for that address.
[Web App: Voter Precinct Finder](#)		In preparation for the recent State primaries, I created a web app for the Town Clerk's office, to assist voters in identifying their Precinct number and polling place. An initial splash window provides instructions, as does the About widget.
[Web App: Abutter List](#)		I checked out ESRI's widget for creating Abutters Lists, put together an App, and asked several of you to give it a try. Your feedback: It needs the ability to add/remove individual parcels from the list before printing mailing labels. We have requested this capability from ESRI; in the meantime, it does make a nice back-up if MapsOnline is not available for some reason. Yarmouth GIS liked it so much they asked how I did it ☺

[Web Map: Assessor Data](#)		I created a web map for embedding in the Assessor web pages: Clicking on a parcel produces a pop-up with
		       Pane 1: Mailing label
		       Pane 2: Assessor data for that property.

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4. Want an Embedded Map (or App) for Your Committee's Web Page?

Just get in touch with Jill, who will work with you to design it the way you want. To see what they look like, visit our [Embedded Maps and Apps](#) in CivicPlus.

Once it's just right, Jill will provide you with an **HTML command string** for you to include on your CivicPlus webpage. Here's all you will need to do to embed it there:

1. Sign in to Concord's [CivicPlus website](#), navigate to the desired webpage, and turn on Live Editing.
2. Locate the Custom HTML widget in the Widgets Content tab
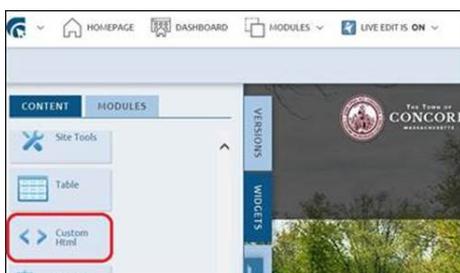
3. Drag the Custom HTML widget into place on your webpage.
4. Paste the **HTML command string** into the widget box, and click DONE.
5. Save your edits and stop your Live Edit session.
6. Test the map and let Jill know if there are any problems.

That's it! I am looking forward to creating one for you!

5. How Old is That Map?

I have generally thought of "old" maps as hand-drawn on paper, with "Here be dragons" around the edges. Recent reading has expanded my definition quite a bit! Here's an example:

The Bedolina Map
CTRL-click to enlarge

commons.wikimedia.org

Engraved into a sandstone boulder in the Italian Alps, it is essentially a parcel map, depicting cultivated fields (dotted squares), mountain paths, and villages. Here's an easier-to-see sketch developed from the map:

pinterest.com

So, how old? It was created around 1000 BCE – *3000* years ago!!

Personally, I am VERY happy that cartography has moved beyond the chisel era… however, I would be thrilled if some of my map creations lasted 3000 years!