**Geog 417: Lab 4**

The real impacts of the Exempt Well Moratorium

(lab originally designed by Jennifer Hackett, heavily modified and updated by Bob Hickey)

**Data:**

The tax parcel and zoning data was downloaded from the Kittitas County GIS website on 5/24/20. The well moratorium data was provided by Jennifer. All three are shapefiles (zipped). Download, unzip, and get them into Pro.

**The Story. More or less.**

 In 2009, the Department of Ecology (WA State) stepped in and implemented an exempt well moratorium in the upper part of Kittitas County. Basically, it meant – NO MORE NEW WELLS. This was because water was already overallocated and something needed to be done.

 As you might imagine, the locals freaked out. If you want to read more, especially the written testimonies, drop by <https://www.co.kittitas.wa.us/response/200907-doegwwm/default.aspx> . Or a Daily Record article: <https://www.dailyrecordnews.com/news/kittitas-county-to-seek-repeal-of-well-moratorium/article_0e7fcf1f-fe70-5f28-9bf0-8a01c4622c60.html>

 In effect, we had big government stepping in, telling the locals what they could and could not do with their land. It was a pretty big slice, a bit over 550,000 acres. Take all the Covid-19 arguments and apply them to landuse. The conversation is basically the same. Of course, if you have undeveloped land up there, this basically made it impossible to build. Because no water, no house.

**Your task:**

 As a savvy citizen and GIS nerd, you thought about the upper county and wondered how big the impact really is. After all, this moratorium would only apply to undeveloped private land outside town boundaries (and outside Suncadia, which already has a water allocation). How much of that is there?

First, you need a single file which contains all the relevant info. Start by bringing the zoning info into the tax parcels layer. The overlay layers file can handle this. Save it into your gdb as a new layer. If you open the attribute file, you’ll have a lot of columns. The ones that will have value in this assignment are:

* Zone\_name (this is your zoning category)
* SHAPESTare – this is your parcel area, in square feet.
* T2\_StateCo – this is the development level of the parcel.
* T2\_Owner – who owns the land.

The next step is to clip this layer down to just the area of the moratorium. Do it. Clip is the command, if you were wondering. For once, ESRI was logical in their command naming.

Now.. we need to select (select by attribute) those parcels that are

* T2\_stateCo – undeveloped or not presently assigned. Note, there are multiple categories of both of these. This gives you the first cut at possible parcels. Conveniently, it excludes all public lands. My suggestion… when you make the selection, right click on the file and data – export features. This will give you a new layer. Then, if you screw up somewhere, you can always go back a step.
* Now, we continue to narrow. Another select by attributes. In this instance, we are looking for areas to exclude, not include. You should be able to do this somehow in the select layer by attribute field… but I didn’t get it to work. So, plan B (at least for me, feel free to muck about). I did a query on t2\_owner – anything containing the word Suncadia (for instance, it would include “New Suncadia llc”). Then I deleted them and saved the file. To do this, I did the query, looked at the attribute table, clicked the show selected records button, then highlighted all these records (click first record, shift click the last, just like in Excel), and hit the delete key. I then went to the edit tab and hit save. Obviously, make sure you are sure of your query before deleting….
* We now do this again based on zoning! In this case, we want to delete those areas in incorporated cities or urban growth areas. We’ll also include Master Planned Resorts, as we’ll assume they too already have water. For the most part, it cuts out Cle Elum, Roslyn, and a couple of large subdivisions (that frankly look like Suncadia extensions of some sort to me).

At this point, we should, theoretically, have those parcels that might be impacted by the moratorium. However, as I click around a bit, I see parcels that, at least according to current zoning practices could potentially become residential – but currently do not. Look at zone name and zonedesc – particularly by clicking on some of the larger remaining plots and answer the question:

Q1 – what might be some of these zoning categories that might not be impacted by the moratorium, but are included in this analysis? (note, you might want to make the map [below] before answering this)

Q2 – how many parcels are remaining that you think are impacted by the moratorium? How many are there within the moratorium area? What percentage is this?

what about the area? Let’s do this in acres – add a field (call it acres, float, and numeric with 2 decimal places). Save. Then calculate field and convert the area column into acres. Now you can click on the acres header in your attribute table and run statistics.

Q3: What are the mean and median sizes of the moratorium parcels? Why are these numbers so different?

Q4) How many total acres are in your moratorium parcels? What percentage is this of the total area in the moratorium zone?

**Now, it’s time for a pretty map!**

1. Map showing the parcels covered by the exempt well moratorium. The map must be as large as possible (on a 8.5x11 sheet of paper) and show the moratorium boundary and zoning (colored according to zone\_name). You can add additional data layers to make the map more informative. (For example, rivers, lakes, county boundary, roads or cities – yes, you’ll have to download them) Don’t just rely on that grainy ESRI background! In fact, I don’t want to see any esri backgrounds on your final map. Include all the usual cartographic stuff – legend, useful scale, N arrow, neatlines, etc. This should be spiffy enough for you to use as an example of cartographic work in your StoryMap (if you want)
	1. The map should also include a table which shows the number of parcels in each zone\_name and the area by zone\_name. Surprisingly, this is easy. Run the summary stats on your layer. Set your statistics fields to first zone\_name, then acres – and your stats type to count and sum, respectively. You’ll see a standalone table appear in your contents pane. To add it to your layout, select the standalone table in your contents pane, then goto insert – table frame. Draw a box on your map and it should appear. Make it look good! Remember, you can always convert to graphics and ungroup (probably multiple times) to directly edit the table.

**Turn in**

1. A color printout of your map
2. A printed document answering the 4 questions above.