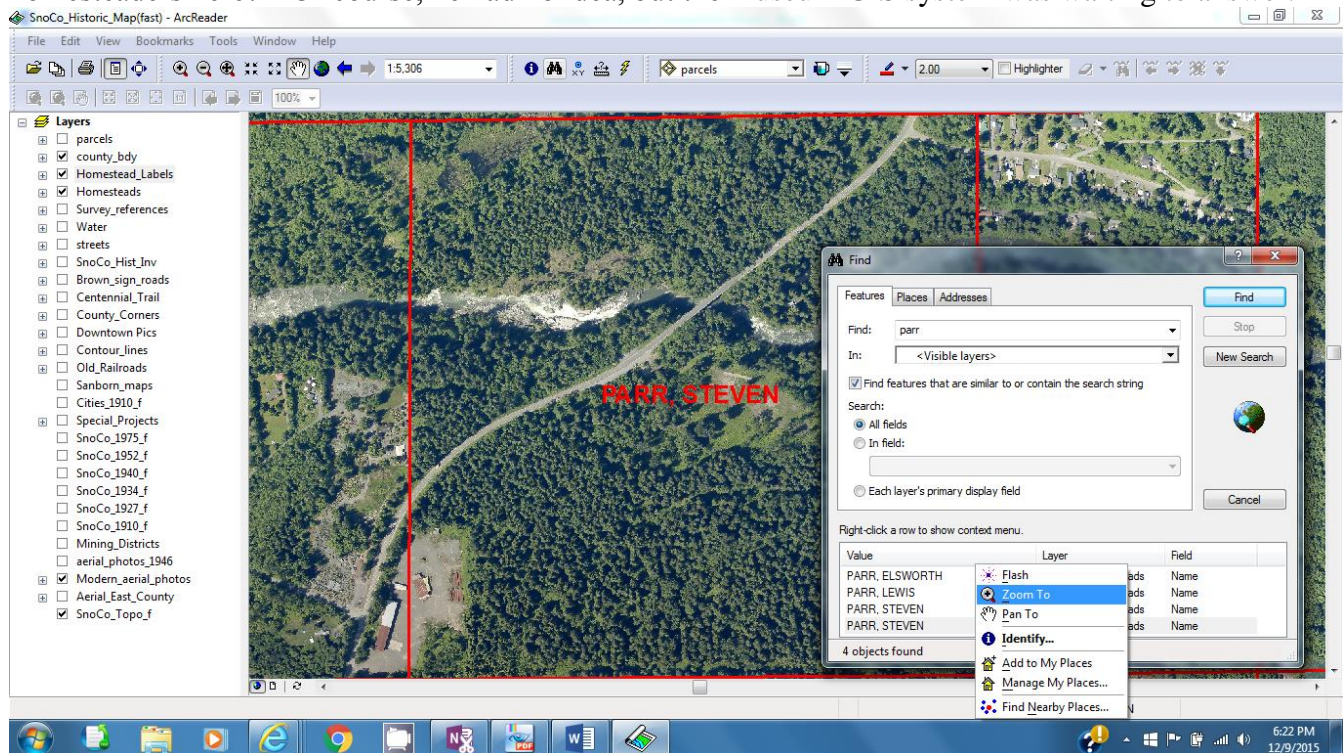Granite Falls, WA is so small that Google Maps used to put it in the wrong part of the State. It only has one traffic light, but it has an active Historical Society that maintains a local historical museum dedicated to the mining, logging, milling, and railroading history of the area. After they completed an extensive digitization effort, their collection of pictures and artifacts could be searched using keywords and names, but it was only through modern GIS technology that they were able to capture and make available the information hidden in hundreds of vintage maps.

A gentleman wandered in one afternoon and said, "My name is Parr and I believe I may have had some relatives in this area. I just flew in this morning from New Zealand, and I'm on my way to visit my cousin (also named Parr) in British Columbia. The kind people in Everett [a large town about 20 miles distant] did have evidence of one of the matriarchs in our family dying there, but they said she was buried in Granite Falls. I decided to drive up here and see what I could find, although my cousin said he'd been here and I wouldn't find much in a small logging town."

A quick look in the digitized Museum collection provided about a dozen pictures of his ancestors (names confirmed). Because they were all dated ca. 1890-1900, a period during which homesteads were actively being granted in the area, the question came up, "Were any of your ancestors homesteaders here?" Of course, he had no idea, but the museum GIS system was waiting to answer.

Turning on the map and enabling the "homestead" layer, the "find" button allowed a search for the name "Parr". Immediately four homesteads were listed, and the visitor exclaimed, "That's my great-great-uncle and his three sons!" Zooming to the homestead of the eldest Parr, imagine our surprise to find that he had homesteaded 160 acres locally, at the center of which was Granite Falls waterfall (and bridge), the local site after which our community is named! Mr. Parr left with a 24" x 36" plot of the aerial view, overlaid with homestead lines and homesteader names as labels (all four Parrs were local), exclaiming "I've been into genealogical research for over 20 years, and I've never been anywhere to find such material so quickly! I can't wait to show my cousin what I couldn't find in Granite Falls!"
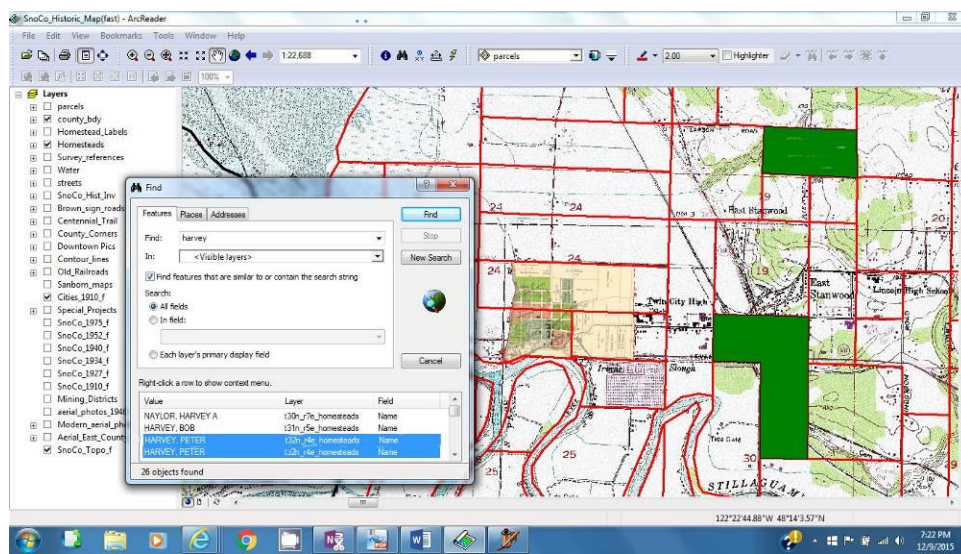
In early 2009, ESRI provided a grant to the Museum for ArcGIS 9.0, based on the museum's intent to create a map that could be shared among multiple organizations. With the cooperation of several organizations with large scanners, the Museum digitized hundreds maps (typically township maps, showing about 36 square miles) and cleaned up the images. With lots of student intern manpower, the all-volunteer team used the geo-referencing capabilities of ArcMap to accurately geo-reference

(overlay) multiple vintages of hand-drawn hardcopy maps, using modern township, section, and 1/16 section corners as the reference points. They used the "shapefile" creation capabilities to draw original homestead boundaries based on a 20-year research effort by one of the members, while including in the associated attribute table such information as homesteader name, grant date, patent number, etc., automatically making all that data completely searchable. Since local homesteads were defined on the basis of 1/16 sections, features such as "snapping" and "auto-complete" made it easy to draw boundaries that were both precise and non-overlapping.

ArcCatalog was used to gather scanned map images from each year into "image catalogs", each catalog generally forming a complete map layer handled as easily as a single image. Forty three maps from 1910 were combined and handled as a single 1910 layer. Similarly, other vintages of maps were combined into "year" groups to form their own map layer. The project team used the "publish" feature of ArcMap to publish and distribute a historical mapping package to 16 museum and genealogical organizations across all of Snohomish County. Visitors to any of those organizations can now use free ArcReader software to examine the history of any spot in the County, starting with the earliest homesteaders, progressing through a variety of vintage township maps (1910, 1927, 1934, 1940, 1952, 1975), and continuing through current property plats/owners and modern 9 inch resolution aerial photographs. Simply by entering a homesteader name or a current property owner name, users can "tune and zoom" to the precise location and view the birth, growth, and sometimes demise of towns, railroads, schools, and businesses over the last 125 years.

When the County GIS organization saw the initial results, they contributed hundreds of early railroad survey maps they had once digitized, but for which they had never found a real use. With those geo-referenced and added as another map "layer", users can examine every siding and spur, relating them to the maps of various vintages. Modern-day "treasure-hunters" come to the Museum to find likely spots to search for artifacts. They can spot long-forgotten railroad sidings and note the GPS coordinates provided on-screen, before starting out on their trek with their handheld GPS units and metal detectors.
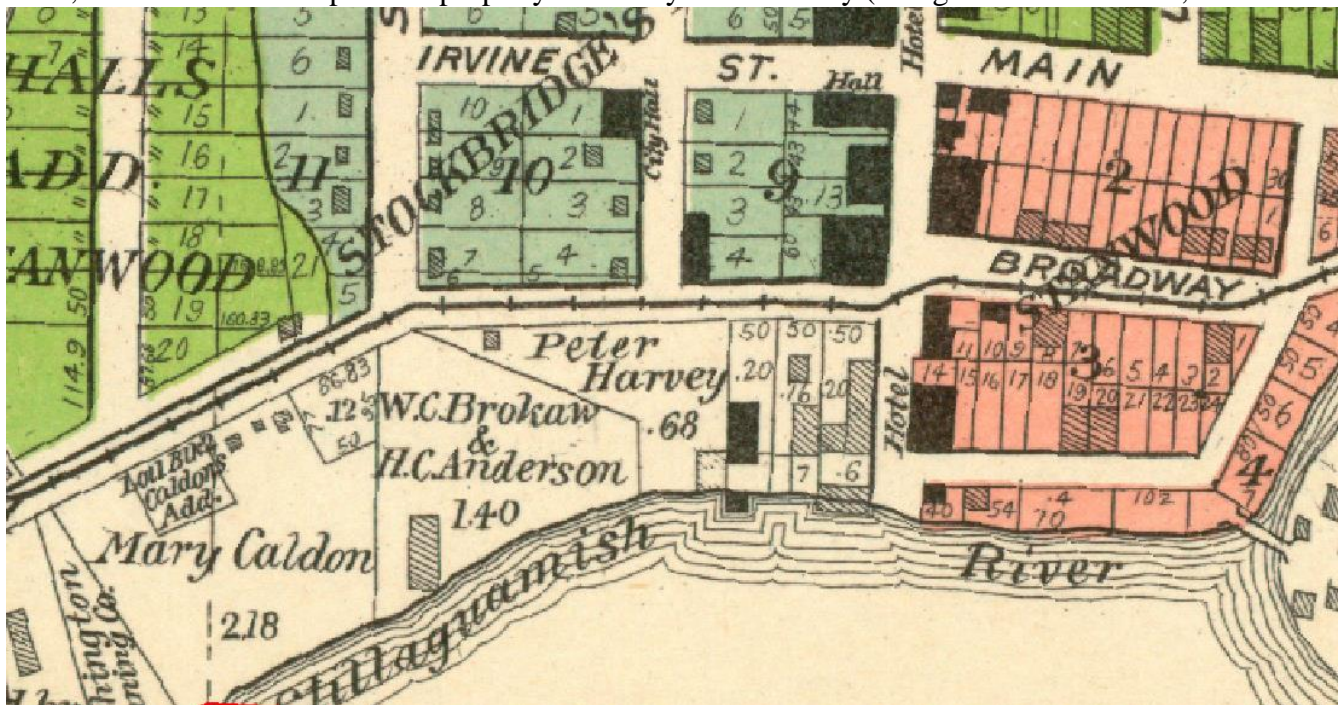
By the time the project was first released and published, the team had geo-referenced over 600 maps, most of them township maps, but many of them railroad surveys and detailed downtown maps for various communities. Over 800 volunteer hours went into the project (almost half of them entering the homestead boundaries and data), but the payoff was immediate. New maps continue to be submitted, so the project continues, adding maps and sharing across all the participating organizations.
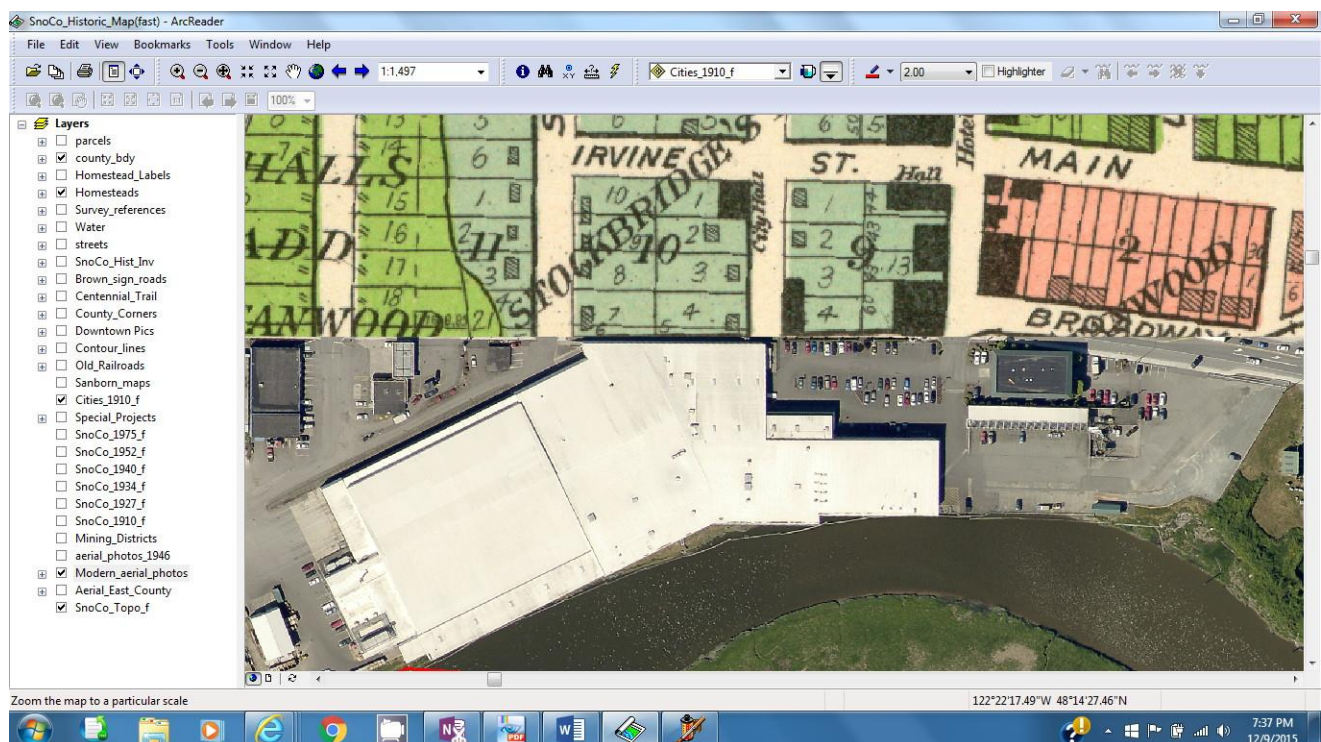

At other times, the discoveries have been more local, sometimes disappointing, but no less interesting. A local fellow walked in one day and asked, "Can you confirm that my ancestor Peter Harvey homesteaded the property on which the Twin City Foods factory now sits in Stanwood, WA?" Another way of asking might have been, "Could you do a title search back to t=0 on a piece of property for which we don't know the legal description?" While it was clearly a matter of some family pride, our search took a surprising turn. By turning on the "cities 1910" layer, it was easy to find and zoom in around the city of Stanwood (the only city in the extreme

northwest of the county). But turning on the homestead layer and searching for his ancestor's name, Peter Harvey, revealed two homesteads granted to that name, but a mile or more from downtown Stanwood where the factory is located. At that point, we had proven that his ancestor had not homesteaded the property of interest. However, zooming in more closely on the downtown map from 1910, we indeed found a piece of property owned by Peter Harvey (though not a homestead, he had
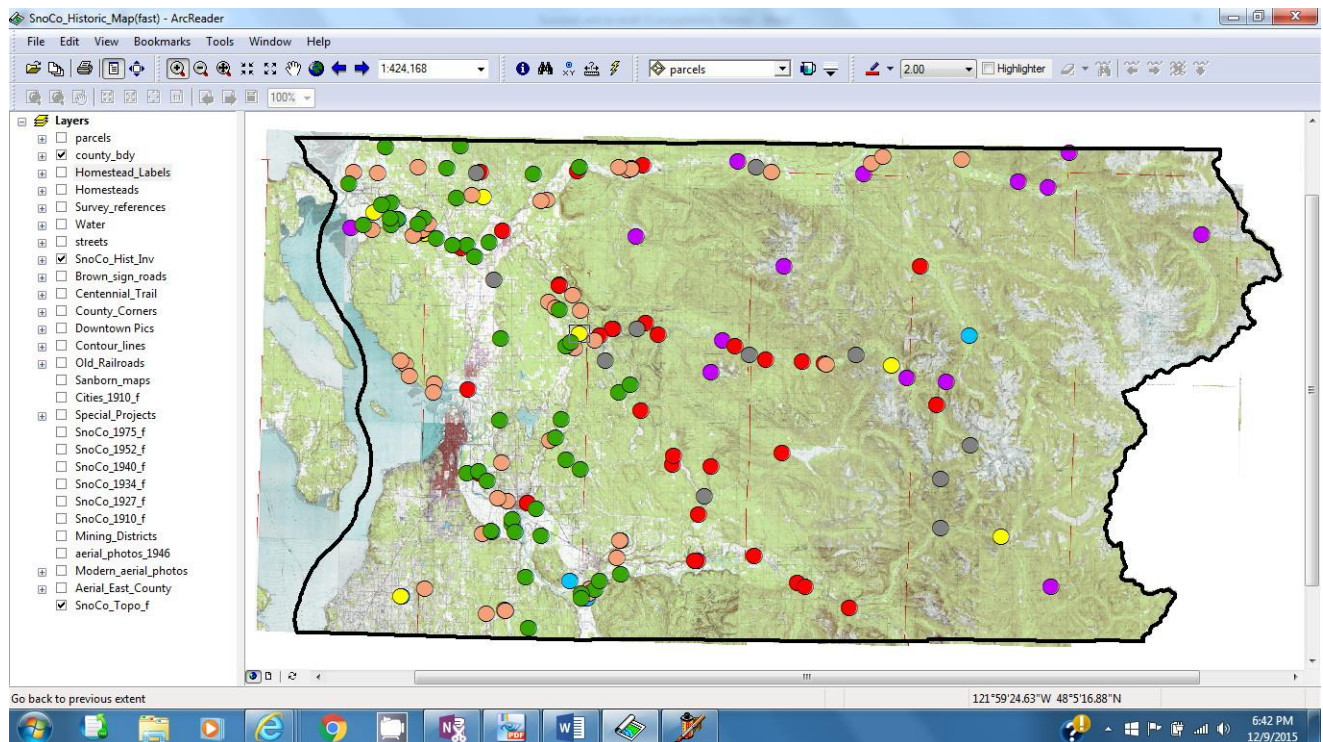

clearly purchased the property sometime before 1910). Turning on modern aerial photographs and using the "swipe" button to peek behind the 1910 city map, it was clear that Peter Harvey's property sat precisely on what is now the east end of the factory. We killed the "homesteaded the factory property" family legend, but certainly found the basis for that story.

New map layers have continually been added over the last few years. There are layers representing a major "rails to trails" project (old railbed converted to hiking, biking and equestrian trail), documenting a county-wide "historic corners" project (designated 1920s-1930s motorist highpoints), recording "brown sign" roads (roads once known by name but now known only by numbers), and a variety of small scale mining and logging projects.

Perhaps the greatest recent effort, however, has gone into the creation of a map layer that describes and inventory of historic assets (buildings, structures, and sites) spread across unincorporated Snohomish County. Such an inventory can be invaluable in finding forgotten places and in protecting them from accidental harm through neglect and/or overenthusiastic development. This map layer consists of hundreds of "points", color-coded according to the original purpose of that asset (i.e. agricultural, civic, industrial, business, infrastructure, etc.). Zooming in closely allows the user to precisely locate the asset, and clicking on an associated hyperlink brings up actual pictures and text describing the historic significance of the item.
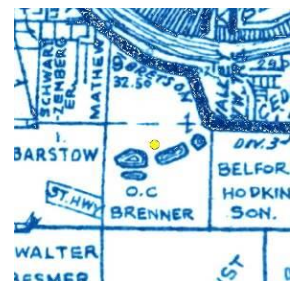

A biologist recently called the museum late one afternoon. He was working with the Stillaguamish tribes in trying to find out who had obtained the original water rights for an old fish farm known for decades as Brenner's Fish Farm. "I've been here at the County offices all day and haven't found anything about who founded the fish farm! I came across one name (Oberlander), but I have no idea how he might have been involved. To trace water rights and help the tribes re-open the fish farm, I really need to know who founded it. The county finally sent me to the library, and the library told me to call you." We thought we might be able to help, so he drove to the museum.

Zooming in on the fish farm (marked on the historic asset layer as a yellow dot near Granite Falls), we dialed through the vintage maps to see property owners through the years . . .
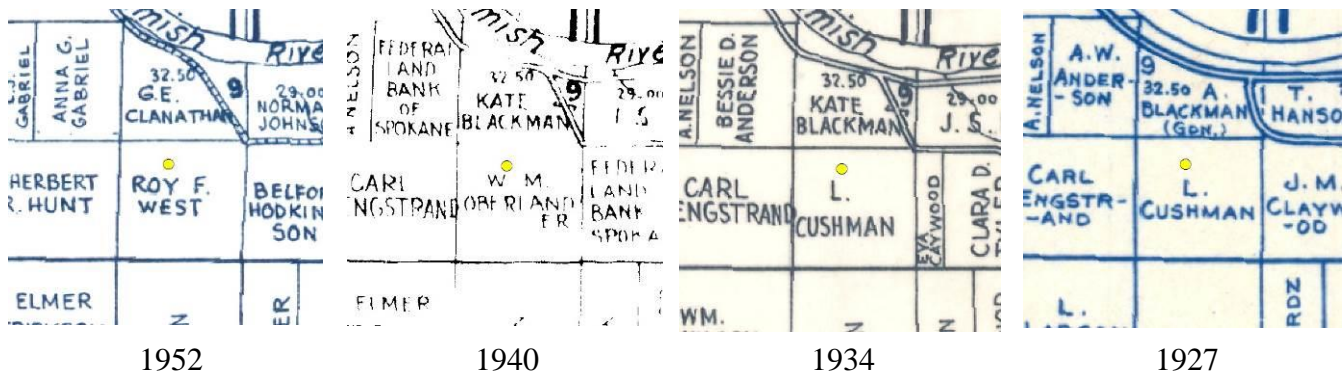
The yellow dot marks the aerial photo, clearly centered on a pond. The 1975 map shows the owner to be O.C. Brenner.

2012   1975

| 1952 | 1940 | 1934 | 1927 |

Brenner (we knew that), West (never heard of him), Oberlander (a suspect), and for several earlier decades Cushman (a new name). We searched our digitized newspapers for "Oberlander", who at one time owned the property, and the only article to surface was titled "Oberlander Buys Cushman Fish Farm". Then searching on "Cushman", we found a 1932 article describing how Mr. & Mrs. Cushman had created the fish farm in 1924, and were currently selling over 200,000 fish per year to the county. The biologist's best comment was, "I could have saved myself a lot of stress by coming here first!" The white paper describing the search is now the hyper-link target for that item on the historic inventory layer!

OBERLANDER BUYS CUSHMAN FISH FARM

Sale of the Cushman fish farm by the Granite Falls State Bank to Mr. W. M. Oberlander was completed last week.

Mr. Oberlander owns a service station at Murphy's Corner near Silver Lake on the Bothell Highway, and he plans to operate the fish hatchery for commercial purposes.

For the present, he will remain at his present residence, and Mr. Cave, a relatives, will be in charge of the farm.
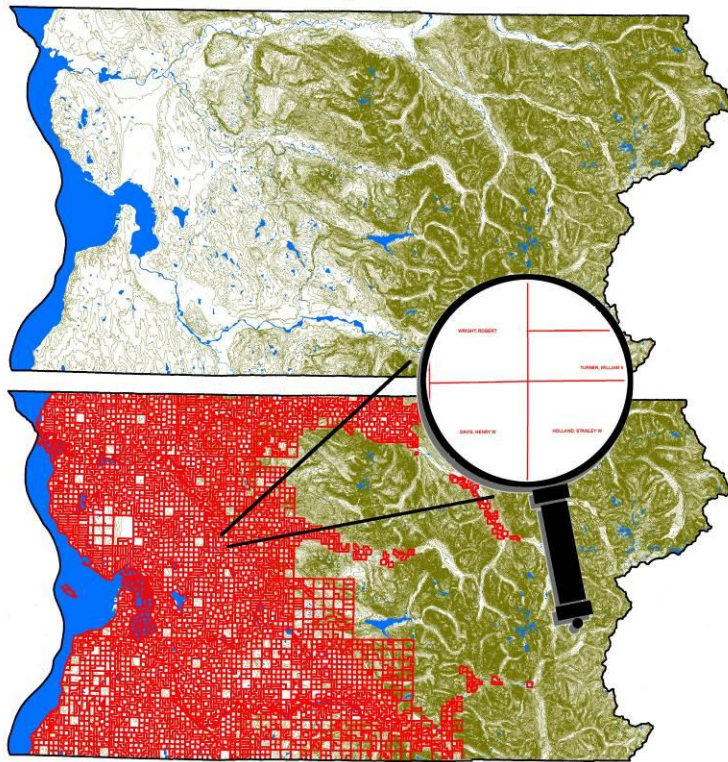
A COMING INDUSTRY

One of the most interesting places around Granite Falls is the trout farm of Mr. and Mrs. Levi Cushman, situated about three miles northwest of Granite.

A trip to the farm and the information gleaned is an education in itself.

The water for the industry head on the Cushman farm and Mr. and Mrs. Cushman started this industry in 1924. Starting with two hundred fish and a very small pond the first year they produced about 7,000 fish, but they experienced a little bad luck as a crane got about 4,000 of the little fishes. The following year a larger pond was added and a few hundred fish were sold to Snohomish county for stocking rivers and lakes.

Historical map-based information continues to be gathered. We don't know the question that might be asked, or which maps might be brought to bear on a visitor's problem, but we've had remarkable success in answering questions quickly that might otherwise have taken days, or weeks, or been unanswerable. We can zoom from the county level to the individual building level of detail, and dial through decades of geographic evolution.

Through the generosity of an ESRI grant for ArcGIS to the Granite Falls Historical Museum, all of Snohomish County has taken a leap forward in the preservation of, and access to, a wealth of information embedded in vintage maps. The collaboration and cooperation of multiple heritage organizations has allowed the mapping system to enjoy continual expansion, with additional maps and additional information added regularly.
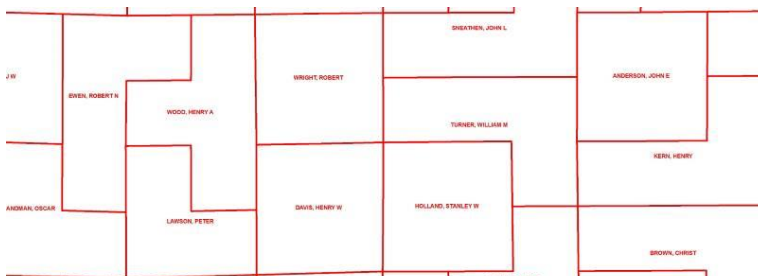
We've used the following images to explain the system to non-GIS folks, and to garner additional interest and support across the heritage community. For more information, contact Fred Cruger, Granite Falls Historical Museum, abbott1912@aol.com .

In the beginning, there was the wilderness that was to become Snohomish County. But by the start of the 20th Century, there were about 4500 homesteads staked out.
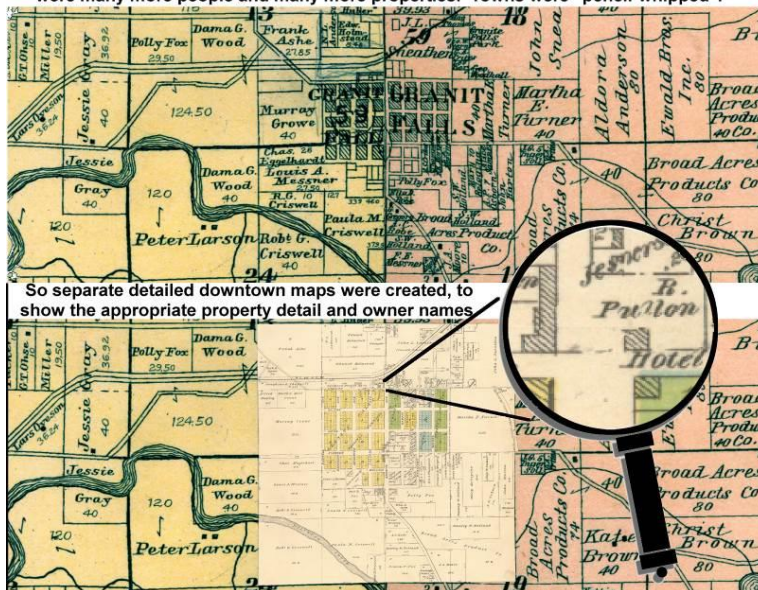
Our GIS system allows us to zoom in on the information, to make use of whatever level of detail is available.

In this case, we are zooming into the area around Granite Falls, to show how we can progress from the county level, all the way to the level of individual properties and buildings.

Homesteads were large, so a map could be rather simple (as above), but by 1910, there were many more people and many more properties. Towns were "pencil-whipped".
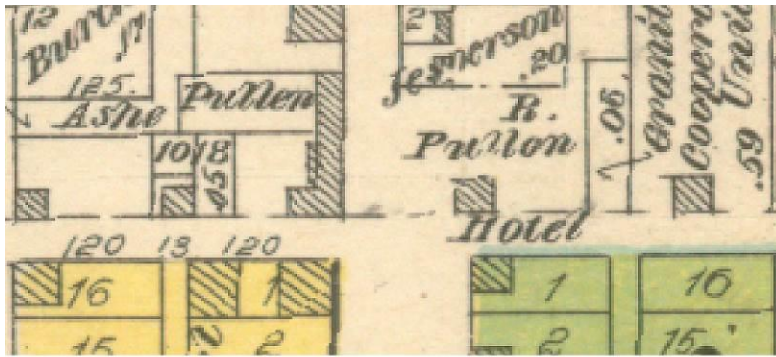
Homesteads ranged from 40 to 160 acres, so mapping them was fairly straightforward (and certainly made for a relatively simple map).

But growth in the area was extreme, particularly when the railroad arrived. In the case of Granite Falls, the railroad was built to access the gold in Monte Cristo, 35 miles to the east. The town doubled in population annually for a number of years in the 1890s and early 1900s.

The downtown area was dense enough that the mapmakers "pencil-whipped" it on the 1910 township maps. However, in the same set of maps they included detailed maps of each city in the county.

That detailed map is layered on top in the lower portion of the figure at left. Again, the system can easily zoom in to extract detail from that layer, as shown in the following figure.

So separate detailed downtown maps were created, to show the appropriate property detail and owner names

The system easily zooms in to extract whatever level of detail is available from each map layer. In this case, we are zooming in to look at the northern end of Granite Falls

The 1910 maps included detail for each of the cities in the county, even most of the unincorporated towns.

The detailed downtown maps showed details not possible to include on the larger township maps. The image above shows what is now the main intersection in downtown Granite Falls. By 1917, however, there were even more detailed maps. Sanborn Fire Insurance maps showed individual buildings and their functions!

The Sanborn maps showed even greater detail, enabling us in many cases to easily determine which existing buildings are "original" and which ones have been in some cases incorporated into larger structures. The red arrows are hyper-links to vintage photos, taken from the location of each arrow, looking in the direction of the arrow.

Notice the arrows in the image above. They indicate "hyper-links" that can be clicked to examine vintage photographs taken from the location of each arrow, looking in the direction the arrow is pointing. Notice #1 is pointing at a building marked "ruined by fire". Arrow #2 is pointing at a building that ostensibly sold "Soft Drinks and Cigars"

#1 The Commercial Hotel was indeed ruined by fire in 1917, the same year the map was created. The large false front at the left has tipped at an angle, the entire roof is gone, but the chimney remains, and the balcony from which many people watched the July 4th parade is intact. The building was never replaced.

#2 The "soft drinks and cigars" building was one of the oldest taverns in town, but since the map was created in 1917, Prohibition was in effect. You couldn't very well call yourself a tavern!