COUNTY BOUNDARY UPDATE GUIDANCE

For State and Local Government

Abstract

This guidance is prepared by the Geospatial Program Office (GPO) with the hope it provide guidance on representing and updating county boundaries at both the state and the local level.

County Boundary Update Process

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This document has been compiled with the hope that it will shed light on the process by which county boundaries were set into statue in the State of Washington and how to represent and update these boundaries at both the state and the local level for operational and administrative purposes.

Purpose

County Boundaries are defined by RCW 36.04 and they are composed of both survey monument and physical feature descriptions. These boundaries have been depicted on map and other spatial products since statehood in 1889. While these legal descriptions do not change, except through Court decisions, spatial representations of these descriptions have improved with technologic advances in the cartographic sciences. Improvements in location based technologies require that spatial depictions of survey monuments and physical features be maintained to ensure they are based on the best available cartographic techniques.

RCW 58.22 defines the Washington State Department of Natural Resources as the responsible agency for establishing and maintaining a state base mapping system. This agency was an early adopter of GIS technologies and developed a statewide mapping system based on data collection technologies available at the time of implementation. Presently, improvements to these existing spatial data layers are driven by business function and available resources. Technologies that did not exist when the first statewide GIS data were created now supports positional accuracies that were either not possible or too expensive to widely use during initial data creation. With the costs of accurate data collection dropping and business requirements at the local level driving spatial accuracy improvements, many new spatial collection projects have been initiated. With local governments funding these data collection projects, a patchwork of data accuracies is developing across Washington State.

In addition, State business functions require the use of local government spatial data, but current incorporation methodologies are in need of streamlining. Limited resources require that all levels of government coordinate their efforts to keep spatial data maintained and available for business functions. Therefore a mechanism must be established that allows local data to be collected into statewide layers without additional editing. The first GIS layer that needs to be developed in order to support intergovernmental data sharing is a statewide County Boundary layer. This layer is the underpinning of all other data collection and aggregation efforts and is important for us to get it right.

This document describes the existing county boundary data found in the current Washington State base mapping system and defines the process by which updates will be submitted. These GIS data are not intended to create a legally binding infrastructure, but to represent statewide county boundaries based on the best available source. It also recognizes that with spatial data collection technology improvements, this document, the methodology it outlines and the data it describes are dynamic and ever changing. Without constant maintenance spatial data quickly becomes obsolete.

Objectives

The challenges we face today in dealing with more and more accurate technology is how to reconcile our legal representation of county boundary information against this more accurate survey information and our legal records. It is also challenging for us to maintain and coordinate operational views into that legal record while still being able to map a representation of that data.

What's described here is the existing rules and statues that dictate how the state interpreted, documents and defined the county boundaries in Washington. Though formal rule change or amendment, these statues can be modified to handle our more modern ways of surveying and defining these boundaries. But, what the future state might look like is actually in the hands of the counties to determine.

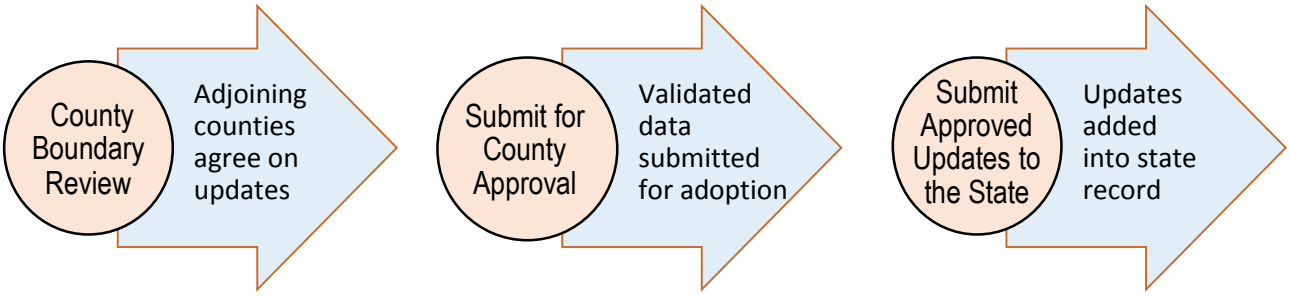
What is also documented here is how the counties can change and improve their county boundaries as they are mapped today, while still meeting the intent of our existing laws.

Reality

There are four issues that the counties and the state face when it comes to mapping and recording the state's county boundaries - both in legal record and in map representation. The following are the ways to effectively make those changes:

1. The state's existing recorded and mapped county boundaries, managed by the Department of Natural Resources (DNR), can be *updated* when new and better coordinate point information is made available at any time. This process is outlined in ***Section 1***.
2. The mapped representation (GIS) of a county's boundaries resides within the authority of any given county. But in order for it to be recorded by the state, the boundary change(s) must to be agreed to by all adjoining counties and appropriately approved and adopted. This process is generally outlined in ***Section 2***.
3. Resolving ambiguities in county boundaries (as defined in statue), along any non-public land survey boundaries, resides within the authority of any given county. But in order for it to be recorded by the state, the boundary change(s) must to be agreed to by all adjoining counties and appropriately approved and adopted. This process is generally outlined in ***Section 3***.

4. Changes to the actual legal boundaries, as defined and documented in state statue, must follow the formal process as defined in RCW's and WAC's. This is outlined in ***Section 4***.



The Big Picture

Guiding Principles

- The counties are the authority when it comes to their business interests.
- Access to improved geospatial data happens continually over time and it needs to be reflected in our state and local records.
- The state relies on counties to maintain and update their county boundary data and to provide those updates to its respective governmental entities, for approval and adoption, and to the state.
- Improved data should be submitted to the state for inclusion into the state business systems so that it can be as effective as possible when determine population estimates, taxing rates, permitting requirements and licensing to name just a few.
- Changes to spatial data doesn't move or change any boundary legally, it just shows a better representation of that boundary line.
- Actual survey monuments control the demarcation of boundaries in Washington.
- Department of Natural Resources (DNR) understands and acknowledges that their Cadastral database represents the best available data available at the time of its creation and that more accurate survey points need to be included to improve the accuracy of the state's geospatial data and the representation of those boundaries.
- The Counties and DNR will work through the Office of the Chief Information Officer's Geospatial Program Office to ensure that all data updates and announcements are disseminated.

- The counties will work through the Association of County & City Information Systems (ACCIS) to ensure that all information regarding data updates and announcements are disseminated.

Section 1

Existing County Boundary Data – Inclusion of More Accurate Coordinate Data to DNR

The original GIS county boundary layer created by the state, and represented in the Department of Natural Resources (DNR) Cadastral data base, was never intended to replace the legal description of the States county boundaries. It was created as a graphical depiction of those boundaries and was based on the best available data at the time of its initial creation.

A map, whether digital or paper is not the same as a property pin, or a survey monument. There already exists a process that surveyors use to describe boundaries and locate these on the ground. When the survey community gets every monument and physical feature surveyed to centimeter accuracy that makes up all 39 county boundaries, then we won't need the GIS submittal process we are trying to define here. But, in the interim, we need a GIS based process that allows us to submit the best depictions of reality we can create from the best available source data.

Any updates to this data can be made at any time, as new and better coordinate information is made available. This process is relatively easy and simply means more accurate coordinate points are submitted to DNR for inclusion into the states cadastral database.

Once this information is in incorporated, then an announcement will be made to the survey and GIS user community. It is important that both communities sign up for inclusion on the list servers that disseminate this information.

- ✓ The Surveying community should consider signing up to the Surveyors List Serve at …. Survey Advisory Board http://listserv.wa.gov/cgi-bin/wa?A0=DNR-SURVEY-ADVISORY-BOARD
- ✓ The GIS users community should join the *WAGIC Listserv to stay informed*

http://listserv.wa.gov/cgi-bin/wa?A0=WAGIC

What follows are some general steps that the county should follow to assure that any improved coordinate points are submitted for inclusion into the states cadastre database.

Example: This example shows how the DNR Land Survey Section, cadastre data editor regularly updates surveyed corner positions with new and more accurate coordinates as part of their core work. The priority of where to make these updates is necessarily driven by DNR business and relative location to DNR managed lands. DNR captures corner data in their Cadastre Point layer, in general only corner positions originally set by GLO or BLM surveyors and DNR parcel corner positions are recorded, the DNR cadastre is ***not*** intended to be an inventory of all possible known parcel corners.

When opportunities arise to improve corner positions outside of the core DNR work areas including along county boundaries; funding and staff time availability allow DNR to work with data providers to include the improved data. One example of a relatively large scale GIS corner position improvement project came by way of Grant County:

Grant County had knowledge of an effort by the U.S. Bureau of Reclamation (USBR) where they partnered with a private land survey firm to accurately locate many of the original USBR survey corners from the Columbia Basin Project. Grant County contacted DNR and provided complete project documentation as listed in figure 1-1

- A copy of e-mail correspondence between you and me regarding the coordinates.
- One dvd, containing the digital coordinate products. They were created by Rogers Surveying, Inc. Please see the file named "Final Report.doc" for further information.
- One spiral bound packet titled "USBR by Rogers Surveying, Inc. For Cadastral Wireframe Grant & Adams Counties April, 2000." This packet represents some of the digital data referenced above, prefaced with a "Project Report" that appears to be the same content as the "Final Report" on the dvd.
- One spiral bound packet titled "Columbia Basin Project WSDOT Geographic Services Bureau of Reclamation Rogers Surveying". This packet contains the WSDOT monuments referenced by the Rogers Surveying group in the "Final Report."
- One 3-ring binder titled "GIS Station Data Bureau of Reclamation Ephrata Field Office Ephrata, Washington." This packet contains the field notes (station data sheets) for the township corners surveyed using GPS units.

figure 1-1

DNR analyzed the data, found it acceptable to update cadastre and used the project as "fill in" work that took about a year of "a little here, a little there" effort. The end result is nearly eight thousand improved corner positions in cadastre. See figure 1-2

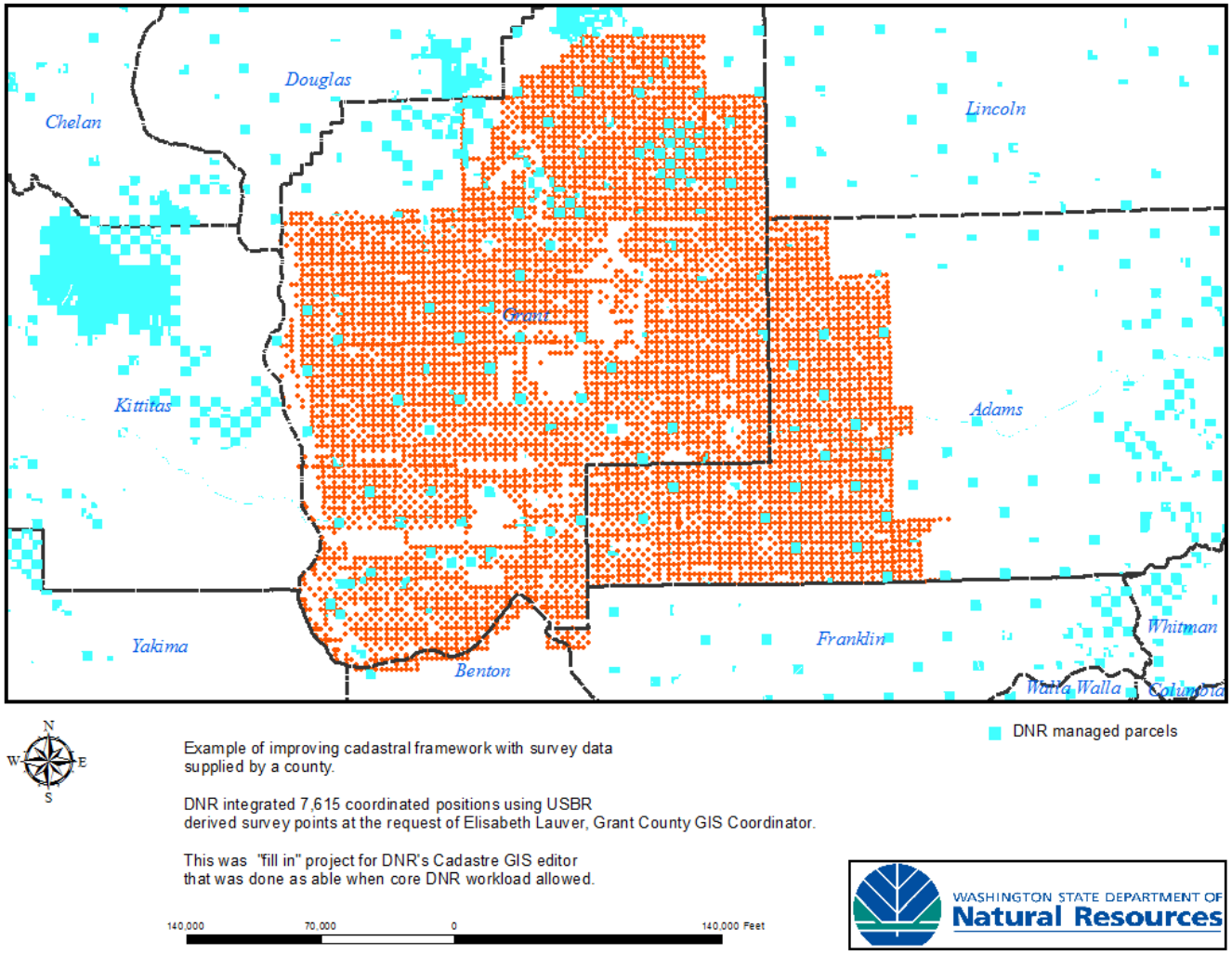


figure 1-2

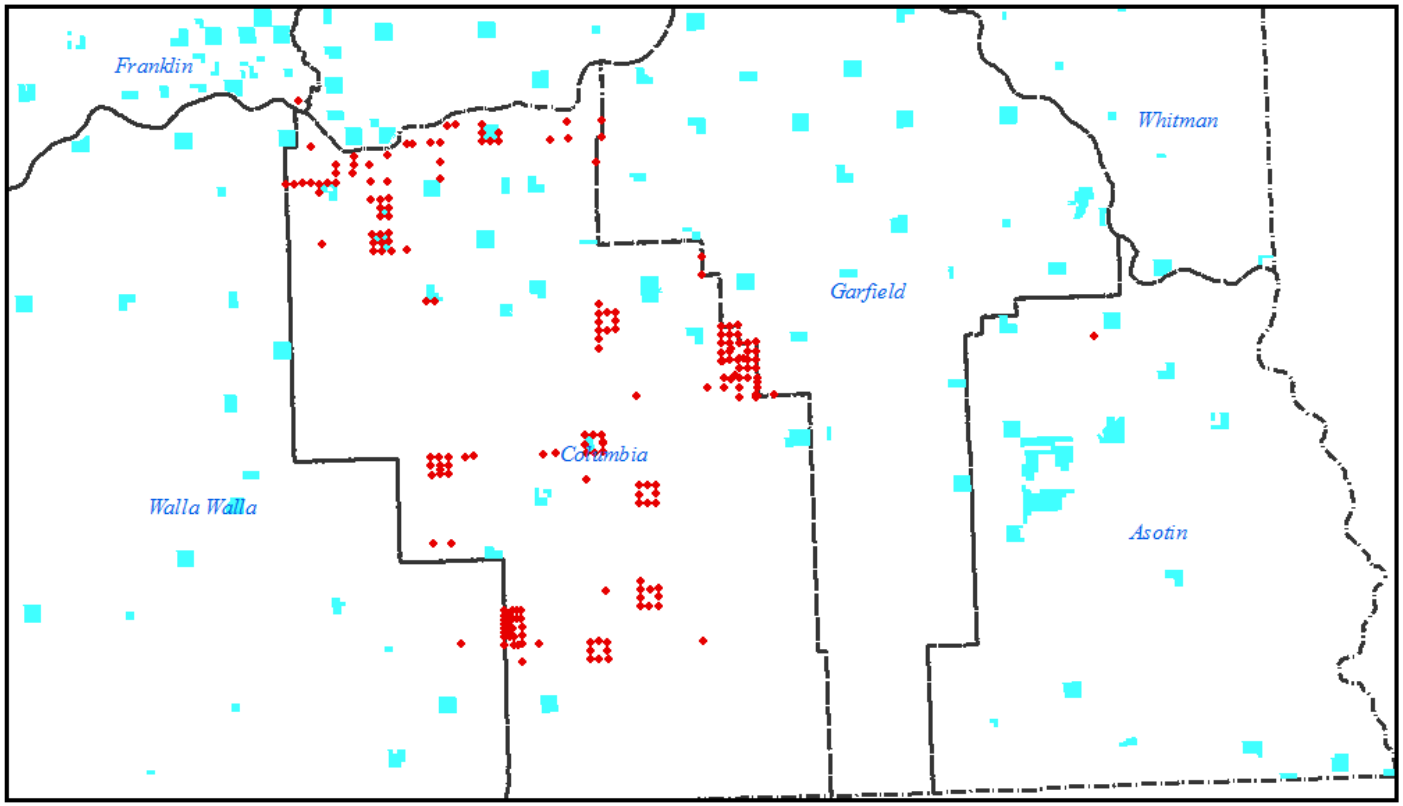
improved corner positions per USBR/Grant County

Another much smaller example of a county providing data to improve GIS corner positions comes from Columbia County: Columbia County contacted DNR inquiring about whether we would be willing to use their data to improve corner positions in cadastre including some positions along the boundary with neighboring Counties.

Columbia County

- researched recorded survey documents for coordinate data
- converted all of the coordinates to Washington State Plane NAD 83 HARN
- provided a geodatabase of their corner positions
- provided references to the source data for each point.

DNR will very likely accept the Columbia County information and assimilate it into cadastre, but since their process was to start from scanned and or paper copies of recorded documents DNR will do a thorough QA/QC of their data to ensure that any potential data entry errors from paper to digital are eliminated. This more manual, hands on approach is only feasible with fairly small data sets.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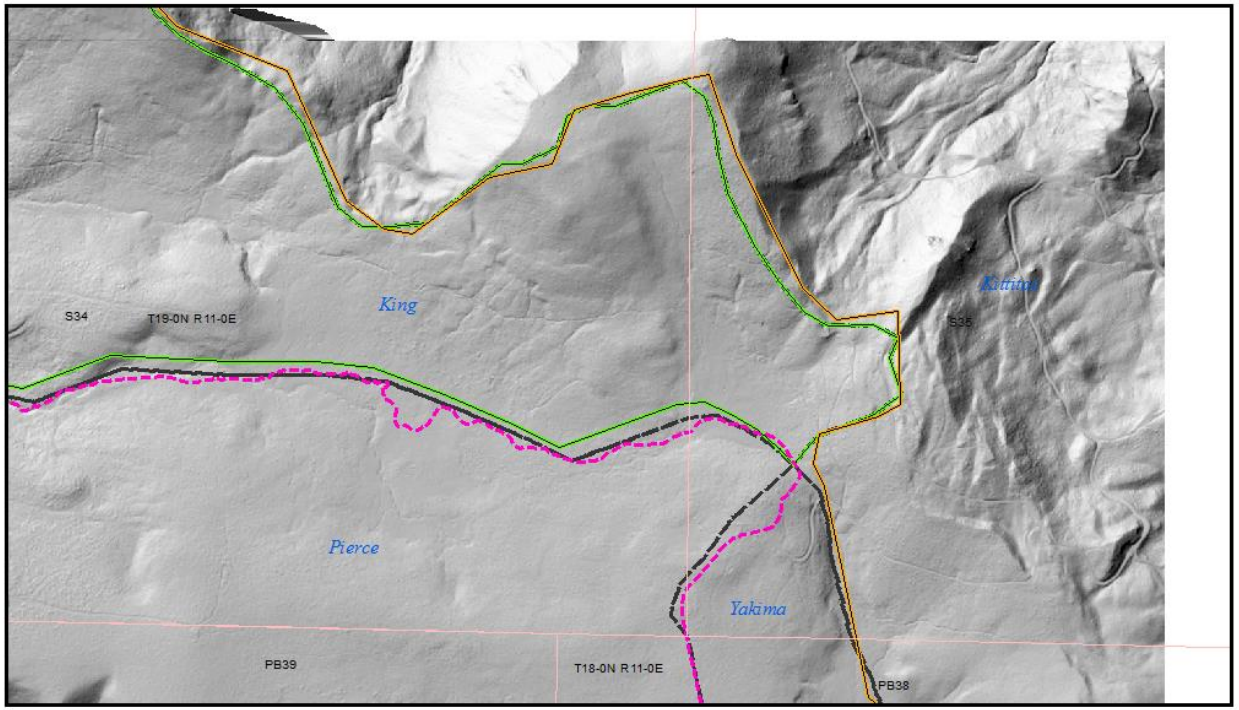
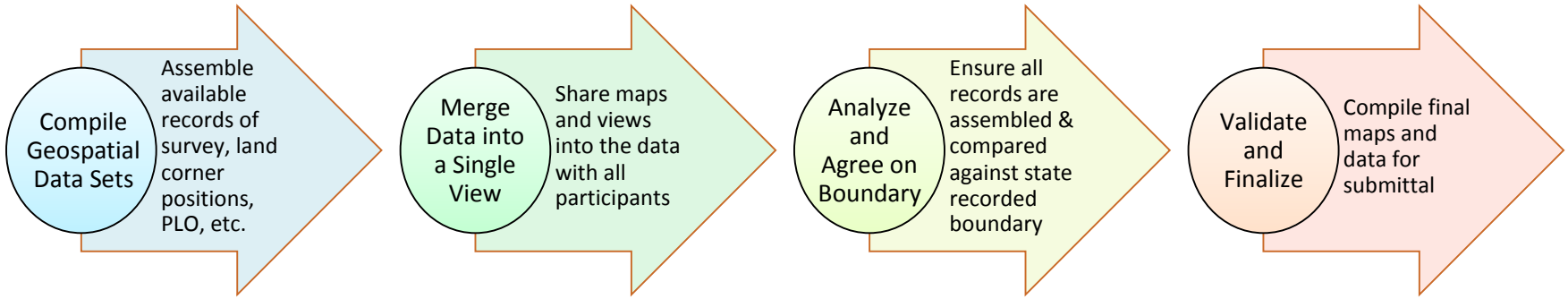
WASHINGTON STATE DEPARTMENT OF
Natural Resources

Updating of county boundaries where defined by physical features will not be initiated by DNR and DNR will only make such changes after all affected counties agree to a solution. See more detail for this process in Section 3 of this document.

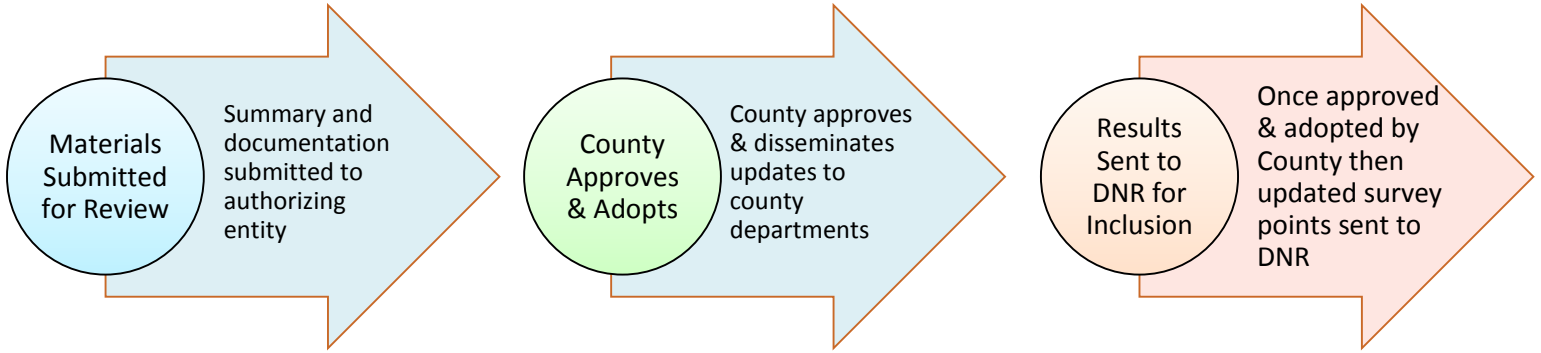


Section 1: Step-By-Step



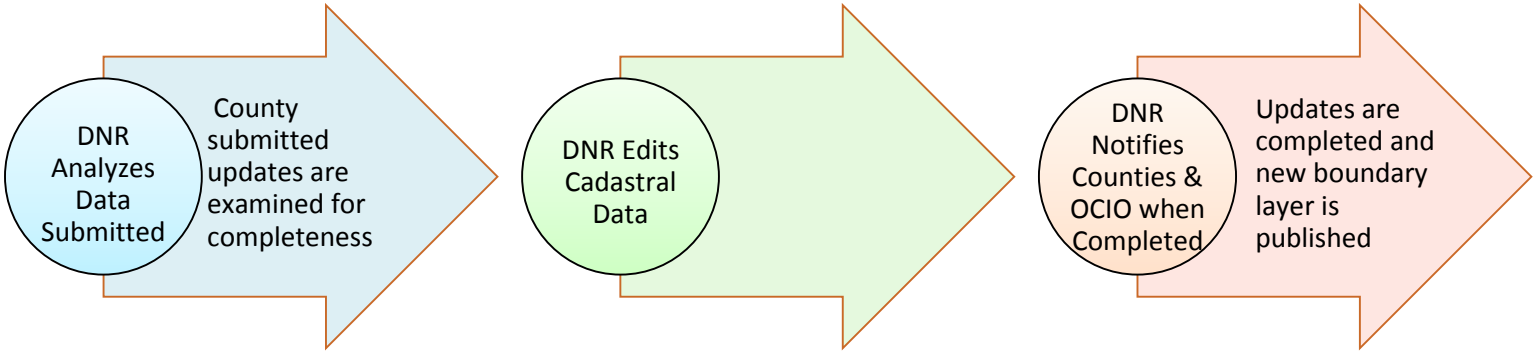
Step 1: County Boundary Data Review

- Work with all adjoining county GIS, IT and land surveyors to review the existing state county boundary for correctness and to make sure it meets the needs of all the adjoining counties.
- Compile updated survey corners or other information that will help the counties determine if more accurate data is available from other sources like the BLM, counties, tribes, cities and others.
- Agree on the boundary representation and create updated GIS boundary file for review.
- GPS Data collection: Geodetic GPS for coordinate control on legal land surveys or Resource Grade GPS should be used to replace less accurate boundaries and survey points in the GIS data.
- County lines that fall along the Public Land Survey grid will need to be resolved with DNR and appropriate metadata will need to be provided if changes are requested along these lines.



Step 2: Submit Updates to County for Approval

- The County boundary authorizing body receives updated county boundary maps.
- The work is reviewed and approved or sent back for further analysis.
- If approved, then the County authorizing entity, as defined by the county, forwards the electronic records and supporting information to DNR for revision
- The county notifies its county departments of the updated county boundary data for inclusion into its business processes.



Step 3: Submit Approved Updates to Department of Natural Resources and to County GIS Steward

- DNR takes submitted County updates and examines packet and submittal to determine if there are any questions.
- The work is scheduled and the county is notified of the projected update.
- The electronic records are entered into the database.
- Once the Cadastral database is updated, then a new county boundary data set is created by DNR and submitted to OCIO.

Step 4: New County Data Published

- Once DNR submits the new county boundary data to OCIO, then the Geospatial Program Office will published it on the WA Geospatial Portal. This update process is on-going and driven by more accurate coordinate data.
- The OCIO notifies the Geospatial community of the county boundary update via the Geographic Information Technology Committee and the Washington Geographic Information Committee List Serve.
- The county notifies the Association of County & City Information Systems (ACCIS) of the updates.

Section 2

Changes to a Counties Mapped Representation of its County Boundary

The authority to change and update a counties GIS data mapped representation of its county boundaries resides within the administrative authority of each county. This allows the GIS practitioners to define the methodology used to update its depiction and to rely on the "best" available source of data for those updates.

GIS data is recognized as a digital, graphic depiction of legal descriptions with regards to boundaries whether County, City or Real Property, not the legal description themselves. As technology improvements allow for better depictions, GIS practitioners at the Counties are encouraged to make use of them to improve these boundaries. Sometimes these improvements are based on Survey (GPS, CORS, Ground based LiDAR, etc.), but more commonly from digital orthophotography, LiDAR and LiDAR derived products like DEMs and 2 foot contours to name just a few.

As indicated previously, the original county boundary layer created by the state, and represented in the Department of Natural Resources Cadastre database, was never intended to replace the legal description the county boundaries in Washington. It was created as a mapped depiction of those boundaries and is based on the best available data at the time of its initial creation.

But, in order for the boundary changes to be recorded at the state level, it is necessary that those boundaries are agreed to by all adjoining counties. It is also recommended that the updated boundaries be adopted by each counties IT Manager to ensure the updated depictions are properly distributed across the county departments. In order to ensure proper coordination and distribution across state and local entities, the Association of County and City Information Systems (ACCIS) and the Office of the CIO's Geospatial Program Office (GPO) should be notified as well.

Notification Mechanism	**Coordination & Distribution**	**Announcements**

County	County IT Managers	ACCIS
State	DNR	OCIO

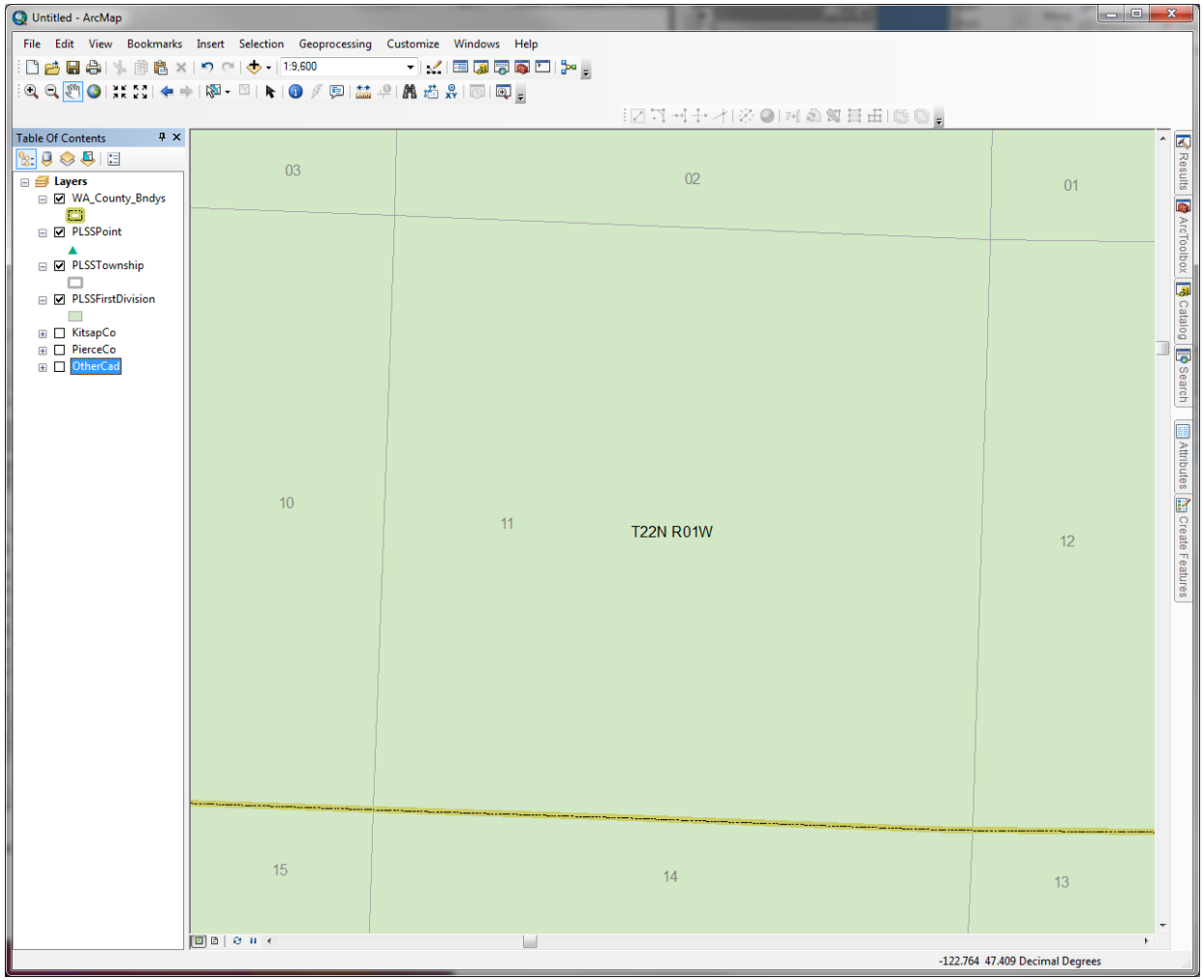
In Section 1 of this document a workflow lays out the process by which survey information is submitted to DNR for inclusion into the State's Cadastral layer. As described above, GIS county boundary layers are derived from a combination of survey data and physical features. In order for the State's Official County Boundary layer to be updated, surveys that would modify a County boundary must be submitted to the State's Cadastral layer. Then a County can use this information to modify their County boundary layer based on this survey information. The County must also work with the adjoining county to come to agreement on the GIS boundary change. Then the change can be submitted to the State for inclusion into the Official County boundary layer.

Agreement between the counties is necessary because of the system of GIS layers that are dependent on county boundaries. Often hundreds of GIS layers are based on the county boundary, so a change is not insignificant to either county. On the other hand, to insure that GIS data consists of the best available data, GIS data must be kept up-to-date or it becomes a liability instead of an asset. In order to achieve agreement, County IT Directors or their delegates (GIS Managers) must answer one question, "Does this change improve the accuracy of the data"? Considerations of the amount of work to make the change cannot be a factor in the agreement. The agreement is not an agreement to make the changes to a county's data but to the State's Official County Boundary layer.

The agreement consists of a presentation of the survey data in the Cadastral layer and how the proposed Official County Boundary depicts this data in comparison to the current Official County Boundary. The parties then agree to the new depiction or make modifications as necessary to proposed boundary. An agreement letter is drafted and signed by both parties and submitted along with the proposed county boundary to DNR for inclusion into the State's Official County Boundary.

Example: An example of this process occurred along the county boundary between Kitsap and Pierce Counties. Examination of the State's Cadastral database, displayed in figure 2.1, shows that no PLSS points exist long the Kitsap/Pierce County boundary (no green triangles). Pierce County had PLSS points calculated for creation of their parcel layer but it was recognized that the accuracy, while the best data available at the time was not very accurate. At a later date, Kitsap initiated a survey that included much of the Kitsap/Pierce county boundary for a county public works project (see figure 2.2). During the coordination of identifying agreement

points between the counties, Kitsap made their survey information available to Pierce County. Pierce County made use of this information and adjusted their parcel and roads layers based on this information. However, these survey data have never been submitted to DNR for inclusion into the Washington State Cadastral database (see figure 2.3). When this work is submitted the state's County Boundary layer will be updated to reflect these changes. With a maintained boundary that is coincident between agencies, data sharing costs among the Counties and State is greatly reduced.



2.1. Section 11, Township 22 N, Range 1 W. This figure shows State cadastral databases First Subdivision layer and Public Land Survey System Point layer along with the DNR County Boundary Layer (yellow line). Note that no PLSS Points exist along Pierce/Kitsap County boundary.

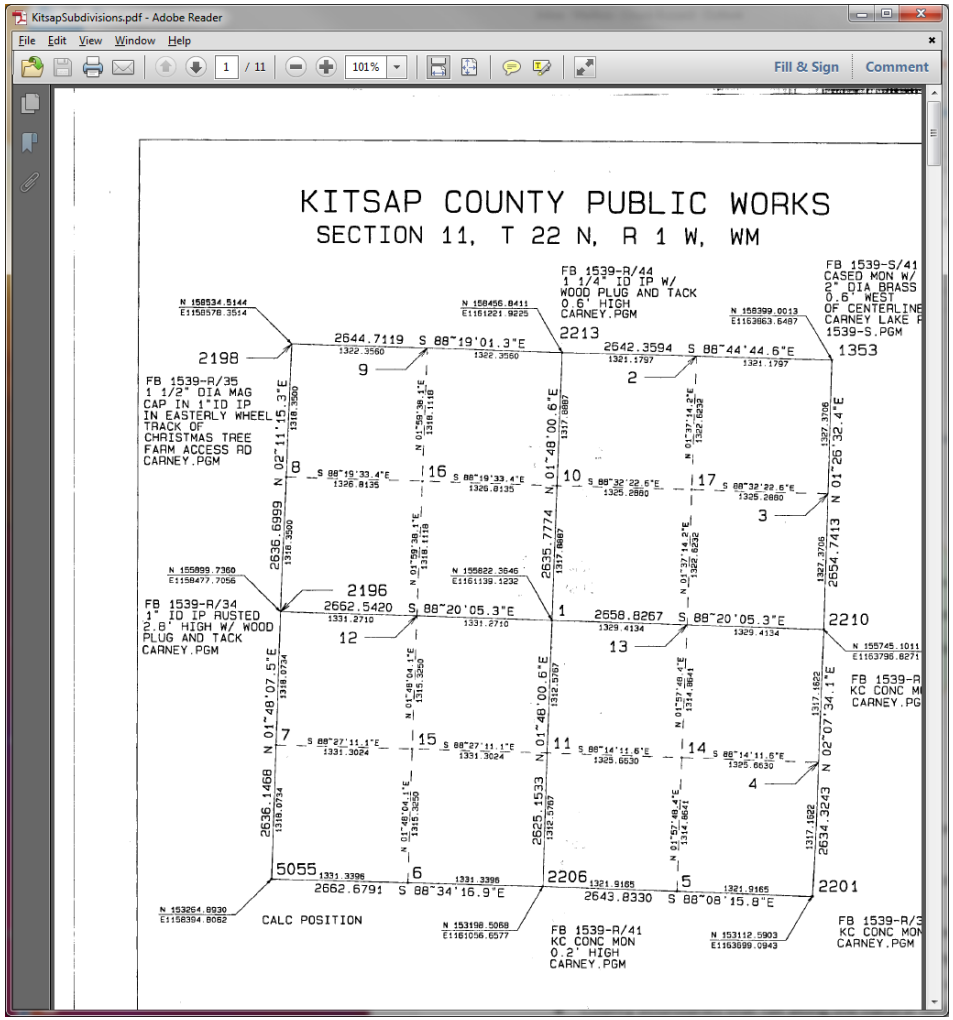


Figure 2.2. This graphic displays some of the documentation that Kitsap County obtained with surveying many of the sections along the Kitsap/Pierce County boundary. This data improved the accuracy of the section corner information along with derived layers like the County boundary layer.

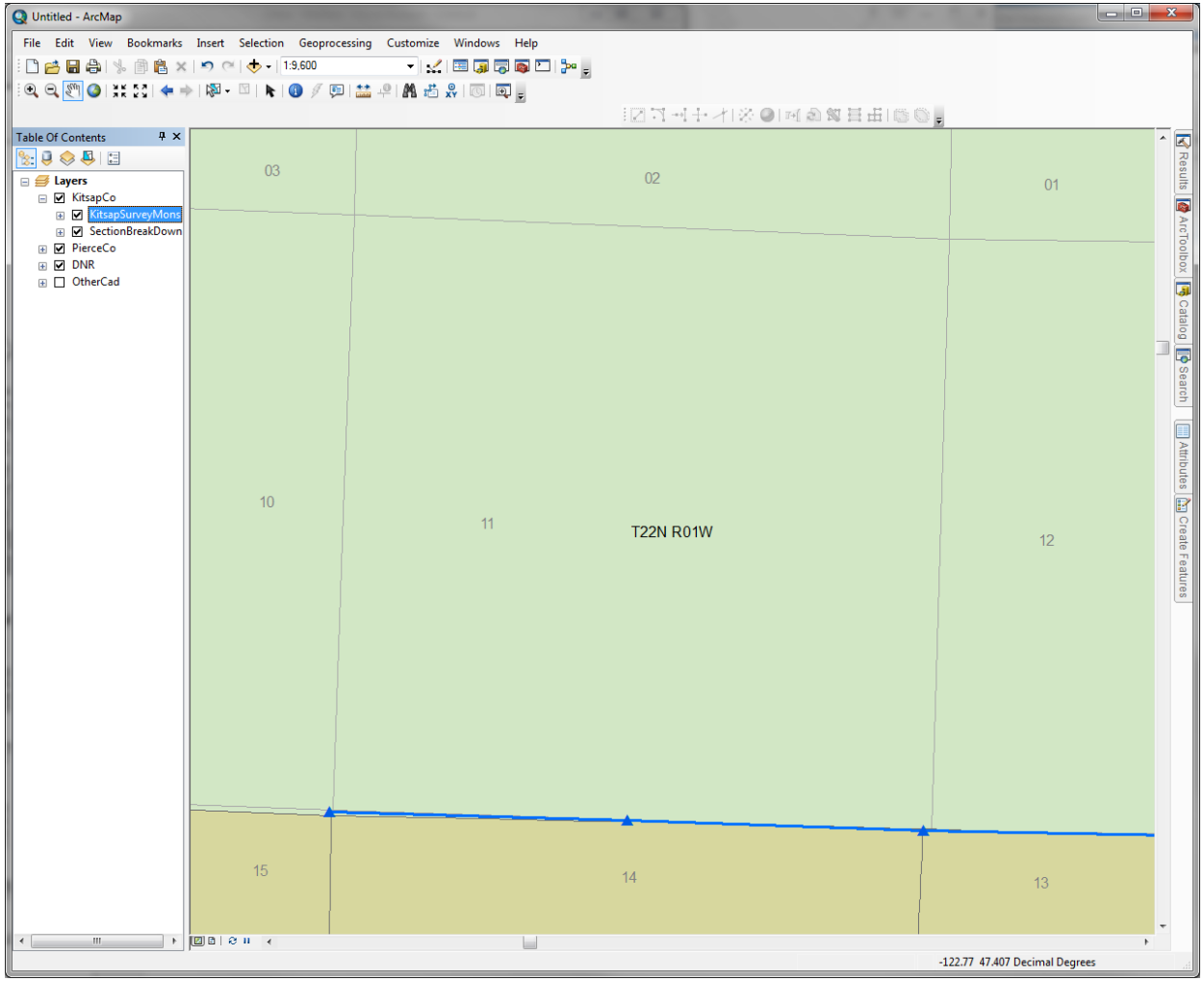
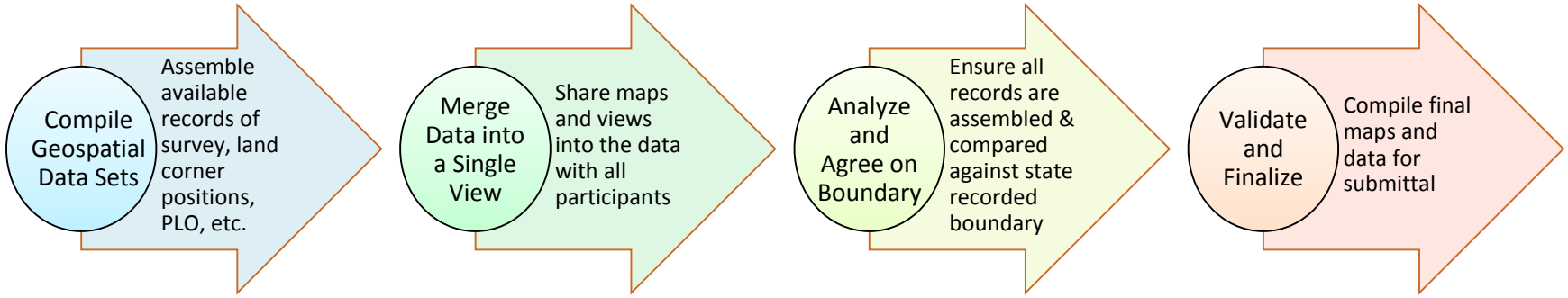


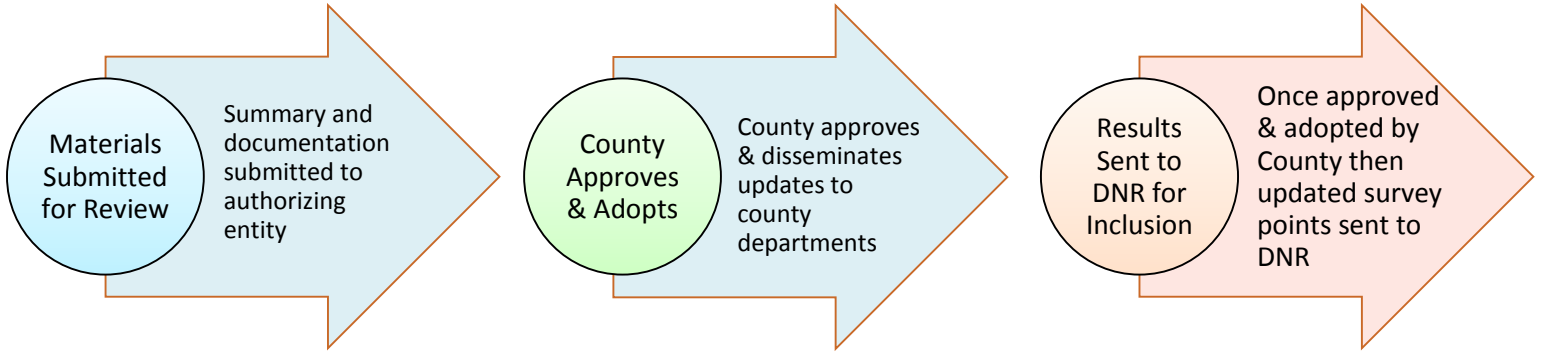
Figure 3.2. This map shows the alinement of Kitsap County Survey (blue lines and triangles), Pierce County first subdivision layer (based) and DNR's first subdivision layer (light green). Note the vertical and horizontal alignment conflicts. These will be eliminated when Kitsap County submits their survey for inclusion into the State Cadastral Database and the state updates its County Boundary layer.

Section 2: Step-By-Step



Step 1: County Boundary Data Review

- Work with all adjacent county GIS and IT managers to see if the state county boundary is correct and meets the needs of its user community.
- Compile any updated records of survey, survey corners or other information that will help the counties determine if more accurate data is available.
- Agree on the boundary representation and create an updated GIS boundary file for review.
- County lines that fall along the Public Land Survey grid will need to be resolved with DNR and appropriate metadata will need to be provided if changes are requested in these areas.
- County boundaries that fall along the natural landscape should be updated using the process outlined in Chapter 3.



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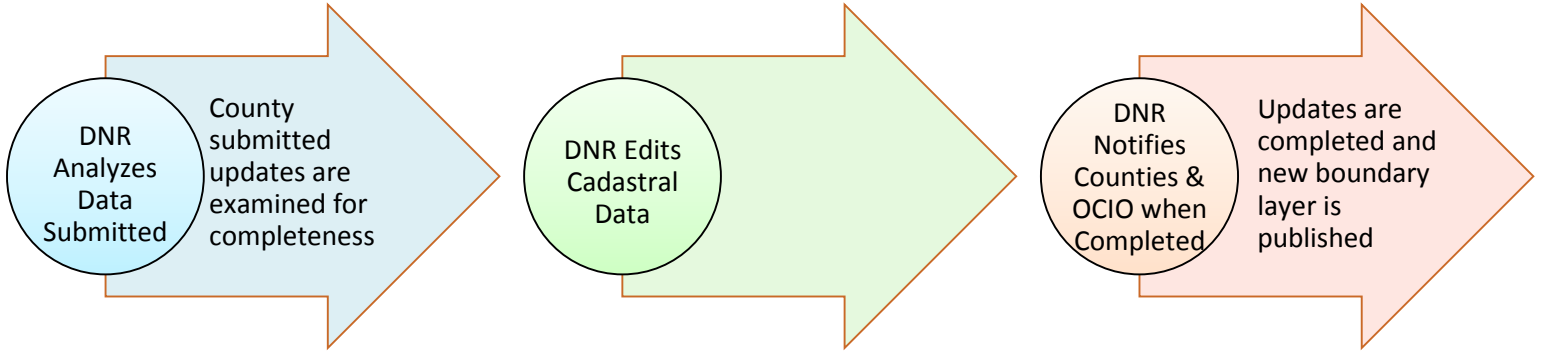

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- The OCIO notifies the Geospatial community of the county boundary update via the Geographic Information Technology Committee and the Washington Geographic Information Committee List Serve.
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Section 3

Resolving ambiguities in county boundaries along non-public land survey boundaries

This section describes the case were adjoining counties are interested in updating the less defined areas of its county boundaries jointly using more up-to-date coordinate information.

In the case of major ambiguities as defined in the broad definition of county boundaries that are defined in statue (defined in the existing RCW 36.04). It is recommended that all adjoining counties discuss and agree on where their boundaries actually reside given new and more accurate information as it becomes available.

As long as the updates are agreed to and approved by the adjoining counties IT Managers for inclusion into the state's county boundary layer, the changes can then be forwarded to the Department of Natural Resources.

Many segments of county boundary descriptions are based on physical features such as mountain range crests or the main channel of rivers and streams. Few of these features have been surveyed so boundary depictions are based on other cartographic data such as contours or digital elevation models. In the past 20 years other digital data sources such as digital orthophotography and LiDAR have improved the accuracy of cartographic depictions of these features. Following is an example that illuminates how these improvements need to be incorporated in order to ensure Washington State's official GIS layers are based on the best available data.

Example: This example shows how using LiDAR can improve the accuracy of a single location where 4 county boundaries meet. The descriptions of this location are defined as:

King County (RCW 36.04.170 excerpt)

...; thence upstream along the middle of the main channel of the Greenwater river to the forks of the Greenwater river and Meadow creek; thence upstream along the middle of the main channel of Meadow creek to the summit of the Cascade mountains, at a point known as Naches Pass, said point lying in the southwest quarter of section thirty-five, township nineteen north, range eleven east, Willamette Meridian;...

Kittitas County (RCW 36.04.190 excerpt)
...; and thence northerly along the main channel of the Naches river to the summit of the Cascade mountains, or to the eastern boundary of King county;…

Pierce County (RCW 36.04.270 excerpt)
...Nisqually river; thence following the main channel of said river to its head; thence due east to the summit of the Cascade mountains; thence northerly along the summit to the head of the Green Water;

Yakima County (RCW 36.04.390 excerpt)
...; thence along the southern boundary of Kittitas county to the summit of the Cascade mountains; thence southerly to the southeast corner of Lewis county;

Reading the excerpts of these four legal descriptions it is difficult to determine that they all refer to the same point Naches Pass. While no survey benchmark is located at Naches Pass, a low elevation on the "crest of the Cascades", a GIS depiction of the location can be determined from digital elevation models such as USGS 10 meter DEM or 20 foot contours derived from these elevation models. Twenty foot contours have been available on the 7.5 minute quadrangle map series produced by the USGS for over 50 years. The USGS has made their DEM and contour data available digitally for over 30 years and they were the source of WA DNR's County Boundary layer for descriptions based on elevation. See Figure 3-1

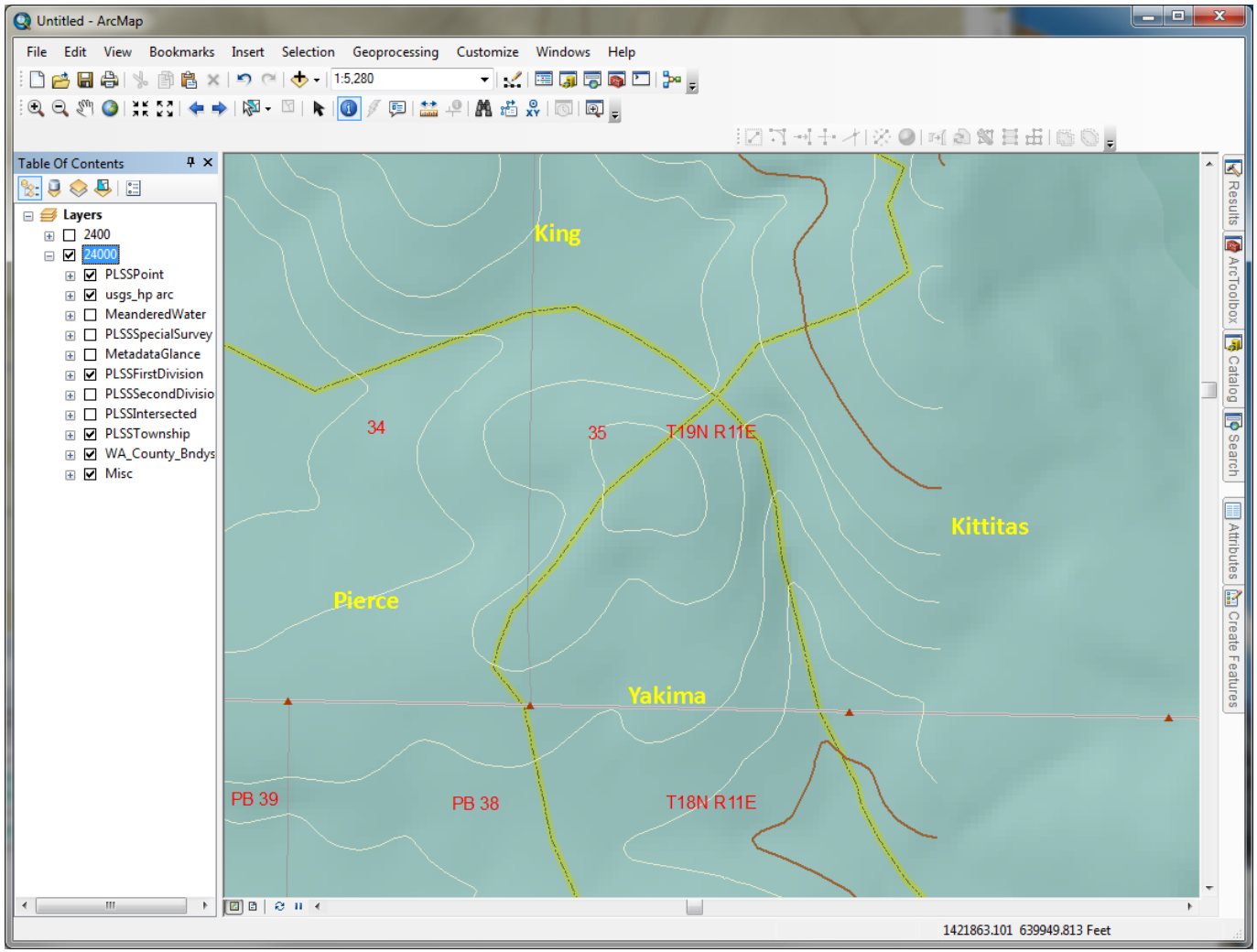


Figure 3- 1Yellow lines are existing WA DNR County boundary lines. Background shaded relief is 10m USGS DEM. 20 foot contours are from USGS DLG. Note that County boundaries for King, Pierce, Kittitas and Yakima meet near Naches Pass.

With the availability of light detection and ranging (LiDAR), collection of elevation based data has vastly improved for a fraction of the cost. This allowed Pierce County along with the USGS to commission a countywide LiDAR collection project that produced a 3 foot DEM. This product allow for the generation of 2 foot contours. The engineering community have found this DEM accurate enough to use for preliminary engineering projects and planners have found that regulatory boundaries based on this data produce fewer false positives than those based on previous technologies.

While LiDAR based data collection is a positive improvement from past techniques, it also has negative attributes. Areas covered with heavy conifer forest are difficult to penetrate with LiDAR. This results in random areas of missing bare earth data. While algorithms exist to fill in missing data, they strictly provide a best guess as to the actual elevation in these data. Windswept water surfaces also influence the reflectivity of the LiDAR returns, causing errors in the recorded elevations. In addition LiDAR suffers from the same temporal issues that all data collection methodologies suffer from. Tidal changes, mining and construction projects can change the terrain significantly and thus reflect as anomalies in the derived DEM surface.

Data accuracy between Washington state counties varies significantly. This can be mitigated by adoption of a hierarchy of data collection methodologies where more accurate methodologies take precedence over less accurate methodologies. Realizing it is cost prohibitive to collect all monuments with the highest accuracy, the survey community has followed a monument hierarchy where by higher accuracy monuments take precedence over lower order monuments. This requires that each feature collected includes documentation as to the methodology used to derive the feature. While surveys are legally binding, thus requiring significant documentation, GIS depictions are just based on the best available data at a point in time and thus require less rigorous documentation. The documentation must include a statement of the methodology and source data used to create the depiction as-well-as the date of the source, the boundary creation date and an estimate of the accuracy of the boundary. The adoption of a GIS accuracy hierarchy will allow for the agency accepting the proposed change to determine whether the submittal is an improvement over the existing depiction and thus moved into the cue for inclusion into the official statewide, boundary layer.

Below, figure 3-2 and 3-3 show how LiDAR derived products can highlight improved accuracies achievable from their use in creating new GIS boundaries.

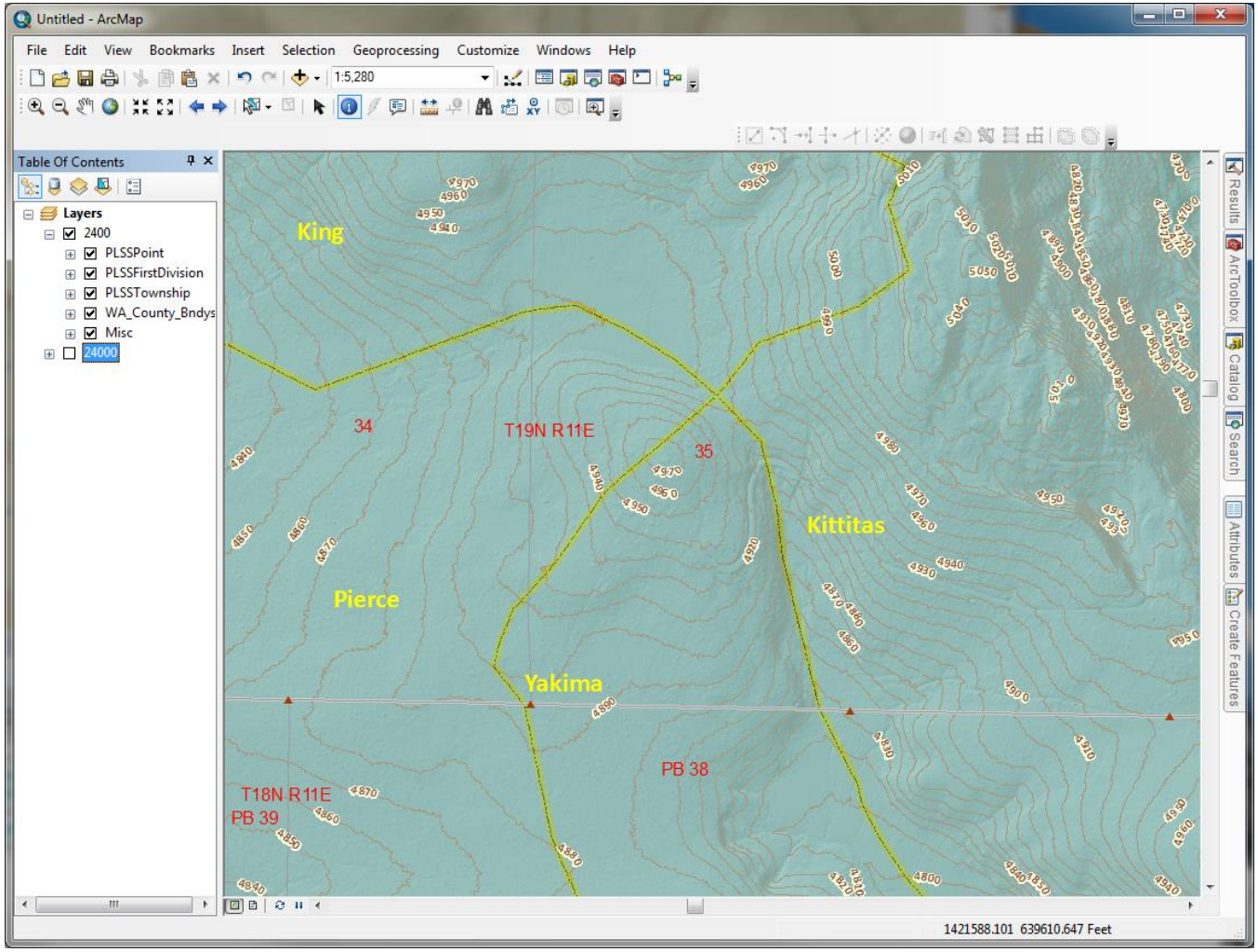


Figure 3-2 Yellow lines are existing WA DNR County boundary lines. Background shaded relief is 3ft Pierce County LiDAR DEM. 10 foot contours were derived from 3ft Pierce County LiDAR DEM. Note that County boundaries for King, Pierce, Kittitas and Yakima meet west of Naches Pass.

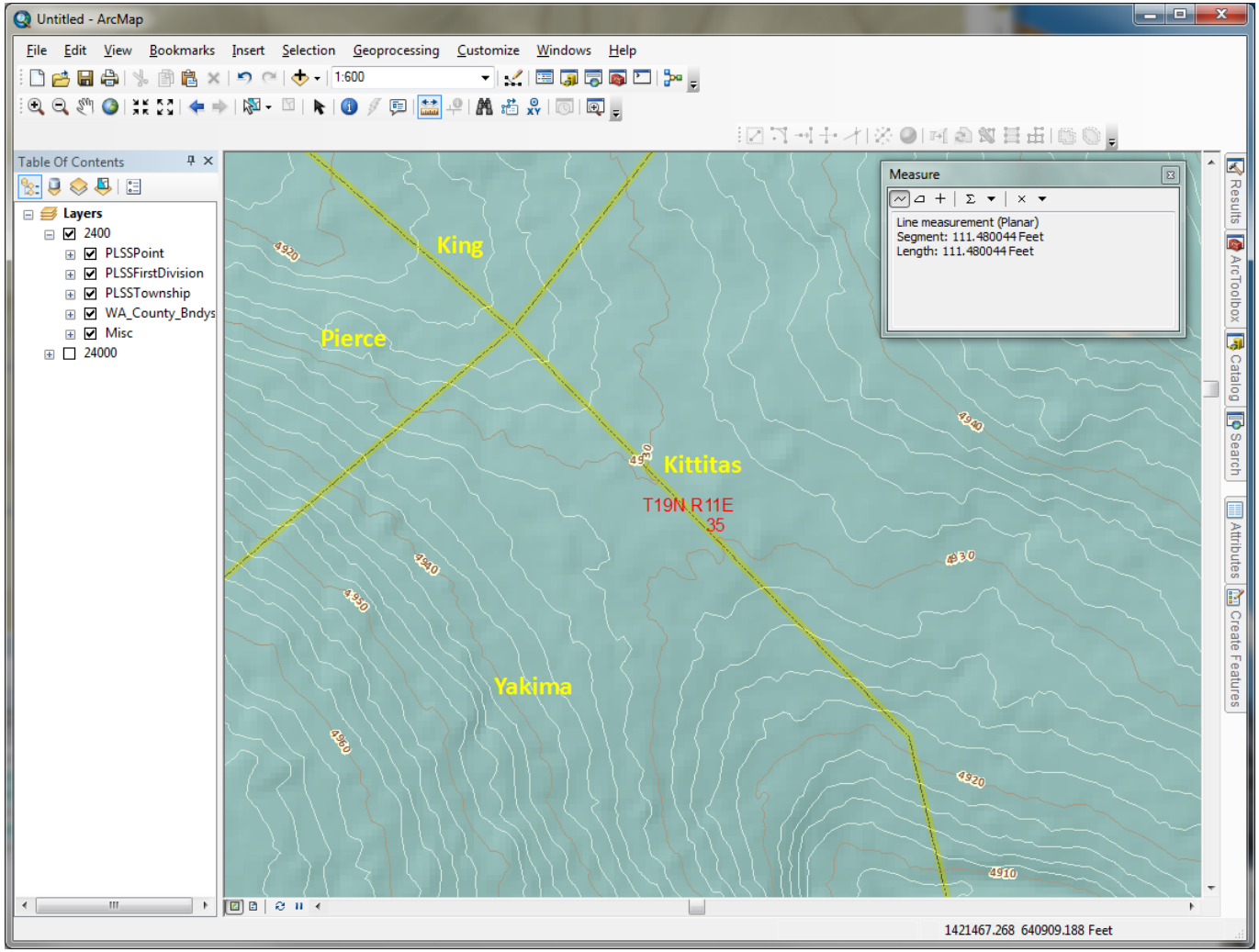
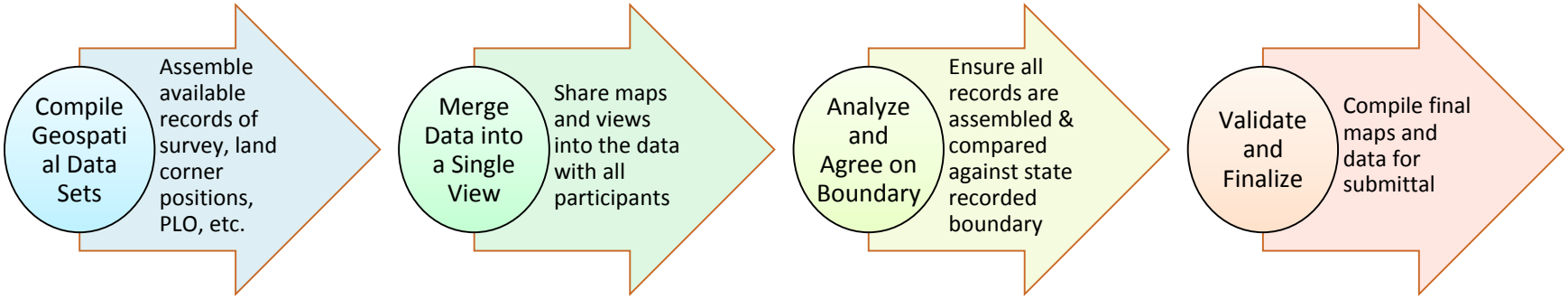


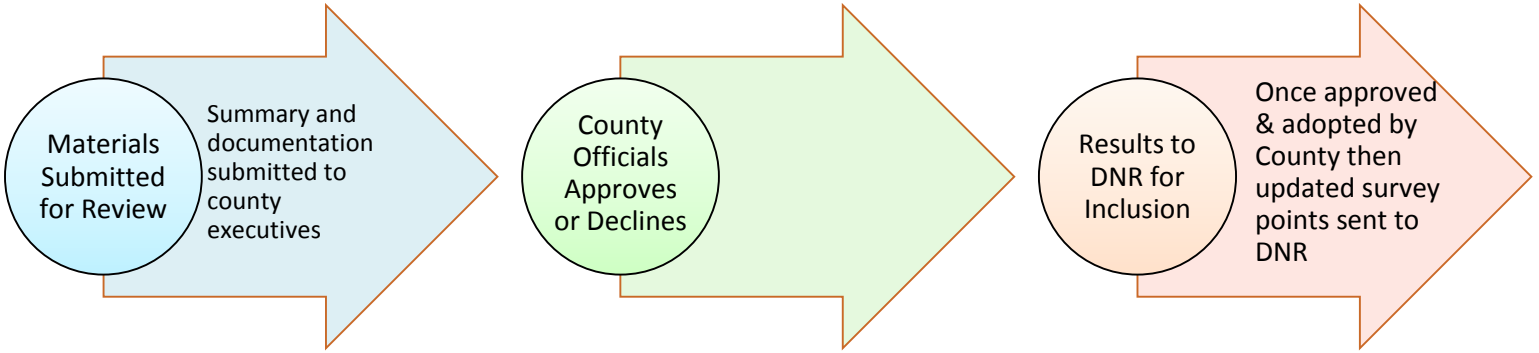
Figure 3- 3 Yellow lines are existing WA DNR County boundary lines. Background shaded relief is 3ft Pierce County LiDAR DEM. 2 foot contours were derived from 3ft Pierce County LiDAR DEM. Note that DNR county boundaries for King, Pierce, Kittitas and Yakima meet approximately 111 feet west of Naches Pass.

Section 3: Step-By-Step



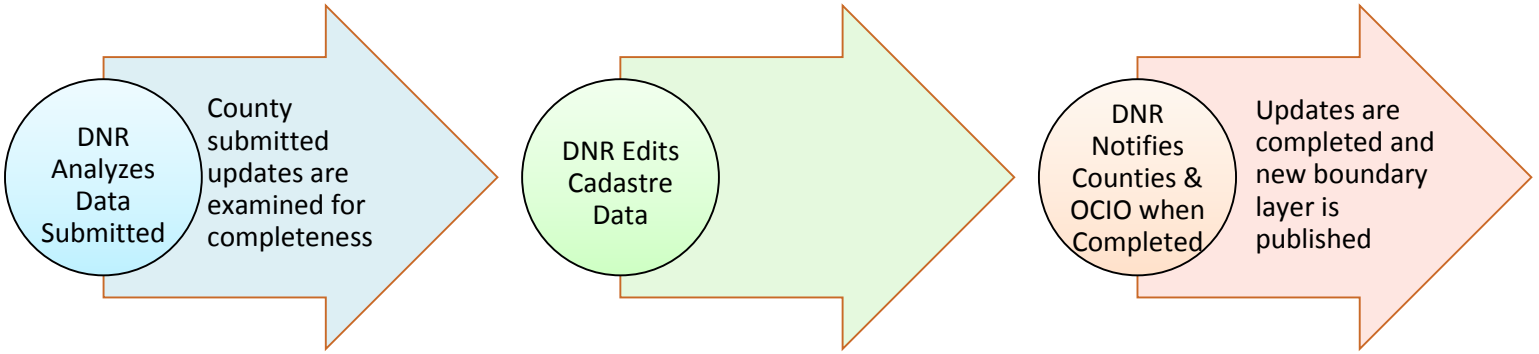
Step 1: County GIS Boundary Data Review

- Work with all adjacent county GIS, IT Managers and land surveyors to see if the existing county boundary is correct and meets the needs of all adjoining counties. All counties must agree to any and all boundary ambiguity changes.
- Compile updated boundary information that will be used to determine the more accurate boundary line.
- County boundaries that fall along the natural landscapes should be updated with only more accurate information than what is presently used to represent the boundaries.
- Agree on the boundary representation and create an updated GIS boundary file for review.



Step 2: Submit Updates to County for Adoption

- The County authority, as defined by the county, receives county boundary improvements and recommended changes.
- The work is reviewed and approved.
- If approved, then the electronic records and supporting information is forwarded to DNR for inclusion into the Cadastral database.



Step 3: Submit Approved Updates to Department of Natural Resources and to County GIS Data Steward

- DNR takes submitted County updates and examines packet and submittal to determine if there are any questions.
- The work is scheduled and the county is notified of the projected update.
- The electronic records are entered into the database.
- Once the Cadastre database is updated, then a new county boundary data set is created by DNR and submitted to OCIO.

Step 4: New County Data Published

- Once DNR submits the new county boundary data to OCIO, then the Geospatial Program Office will publish it on the WA Geospatial Portal. This update process is on-going and driven by more accurate coordinate data.
- The OCIO notifies the Geospatial community of the county boundary update via the Geographic Information Technology Committee and the Washington Geographic Information Committee List Serve.
- The county notifies the Association of County & City Information Systems (ACCIS) of the resulting updates.

Section 4

Process for Formally Changing County Boundaries in State Statue

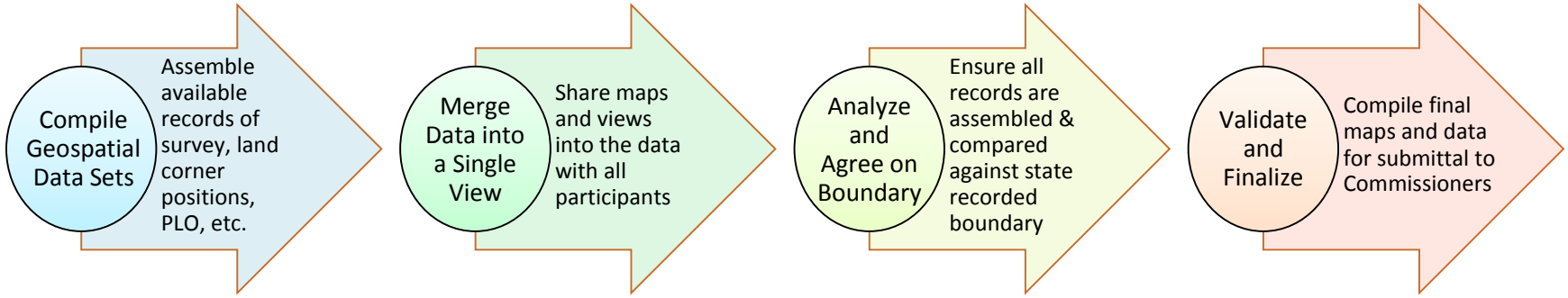
County boundaries are set in state law and there are one of two ways to change or update these boundaries legally:

(1) Through court order; or
(2) *By the joint action of its county commissioners.*

Changes in county boundary needs to be recorded with the WA Department of Natural Resources who has been given authority to record and track the state base maps. Below are a list of relevant state statues related to the mapping and depiction of county boundaries.

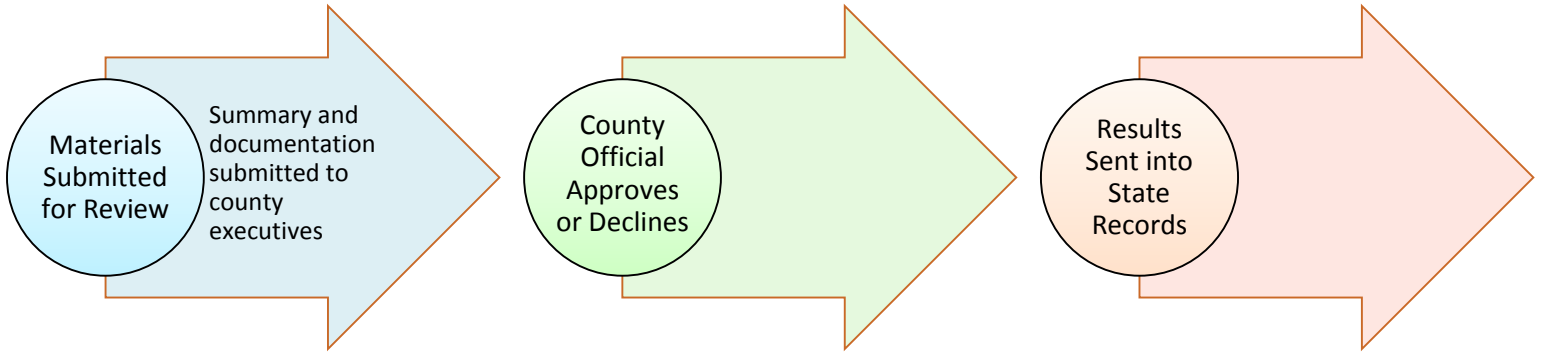
- RCW 36.04.400 **Survey of County Boundaries**. *"All common boundaries and common corners of counties not adequately marked by natural objects or lines, or by surveys lawfully made, must be definitely established by surveys jointly made by all the counties affected thereby, and approved by the board of county commissioners of such counties…."* http://apps.leg.wa.gov/rcw/
- RCW 36.04 **County Boundaries**. The legal designation for each county boundary is defined in law and outlined under this RCW. http://apps.leg.wa.gov/rcw/
- RCW 58.22 **State Base Mapping System.** The department of natural resources shall establish and maintain a state base mapping system.

Section 4: Step-By-Step



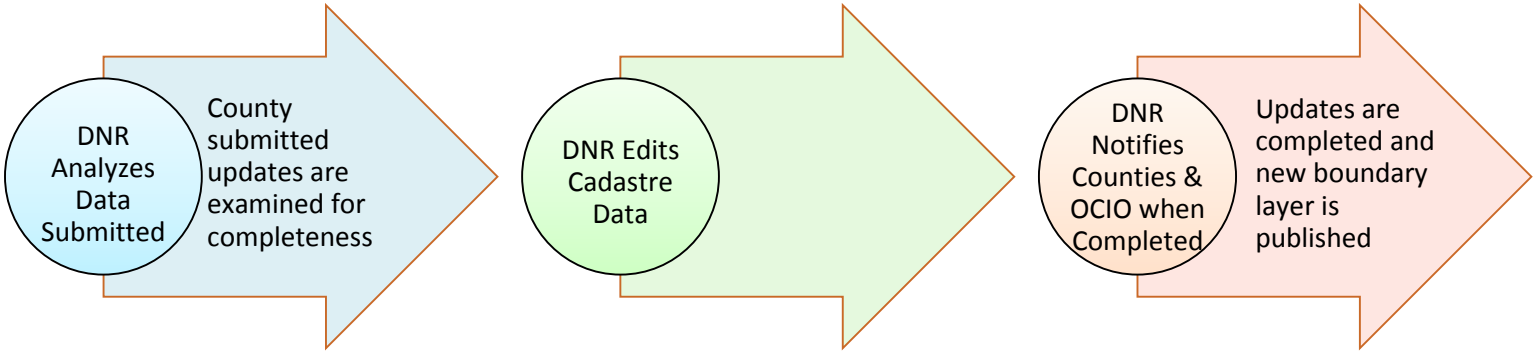
Step 1: GIS County Boundary Data Review

- Work with all adjacent county GIS, IT Managers and land surveyors to see if the state county boundary is correct and meets the needs of the counties.
- Compile updated records of survey, survey corners or other information that will help counties determine if more accurate data is available.
- Agree on the boundary representation and create updated GIS boundary file for review.
- GPS Data collection: Geodetic GPS for coordinate control on legal land surveys or Resource Grade GPS should be used to replace less accurate boundaries in the GIS data.
- County lines that fall along the Public Land Survey grid will need to be resolved with DNR and appropriate metadata will need to be provided if changes are requested.



Step 2: Submit Updates to County Commissioners for Approval and Adoption

- The County executive receives county boundary improvements and recommended changes.
- The work is reviewed and scheduled for Commissioners review and approval.
- If approved, then the County executive forwards the electronic records and supporting information to DNR for revision.
- The county notifies the Association of County & City Information Systems (ACCIS) of the resulting updates.



Step 3: Submit Approved Updates to Department of Natural Resources and to County GIS Data Steward

- DNR takes submitted County updates and examines packet and submittal to determine if there are any questions.
- The work is scheduled and the county is notified of the projected update.
- The electronic records are entered into the database.
- Once the Cadastre database is updated, then a new county boundary data set is created by DNR and submitted to OCIO.

Step 4: New County Data Published

- Once DNR submits the new county boundary data to OCIO, then the Geospatial Program Office will published it on the WA Geospatial Portal. This update process is on-going and driven by more accurate coordinate data.
- The OCIO notifies the Geospatial community of the county boundary update via the Geographic Information Technology Committee and the Washington Geographic Information Committee List Serve.

Acknowledgements

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