

Voting District (VTD) Project GUPS User's Guide Addendum: VTD Verification 2

The Voting District Project has two distinct parts – initial delineation, which is referred to as VTD, and verification 1 & verification 2, referred to collectively as VTDV. This addendum is specific to Verification 2 (VTDV2), and is the final chance for your state to make VTD updates before the 2020 Census. VTDV2 is a limited review and only allows for VTD updates and the linear feature updates required for those updates. If you need to make additional updates (beyond what is allowed in VTDV2), please contact our office to discuss them.

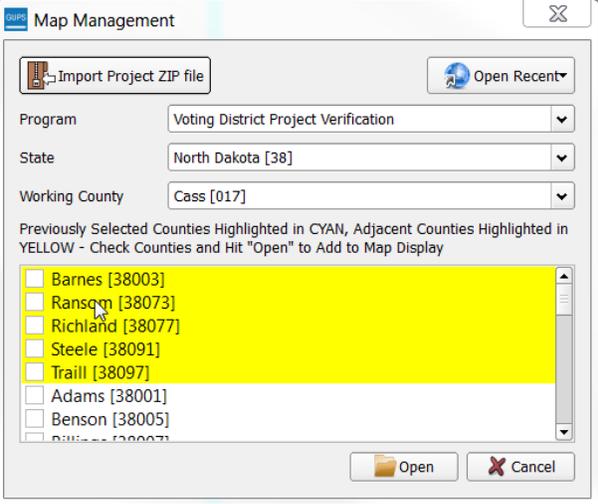
During VTDV2, you have the opportunity to review the voting district boundaries you initially submitted as part of the 2020 Redistricting Data Program (RDP), now referred to as the Census Bureau's "current VTDs", against your own reference layer, which you can import into the VTDV GUPS. This addendum explains how to start a VTD Verification Project and explains how to use the tools specifically designed for VTD Verification. All other tools and functionality remain unchanged from the VTD GUPS provided to you for initial delineation, with the exception of changes documented in the *Voting District Project GUPS User's Guide Section 3 – New Tools in GUPS*, the *Quick Reference Guide for VTD Verification*, and the *Quick Reference Guide for VTD Verification 2*.

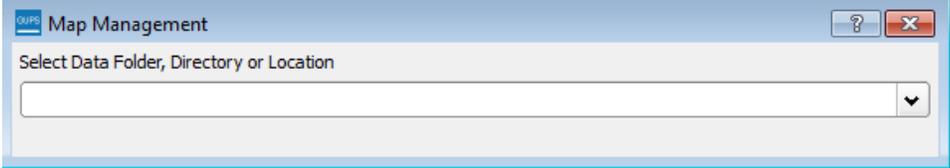
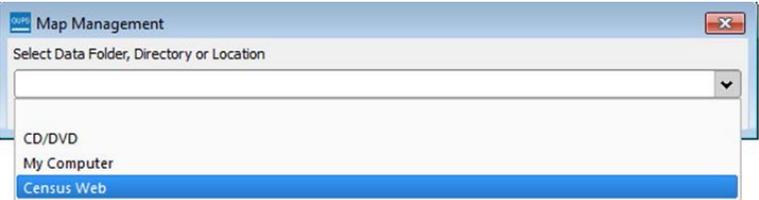
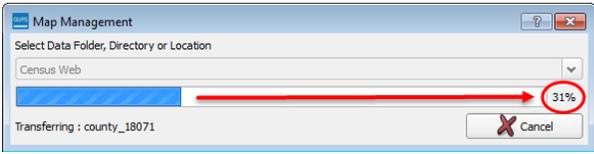
As you review the VTD plans for your state, please note that there may be some differences between your original VTD submission and your VTD reference layer. Two main reasons for differences include updates to TIGER Geography since VTDV1 and edits the Census Bureau performed to align VTD boundaries to legal boundaries in TIGER (no housing units are affected). Please do not perform whole-scale fixes or edits to VTDs until you review each area of fall out. Please contact our office if you have any questions or concerns.

1.0 Starting a GUPS Verification Project

If you submitted VTD updates for a county in your state during the initial delineation period, you start a GUPS verification project by selecting **Voting District Project Verification** as the program in which you are participating. See Table A-1 for instructions on starting a VTDV project.

Table A-1 : How to Start a VTD Verification GUPS Project

Step	Action and Result
<p>Step 1</p>	<p>In the Map Management dialog box, use the drop-down menu next to the Program field to select your program, 'Voting District Project Verification'.</p> <p>In the State field, use the drop-down menu to select your state or type the name of the state. The scroll bar to the right allows you to move up and down the list of states. Choose your State. Repeat these steps to choose the County to update.</p> 

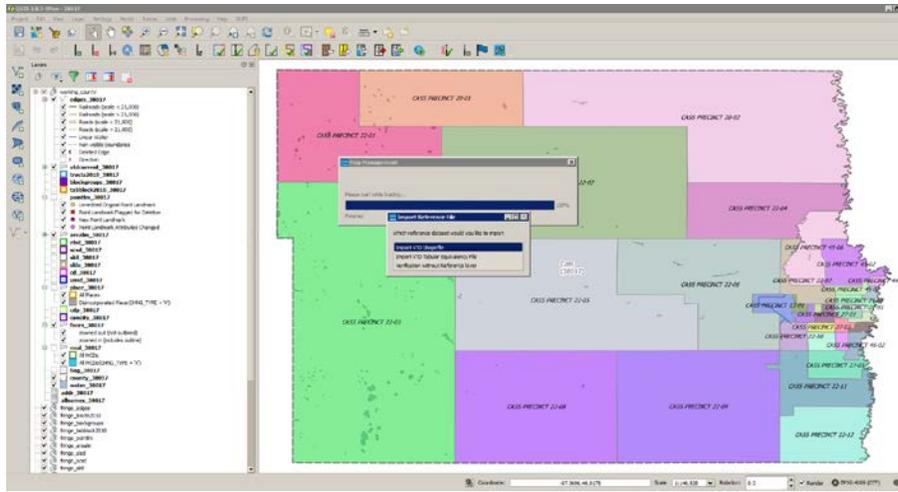
<p>Step 2</p>	<p>After you select the working county, the GUPS asks you to specify the location from which you want to pull the county's (or county equivalent's) shapefiles. <i>The Select Data Folder, Directory or Location box opens.</i></p> 
	<p>GUPS will only ask you to specify a location <i>the first time</i> you open a county's shapefile. When you come back to work on the same county again, the project will automatically load, even if you made no changes in your first session.</p>
<p>Step 3</p>	<p>In the Select Data Folder, Directory or Location box drop-down menu, select the location from which you wish to pull the file. We recommend using the Census Web Option.</p> 
<p>Step 4</p>	<p>Once you click on 'Census Web', the shapefiles for the county begin to load and progress is displayed by a blue striped bar (color may vary), with the percentage of the upload completed displayed to the right.</p>  <p>If you select the CD/DVD option, GUPS will ask you to insert the data CD/DVD provided by the Census Bureau and click OK. The shapefiles will download from the CD/DVD.</p> <p>If you select the My Computer option, GUPS will ask you to navigate to the location where the shapefiles you downloaded from the FTP site are stored. (See the <i>Voting District Project GUPS User's Guide</i> for instructions on downloading files from the FTP site.)</p>
<p>Step 5</p>	<p>As GUPS loads the data, it unzips and copies the files to a folder that was created on your computer's home directory (i.e., C:\GUPSGIS\gupsdata\VTDV20\shape) during the installation process. It then pulls the shapefiles into the GUPS.</p>

Step 6

Once the files are loaded, the Import Working File dialog box opens asking ‘**Which reference dataset would you like to import?**’

GUPS VTDV contains a verification tool that runs a comparison between a VTD reference layer you import against the VTDs the Census Bureau collected and processed into our database during the initial delineation, labeled as *VTD_current* in the GUPS project. If you have a reference dataset you want to import to run the comparison, select “Import VTD Shapefile” (if the dataset is in a shapefile format), or select “Import VTD Tabular Equivalency File” if your reference dataset is a text file. You will then be asked to map the fields in your reference dataset to the standard field names used in GUPS. This process is very similar to the process you may have chosen to use during initial delineation, if you imported your own VTD reference file to create your submission. Please see Sections 7.3 and 7.4 in the *Voting District Project GUPS User's Guide* for information on importing the tabular equivalency file or shapefile and mapping the fields.

If you do not have a reference layer to import, select “Verification without Reference Layer” from the drop down menu.



Your county project will open. If you imported a VTD reference layer, you will see it shown in the table of contents (named *vtreference_<ssccc>*, where *ss* = the 2-digit state code and *ccc*=the 3-digit county code) and displayed in the map view.

2.0 Using the VTDV Verification Tool

If you imported a VTD reference layer, you can use the VTD Verification Tool to validate the current voting districts that were collected and processed by the Census Bureau during initial delineation against your imported reference layer. The VTD Verification Tool will provide feedback and notify you of instances where:

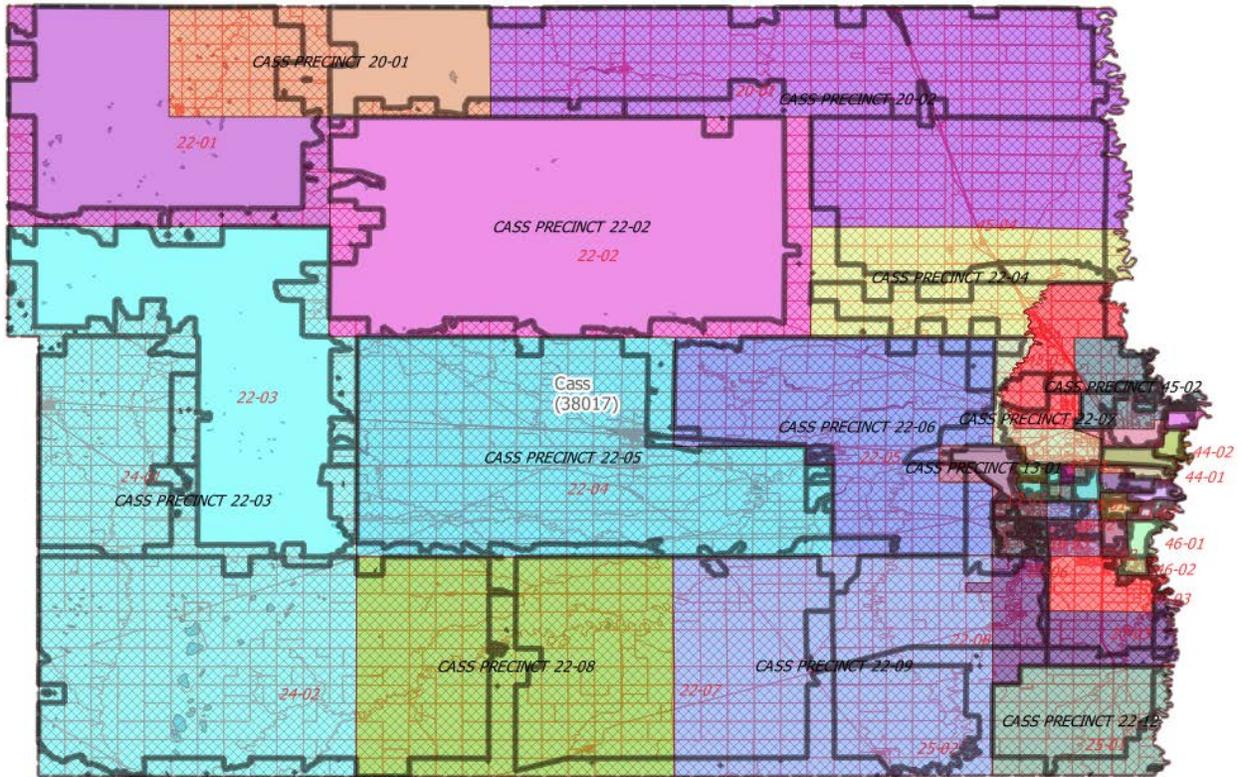
1. The list of current Census VTDs, those you supplied during initial delineation, contains a VTD that is not contained in the imported reference VTD layer.
2. Specific faces in the current Census VTD layer are missing from the imported VTD reference layer, and/or

3. Faces assigned to a specific voting district in the current Census VTD layer belong to a separate voting district in the reference layer.

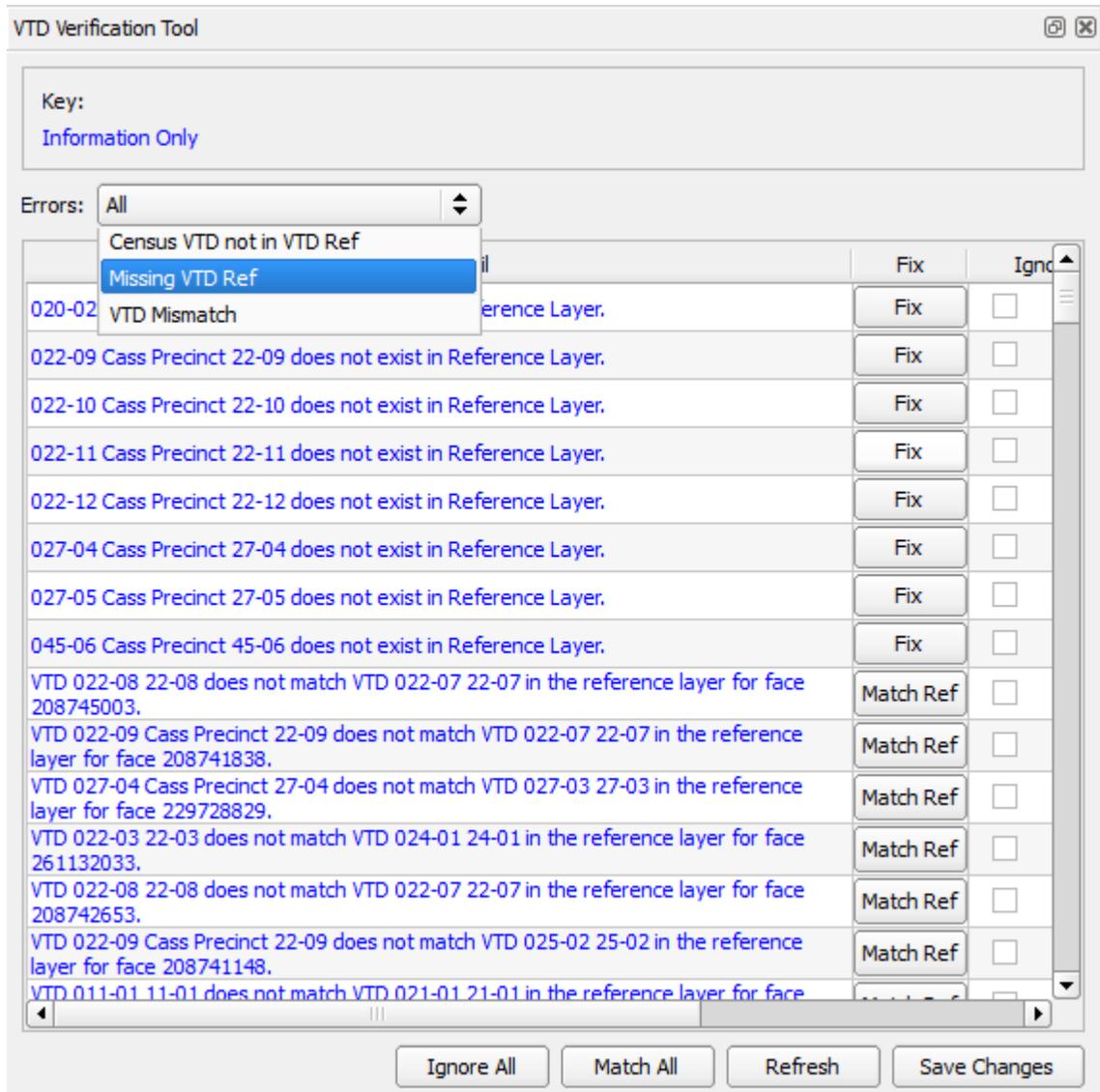
Click on the VTD Verification Tool on the VTD Toolbar to run the Tool.



Once the Tool runs, a VTD Verification Tool window will appear. You may notice a crosshatching pattern that appears over parts of the working county. This pattern symbolizes areas where there is a discrepancy between the current Census and the imported reference VTD layers. One or more of the three possible types of errors may appear in the window. It is also possible that there will be no errors.



In the VTD Verification Tool window, you can use the “Errors” drop-down list to toggle between just one type of error, or seeing all three types of errors, or criteria failures. Each type of criteria failure is described below.



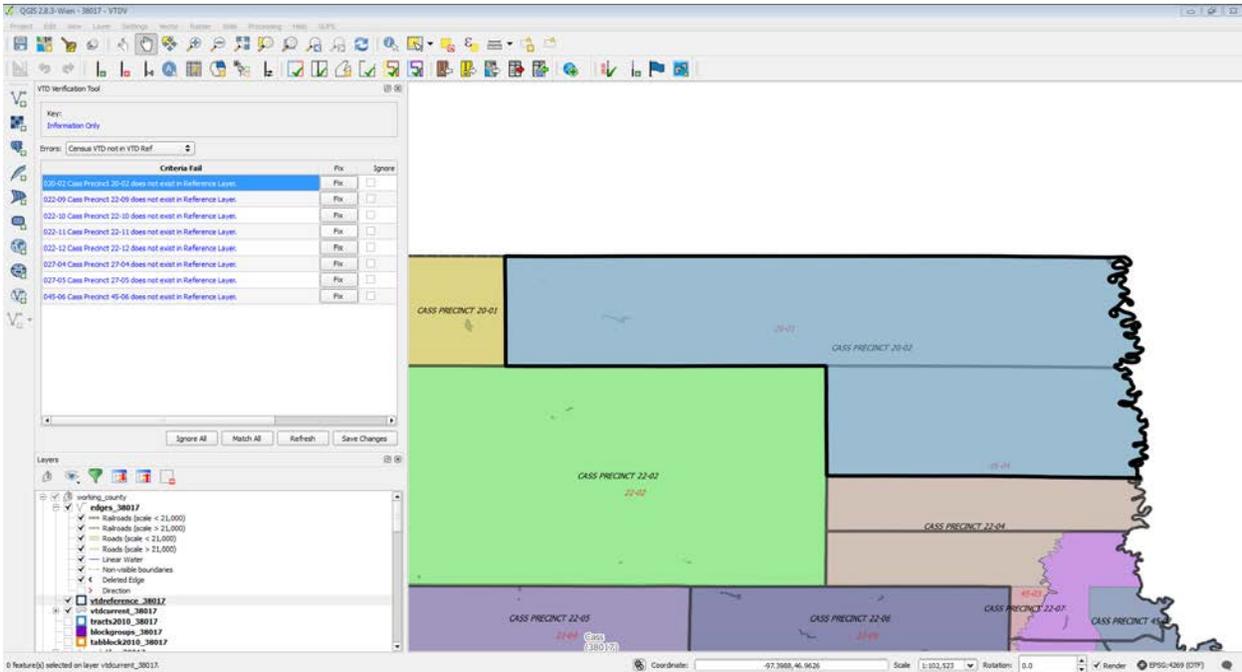
New for VTDV2: We added an enhancement to the VTD Verification Tool to allow users to export a copy of the VTD Verification Tool fallout as a .csv file by clicking the 'Export Errors' button in the lower right corner of the tool dialog window (Please note: the screenshots in this addendum have not been updated to show the 'Export Errors' button). The .csv file will be saved in the GUPSGIS\gupsdata\VTDV20\output folder with the following naming convention: "VTDV_difference_export.csv". Each time you export a copy of the errors, the software will overwrite the previous version of the file. Therefore, if you'd like to keep multiple versions of the .csv file to track progress, please save each .csv file iteration to a different folder, and make file names unique, as needed.

2.1 Census VTD not in VTD Ref Errors

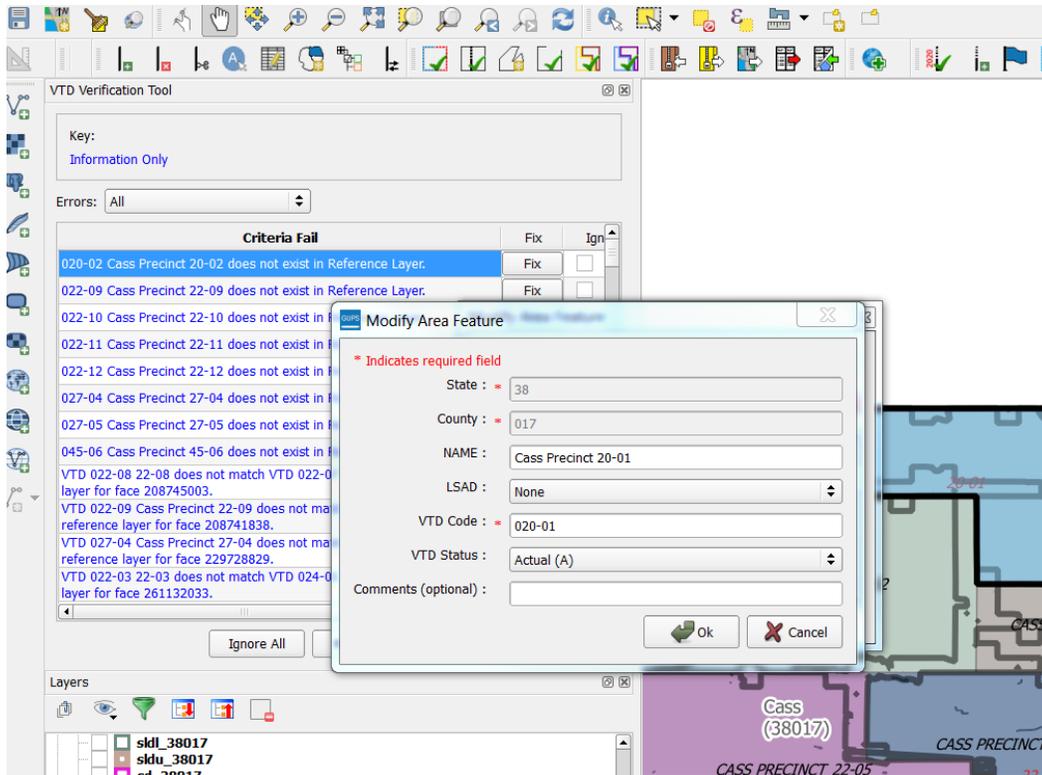
This error is reported when the current Census VTD layer (`vtdcurrent_<ssccc>` where `ss` = state code and `ccc` = county code), contains a VTD that is not in your imported reference file.

The example below contains eight errors of this type. The first error listed in the Criteria Fail window reports that the current Census VTD shapefile contains CASS PRECINCT 20-02, but that VTD is not found in the VTD reference layer.

- a. Click on the error in the Criteria Fail window to zoom to it on the map. In the map view, CASS PRECINCT 20-02 is displayed on the `vtdcurrent_38017` layer (blue fill), but the same area in the reference VTD shapefile is VTD 20-01 (labeled in red text). (Note: the crosshatching layer has been turned off in the images below for easier viewing.)



- b. If the current Census VTD layer needs to be updated, click the Fix button next to the error. The Modify Area Feature Tool will open. You can use the tools in the Modify Area Feature Toolbox to modify the area and attributes in the `vtdcurrent` layer to match the reference VTD. In this example, the problem is actually an incorrect name. Use the Modify Attributes Tool in the Modify Area Feature toolbox to update the name of the VTD in the `vtdcurrent` layer. (See Section 8.2 in the *Voting District Project GUPS User's Guide* for instructions on how to use the tools in the Modify Area Feature Toolbox.)



2.2 Missing VTD Ref

This error is reported when the imported VTD reference layer does not cover all the faces (area) of the county. The Census *vtdcurrent* layer, has assigned the area to a VTD.

The example below contains many errors of this type. The first error listed in the Criteria Fail window reports that face 259070640 is unassigned in the VTD reference layer.

- a. Click on the error in the Criteria Fail window to highlight and zoom to the face on the map. The face is assigned to CASS PRECINCT 44-01 in the *vtdcurrent* shapefile.
- b. Review the face to see if you agree with the VTD the face is assigned to in the *vtdcurrent* shapefile.
 - i. If you do not agree, open the Modify Area Features Toolbox and use the tools to assign the face to the appropriate VTD. (See Section 8.2 in the *Voting District Project GUPS User's Guide* for instructions on how to use the tools in the Modify Area Feature Toolbox.)
 - ii. If you do agree, check the box in the "Ignore" column in the criteria fail list, and when you refresh the error list (using the "refresh" button at the bottom of the list), the error will not display again.

QGIS 2.8.3 Wien - 38017 - VTD

Project Edit View Layers Settings Vector Editor Tools Processing Help QGIS

VTD Verification Tool

Key:
Information Only

Errors: Missing VTD Ref

Criteria Fail	Fix	Ign
Face 229075940 does not have a value for reference VTD.	Match Ref	<input type="checkbox"/>
Face 227965994 does not have a value for reference VTD.	Match Ref	<input type="checkbox"/>
Face 265895078 does not have a value for reference VTD.	Match Ref	<input type="checkbox"/>
Face 256130670 does not have a value for reference VTD.	Match Ref	<input type="checkbox"/>
Face 208748950 does not have a value for reference VTD.	Match Ref	<input type="checkbox"/>
Face 227966457 does not have a value for reference VTD.	Match Ref	<input type="checkbox"/>
Face 261133168 does not have a value for reference VTD.	Match Ref	<input type="checkbox"/>
Face 227965993 does not have a value for reference VTD.	Match Ref	<input type="checkbox"/>
Face 208748533 does not have a value for reference VTD.	Match Ref	<input type="checkbox"/>
Face 208739239 does not have a value for reference VTD.	Match Ref	<input type="checkbox"/>
Face 208749117 does not have a value for reference VTD.	Match Ref	<input type="checkbox"/>
Face 208749502 does not have a value for reference VTD.	Match Ref	<input type="checkbox"/>
Face 208749502 does not have a value for reference VTD.	Match Ref	<input type="checkbox"/>
Face 208749502 does not have a value for reference VTD.	Match Ref	<input type="checkbox"/>
Face 261738150 does not have a value for reference VTD.	Match Ref	<input type="checkbox"/>

Ignore All Match All Refresh Save Changes

Layers

- msd_38017
 - place_38017
 - All Places
 - DissolvedPlace(CHG_TYPE = Y)
 - cdp_38017
 - county_38017
 - vtdv19_38017_changes_vtd
 - faces_38017
 - zoomed out (not outlined)
 - zoomed in (includes outline)
 - Consistent Canvas vs Reference
 - msd_38017
 - All MCDs
 - All MCDs(CHG_TYPE = Y)
 - hwy_38017

0 Feature(s) selected on layer faces_38017.

Coordinate: -96.77924, 46.88382 Scale: 1:2,079 Rotation: 0.0

Render EPSG:4326 (WGS)

2.3 VTD Mismatch

This error is reported when a face is assigned to a specific voting district in the Census Bureau’s *vtdcurrent* layer, but belongs to a different voting district in the reference layer.

The example below shows several errors of this type. The first error listed in the Criteria Fail list reports that VTD 022-08 22-08 does not match VTD 022-07 22-07 in the reference layer for face 208745003. (Note: VTD 022-07 is the VTD name and 22-07 is the code. The error report includes the name and code for the VTD, and may look odd on the report if the name and code are similar.)

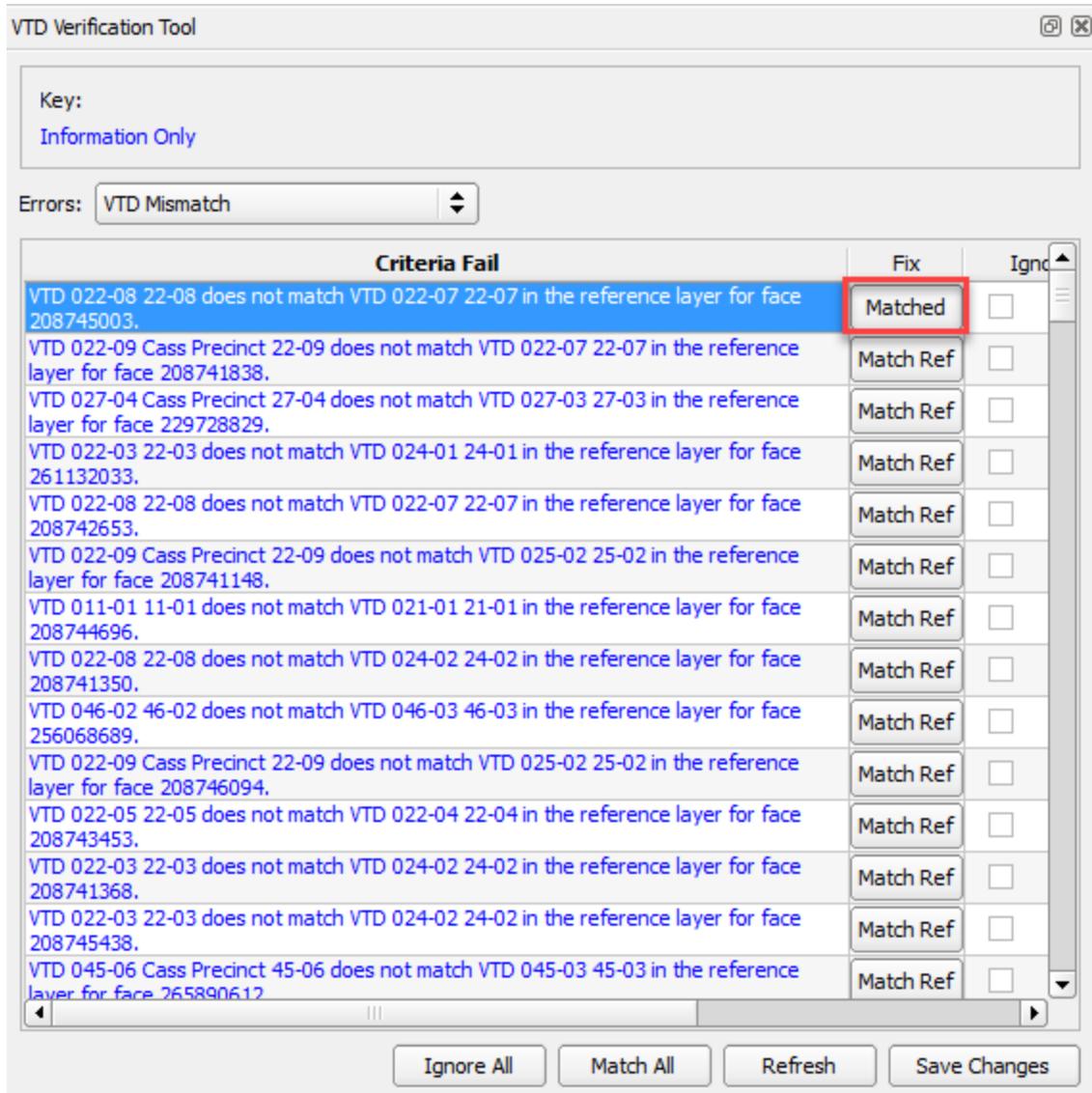
- a. Click on the error in the criteria fail list to highlight and zoom to the face on the map.

The screenshot shows the 'VTD Verification Tool' interface. On the left, there is a 'Criteria Fail' list with columns for 'Fix' and 'Ign'. The first error is highlighted in blue: 'VTD 022-08 22-08 does not match VTD 022-07 22-07 in the reference layer for face 208745003.' To the right of this error are 'Match Ref' and 'Ign' buttons. The map on the right shows a blue-shaded area labeled 'CASS PRECINCT 22-08' and '22-07'. The map includes street names: 'Main St. N', '2nd Ave', '5th St. N', '1st Ave. N', and '6th St. N'.

Criteria Fail	Fix	Ign
VTD 022-08 22-08 does not match VTD 022-07 22-07 in the reference layer for face 208745003.	Match Ref	<input type="checkbox"/>
VTD 022-09 Cass Precinct 22-09 does not match VTD 022-07 22-07 in the reference layer for face 208741838.	Match Ref	<input type="checkbox"/>
VTD 027-04 Cass Precinct 27-04 does not match VTD 027-03 27-03 in the reference layer for face 229728829.	Match Ref	<input type="checkbox"/>
VTD 022-03 22-03 does not match VTD 024-01 24-01 in the reference layer for face 261132033.	Match Ref	<input type="checkbox"/>
VTD 022-08 22-08 does not match VTD 022-07 22-07 in the reference layer for face 208742653.	Match Ref	<input type="checkbox"/>
VTD 022-09 Cass Precinct 22-09 does not match VTD 025-02 25-02 in the reference layer for face 208741148.	Match Ref	<input type="checkbox"/>
VTD 011-01 11-01 does not match VTD 021-01 21-01 in the reference layer for face 208744696.	Match Ref	<input type="checkbox"/>
VTD 022-08 22-08 does not match VTD 024-02 24-02 in the reference layer for face 208741350.	Match Ref	<input type="checkbox"/>
VTD 046-02 46-02 does not match VTD 046-03 46-03 in the reference layer for face 256068689.	Match Ref	<input type="checkbox"/>
VTD 022-09 Cass Precinct 22-09 does not match VTD 025-02 25-02 in the reference layer for face 208746094.	Match Ref	<input type="checkbox"/>
VTD 022-05 22-05 does not match VTD 022-04 22-04 in the reference layer for face 208743453.	Match Ref	<input type="checkbox"/>
VTD 022-03 22-03 does not match VTD 024-02 24-02 in the reference layer for face 208741368.	Match Ref	<input type="checkbox"/>
VTD 022-03 22-03 does not match VTD 024-02 24-02 in the reference layer for face 208745438.	Match Ref	<input type="checkbox"/>
VTD 045-06 Cass Precinct 45-06 does not match VTD 045-03 45-03 in the reference layer for face 265890612.	Match Ref	<input type="checkbox"/>
VTD 041-01 41-01 does not match VTD 041-02 41-02 in the reference layer for face 208743498.	Match Ref	<input type="checkbox"/>

- b. Review the face and determine to which VTD it should be assigned. In this example, you need to determine if it should remain assigned to 22-08, as it currently is in the *vtdcurrent* layer, or if it needs to be reassigned to 22-07 as it is in the reference layer.
 - i. If the face should remain assigned to 22-08, as it currently is in the *vtdcurrent* layer, check the ignore box to the right of the error listing in the criteria fail list. When you refresh the error list (using the “refresh” button at the bottom of the list), the error will not display again.
 - ii. If the face should be in VTD 22-07 as it is in the reference layer, click on the “Match Ref” button to the right of the error listing in the criteria fail list. GUPS will reassign

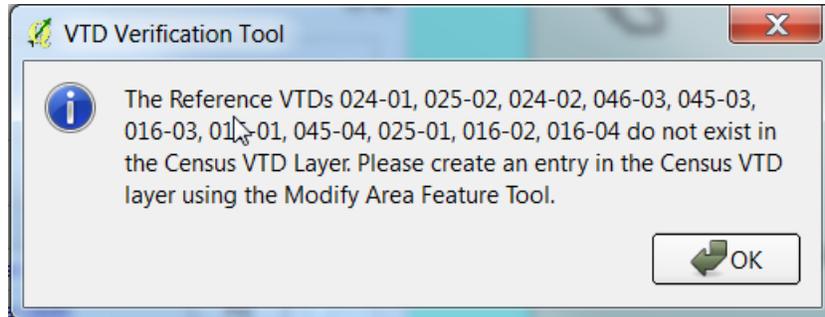
the face in the *vtdcurrent* layer, and the button will now be called “Matched.” (Note: you will not see the change applied until you click “Save Changes” or “Refresh” at the bottom of the VTD Verification Tool window.)



- iii. If the face should remain in 22-08, check the Ignore box to the right of the error listing. When you rerun the VTD Verification Tool, or click on the “Refresh” button at the bottom of the Criteria Fail window, the error will no longer appear.

You also have the option to assign all the faces in the criteria fail list to the reference layer all at once, or ignore all errors at once and leave them assigned to the *vtdcurrent* layer, by clicking on the “Match All” or “Ignore All” buttons at the bottom of the window.

If a reference VTD does not exist for faces in the current VTD layer, GUPS cannot “match” it and an error will pop up prompting you to create an entry in the current VTD layer using the Modify Area Feature Tool.



Click “Refresh” to save the session and refresh the VTD Verification Tool.

Click “Save Changes” to save the changes made in the current session.