

# VALIDATION TOOL GUIDE

## Version 10 Statewide Parcel Map Database Project

December 22, 2023

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#### VALIDATE WITH VALIDATION TOOL

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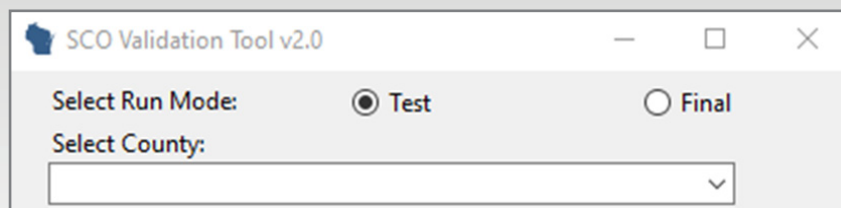
#### ZIP & SUBMIT

<b>SUBMIT .INI SUBMISSION FORM + DATA</b>	<b>22</b>
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**NOTICE: The Validation Tool is now a stand alone executable program!**

*The process for running the tool is simplified from the previous tool. Please read through the documentation for instructions on executing the new tool.*

### Overview of Tool



**Test mode** = For [PREPARING/TESTING/VALIDATING](#) a parcel dataset

- Find and fix errors within a Searchable Format parcel submission
- Provides easy-to-use descriptions of each error so that the proper resolutions can be implemented
- Geometry validation is **NOT** performed in Test Mode

**Final mode** = For [CREATING FINAL .INI SUBMISSION FORM](#) for parcel dataset

- Check parcel dataset submission including geometry validation and the existence, degree and nature of any errors
- Fill out Explain Certification which explains any of your special circumstances
- Create the .ini submission form, which **\*must\*** be included in final zipped submission package

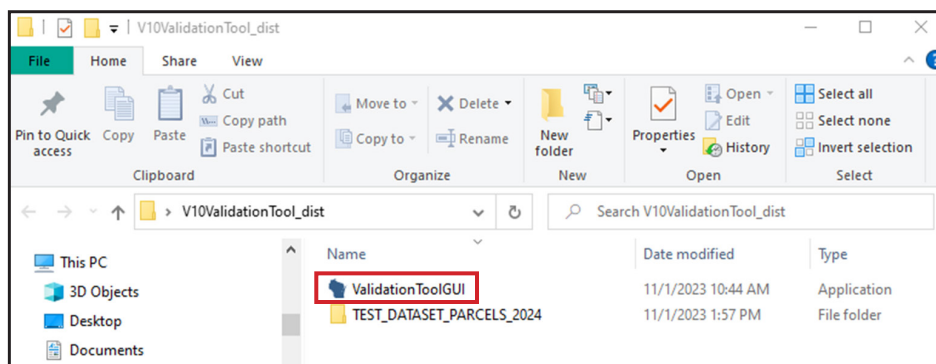
# Before Starting...

## Gather Materials

- The [Submission Documentation](#) and [V10 webpage](#)
- The county staff member(s) who will submit the data
- The parcel dataset for submission, **with data already prepared to the schema standards**

## Install the Tool

- Install the updated [Validation Tool](#), downloaded from [www.sco.wisc.edu/parcels/tools](http://www.sco.wisc.edu/parcels/tools)
  - The Validation Tool is **now a stand alone tool** independent of ArcMap or ArcCatalog
  - **Unzip** the downloaded zip package to the directory of your choice.
  - Double click on the file named **ValidationToolGUI** to run the tool
  - The tool will be ready to run upon unzipping
  - If you experience trouble starting or executing the tool, see the Troubleshooting section below



## Get Ready to Run the Tool

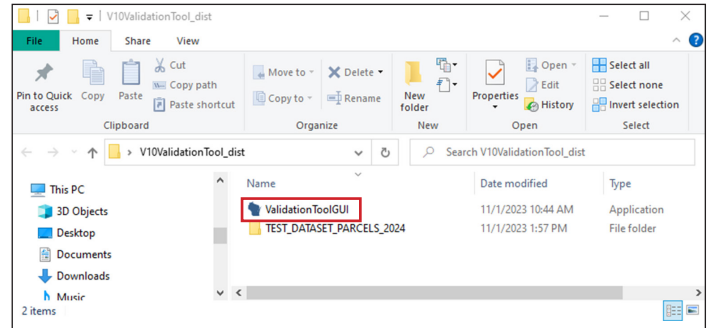
- **First, FORMAT YOUR DATA to schema standards**
  - The Validation Tool's Test Mode is meant to be executed on a parcel layer that is as-close-as-possible to the schema specifications.
  - An excessive number of errors will likely be found on a parcel dataset that does not closely adhere to the schema, even if it is a well designed parcel dataset on its own.
  - The tool is designed to test against the statewide parcel schema only.
  - Testing a dataset before the proper preparations have been applied may cause the tool to stop execution, as it is designed to gracefully exit execution if the requirements are not intact in the tested feature class.
  - Running the tool in Test Mode before the data is properly prepared may also cause an excessive number of simple errors to be flagged, which can be overwhelming and may obfuscate more important errors.
- **Test the tool**
  - To test how the tool works, you can try it on the test data, included within the zipped tool package.
- **Run the "Null Fields and Set to UPPERCASE Tool"**
  - Run the [Null Fields and Set to UPPERCASE Tool](#).
  - The statewide parcel schema specifies that leading and trailing white spaces should NOT exist.
  - All strings should be written in UPPERCASE.
  - Empty string cells (e.g. "") should be annotated as true SQL <Null> values (and NOT a string of text characters that spells out the word "NULL").
  - The tool will flag any instance of these errors and these types of errors can add up quickly.
  - Executing the [Null Fields and Set to UPPERCASE Tool](#) **before** running **Validation Tool** can thus help avoid excessive errors.

# About the Tool

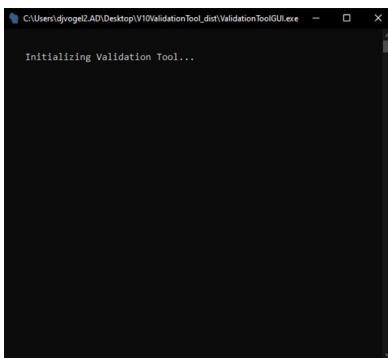
## Executing the tool in Test Mode

Once you've unzipped the V10ValidationTool\_dist directory, navigate to the folder location on your C: drive. It can be run directly from this location. To start the tool, **double-click** on the file name '**ValidationToolGUI**'.

The tool will take a few seconds to start up. Once startup is complete, 2 windows will appear, a 'Status Window' and the 'Tool Window'.



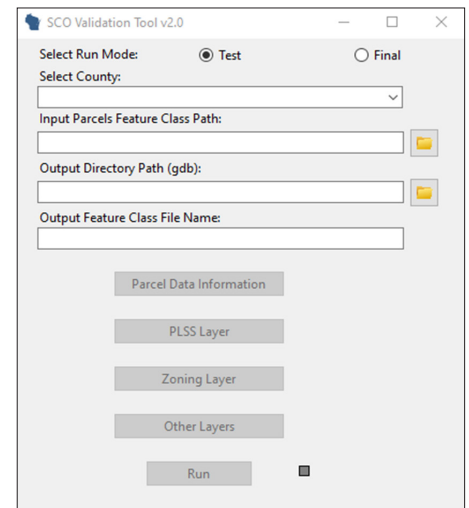
Status Window



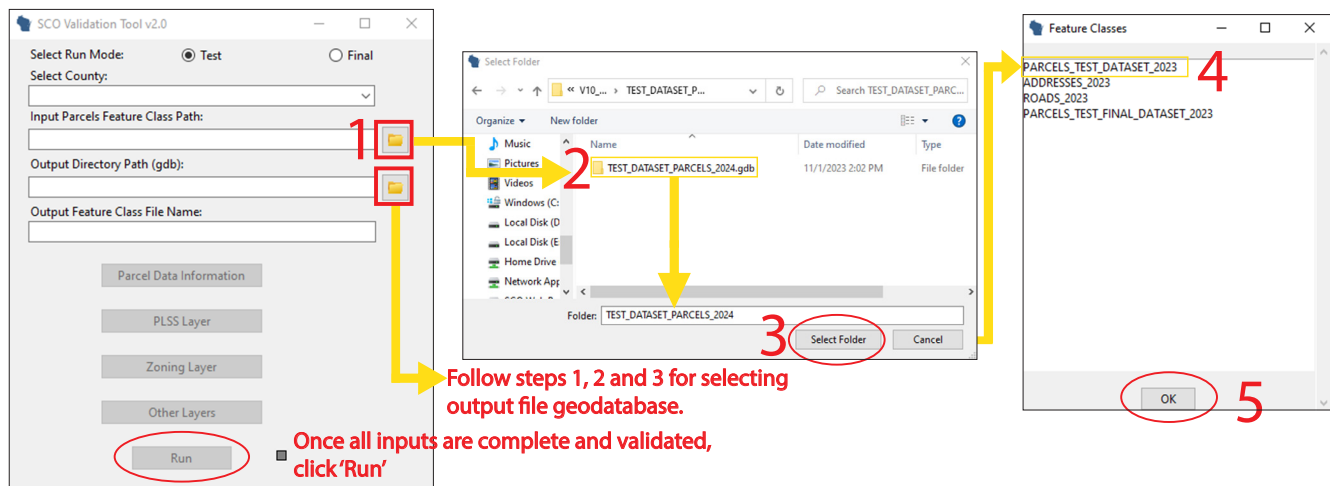
The 'Status Window' will display messages keeping the user informed about where the tool is in the validation and assessment process. It will also display any messages related to immediate errors that may be encountered, such as projection issues, attribute schema deviations, etc.

*(This window can be resized by the user. Keep the status window open)*

Tool Window



For running in Test Mode, only the 4 input values on the main screen are required. Use the file explorer buttons to locate the 'Input Parcels Feature Class' and the 'Output Directory Path (gdb)'.



## About Test Mode

Executing the tool in Test Mode will allow you to assess your parcel submission and **determine specifically what improvements need to be made** to the dataset before zipping up the files and submitted the data.

Test Mode is **designed to flag all conditions that violate schema specifications** and **note them in two places**:

- **Validation\_Summary\_Page** - A summary file called *Validation\_Summary\_Page* is an HTML file that allows the user to visualize the potential errors observed in the dataset. This file will open automatically in your web browser upon completion of the tool in Test Mode.
- **Output feature class** - Comments that are automatically created within the output feature class, whose output location is also specified by the user in the tool's dialogue.

The purpose of Test Mode is to eliminate errors -- by helping to pinpoint them--thus directing the user to take appropriate actions to correct them.


Resolving errors may necessitate the execution of one of the Project's [tools](#), custom automated solutions, and/or manual edits.

It is anticipated that **the Validation Tool may need to be executed several times in Test Mode** in order to troubleshoot all errors that may exist. The tool should be executed subsequent times until all possible fixes to errors have been resolved. The tool should always be executed one final time in Test Mode before proceeding to Final Mode.

Some errors uncovered within Test Mode may not be possible to resolve. **If any errors remain because it is not possible to resolve them, they must be explained within the Explain Certification window, within the Parcel Data Information section of the tool** when running the tool in Final Mode.

### The Validation Summary Page

The error status is always summarized within the output *Validation\_Summary\_Page*, pictured below. This file provides a general overview of the condition of the dataset. It summarizes error status for "GENERAL FILE ERRORS" and for "FLAGS IN OUTPUT FEATURE CLASS (IN-LINE ERRORS)".

Validation Summary Page - Vernon 	
Summary of possible errors found by the Validation Tool, for which you must: 1) <b>Eliminate</b> . Eliminate the flags. Go back to the output feature class to resolve each error by making the data consistent with the schema specs in <a href="#">Submission Documentation</a> , or, 2) <b>Explain</b> . Provide explanations in writing for any legitimately missing/non-conforming data in the <a href="#">Explain-Certification</a> form of the User Interface.	
<b>GENERAL FILE ERRORS</b>  Geometric Misplacement Flag: None. Geometric File Error: None. Coded Domain Fields: None.  Missing CONAME: None. Missing PARCELFIPS: None. Missing PARCELSRC: None.  TAXROLLYEAR "2023" (Expected year value): 100.0% TAXROLLYEAR "2022" (Previous year value): 0.0% TAXROLLYEAR "2024 or 2025" (Future year values): 0.0% TAXROLLYEAR (Other year values): 0.0%  PARCELDATE FLAG :69.28% of all records contain uniform PARCELDATE values. Review Submission Documentation.	<b>FLAGS IN OUTPUT FEATURE CLASS</b>  General Element Errors: <b>2</b> possible errors found. See the attribute table in the output feature class to resolve these. Address Element Errors: <b>7</b> possible errors found. See the attribute table in the output feature class to resolve these. Tax Element Errors: <b>13</b> possible errors found. See the attribute table in the output feature class to resolve these. Geometric Element Errors: <b>None</b> . <b>ERROR SUM: 22</b>  *There are detailed error messages associated with these flags, which have been added to your output feature class.  Scroll to the far right of the attribute table, sort each of the 4 error fields in descending order, and work to either <b>eliminate</b> or <b>explain</b> each error message.
ATTRIBUTE COMPARISON	
ATTRIBUTES WITH 15% OR GREATER INCREASE/DECREASE IN RECORD VALUE COMPLETENESS Percentage Difference Compared to Last Year's Dataset - Click attribute name to view schema definition	

**Validation\_Summary\_Page (example). This displays in full "GENERAL FILE ERRORS" and summarizes error status for "FLAGS IN OUTPUT FEATURE CLASS." It also displays the "ERROR SUM."**

Once the parcel data is ready for submission--as determined by an error-free Test Mode run and a corresponding *Validation\_Summary\_Page* file that tells you no errors have been found, the tool can then be executed in Final Mode.

## About Final Mode

Final Mode walks you through prompts that build the mandatory .ini submission form. The .ini submission form is an automatically created .ini file that is named with:

- The county name + output file name:
- E.g., "DANE\_Final1.ini" - where "DANE" is the county specified and "\_Final1" is the output file name chosen by the user.

The tool need only be executed once in Final Mode. The only output for Final Mode is the .ini submission form, which must be zipped up with the GIS files for submission.

The screenshot shows the 'SCO Validation Tool v2.0' window. At the top, 'Select Run Mode:' has two radio buttons: 'Test' and 'Final'. The 'Final' button is selected and highlighted with a red box. Below this is a 'Select County:' dropdown menu. Further down are fields for 'Input Parcels Feature Class Path:', 'Output Directory Path (gdb):', and 'Output Feature Class File Name:'. The 'Output Feature Class File Name:' field contains the text 'Generated automatically with county name'. At the bottom, there are four sub-window checkboxes: 'Parcel Data Information', 'PLSS Layer', 'Zoning Layer', and 'Other Layers'. To the right of these checkboxes are five red boxes containing instructions. At the very bottom is a 'Run' button.

Sub-window	Instructions
Parcel Data Information	- Only applicable in Final Mode - This is where you enter basic info about the submission
PLSS Layer	- Parameters for selecting the condition and file name of the PLSS layer that you will submit
Zoning Layer	- Parameters for selecting the condition and file name(s) for the county-administered zoning layers that you will submit
Other Layers	- Parameters for selecting the condition and file name(s) for the county-administered other layers that you will submit
Run	- Once all sub-windows are successfully populated, the status box next to each sub-window and the 'Run' button will turn green

## Glossary of Associated Files

*Validation\_Summary\_Page* - An HTML file that results when you run the tool in Test Mode. It summarizes errors.

*.ini submission form* - An .ini format file that is the result of successfully running the tool in Final Mode. This file provides all of the information you have inputted in Final Mode (including the Explain Certification information). It is **MANDATORY for all submissions**.

*Output Feature Class* - The feature class that results from running the tool in Test Mode, where errors can be viewed as values within the attribute table as "IN-LINE errors," written IN-LINE, inside the attribute table of output feature class.

**Output COUNTYNAME\_PARCELS.gdb** - The final output parcel file geodatabase, automatically created and populated when running Final Mode.

**Output COUNTYNAME\_OTHER.gdb** - The final output others file geodatabase, automatically created and populated when running



# TEST MODE

## Overview of Test Mode

Test Mode may yield several thousand errors or merely a handful of errors upon its first running. The number of errors will be influenced by the size of the parcel dataset, its adherence to schema specifications, and the amount of preparation that has already been applied to the layer.

### 1.1 Finding errors manually

The Validation Tool will check your data for errors, but it is advisable to manually check for errors first. A manual check is the process that a county may have employed in the past to double-check that the parcel submission adheres to the specs of the [Submission Documentation](#). Ensure that the dataset is vetted with a **manual error check** before moving to the next step.

There may be additional errors specific to your county's records that the Validation Tool will not be able to detect. Please contact SCO if you need assistance identifying these errors and rectifying them.

### 1.2 Finding errors via the Validation Tool

The [Validation Tool](#) is designed to identify common file, geometric, and attribute issues.

- **Geometric Issues.** The geometric assessment results can be found within the output *Validation\_Summary\_Page* file and within the geometric error field ("GeometricElementErrors") of the tested parcel feature class.
- **Attribute Issues.** The attribute assessment results can be found within the output *Validation\_Summary\_Page* file and within the general error field ("GeneralElementErrors"), address error field ("AddressElementErrors"), or tax error field ("TaxElementErrors") of the tested parcel feature class.

## Interpreting Geometric Issues

### 1.3 Definitions for Types of Geometric Issues

Geometric errors may be classified in one of 3 locations pending the nature of the error: IMMEDIATE ERRORS, GENERAL FILE ERRORS, or FLAGS IN OUTPUT FEATURE CLASS (IN-LINE ERRORS).

#### IMMEDIATE ERRORS

- IMMEDIATE ERRORS exist on parcel feature classes under conditions where the feature class cannot be further tested by the tool without resolving them. They cause the tool to automatically stop executing.
  - **Example:** A variety of immediate errors are tested for by the tool. If the tested dataset does not have a schema that exactly matches the parcel schema, if a dataset is projected to a coordinate reference system that differs from that of the statewide schema, or if a geometric shift greater than 6 meters is observed, the tool will automatically stop executing.
  - **Example:** THERE ARE AT LEAST 100 INSTANCES OF THE STRINGS '<Null>','NULL', AND/OR BLANK VALUES WITHIN THE ATTRIBUTE TABLE. RUN THE "NULL FIELDS AND SET TO UPPERCASE TOOL" AVAILABLE HERE: <https://www.sco.wisc.edu/parcels/tools>. ONCE COMPLETE, RUN VALIDATION TOOL AGAIN.

#### GENERAL FILE ERRORS

- GENERAL FILE ERRORS are broader in nature and typically apply to an entire parcel feature class or a large portion of a feature class.
- Notes that describe the nature of **GENERAL FILE ERRORS can be found within the Validation\_Summary\_Page** under the "GENERAL FILE ERRORS" section.
- Note that GENERAL FILE ERRORS will not be found within the "GeometricElementErrors" field, as this type of error is not specific to any one feature (rather, they apply to many features or the feature class as a whole).

#### FLAGS IN OUTPUT FEATURE CLASS (IN-LINE ERRORS)

- FLAGS IN OUTPUT FEATURE CLASS (IN-LINE ERRORS) exist on individual parcel features within the dataset and apply to only the specific feature at the given OBJECTID within the feature class.
  - **Example:** A parcel geometry was found that has no length value or no area value, thus indicating that it contains a "Null" geometry or invalid geometry
- Notes that describe the nature of **IN-LINE errors can be found within the output feature class** that is created by running the tool in Test Mode. These flag notes will exist in the "GeometricElementErrors" field that is automatically created when running the tool in Test Mode. A summary of the number of in-line geometric errors found is also written to the *Validation\_Summary\_Page* file for the purpose of quick reference when reviewing the results.

**FLAGS IN OUTPUT FEATURE CLASS**  
**General Element Errors: 5** possible errors found. See the attribute table in the output feature class to resolve these.  
**Address Element Errors: 6** possible errors found. See the attribute table in the output feature class to resolve these.  
**Tax Element Errors: 13** possible errors found. See the attribute table in the output feature class to resolve these.  
**Geometric Element Errors: None.**  
**ERROR SUM: 24**  
\*There are detailed error messages associated with these flags, which have been added to your output feature class.  
Scroll to the far right of the attribute table, sort each of the 4 error fields in descending order, and work to either **eliminate**

# Workflow/Sequence for Edits

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## 1.4 Recommended sequence of editing

Three levels of errors may be found when running the tool in Test Mode. It is recommended you resolve these issues in the following order, but please note this workflow is only one of many possible acceptable workflows:

- 1) **IMMEDIATE ERRORS in Status Window - Resolve 1<sup>st</sup>**
- 2) **GENERAL FILE ERRORS in Validation\_Summary\_Page - Resolve 2<sup>nd</sup>**
  - General Element Errors
  - Geometric Element Errors
  - Address Element Errors
  - Tax Element Errors
- 3) **FLAGS IN OUTPUT FEATURE CLASS/IN-LINE ERRORS - Resolve 3<sup>rd</sup>**
  - General Element Errors
  - Geometric Element Errors
  - Address Element Errors
  - Tax Element Errors

### IMMEDIATE ERRORS - Resolve 1<sup>st</sup>

**IMMEDIATE ERRORS** are errors found within the data that **have a direct effect on the proper execution of the tool**. If an error of this nature is found, the tool will gracefully stop executing and alert the user of the problem through the tool's dialogue in the status window.

Generally, no other errors will be listed when this type of error is encountered. The user must resolve the immediate error, using the directions provided in the tool's dialogue box before proceeding with the next execution of the tool in Test Mode. Once the immediate error is resolved, the tool can be executed again for GENERAL FILE and IN-LINE errors.

### GENERAL FILE ERRORS - Resolve 2<sup>nd</sup>

**GENERAL FILE ERRORS** are recommended for resolution after immediate errors, but before IN-LINE errors. A summary of GENERAL FILE ERRORS can be found on the Validation Summary Page. This is due to the nature of GENERAL FILE ERRORS, which **affect a great number of features**. The various resolutions to GENERAL FILE ERRORS tend to be well suited for batch troubleshooting. Executing resolutions on large batches of features or the entire feature class may positively impact the number of IN-LINE errors, which can require more manual intervention to resolve.

### FLAGS IN OUTPUT FEATURE CLASS/IN-LINE ERRORS – Resolve 3<sup>rd</sup>

**FLAGS IN OUTPUT FEATURE CLASS (IN-LINE ERRORS)** are recommended for resolution last. **Remember that IN-LINE errors are found within the output feature class, in the attribute table.**

### Recommendation for Handling Error Types

At the above error levels, there are four categorical types of error. The condition of the data, software used, and other factors may cause a more obvious workflow to be desirable, but it is recommended that these types be handled in the following order:

- I. **General Element Errors** – errors broadly classified (not falling into one of the other three error categories)
- II. **Geometric Element Errors** - errors that are a function of parcel geometry
- III. **Address Element Errors** - errors specific to address-related attribute elements
- IV. **Tax Element Errors** - errors specific to tax roll-related attribute elements

# GENERAL FILE ERRORS - How to Resolve

## 1.5 Reading GENERAL FILE ERRORS within the Validation\_Summary\_Page

GENERAL FILE attribute errors will come in the following forms within the Validation\_Summary\_Page. Please read the directives associated with each error in the summary file to begin troubleshooting.

### Validation Summary Page - Vernon

Summary of possible errors found by the Validation Tool, for which you must:

- 1) **Eliminate.** Eliminate the flags. Go back to the output feature class to resolve each error by making the data consistent with the schema specs in [Submission Documentation](#), or,
- 2) **Explain.** Provide explanations in writing for any legitimately missing/non-conforming data in the [Explain-Certification](#) form of the User Interface.

#### GENERAL FILE ERRORS

Geometric Misplacement Flag: None.  
Geometric File Error: None.  
Coded Domain Fields: None.

Missing CONAME: None.  
Missing PARCELFIPS: None.  
Missing PARCELSRC: None.

TAXROLLYEAR "2023" (Expected year value): 100.0%  
TAXROLLYEAR "2022" (Previous year value): 0.0%  
TAXROLLYEAR "2024 or 2025" (Future year values): 0.0%  
TAXROLLYEAR (Other year values): 0.0%

PARCELDATE FLAG :69.28% of all records contain uniform PARCELDATE values. Review Submission Documentation.

#### FLAGS IN OUTPUT FEATURE CLASS

**General Element Errors:** 2 possible errors found. See the attribute table in the output feature class to resolve these.  
**Address Element Errors:** 7 possible errors found. See the attribute table in the output feature class to resolve these.  
**Tax Element Errors:** 13 possible errors found. See the attribute table in the output feature class to resolve these.  
**Geometric Element Errors:** None.  
**ERROR SUM: 22**

\*There are detailed error messages associated with these flags, which have been added to your output feature class.

Scroll to the far right of the attribute table, sort each of the 4 error fields in descending order, and work to either **eliminate** or **explain** each error message.

#### ATTRIBUTE COMPARISON

ATTRIBUTES WITH 15% OR GREATER INCREASE/DECREASE IN RECORD VALUE COMPLETENESS

Percentage Difference Compared to Last Year's Dataset - Click attribute name to view schema definition

### GENERAL FILE ERRORS – Summarized in Validation\_Summary\_Page

Note that in Test Mode, **the Validation Tool is designed to compare some portions of the Searchable Format submission you are testing for against previous data specific to YOUR county (that being the standardized county data from the previous statewide parcel layer), or values that might be “expected” based on the statewide schema.**

#### Geometric File Errors

Geometric file errors will occur if the parcel feature class appears to have file qualities that do not meet submission standards. The following types of Geometric file errors or flags might be thrown:

- **Error: Invalidated Coordinate Reference System**
  - ▶ **Nature:** Occurs when the feature class's coordinate reference system (CRS) cannot be accurately validated by the Validation Tool
  - ▶ **Fix:** Follow the [Parcel\\_Schema\\_Field\\_Mapping\\_Guide](#) to project native data to the Statewide Parcel CRS and ensure that the feature class adheres to the CRS parameters as so:
    - ▶ Datum: NAD\_1983\_HARN\_Wisconsin\_TM
    - ▶ WKID: 3071
    - ▶ Authority: EPSG
    - ▶ Projection: Transverse Mercator
    - ▶ False Easting: 520000.0
    - ▶ False Northing: -4480000.0
    - ▶ Central Meridian: -90.0
    - ▶ Scale Factor: 0.9996
    - ▶ Latitude of Origin: 0.0
    - ▶ Linear Unit: Meter (1.0)
- **Error: Geometry Type Error**
  - ▶ **Nature:** Occurs when the feature class contains non-polygonal features, such as points or lines. Only polygon feature classes should be submitted.
  - ▶ **Fix:** Prepare a feature class containing polygon parcel features



## Geometric Misplacement Flag

A Geometric Misplacement Flag will occur if parcel geometries appear to be spatially misplaced more than 6 meters when comparing them against the previous statewide parcel version's parcel geometries. This existence of this issue can be indicative of a re-projection error but could also be caused by other reasons.

- ▶ **Purpose of this test:** This test calls attention to the possibility that parcel geometries might have had geometric error introduced. Past parcel submissions have occasionally contained subtle to significant degrees of dataset-wide geometric misplacement.
  - ▶ This condition often results from merging the local parcel dataset with its native coordinate reference system, with the statewide parcel template ([GISTemplates.zip](#)), which has the statewide coordinate reference system applied.
  - ▶ To best preserve the geometric quality of the local parcel dataset, the local dataset should first be projected from its native CRS to the CRS of the statewide parcel layer, and then merged into the template file.
  - ▶ See [Parcel\\_Schema\\_Field\\_Mapping\\_Guide](#) on how to project data to the statewide parcel CRS.
  - ▶ If a geometric transformation is required when re-projecting, ensure that the appropriate transformations identified (e.g., Wisconsin, not the Michigan transformation, which is often what is selected by default)
- ▶ **How is this error tested?** Within the logic of the Validation Tool, parcel geometries of the submitter's parcel dataset are checked at 100 evenly dispersed intervals across the parcel dataset. Each of these tests involve querying the most recent statewide parcel feature service by PARCELID, accessing the geometric properties of the queried parcel, and comparing parcel centroids of each polygon. If the two parcel centroids contain more than a 0.01 meter difference, then the test will fail. If 50 of these 100 tests fail, the Geometric Misplacement Flag is thrown. If the Validation Tool is run on Test mode and the Geometric Misplacement Flag is thrown it will not create the Validation\_Summary\_Page. If the Validation Tool is run on Final mode and the Geometric Misplacement Flag is thrown it will not create the .ini submission form.
- ▶ **False positives:** Given the nature of this test's logic as described, there is a possibility of a false positive test for geometric misplacement. The following may be reasons a geometric misplacement error may be incorrectly displayed:
  - ▶ Any reason that all, or a significant number of parcel features, were spatially adjusted over the course of the year.
  - ▶ The parcels submitted to the previous version of the project were misplaced and were not corrected when preparing the statewide layer.
  - ▶ If there is a reason for a parcel shift of more than 6 meters, please contact the SCO to ensure that the county has geometric accuracy and continuity between annual versions.
  - ▶ **If any of these conditions for false positives are true, or another exceptional condition exists, make note of this in the Explain Certification section of the tool's Final Mode under "Parcel Data Information"**
- ▶ **Validating and correcting this issue:** If this flag is thrown and it is clear that the false positives above are not explanations of the cause, then the following steps are recommended:
  - ▶ **Validating**
    - 1) Open a new ArcMap session and bring up the parcel feature class
    - 2) Add an orthorectified imagery layer—use the best/most reliable layer available
    - 3) Add the native parcel dataset—make sure that the native layer has the county coordinate reference system applied.
    - 4) Change each of the two parcel layers symbology to have no fill and stroke with two distinct colors.
    - 5) Zoom-in on parcels across several different areas across the county, check to ensure that the geometries of the two parcel datasets align (it may be necessary to zoom in beyond 1:1 scale).
    - 6) If there is a difference between the location of the two parcel datasets when inspecting parcels across the county, then a geometric misplacement exists.
  - ▶ **Correcting**
    - 1) If the parcel dataset was prepared using steps akin to merging the native parcel dataset with the GISTemplate without first projecting the native data to the statewide coordinate reference system, then this is likely the cause of the geometric misplacement.
    - 2) Follow the steps outlined in the [Parcel\\_Schema\\_Field\\_Mapping\\_Guide](#) to re-prepare the parcel geometries.

## Coded Domain Fields

- ▶ **Nature:** Occurs when the feature class contains coded domain values.
- ▶ **Fix:** Remove [coded value domains](#). Prepare a feature class containing "flat" attribute fields as the schema requires.
  - ▶ The following reference may be useful:  
[desktop.arcgis.com/en/arcmap/10.3/tools/data-management-toolbox/remove-domain-from-field.htm](https://desktop.arcgis.com/en/arcmap/10.3/tools/data-management-toolbox/remove-domain-from-field.htm)

### Missing CONAME, PARCFIPS, or PARCSOURCE

- This section speaks to three fields in the schema that **must be 100% populated**: CONAME, PARCFIPS, and PARCSOURCE
- Errors you might get:
- Error/Flag: **[#] missing values in this field. Populate Missing (CONAME, PARCFIPS, or PARCSOURCE) for ALL records in the dataset.**
  - ▶ **Nature:** Occurs when there are blank or <Null> records within any of these three fields
  - ▶ **Fix:** Ensure that all three of these fields are 100% populated with valid domains as defined in the Submission Documentation. You can isolate these records by sorting each field in ascending order, and using *Field Calculator* to populate as appropriate. In most cases, all parcels in the dataset will have the same values for CONAME, PARCFIPS, and PARCSOURCE.

Missing CONAME: None.  
Missing PARCSOURCE: None.  
Missing PARCFIPS: None.

### TAXROLLYEAR: Percentage of records with various Taxroll Years

- This section displays a summary of your file's TAXROLLYEAR attribute.
- Based on the schema definition, it is expected that the majority of tax records should be the year prior to the year in which a parcel submission takes place.
  - ▶ For V10—with the data request in 2023—the majority of tax records should be "2023" (There are cases where an exception can be made to this rule, for cases of parcel splits/new parcels, as detailed in the Submission Documentation, under the attribute definition for TAXROLLYEAR.)
- TAXROLLYEAR percentages and ALL error messages must be interpreted in the context of YOUR dataset. A human with knowledge of the native data can interpret the output best.
- Consider the sample report below, followed by an explanation of the various types of errors you might get:

TAXROLLYEAR "2023" (Expected year value): 100.0%  
TAXROLLYEAR "2022" (Previous year value): 0.0%  
TAXROLLYEAR "2024 or 2025" (Future year values): 0.0%  
TAXROLLYEAR (Other year values): 0.0%

- **Error/Flag: TAXROLLYEAR: All 4 stats add up to less than 100%**
  - ▶ **Nature:** Occurs when there are <Null> values in the TAXROLLYEAR field; <Null> values are not counted within this summary.
  - ▶ **Fix:** Ensure that all <Null> values exist because they are parcel splits/new parcels, or non-parcel features such as GAP/ROW/HYDRO, etc. If they are not parcel splits/new parcels or non-parcel features, then they should have a valid tax roll year associated with them.
- **Error/Flag: TAXROLLYEAR: Any value higher than 0.0% exists in "Other Taxroll Year"**
  - ▶ **Nature:** Occurs when there are TAXROLLYEAR values that are anything other than the previous, future, or expected tax roll year. For example, in the case of V10 project "2020" is not valid and would be flagged here.
  - ▶ **Fix:** Ensure that all TAXROLLYEAR values are valid and make sure to update other attributes appropriately so that this data is of the appropriate vintage. If TAXROLLYEAR values cannot be of the appropriate vintage, please make an explanation of this in the Explain Certification.
- **Error/Flag: TAXROLLYEAR: Any value higher than 0.0% exists in "Previous Taxroll Year"**
  - ▶ **Nature:** Occurs when there are TAXROLLYEAR values that meet the previous tax year values. For example, in the case of V10 project "2022" is not valid and would be flagged here. The majority of V10 tax roll year values should be "2023".
  - ▶ **Fix:** Ensure that all TAXROLLYEAR values are valid and make sure to update other attributes appropriately so that this data is of the appropriate vintage. If TAXROLLYEAR values cannot be of the appropriate vintage, provide an explanation in the Explain Certification.
- **Error/Flag: TAXROLLYEAR: An exceptionally large value exists in "Previous Taxroll Years"**
  - ▶ **Nature:** Occurs when there are a large number of TAXROLLYEAR values that contain previous tax year values. For example, in the case of V10 project "2022" is not valid and would be flagged here. The majority of V10 tax roll year values should be "2023".
  - ▶ **Fix:** Ensure that all TAXROLLYEAR values are valid and make sure to update other attributes appropriately so that this data is of the appropriate vintage. If TAXROLLYEAR values cannot be of the appropriate vintage, provide an explanation in the Explain Certification.

### PARCELDATE FLAG: Percentage of records with uniform Parcel Date

- This section displays the percentage of records with uniform PARCELDATE values.
- **Error/Flag: [#]% of all records contain uniform PARCELDATE values.**
  - ▶ **Nature:** Occurs when there are 25% or more records with uniform Parcel Date values.
  - ▶ **Fix:** Ensure to populate this field with the data that describes when the individual parcel geometry was last edited. Do not populate with the "cut date" or date when the data was extracted for submission. Correct the issue by starting an editing session, and convert the uniform values to <Null>.

# FLAGS IN OUTPUT FEATURE CLASS (IN-LINE ERRORS) - How to Resolve

## 1.6 Reading results within the “GeometricElementErrors” field

Geometric errors/flags that are specific to an individual feature will be written IN-LINE within the *GeometricElementErrors* field. This field is automatically created when running the tool in Test Mode. **Open the output feature class in ArcMap after running this Validation Tool and sort this field descending on the *GeometricElementErrors* field.** Please read the directives associated with each error to begin troubleshooting.

### Error and Flag Overview

The following types of “geometric element errors” or “flags” might be thrown when running a validation. These results will be reflected within the *GeometricElementErrors* field.

#### - Error/Flag: **Sliver Polygon**

- ▶ **Nature:** This type of flag will occur if the parcel’s geometry appears to have the geometric qualities of a sliver polygon. Specifically, if the polygon has any of the following:
  - ▶ “Sliver polygon: AREA” --> area < 0.01 Meters
  - ▶ “Sliver polygon: LENGTH” --> length < 0.01 Meters
  - ▶ “Sliver polygon: AREA/LENGTH” --> area / length < 0.01 Meters
- ▶ **Fix:** \*Note that this type of issue is annotated as a “flag” and thus not necessarily an indication of an error. In many parcel datasets, this type of sliver polygon is used to maintain a spatially contiguous parcel dataset, even though there may be small areas where parcels did not COGO together perfectly. While these types of features are not preferred, they are acceptable by the statewide schema standards, as long as one of the following actions are applied:
  - ▶ **If the sliver exists intentionally as a way to fill a geometric gap in the parcel dataset,** the parcel should be annotated as “GAP” within the PARCELID field.
  - ▶ **If the sliver exists as an unintentional fragment of another parcel,** the parcel should be geometrically merged with the parcel that shares a common PARCELID.

#### - Error/Flag: **Corrupt Geometry**

- ▶ **Nature:** This type of flag will occur if the parcel’s geometry cannot be accessed within the script. Use the following directives accordingly:
  - ▶ **“Corrupt Geometry: The feature’s area and/or length could not be accessed.”**  
or
  - ▶ **“Corrupt Geometry: The feature’s geometry could not be accessed.”**  
--> A rare general error that occurs when a parcel’s geometry could not be accessed. This type of error is indicative of a corrupt parcel geometry and is general in nature. As this is a general error, there may be various reasons that the error was thrown.
- ▶ **Fix:** If either of these error messages are found on a feature, try the following techniques to troubleshoot (in the following order):
  - ▶ Navigate to the feature within ArcMap by selecting the feature and choosing to zoom to it. If the act of zooming to the feature brings you to no result, or to some location outside of the county, then the parcel likely has a null geometry. Features with null geometry should be deleted or re-created.
  - ▶ If navigating to the feature by selecting the feature and zooming to it brings you to a parcel feature, explore the nature of the parcel geometry.
    - Does it self-intersect?
    - Does it contain more than 2 vertices?
    - Do any of its vertices exist perfectly on top of one another?
    - Is it represented as existing within the county boundaries?
    - Is it a multi-part feature? If this is a multi-part feature, the same issues should be examined on each part of the multi-part feature.
      - Does it self-intersect?
      - Does it contain more than 2 vertices?
      - Do any of its vertices exist perfectly on top of one another?
      - Is it represented as existing within the county boundaries?
  - If any of the above are true, actions should be taken to correct the issues, the feature should be deleted, or re-created.

## 1.7 Errors in GeneralElementErrors/AddressElementErrors/TaxElementErrors fields

Attribute errors cover the bulk of expected and possible errors that the tool will find. Because of the quantity and nature of these types of issues, the issues are broken into three categories:

- **GeneralElementErrors** - Attribute errors that are not specific to address or tax elements
- **AddressElementErrors** - Attribute errors that are specific to address-related elements
- **TaxElementErrors** - Attribute errors that are specific to tax-related elements

## 1.8 Reading results in the GeneralElementErrors/AddressElementErrors/TaxElementErrors

- General Element, Address Element, and Tax Element Errors (in-line) are specific to an individual parcel feature.
- These flags are written **in-line** within their respectively named fields, **in the output feature class** that results from running the tool in Test Mode.
- Like GeometricElementErrors, these fields are automatically created when running the tool in Test Mode.
- To read results:
  - ▶ After running the Validation Tool, open the output feature class in ArcMap.
  - ▶ **Sort in descending order on each of these fields in the output feature class, one at a time.**
  - ▶ After sorting, there will be one or more messages on the lines at the top of the table, delimited by a pipe ( | )
  - ▶ In the attribute table of the output feature class, read the directives associated with each error/flag to begin troubleshooting.

### Interpreting these directives

General directives are listed below. Note that error messages contain contextual descriptions that have large numbers of permutations. Thus, it is not possible to list all possible messages and the message descriptions below. This documentation intended to provide general guidelines.

#### Legend for syntax - For interpreting the error directives below

**[FIELD]** - This syntax represents a parcel schema field name as a way of annotating that this is a variable and could be interchanged for any field name.

**[ADDRESS FIELD]** - Similar to **[FIELD]**, this syntax represents a standardized field name as a way of annotating that this is a variable. In this case, the field is specific to **address** element fields only.

**<X>** - Indicates a count of something, which could be any value - from small to very large.

- **Error/Flag: An unknown issue occurred with the [FIELD] field. Please inspect the value of this field.**
  - ▶ **Nature:** This type of "general element error" or "flag" might be thrown when an unexpected condition exists within the annotated field. As the message states, the issue is unknown and uncommon. See the fix below for strategies to resolve this.
  - ▶ **Fix#1:** \*Note that this type of issue is annotated as a "flag" and thus not necessarily an indication of an error. These records should be inspected within their respective field. To inspect a record, open an Editing session in ArcMap on the output feature class, and navigate to the record in question to explore:
    - ▶ **Does anything appear abnormal about the content of the cell?**
    - ▶ **Copy the record from the cell and paste it into a text editor**
      - **Do any new characters appear?**
      - **Are there new lines below the text?**
      - **Are there characters on new lines?**
    - ▶ If any of the above conditions, or other strange/undesirable conditions exist within the cell, make the appropriate corrections. If no obvious solution appears, proceed to fix #2.
  - ▶ **Fix#2:** If there are no obvious problems with the record, check the record to make sure that it is meeting s statewide schema specifications. If there is no obvious reason that this error exists, note the following within the Explain Certification as a part of your submission.
    - ▶ *--There are <X> instances of the following error "unknown issue occurred with the ADDNUM field. Please inspect this field's value." These issues are unexplainable by the county LIO."*

- **Error/Flag: Value in [FIELD] does not appear to be a numeric value.**
  - ▶ **Nature:** Occurs when there are non-numeric elements existing within the field when only numeric values should exist.
  - ▶ **Fix:** Ensure that all values within this field are numeric. Correct the issue by starting an editing session to type in a valid value, or use the *Field Calculator* to correct the records. If this issue exists on a large number of records, a more automated solution, or re-joining anew may be warranted.
- **Error/Flag: Null Found on [FIELD].**
  - ▶ **Nature:** Occurs when a <Null> value was found within a field that should not contain <Null> values.
  - ▶ **Fix:** Ensure that all values within this field are free of <Null> values. Correct the issue by starting an editing session to type in a valid value, or use *Field Calculator* to correct the records. If this issue exists on a large number of records, a more automated solution, or re-joining anew may be warranted.
- **Error/Flag: Appears to be a duplicate value in [FIELD].**
  - ▶ **Nature:** Occurs when a duplicate value was found within PARCELID AND TAXPARCELID fields, which should never contain duplicate values (with the exception of non-parcel features).  
**NOTE:** This error message will flag the second and all subsequent instances of duplicate values present, but does not flag the first occurrence of a value. Rights of way, hydrography, gaps, and other non-parcel features are, by design, not included in this assessment. However, if items similar to these non-parcel features are flagged, their error can be disregarded and noted as an exception in the Explain Certification.
  - ▶ **For non-parcel features newly added since last year** (with labels in PARCELID field), explicitly note any new PARCELID values in the Explain Certification file. The Validation Tool only recognizes duplicate PARCELIDs for non-parcel features from prior years' submittals. A note in the Explain Certification serves as a legitimate explanation for this flag.
    - ▶ Include **"Notice of New Non-Parcel Feature PARCELIDs"** in the Explain Certification.
  - ▶ **Fix:** Ensure that all values within this field are not duplicative. Correct the issue by starting an editing session. If this issue exists on a large number of records, a more automated solution, or re-joining anew may be warranted.
    - ▶ **Avoid Duplicate Parcel IDs.** For multiple polygons with the same PARCELID, where possible, provide the parcel geometries as **"multipart polygons"**—non-contiguous geometries that correspond to only one record in the attribute table. You can run the *ArcGIS Dissolve tool* over the features to convert them to multipart polygons. This can help resolve excessive instances of this flag.
  - ▶ **NOTE:** It is possible that exploded multi-part parcels will be flagged by this tool. It is not required to dissolve single parcels represented by multiple non-contiguous geometries. If this condition is the reason why duplicate polygons exist, then these features may be submitted as they exist, but this must be reported within the Explain Certification file.
- **Error/Flag: Redundant information in TAXPARCELID and PARCELID fields.**
  - ▶ **Nature:** Occurs when TAXPARCELID values are duplicates of the values existing in the PARCELID field.
  - ▶ **Fix:** Ensure this field is <Null> for all records unless the values are distinct/different from those in PARCELID field.
- **Error/Flag: A value provided in the PSTLADRESS field may contain an incomplete address. Please verify the value is correct or set to <Null> if complete address is unknown.**
  - ▶ **Nature:** Occurs when a postal address value contains 'UNAVAILABLE', 'UNKNOWN', '00000', 'NONE', etc.
  - ▶ **Fix:** Include a full postal address if available. If this is not possible, correct the issue by starting an editing session, and convert values such as these to <Null>.
- **Error/Flag: Value provided in PLACENAME does not contain required LSAD descriptor.**
  - ▶ **Nature:** Occurs when a place name value does not include the necessary LSAD descriptor, such as:
    - ▶ CITY OF
    - ▶ TOWN OF
    - ▶ VILLAGE OF
  - ▶ **PLACENAME examples:**
    - ▶ CITY OF CHIPPEWA FALLS
    - ▶ TOWN OF MADISON
    - ▶ CITY OF MADISON
    - ▶ VILLAGE OF LAKE HALLIE
  - ▶ **NOTE** \*All\* tax parcels must have a PLACENAME value, even parcels that have not been assigned an address.
  - ▶ **Fix:** Ensure that all values within this field contain their appropriate LSAD descriptor. Correct the issue by starting an editing session to type in a valid value, or use *Field Calculator* to correct the records. If this issue exists on a large number of records, a more automated solution, or re-joining anew may be warranted.



- **Error/Flag: Value provided in [FIELD] not in acceptable domain list.**
  - ▶ **Nature:** Value provided in [FIELD] not in acceptable domain list.
  - ▶ **Fix:** Ensure that all values within this field contain a valid value. Correct the issue by first checking the statewide schema definition for the field within the [Submission Documentation](#). Also, consult the parcel domain list for a comprehensive list of domains on fields as appropriate. Use an ArcMap editing session or *Field Calculator* to correct the records. If this issue exists on a large number of records, a more automated solution may be desired, such as use of the [Data Standardize Tool](#).
- **Error/Flag: Values of '<Null>','NULL' or blanks occurred in [FIELD]. Please correct.**
  - ▶ **Nature:** Occurs for values other than a true SQL <Null>, such as the strings '<Null>','NULL', or blanks.
  - ▶ **Fix:** Run the [Null Fields And Set To Uppercase Tool](#) to convert values to true SQL <Null>.
- **Error/Flag: Value provided in STREETNAME does not appear in list created from data of last year. Please verify this value contains only the STREETNAME and the street name is correct.**
  - ▶ **Nature:** Occurs when an unrecognized value exists within the annotated field. However, in this case the field containing the value does not have a comprehensive list of domains. This is simply a flag to call attention to the field, so that a specialist can make the correct decision on the validity of the value.
  - ▶ **For STREETNAMES newly added since last year,** explicitly note any new STREETNAME values in the Explain Certification file. The Validation Tool only recognizes STREETNAME values from prior years' submittals. A note in the Explain Certification serves as a legitimate explanation for this flag.
    - ▶ Include "[Notice of New Street Names](#)" in the Explain Certification.
  - ▶ **Fix:** Check all values containing this flag and verify that they contain a valid value. There will not be a comprehensive list of domains for this field, so verifying the record means that it must be checked against the field's definition within the Submission Documentation. Use an ArcMap editing session or *Field Calculator* to correct the records. If this issue exists on a large number of records, a more automated solution may be desired, such as use of the Data Standardize Tool.
- **Error/Flag:[FIELD] is <Null> but [FIELD] is populated. Please ensure elements are in the appropriate field.**
  - ▶ **Nature:** This flag will be thrown when one of a selection of fields that relate to one another are found to be blank or <Null> when they should not be blank or <Null>. For example, if SITEADDRESS is populated—indicating that a site address has been assigned to the parcel—then we would also expect that STREETNAME would be populated. Under this example, if SITEADDRESS is populated and STREETNAME is <Null>, then this flag would be thrown.
  - ▶ **Fix:** Check all values containing this flag and verify that they contain a valid value in context of the fields that they are flagging. Verifying the record may mean that it must be checked against each field's definition within the [Submission Documentation](#). Use an ArcMap editing session or *Field Calculator* to correct the records.
- **Error/Flag:<Null> Found on [FIELD] field and value is expected.**
  - ▶ **Nature:** This flag will be thrown when a value is found to be blank or <Null> when a value would otherwise be expected.
  - ▶ **Fix:** Check all values containing this flag and ensure that they contain a valid value in context of the fields that they are flagging. Verifying the record may mean that it must be checked against each field's definition within the [Submission Documentation](#). Use an ArcMap editing session or *Field Calculator* to correct the records.
- **Error/Flag:Value provided in ZIPCODE is either not 5 digits long or does not appear to be a Wisconsin zip code.**
  - ▶ **Nature:** This flag will be thrown if the zipcode value does not meet specifications of a Wisconsin zipcode, or if the value is not five digits in length.
  - ▶ **Fix:** Check all values containing this flag and ensure that they contain a valid zipcode value. Note that the [Submission Documentation](#) specifies that this field should contain the **site address** zipcode, so only Wisconsin zipcodes are valid. Owner mailing addresses do not belong in ZIPCODE. To make corrections, use an ArcMap editing session or *Field Calculator* to correct the records.
- **Error/Flag:Value provided in ZIP4 is not 4 digits long.**
  - ▶ **Nature:** This flag will be thrown if the zip4 value is not 4 digits in length.
  - ▶ **Fix:** Check all values containing this flag and ensure they contain a valid zip4 values. To make correction, use an ArcMap editing session or *Field Calculator* to correct the records.
- **Error/Flag:Bad characters found in [FIELD]**
  - ▶ **Nature:** This flag will be thrown if uncommon characters were found within the specified field. Double-check this field to ensure that the values within it are correct, readable, and free of new lines/carriage returns. Note that these flags are thrown under particular contexts, so not all flags are errors and not all instances of these characters will cause flags **with the exception of new lines "\n" and carriage returns "\r"**—these characters should never exist in a parcel submission.
  - ▶ **Fix:** To make corrections, use an ArcMap editing session or *Field Calculator* to overwrite and correct the records.

- **Error/Flag: Future Year [X] found and [FIELD] field(s) is/are not <Null>. A <Null> value is expected in all tax roll data for records annotated with future tax roll years. Please verify.**
  - ▶ **Nature:** This flag will be thrown when records annotated with future tax roll year values contain any tax roll information and are not populated with values of <Null>. A future tax roll year indicates that the associated record has no joinable record within the tax roll, so no values are expected to be present. Often times, if values are present, these are carryovers from previous years, most often associated with the original parent parcel. These values should be converted to <Null>.
  - ▶ **Fix:** Check all values containing this flag and ensure they are populated with <Null> values. To make correction, use an ArcMap editing session or *Field Calculator* to correct the records.
- **Error/Flag: The NETPRPTA value is greater than the GRSPRPTA value. See Submission\_Documentation.pdf for further information.**
  - ▶ **Nature:** This flag will be thrown when NETPRPTA value is **greater** than the value provided in the GRSPRPTA field. This could be indicative of delinquent utility charges or non-property tax charges being included in the NETPRPTA field.
  - ▶ **Fix:** If possible, remove non-property tax charges from NETPRPTA value. If this is not feasible, then <Null> out value in the NETPRPTA according to statewide schema specifications.
- **Error/Flag: A value provided in PROPCLASS field is not in acceptable domain list.**
  - ▶ **Nature:** This flag will be thrown if any values other than those listed as acceptable domains for PROPCLASS are found within the field. As defined in the Submission Documentation, the valid domains for this field are:
    - ▶ 1
    - ▶ 2
    - ▶ 3
    - ▶ 4
    - ▶ 5
    - ▶ 5M
    - ▶ 6
    - ▶ 7
  - ▶ **Fix:** To make corrections, use an ArcMap editing session or *Field Calculator* to overwrite and correct the records. Note, for large numbers of errors, the [Class of Property Dissolve Toolset](#) may be of use in correcting this issue.
- **Error/Flag: A value provided in AUXCLASS field is not in AUXCLASS domain list. Standardize values for AUXCLASS domains.**
  - ▶ **Nature:** This error will be thrown if any values other than those listed as acceptable domains for AUXCLASS are found within the field. As defined in the Submission Documentation, the valid domains for this field are:

▶ X1	▶ W1	▶ AW (see schema definition for details)
▶ X2	▶ W2	▶ AWO (see schema definition for details)
▶ X3	▶ W3	
▶ X4	▶ W4	
	▶ W5	
	▶ W6	
	▶ W7	
	▶ W8	
	▶ W9	
  - ▶ **Note:** The above is not an exhaustive list of acceptable values. Other classifications you may have that are not included in the definition of AUXCLASS or PROPCLASS may be included within AUXCLASS, and **these additional values would not require standardization** as long as the definitions are specified within the *Explain Certification*.
  - ▶ **Fix:** To troubleshoot this flag, first review the domains listed within the flagged field. If any of the values represent an AUXCLASS EXEMPT or AUXCLASS SPECIAL value, ensure that they are corrected to meet the values annotate in the [Submission Documentation](#). If the value does not represent an AUXCLASS EXEMPT or AUXCLASS SPECIAL value, then the value can be left as is.
    - ▶ Make sure to define each of these additional values within the *Explain Certification*.
  - ▶ To make corrections to a value, use an ArcMap editing session or *Field Calculator* to overwrite and correct the records. Note, for large numbers of errors, the [Class of Property Dissolve Toolset](#) may be of use in correcting an issue.
- **Error/Flag: Duplicate values exist in [PROPCLASS or AUXCLASS] field.**
  - ▶ **Nature:** This flag will be thrown if a domain is observed to exist twice within either the PROPCLASS or AUXCLASS fields.
  - ▶ **Fix:** A domain should only be listed once within this comma delimited list. To make corrections, use an ArcMap editing session or *Field Calculator* to overwrite and correct the records.

- **Error/Flag: The PROPCCLASS and AUXCLASS fields are <Null> and a value is expected for any non-new parcel.**
  - ▶ **Nature:** This flag will be thrown if a <Null> value is found in both the PROPCCLASS and AUXCLASS field and the record appears to be a valid taxable parcel.
  - ▶ **Fix:** Check all records containing this flag and ensure that at least one of these fields is populated for all valid taxable parcels. If values are not available, provide an explanation in the *Explain Certification*.
- **Error/Flag: The value provided in CONAME field does not match expected county name.**
  - ▶ **Nature:** This flag will be thrown if the CONAME does not match the name of the county expected, which would be the contributing jurisdiction. The CONAME is expected to be the same as the contributing county name.
  - ▶ **Note:** If you are contributing parcels on behalf of another county, this flag can be disregarded.
  - ▶ **Fix:** Ensure that the CONAME value is correctly populated. To make corrections, use an ArcMap editing session or *Field Calculator* to overwrite and correct the records.
- **Error/Flag: The value provided in PARCELFIPS field does not match submitting county fips.**
  - ▶ **Nature:** This flag will be thrown if the PARCELFIPS does not match the name annotated within PARCELSRC as would be expected.
  - ▶ **Tip: Make sure that leading zeros are intact within this field.**
    - ▶ For example, BAYFIELD has a FIPS code of 007, if the value of "7" were used in lieu of "007" this flag would be thrown.
  - ▶ **Fix:** Ensure that the value is correctly populated. To make corrections, use an ArcMap editing session or *Field Calculator* to overwrite and correct the records.
- **Error/Flag: The value provided in [PARCELSRC or PARCELFIPS] field does not appear to meet required domains.**
  - ▶ **Nature:** This flag will be thrown if the PARCELFIPS or PARCELSRC does not match the domain list as defined within the [Submission Documentation](#).
  - ▶ **Tip:** For PARCELFIPS, make sure that **leading zeros are intact** within this field.
    - ▶ For example, BAYFIELD has a FIPS code of 007, if the value of "7" were used in lieu of "007" this flag would be thrown.
  - ▶ **Tip:** For PARCELSRC, make sure that **the word " COUNTY" is \*not\* included** in this field.
    - ▶ For example, an annotation of "BAYFIELD COUNTY" would cause a flag to be thrown.
  - ▶ **Fix:** Ensure that the value is correctly populated. To make corrections, use an ArcMap editing session or *Field Calculator* to overwrite and correct the records.
- **Error/Flag: The value provided in PARCELFIPS field does not match submitting county fips.**
  - ▶ **Nature:** This flag will be thrown if the PARCELFIPS does not match the name annotated within PARCELSRC as would be expected.
  - ▶ **Tip:** Make sure that **leading zeros are intact** within this field.
    - ▶ For example, BAYFIELD has a FIPS code of 007, if the value of "7" were used in lieu of "007" this flag would be thrown.
  - ▶ **Fix:** Ensure that the value is correctly populated. To make corrections, use an ArcMap editing session or *Field Calculator* to overwrite and correct the records.
- **Error/Flag: The value provided in SCHOOLDISTNO is not within the acceptable domain list or is not 4 digits long as expected. Please verify value.**
  - ▶ **Nature:** This flag will be thrown if the SCHOOLDISTNO does not match the length of a valid school district ID (character length of four) or is not within the acceptable domain list.
  - ▶ **Fix:** Ensure that the value is correctly populated. See schema definition of SCHOOLDISTNO for hints. To make corrections, use an ArcMap editing session or *Field Calculator* to overwrite and correct the records. See the [Parcel\\_Domain\\_List](#) for a comprehensive list of valid SCHOOLDISTNO and SCHOOLDIST values.
- **Error/Flag: One or both of the values in the SCHOOLDISTNO field or SCHOOLDIST field are not in the acceptable domain list. Please verify values.**
  - ▶ **Nature:** This flag will be thrown if the SCHOOLDISTNO or SCHOOLDIST values do not match valid school district name (SCHOOLDIST) or school district number (SCHOOLDISTNO) listed within the [Parcel\\_Domain\\_List](#).
  - ▶ **Fix:** Ensure that the value is correctly populated. To make corrections, use an ArcMap editing session or *Field Calculator* to overwrite and correct the records. See the [Parcel\\_Domain\\_List](#) for a comprehensive list of valid SCHOOLDISTNO and SCHOOLDIST values.
- **Error/Flag: A value in SCHOOLDIST is not within the acceptable domain list. Please verify value.**
  - ▶ **Nature:** This flag will be thrown if the SCHOOLDIST field does not match a valid school district name within the updated domain list for school districts: [Parcel\\_Domain\\_List](#).
  - ▶ **Fix:** Ensure that the value is correctly populated, meeting a valid domain as appropriate. To make corrections, use an ArcMap editing session or *Field Calculator* to overwrite and correct the records. See the [Parcel\\_Domain\\_List](#) for a comprehensive list of valid SCHOOLDISTNO and SCHOOLDIST values.



- **Error/Flag: Both the SCHOOLDISTNO & SCHOOLDIST are <Null> and a value is expected.**
  - ▶ **Nature:** This flag will be thrown if a <Null> value is found in both the SCHOOLDISTNO and SCHOOLDIST field and the record appears to be a valid taxable parcel.
  - ▶ **Fix:** Check all records containing this flag and ensure that at least one of these fields is populated for all valid taxable parcels. If values aren't available, provide an explanation in the *Explain Certification*.
- **Error/Flag: A <null> value provided in MFLVALUE field does not match the (W1-W9) AUXCLASS value(s). Refer to submission documentation for verification.**
  - ▶ **Nature:** This flag will be thrown if the MFLVALUE is not populated and AUXCLASS is populated with one of the AUXCLASS special values, except W4.
  - ▶ **Fix:** Ensure that the value is correctly populated. To make corrections, use an ArcMap editing session or *Field Calculator* to overwrite and correct the records.

## ATTRIBUTE COMPARISONS

The "ATTRIBUTE COMPARISON" section of the Validation\_Summary\_Page is created by comparing your current submission against what was established in the previous year's parcel data.

It is expected that parcel submissions will continue to grow in quality and attribute completeness, as well as natural increases in quantity of records. Differences of 15% or more in the number of records populated from one year's submission to the next are indications of possible error or possible improvement. Consider the sample report below, and the various types of errors that you may get.

- **Error/Flag: "Percentage Difference Compared to Last Year's Dataset" column has a 15% or greater negative (-) value**
  - ▶ **Nature:** In this example, OWNERNME2 has a significant reduction of -35% in populated values. This could be indicative of a problem with the OWNERNME2 field, indicating that it may need attention.
- **Error/Flag: "Percentage Difference Compared to Last Year's Dataset" column has a 15% or greater positive (+) value**
  - ▶ **Nature:** In this example, ESTFMKVALUE has a significant INCREASE of 27% in populated values. This could be indicative of an improvement in data or mistakenly adding ESTFMKVALUE where it should be <Null>.

ATTRIBUTE COMPARISON	
ATTRIBUTES WITH 15% OR GREATER INCREASE/DECREASE IN RECORD VALUE COMPLETENESS	
Percentage Difference Compared to Last Year's Dataset - Click attribute name to view schema definition	
OWNERNAME2:	- 35 % LESS records compared to last year's dataset. Inspect the OWNERNAME2 field for possible errors/omissions. 
ESTFMKVALUE:	+ 27 % MORE records compared to last year's dataset. Inspect the ESTFMKVALUE field for possible errors. 
NEXT STEPS	

Sample "ATTRIBUTE COMPARISON" report

- **Error/Flag: Decrease/Increase in attribute values across any field listed.**
  - ▶ **Nature:** If a negative percentage (-) is displayed for an attribute within the table, then the annotated percentage indicates a **30% or greater decrease** in the number of records populated for that attribute field within the parcel layer being tested in contrast to the currently live parcel layer. If a positive percentage (+) is displayed for an attribute, it indicates a **30% or greater increase** in the number of records populated for that field within the parcel layer being tested in contrast to the currently live parcel layer. A negative or positive percentage does not necessarily mean your data is correct or incorrect, however, large discrepancies (percentage) *could* indicate missing or incorrect data.
  - ▶ **Fix:** If any field's difference appears to be significant, review the field and identify whether this difference is due to missing or incorrect data.
    - ▶ **If difference is due to missing or incorrect data:** Fix the issue so that the most complete and current data possible is being submitted. If it is not possible to achieve this, then make a note within the Explain Certification section of the tool.
    - ▶ **If difference is not due to missing or incorrect data:** Make note of the explanation within the Explain Certification section of the tool.

## Repeat Test Run Sequence (As Needed)

The validation sequence articulated through the steps up to this point will need to be executed once and then the **tool executed again in Test Mode** to ensure that the errors were resolved. Once the tool is run in Test Mode without error, the tool can then be run in Final Mode to finalize the submission.

# FINAL MODE

## Overview of Final Mode

The Validation Tool's secondary purpose is to prepare the mandatory submission form that will accompany the zipped GIS file submission.

- The **.ini submission form** is an .ini format file that is yielded from successfully running the tool in Final Mode.
- The **.ini submission form** provides all of the information you have inputted in Final Mode -- including the content of the Explain Certification.

This part of the guide will explain what is needed to create the **.ini submission form** and how to package the submission.

## 1.9 Getting Started/Installing the Tool

- Be sure to read the previous sections of this guide before attempting to run the tool in Final Mode.
- Subsequent sections of this guide presume that you have read the previous sections and have installed the tool.

## 1.10 Using the Tool and Configuring Final Mode

- To begin with Final Mode, open the Parcel Validation Tool from within the unzipped directory by double clicking on `_VALIDATION_TOOL_USER_INTERFACE_.file`.
- The interface of the tool will look familiar if you have been using the tool in Test Mode.
- Select the 'Final' radio button (**a.**) will set the tool to execute in **Final Mode**, and will affect the parameters that need to be populated within the four sub-windows (*Parcel Data Information*, *PLSS Layer*, *Zoning Layer*, *Other Layers*).

## 1.11 Completing the Tool's Dialogue with Parameters

- Once you have properly configured the tool to run in Final Mode and have set the County as appropriate, the remainder of the tool's configurations are nested within the four sub-windows (*Parcel Data Information*, *PLSS Layer*, *Zoning Layer*, *Other Layers*).
- Fill out the tool's dialogue ideally working from top to bottom, and clicking on each of the four sub-windows one at a time.
- **NEW: Explain Certification information is now entered directly in the tool and not in an external text file. This information is now entered in the Explain Certification entry form in the Parcel Data Information sub-window.**

- **NOTE:** If you miss a parameter, the tool will identify the missing parameter and not allow you to execute the tool.



- If a parameters grayed out, you can skip it and move along.
- If you miss a parameter, the tool will identify the missing parameter and will not allow you to execute the tool.
- The tool will indicate it is ready to run when all sub-window indicators are **green**.
- Once the tool completes, you can re-run the tool without having to re-enter information if the tool has not been closed.

## Inputting the Explain Certification

A requirement to successfully completing the tool in Final Mode is filling out the *Explain Certification* window.

### Explain Certification Must-Haves:

- **Notice of New Street Names** [if applicable] - **For STREETNAMES newly added since last year**, explicitly note any new STREETNAME values in the *Explain Certification*. The Validation Tool only recognizes STREETNAME values from prior years' submittals. A note in the *Explain Certification* serves as a legitimate explanation for flags related to new street names.
- **Notice of New Non-Parcel Feature PARCELIDs** [if applicable] - **For non-parcel features newly added since last year** (with labels in PARCELID field), explicitly note any new PARCELID values in the *Explain Certification*. The Validation Tool only recognizes duplicate PARCELIDs for non-parcel features from prior years' submittals. A note in the *Explain Certification* serves as a legitimate explanation for flags related to new non-parcel features.
- **Notice of Missing Data/Omissions**. If a field is missing data that should be populated in-part or in the field's entirety, the missing data should be noted in the *Explain Certification*, with a brief description/justification.
- **Error Sums That Are Unresolvable**. Errors remaining in final run of Validation Tool that cannot be resolved—perhaps because they are legitimate exceptions to the schema or unique circumstances.
  - ▶ Note. Not all flags in the tool represent “errors” or mistakes in the data—some occur for legitimate reasons or exceptional situations in which deviations from the schema are permissible. However, 100% of the number of flags represented by the ERROR SUM on the last and final run of the tool should have explanations.
    - ▶ **Explanations can be generalized/grouped together for duplicate error messages**. It is not necessary to provide explanations for all of the flags if there are large numbers of them that share common explanations.
- If there are **no** applicable must-haves or other issues with adhering to the submission standards, write “NONE” within the *Explain Certification* boxes (and pat your county staff on the back!)
- On the following page is an example of a property configured *Explain Certification*. For readability, response appear in **green**:

Explain Certification

Notice of New Street Names:

Enter new Street Names here or type None if no values exist

BADGER BOULEVARD  
STELLAR LANE  
E JOHNSON COURT

Notice of New Non-Parcel Feature PARCELIDs:

Enter new Non-Parcel Feature Parcel IDs or type None if no values exist

BALSAM LAKE  
'GAP' for 99 gap polygons  
(these are 2 new non-parcel feature PARCELIDs added in 2022)

Notice of Missing Data/Omissions

Enter omission information here or type None if no omissions exist

None

Error Sums That Are Unresolvable

Enter justification for unresolvability or type None if no value exist

--DEEDACRES - Missing 5,660 parcel records (within the VILLAGE of XYZ). No DEEDACRES values are available within the VILLAGE of XYZ for deeds predating 1985.

Other:

--NOTICE OF "ASSESSED WITH" PARCELS - The county has 999 parcels that are "Assessed with" other parcels under state statute 70.23(2). They lack values in all tax roll fields and are designated by the value "AWO" in the AUXCLASS field.

NOTE: ENTRIES HERE ARE NOT SAVED if the validation tool is restarted.

OK

Cancel

Explain Certification, with example entries

# Certification of Data Submission Completeness

There is a certification process--a CERTIFY box and ERROR SUM # explained box.

- **CERTIFY.** County data submitters must check the box next to the sentence in order to complete the certification:

**I certify this dataset is complete, correct, and all error messages have been explained in the Explain Certification.**

Parcel Data Information

Output Directory for PARCEL and OTHER gdb and \*.ini:

Submitter Name:

Submitter Email:

Select Condo Model:

Explain Certification (REQUIRED), click Add:

Add

☐ Check here if any owner names are redacted:

URL or Filename of Redaction Policy (if any):

☐ I certify this dataset is complete, correct, and all error messages have been explained in the Explain Certification.

How many errors of the ERROR SUM did you explain in Explain Certification?:

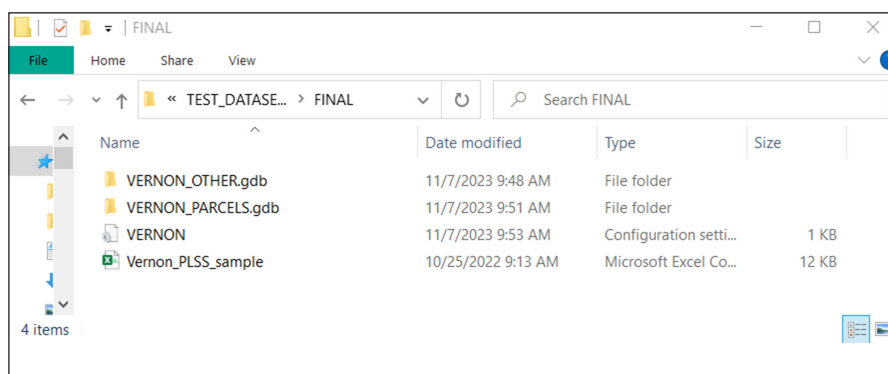
OK Cancel

## # OF ERRORS "EXPLAINED" OF THE ERROR SUM.

- In this box, enter a number that represents the portion of the ERROR SUM figure **for which explanations have been provided in the Explain Certification.**
  - ▶ Counties should strive to provide explanations for 100% of the number of flags represented by the ERROR SUM that remain present on the last and final run of the tool.
  - ▶ **Explanations can be generalized/grouped together for duplicate error messages.**
  - ▶ Enter "0" if the ERROR SUM is zero and thus there were no errors to explain.

# Saving the Mandatory .ini Submission Form and Geodatabases

Once the Validation Tool run has completed, the .ini submission form will be written to the output directory that was chosen within the Parcel Data Information sub-window. **This updated tool will also create and populate the final geodatabases with the feature classes you identified in the various sub-windows.** The directory will be ready to zip and upload.



*Example of automatically created Validation Tool outputs*

# SUBMIT .INI SUBMISSION FORM + DATA

## Packaging the Submission

Before uploading to submit, ensure that the following data is on the root level of your zipped package:

- .INI SUBMISSION FORM
- PARCEL FEATURE CLASS WITH TAXROLL DATA
- OTHER LAYERS - PLSS / OTHER LAYERS - RML
- NOTES (Optional)

Layer/Theme	Naming Convention (Required)
<input type="checkbox"/> <b>.INI SUBMISSION FORM</b>	<b>COUNTYNAME.ini</b>
<input type="checkbox"/> <b>PARCEL FEATURE CLASS WITH TAX ROLL DATA</b>	COUNTYNAME_ <b>PARCELS</b> .gdb\PARCELS
<input type="checkbox"/> <b>OTHER LAYERS:</b>	
★ <b>PLSS</b>	COUNTYNAME_ <b>OTHER</b> .gdb\COUNTYNAME_ <b>PLSS</b> _YEAR
<b>Zoning – General</b> (county-maintained)	COUNTYNAME_OTHER.gdb\COUNTYNAME_ <b>GENERAL</b> _YEAR
<b>Zoning – Shoreland</b> (county-maintained)	COUNTYNAME_OTHER.gdb\COUNTYNAME_ <b>SHORELAND</b> _YEAR
<b>Zoning – Airport Protection</b> (county-maintained)	COUNTYNAME_OTHER.gdb\COUNTYNAME_ <b>AIRPORT</b> _YEAR
<b>Rights of Way</b>	COUNTYNAME_OTHER.gdb\COUNTYNAME_ <b>ROW</b> _YEAR
★ <b>Roads/Streets/Centerlines</b>	COUNTYNAME_OTHER.gdb\COUNTYNAME_ <b>ROADS</b> _YEAR
<b>Hydrography</b> (line and/or polygon)	COUNTYNAME_OTHER.gdb\COUNTYNAME_ <b>HYDRO</b> _YEAR_POLY (or “_LINE”)
★ <b>Addresses</b>	COUNTYNAME_OTHER.gdb\COUNTYNAME_ <b>ADDRESSES</b> _YEAR
<b>Buildings/Building Footprints</b>	COUNTYNAME_OTHER.gdb\COUNTYNAME_ <b>BUILDINGS</b> _YEAR
<b>Land Use</b>	COUNTYNAME_OTHER.gdb\COUNTYNAME_ <b>LANDUSE</b> _YEAR
<b>Parks/OpenSpace</b> (e.g., county forests)	COUNTYNAME_OTHER.gdb\COUNTYNAME_ <b>PARKS</b> _YEAR
<b>Trails</b>	COUNTYNAME_OTHER.gdb\COUNTYNAME_ <b>TRAILS</b> _YEAR
<b>Other Recreation</b> (boat launches, etc.)	COUNTYNAME_OTHER.gdb\COUNTYNAME_ <b>RECREATION</b> _YEAR
<input type="checkbox"/> <b>NOTES</b> (optional)	COUNTYNAME_NOTES.docx

## Submit .ini Submission Form + Data

@ [geodatacollector.legis.wisconsin.gov](https://geodatacollector.legis.wisconsin.gov)

1. Submit to **LTSB GeoData Collector**
2. Note the **WISE-Decade browser requirements**
  - Compatible with **IE 10+**, **Firefox28+**, **Chrome 33+**
  - If upload via **LTSB GeoData Collector** fails, there is an [alternative upload page](#)
3. Look for a **confirmation messenger after upload**
  - The progress indicator will display a confirmation message after a successful upload.
  - You are done when you see a confirmatino message signaling **“Upload Complete”**

☐ I'm not a robot
 

Submit

Upload Complete

If you are experiencing technical difficulties with this website or uploading a file, please email the [LTSB GIS Team](#)