Data Standardize Tool Guide

The Data Standardize Tool standardizes parcel data field values to meet the requirements of the Searchable Format. It will generate a summary and lookup table of domains, which can be edited and utilized to standardize a field.

Use this guide if you wish to standardize fields to match the Searchable Format, detailed in the Submission Documentation.

Fields Requiring Standardization for Searchable Format	
Field Name	**Definition/Alias**
PREFIX	Prefix
STREETTYPE	Street Type
SUFFIX	Suffix
SCHOOLDIST	School District
SCHOOLDISTNO	School District Number
PROPCLASS / AUXCLASS	Class of Property / Auxiliary Class of Property
*PROPCLASS / AUXCLASS	Class of Property / Auxiliary Class of Property
*CONAME	County Name
*PARCELFIPS	Parcel Source FIPS
*PARCELSRC	Parcel Source Name

*Asterisked fields require standardization, but do not necessarily need to be run through this tool, as they can simply be calculated with one domain within the *Field Calculator* or a similar instrument.

Why is This Guide Necessary?

The statewide parcel layer can be more consistent, understandable, searchable, maintainable, and user friendly if the data within is standardized. Standardization is required for the above fields. It may be valuable to standardize other fields in the submission, but this should be done at the submitter's discretion.
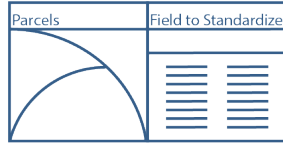
How to Use This Guide

It is recommended you have the following materials at hand:
- The Submission Documentation and webpage
- The data participating in the Searchable Format submission, in file geodatabase format
- The county staff member(s) who will submit the data
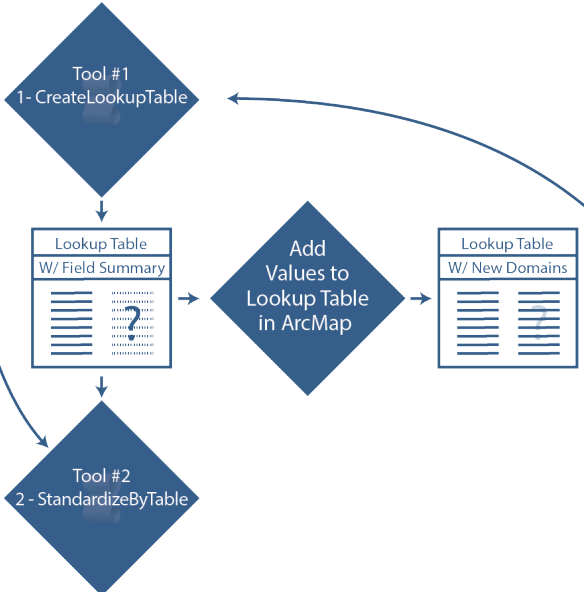- The Data Standardize Tool from www.sco.wisc.edu/parcels/tools
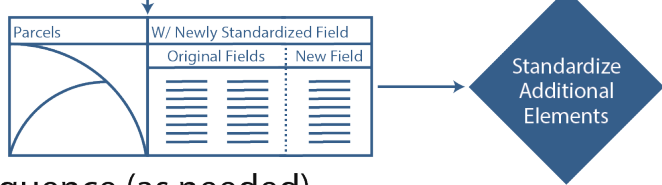
Process Overview

STEP ❶ Install the Tool

STEP ❷ Prepare the data to be standardized

STEP ❸ Configure and execute tool #1, the 1 - CreateLookupTable Tool

STEP ❹ Configure and execute tool #2, the 2- StandardizeByTable Tool

STEP ❺ Repeat sequence (as needed)

STEP ❻ Proceed in creating Searchable Format Submission

Figure 1. Data Standardize Tool workflow overview

❶ Install the Tool

1.1 Install the Data Standardize tools

The *Standardize Domains Toolbox* contains two separate ArcPy script tools, both of which participate in the standardizing workflow. These tools can be installed by downloading the zipped package from www.sco.wisc.edu/parcels/tools.

Unzip the download to the directory of your choice. Then open ArcCatalog and navigate to the new directory. You should see toolboxes, labeled with their respective ArcGIS version compatibility. Choose the toolbox that fits your ArcGIS install. If you do not see any toolboxes, hit F5 to refresh the directory.

The tools should be ready to run. If you experience trouble starting or executing either of the tools, see the Troubleshooting section below.

❷ Prepare the data to be standardized

2.1 Determine the fields that require standardization

If you are using this tool as a step towards submitting data in the Searchable Format, the following fields require standardization.

Field Name	Definition	Field Name in County Land Information System
PREFIX	Prefix	
STREETTYPE	Street Type	
SUFFIX	Suffix	
SCHOOLDIST	School District	
SCHOOLDISTNO	School District Number	
PROPCLASS	Class of Property	
AUXCLASS	Auxiliary Class of Property – **Special** and **Exempt** classifications from Submission Documentation	

2.2 Prepare for data standardization

These tools require a file geodatabase feature class as the main input GIS file containing the fields to be standardized. If the data does not yet exist as a file geodatabase feature class, take the appropriate actions to export or join the data into this format.

Also note that the steps outlined in this guide will need to be executed once for each field that is to be standardized.

❸ Configure and execute tool #1, the 1 - CreateLookupTable Tool

The first tool of the sequence is the *1 - CreateLookupTable Tool*. This tool will summarize the field that is to be standardized and output a file geodatabase table containing the following:

- A field containing each unique value within the field of interest, named according to the input field
- A **FREQUENCY** field containing a count of the number of occurrences of the given attribute in the field of interest
- A blank field that will be manually edited in the next step of the cycle

To configure the *1 - CreateLookupTable Tool* and create a lookup table, configure tool like the example in Figure 2.
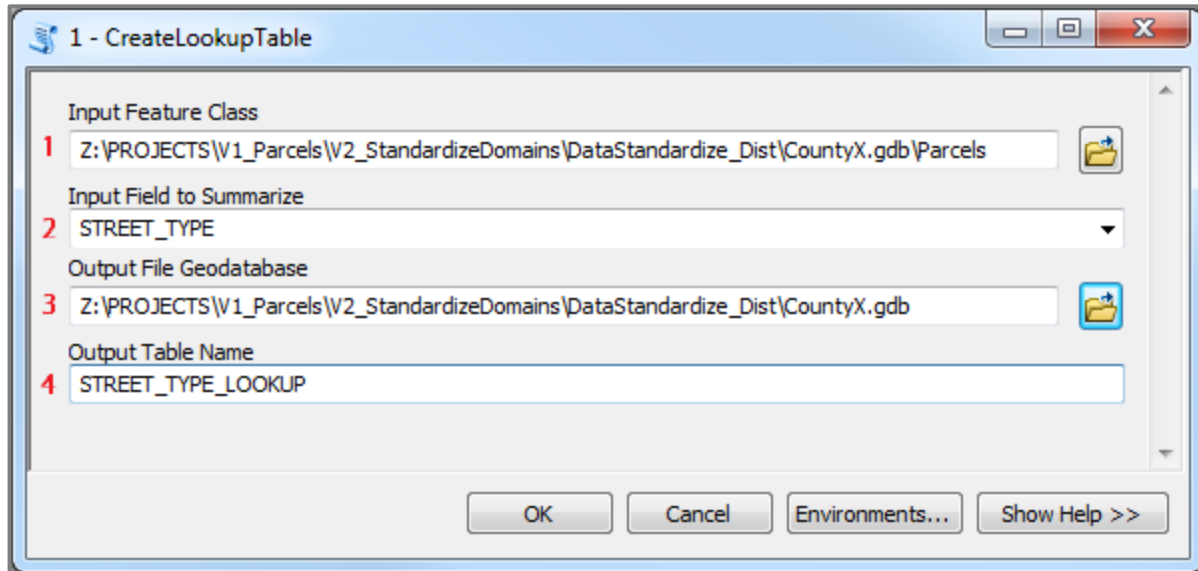

Figure 2. Configuring the 1 – CreateLookupTable Tool

1 – CreateLookupTable Parameter Definitions	
1 Input Feature Class	The feature class containing the field whose attributes are to be summarized and then standardized in *2 – StandardizeByTable Tool*
2 Input Field to Summarize	The field whose attributes are to be summarized and then standardized in *2 – StandardizeByTable Tool*
3 Output File Geodatabase	The output file geodatabase to which the output lookup table will be written
4 Output Table Name	The name of the lookup table to be written as an output

The outcome of *1 – CreateLookupTable Tool* is a lookup table named as appropriate within the file geodatabase, as pictured in Figure 3.
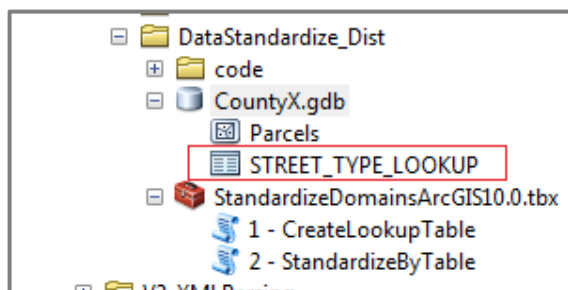

Figure 3. Output table from the 1 – CreateLookupTable Tool

3.1 Edit the newly created lookup table in ArcMap

The newly created lookup table will contain a blank field named as the original field's name with an **_ST1** appended to the end. The second tool, *2 – StandardizeByTable*, will consume this table and write out whatever corresponfing value exists within this field as the standard domain.

Open the lookup table in ArcMap, start an edit session on this table, and manually edit the _ST1 column as appropriate. Figure 4 depicts an example of how this would be done to standardize the various forms of "road" and "street."
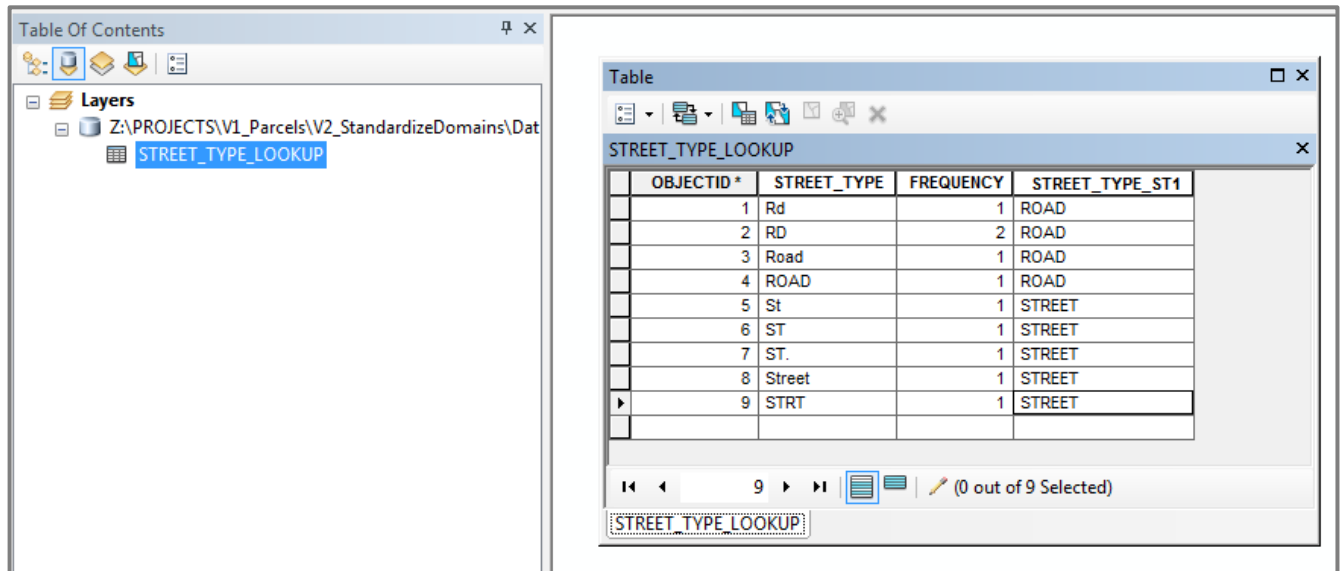

Figure 4. Editing the Lookup Table in an ArcMap editing session

The list of acceptable domains is available as a Digital Appendix, Parcel_Domain_List.xlsx. Note that it may be efficient to use a table join to a list of acceptable domains in order to remove the attributes that already meet the correct domain standard. Domains are also listed in the Submission Documentation.

❹ Configure and execute Tool #2, the 2 – StandardizeByTable Tool

The second tool of the sequence is the *2 – StandardizeByTable Tool*. This tool will consume the newly edited lookup table and use the **_ST1** field to standardized and output a file geodatabase feature class containing a new field with the correctly standardized attributes.

Use the newly edited lookup table to configure the *2 – StandardizeByTable Tool* by following the configuration illustratred in Figure 5.
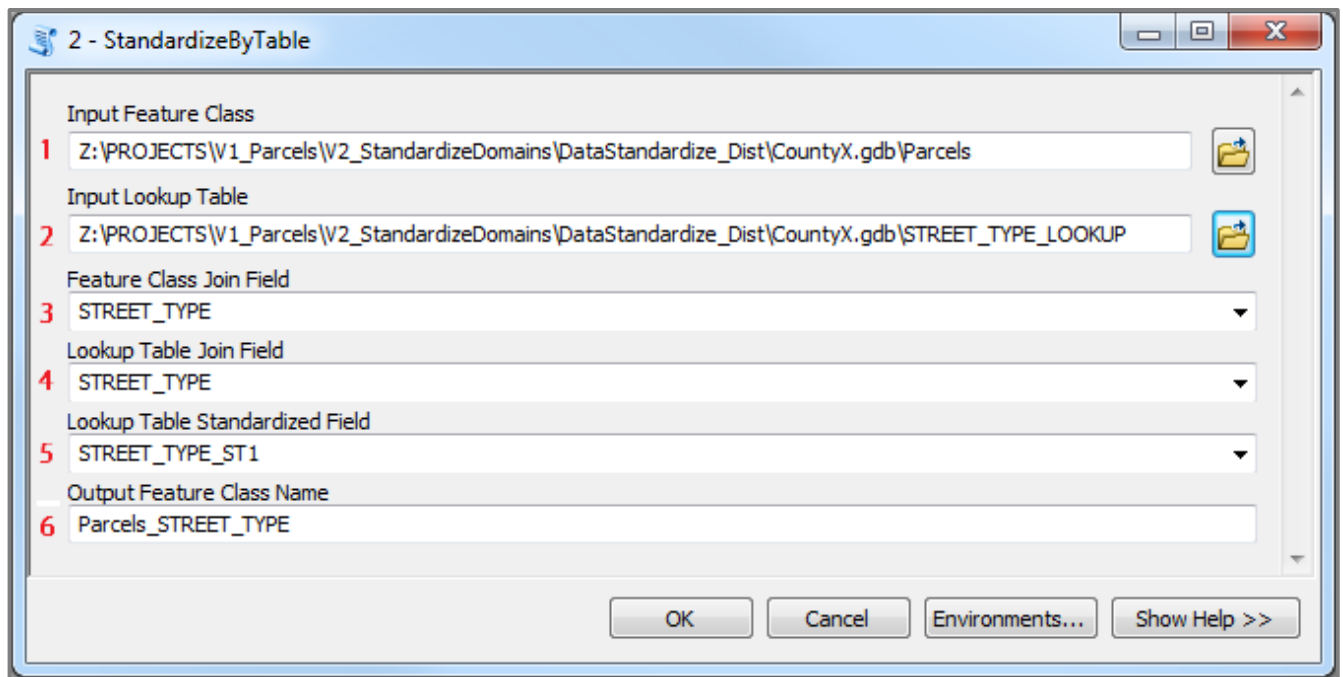
Figure 5. Configuring the 2 – StandardizeByTable Tool

2 – StandardizeByTable Parameter Definitions	
1 Input Feature Class	The feature class containing the field to be standardized.
2 Input Lookup Table	The input lookup table, created with *1 – CreateLookupTable Tool*, containing a field summarizing all unique attributes in the field of interest and another field containing the appropriate domain values the attributes should be standardized to.
3 Feature Class Join Field	The field of interest within the feature class that contains the attributes to be standardized.
4 Lookup Table Join Field	The field within the lookup table containing a summary of all unique attributes in the field of interest.
5 Lookup Table Standardized Field	The field within the lookup table containing the appropriate domain values the output attributes should be standardized to.
6 Output Feature Class Name	The name of the output feature class. This feature class will automatically be written to the file geodatabase that the input feature class resides-in.

After running the *2 – StandardizeByTable Tool* to standardize the attributes in the field of interest, the outcome will be standardized fields within the newly created feature class. The original fields will remain intact as the standardized fields will be written to a field named **Original Field Name_ST2.** Figure 6 shows an example output.

Figure 6. Final output of 2 – StandardizeByTable is standardized attributes in a new field

❺ Repeat sequence (as needed)

The standardization sequence articulated through the steps completed to this point will need to be executed once for each field that is to be standardized. Make sure to save your lookup tables for use in subsequent standardization efforts. By joining a legacy lookup table to a freshly summarized lookup table, updating the **_ST1** field should require little additional effort.

❻ Proceed in creating Searchable Format Submission

Troubleshooting for Data Standardize Tool

My tool does not show-up in the directory I have unpacked to.

If the tool does not appear in the directory you have unpacked it to, first try refreshing the directory in ArcCatalog (Right click directory » Refresh…). If the problem continues, it may be because you are using a legacy version of ArcGIS (ArcGIS 9.0 – ArcGIS 10.1). Tools supporting ArcGIS legacy versions are available at www.sco.wisc.edu/parcels/tools.

I get an error when attempting to run the tool.

If running the tool results in an error, first ensure that the tool runs correctly on the test data provided in the zipped package.
- If the tool does not run successfully over the test data, try to interpret the error message in finding a solution and submit the error message (via screen capture or cut and paste) to David Vogel at djvogel2@wisc.edu.

It may also be useful to restart ArcCatalog if you continue to get errors.

I get a properties dialogue instead of a tool input dialogue when opening the tool.

Refresh the directory in ArcCatalog (hit F5 to refresh).

Who can I contact for help?

David Vogel, State Cartographer's Office, 608-890-3793, djvogel2@wisc.edu

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