DOR XML Parse Tool Guide

The DOR XML Parse Tool helps prepare tax roll data in XML format to be joined to parcel geometries. It will aggregate all XML datasets for a county, parse the XML into a database file that will contain one record per taxable parcel, and allow you to join the output to GIS parcels via a PIN or TaxKey ID.

Use this guide if your county's **tax roll data is already in XML format** and you would like to use that XML data to help meet the Searchable Format. Data source must be the finalized tax roll—not the assessment roll.

Why is This Guide Necessary?

The project team has worked to make the Parcel Initiative's goals consistent with DOR's preferred XML format standard for property tax roll data. While DOR's XML format standard brings a county close to meeting Benchmarks 1 and 2 for the submittal of parcel datasets, it does not quite meet the needs of the Parcel Initiative for the following reasons:

- Up until August of 2015, the DOR XML standard did not include a "fair market value" attribute, which is required per state statute 59.72(2)(a). Estimated fair market value was added to the *2016 Assessment and Tax Roll XML Schema*. Data submitted to DOA must include the fair market value attribute.
- XML does not accommodate parcel geometry. While counties may use the XML format for attributes, submission of parcel geometries to DOA is required.
- The DOR XML format does not require parsing of street address elements, which is a requirement for the Searchable Format.

How to Use This Guide

It is recommended you have the following materials at hand:

- The Submission Documentation and webpage
- Your XML data – Must be a **validated** *tax* roll submission to DOR (matching DOR requirements exactly), can be individual jurisdiction files, or a county-wide aggregate
- Your GIS parcel data
- The county staff member(s) who will submit the data
- The DOR XML Parse Tool from www.sco.wisc.edu/parcels/tools

Process Overview

STEP **①** Install the Tool

STEP **②** Examine XML and parcel data
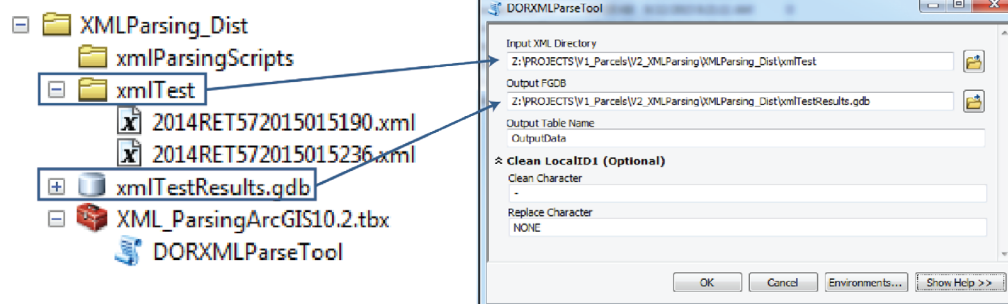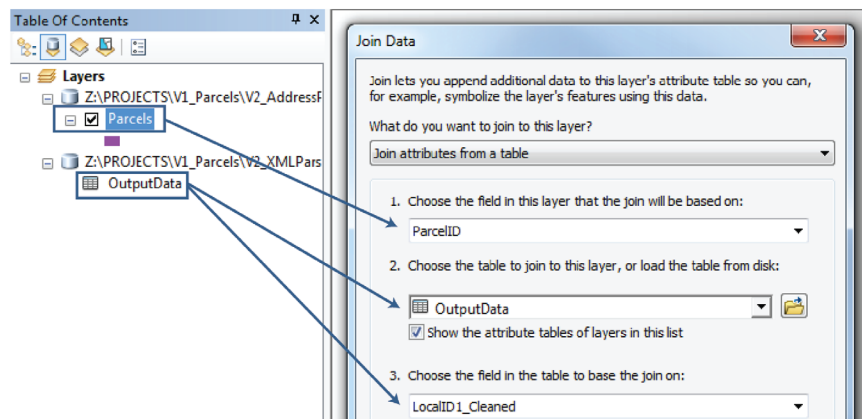
```
<PropertyInfo>
    <LocalID1>57-236-2-41-09-21-1</LocalID1>
    <LocalID2>38557</LocalID2>
    <Town>41</Town>
    <Range>09</Range>
    <RangeDirection>W</Range
    <Section>21</Section>
    <Quarter40>NE</Quarter40
    <Quarter160>NE</Quarter1
```

OBJECTID *	Shape *	GISPIN
1	Polygon	57-236-2-41-09-21-1
2	Polygon	57-236-2-41-09-21-7
3	Polygon	57-236-2-41-09-21-9

STEP **③** Configure and execute tool

STEP **④** Table join the output .dbf to parcel geometries

STEP **⑤** Proceed in creating Searchable Format Submission

Figure 1. DOR XML Parse Tool process overview

❶ Install the Tool

1.1 Download and install

Download the zipped package with the DOR XML Parse Tool, an ArcPy script tool, from sco.wisc.edu/parcels/tools.

Unzip 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 tool should be ready to run. The package includes two sample XML files in the *XMLParsing_Dist\xmlTest* directory that can be used to test the tool. If you experience trouble starting or executing the tool, see the Troubleshooting section below.

❷ Examine XML and parcel data

2.1 Optional: Add Estimated Fair Market Value to your XML

Estimated Fair Market Value was added to 2016 assessment and tax roll XML schema, but was absent prior to that. If your XML data includes it, you may skip this step.

If your county does not currently support Estimated Fair Market Value in the XML data that you are about to parse, you have the option to add it to the XML data now. If adding Estimated Fair Market Value to the XML data is not feasible, this field and its values can be joined to parcels after completing the processes outlined in this guide.

2.2 Understand your XML data and the appropriate join PIN

The DOR XML schema supports three different types of PIN; **LocalID1**, **LocalID2**, and **ParcelID**. While **LocalID1** is the only required element of the three, it may be true that your county or jurisdiction has included **LocalID2** or **ParcelID** in the XML data. It may also be the case that **LocalID2** or **ParcelID** are essential to creating a proper join between tax roll information derived from the XML and parcel geometries.

Before proceeding, it is recommended that you understand your XML data and ensure that the appropriate PIN is available for joining the XML data to parcels. Note that it may be the case that a table separate from your parcel dataset contains the appropriate join key. It may also be the case that your Parcel or DOR XML PIN needs modification to correctly join.

Your county parcel dataset may include a PIN that is very similar to **LocalID1** of your XML data. For example, it may contain the same digits included in **LocalID1** but exclude hyphens. For this reason, the *XML Parsing Tool* includes a parameter for clearing-out a specific string in the output .dbf. This output is written to the **LocalID1_Clean** field. See Figure 2 for an example of the outcome if the **Clean Char** parameter is set to "–" and the **Char Replace** parameter is set to "NONE."

XML:
```
<PropertyInfo>
    <LocalID1>57-236-2-41-09-21-1 01-000-000020</LocalID1>
    <LocalID2>38557</LocalID2>
    <ParcelID>57587</ParcelID>
    <Town>41</Town>
    <Range>09</Range>
    <RangeDirection>W</RangeDirection>
```
Output:

Output Field	Output PIN
LocalID1	57-236-2-41-09-21-1 01-000-000020
LocalID1_Cleaned	5723624109211 01000000020

Figure 2. PINs in XML data and the outcome of cleaning characters

❸ Configure and execute tool

3.1   Use the DOR XML Parse Tool to parse the XML and turn it into a table that can be joined to GIS features

Execute the tool by entering an entire directory of validated DOR XML data as the **Input XML Directory** parameter and the tool will iterate through all XML in the directory and aggregate it. If you are only performing a parse on one file, only include that one file in the directory.

The **Output FGDB** parameter accepts a file geodatabase only. This will be the output location of the .dbf that contains the parsed/extracted data. The **Output Table Name** parameter accepts a string, which will be the desired name of the .dbf to be placed in the **Output FGDB**.
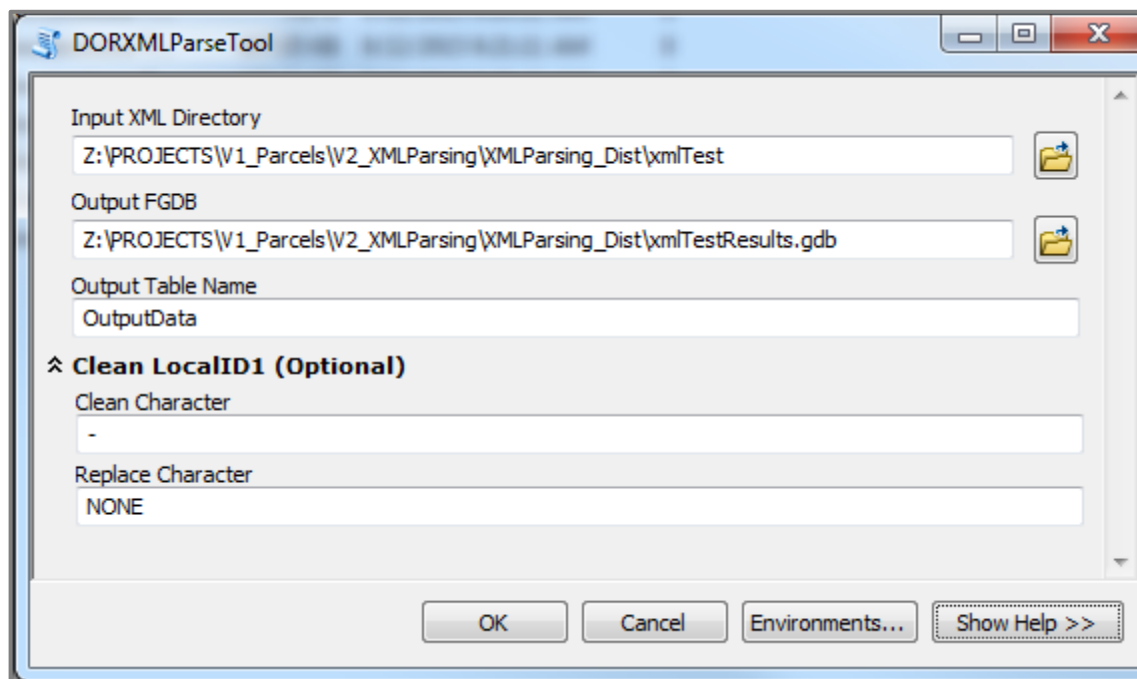

Figure 3. DOR XML Parse Tool

If you notice a slight difference between the **LocalID1** in your XML data and the PIN to be used to join the output XML to parcel geometries (such as the absence of hyphens), the optional parameters within the **Clean LocalID** dropdown may be useful.

Using the **Clean LocalID** option, a copy will be made of the **LocalID1** field called **LocalID1_Cleaned** in the output .dbf. The string parameter set in **Clean Character** will be the string stripped from the **LocalID1_Cleaned**. The string parameter set in **Replace Character** will replace the string identified in the **Clean Character** parameter. If the **Replace Character** parameter is set to "NONE" then the **Clean Character** will be replaced with nothing ("") in the output **LocalID1_Cleaned** field.

3.2   Click OK to run tool

❹ Table join output .dbf to parcel geometries

4.1   Ensure that all features are joined

Upon completion of the *DOR XML Parsing Tool*, ensure that you are able to accurately join the newly created .dbf table to your parcel geometries via a table join on the appropriate join fields.
If the XML correctly adheres to the DOR's schema, the *DOR XML Parsing Tool*'s output .dbf will represent each real property as an individual "taxable unit."

Note on condo modeling

- If your parcel dataset models condos relationally, or does not model multi-owner units at all, extra processing is required. In these cases, either no taxable units or not all taxable units from the tax roll will be joined to the parcels due to the fact that one parcel geometry represents multiple taxable units. To correct this, use the Condo Stack Tool available at www.sco.wisc.edu/parcels/tools.

Note about 'Inferred Acreage' attribute field

- Native DOR validated XML files do not contain an aggregate acreage field with the total of all acreage for a given record. In an effort to remedy the absence of this field, the tool output contains a field called *InferredAcreage*. For any given XML record, the value in the *InferredAcreage* field is the total number of acres associated with all classes of property (general and auxiliary). It is up to the submitting county to determine whether this is an appropriate method for determining the acreage that exists within a given parcel record. If deemed an appropriate method, this field can be mapped to the *ASSDACRES* field of the statewide schema.

Note on fields outputted

- The tool outputs these fields in the output .dbf:
  - ▶ **TAXPARCELID**
    TAXPARCELID_CLEANED
    TAXPARCELID_2
  - ▶ **PARCELID**
  - ▶ **TAXROLLYEAR**
  - ▶ **SITEADRESS**
    SITEADRESS_2
    SITEADRESS_FULL
  - ▶ **PLACENAME**
  - ▶ **STATE**
  - ▶ **ZIPCODE**
  - ▶ **OWNERNME1**
  - ▶ **OWNERNME2**
  - ▶ **PSTLADRESS**
  - ▶ **PROPCLASS**
  - ▶ **AUXCLASS**
  - ▶ **CONAME**
  - ▶ **MUNINAME**
  - ▶ **MUNIFIPS**
  - ▶ **SCHOOLDISTNO**
  - ▶ **LNDVALUE**
  - ▶ **IMPVALUE**
  - ▶ **CNTASSDVALUE**
  - ▶ **MFLVALUE****
  - ▶ **ESTFMKVALUE**
  - ▶ **GRSPRPTA**
  - ▶ **NETPRPTA**
  - ▶ **INFERREDACREAGE** (in some cases may be ~ASSDACRES)

  **Note on MFLVALUE. No one single field exisits in the DOR XML schema to represent the statewide parcel schema field MFLVALUE (Assessed Value of MFL/FCL Land).

  The *DOR XML Parse Tool* calculates MFLVALUE by adding the following fields:

  > **PFCRegularClass1**<Value> **+** **PFCRegularClass2**<Value> **+** **PFCSpecialClass**<Value> **+**
  > **MFLBefore2005Open**<Value> **+** **MFLBefore2005Closed**<Value> **+** **MFLAfter2004Open**<Value> **+** **MFLAfter2004Closed**<Value> **+**
  > **MFLFerrousMining**<Value>

  Counties should check the values outputted by the tool for accuracy prior to submitting data.

  MFLVALUE can be manually calculated adding the values for assessed value of land for enrolled MFL/FCL parcels. The value you get as a result should match the tax bill field value depicted in Submission Documentation on page 3.

  See Submission Documentation for full details on MFLVALUE.

❺ Proceed in creating Searchable Format Submission

Troubleshooting for DOR XML Parse 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 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 runs successfully over the test data, then double-check your XML for errors against the DOR XML schema. Remember, your data must be validated by DOR to work with this tool.
- 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 the State Cartographer's Office

My output is blank.
If the output is blank, make sure that there are XML files on the root directory of the "Input XML Directory." Nested folders will not be consumed by the tool (not recursive). Also, verify that the XML is valid and adhering to the DOR XML schema.

The .dbf result contains errors.
If you detect an anomaly or other problem in the result of the XML parse, submit your observations to djvogel2@wisc.edu.

I cannot join my .dbf result to my parcel dataset.
Take a close look at the three different types of PIN within the DOR XML data; **LocalID1**, **LocalID2**, and **ParcelID** and compare these to any available PINs associated with your Parcel data. Try to note any similarities, even if the PINs are not a perfect match. It may be the case that a table separate from your parcel dataset contains the appropriate join key. It may also be the case that your parcel or DOR XML PIN requires modification to correctly join.

Note that there may be jurisdictional variations in PIN across the county, so some jurisdictions may join correctly while others will not. The Wisconsin Department of Revenue webpage documenting municipal parcel formats may be useful.

Who can I contact for help?
David Vogel, State Cartographer's Office, 608-890-3793, djvogel2@wisc.edu

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