# Final Report

## Version 6 Statewide Parcel Map Database Project

October 9, 2020 | *Appendix B Updated: July 6, 2021

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# OVERVIEW

The **Version 6 Statewide Parcel Map Database Project** (V6 Project) was a joint effort between the Wisconsin Department of Administration (DOA) Division of Intergovernmental Relations and the Wisconsin State Cartographer's Office (SCO). This document describes the V6 Project, which ran from January 2020 to December 2020 as part of the Statewide Parcel Map Initiative established by Act 20 of 2013.

## Project Objectives Achieved

- Create an updated statewide parcel database and map layer by integrating county-level datasets.
- Provide for download of parcel database and display map layer online.
- Continue implementation of standard for parcel data known as the "Searchable Format," which is tied to Wisconsin Land Information Program grant funding for local governments.
- Assess and communicate county progress in achieving the Searchable Format.

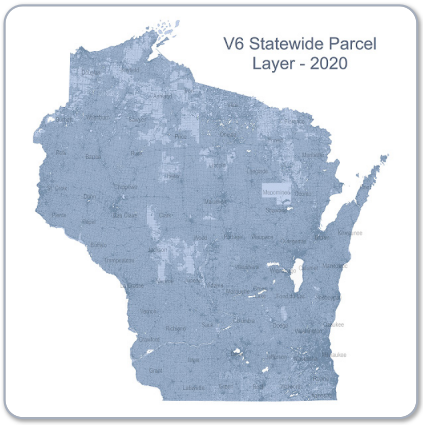
The V6 Project successfully aggregated all known digital parcel datasets within the state, resulting in a statewide GIS parcel layer of **3.507 million parcels**. The statewide data was standardized to meet the Searchable Format and made publicly available online on June 30, 2020. The V6 Project represents another successful step in the Statewide Parcel Map Initiative, an effort important for improving the quality of Wisconsin's real estate information, economic development, emergency planning and response, and other necessary citizen services.

### PROJECT BACKGROUND

The V6 Project was another phase in the incremental approach toward the Parcel Initiative—improving the statewide parcel map with each annual iteration. The V6 Project builds upon the experience of the LinkWISCONSIN and V1-V5 Projects. V6 was the fifth round of implementing standards for data submissions—the Searchable Format—which the legislature directed the Department of Administration to create in coordination with counties as part of Act 20 of 2013. In the Searchable Format, county data submittal is ready for immediate aggregation into the statewide parcel layer. Counties are to achieve the Searchable Format for parcel and tax roll data each year by March 31st.

### TECHNICAL APPROACH

The technical approach taken by SCO staff involved several steps, including preparation and ingest, local-level processing, aggregation, state-level processing, and quality assurance/quality control. To support counties in achieving the Searchable Format, SCO developed a tool called the Validation Tool that counties are required to run in order to validate their data against the schema, as well as a suite of other geoprocessing tools. Once the statewide layer was created, data was distributed in several formats via a custom website and a web-based




mapping application. The web app allows someone without GIS software to view and search the statewide parcel map.

### BENCHMARK PROGRESS ASSESSMENT

The final V6 layer represents an increase in geometric coverage over the V5 statewide layer. Three counties have yet to complete their digital parcel mapping—Buffalo, Burnett, and Crawford—notable progress, as that figure is down from 12 counties in 2014. Notes from assessment and analysis of county data were communicated to counties through individualized documents called V6 Observation Reports, which describe what must still be done for a county to meet the Searchable Format. The majority of counties came close to meeting the Searchable Format in their V6 data submissions. Very few met the Searchable Format exactly, with only 18%, or 13 of 72 counties, submitting data that did not require additional processing to meet all Searchable Format requirements. The remaining 82% of counties either required follow-up to obtain missing data, or had processing steps performed on their behalf to get the data into the Searchable Format.

In addition to parcels, several other GIS data layers were collected as part of a collaboration with the UW-Madison Robinson Map Library. For V6, **461** new county datasets were cataloged, archived, and made available through the data portal GeoData@Wisconsin.

### RECOMMENDATIONS

Recommendations to improve and achieve better efficiency, accuracy, and final products include targeting outreach to assist those counties with repeated challenges in meeting Searchable Format requirements, enforcing more strict protocols for repeat errors, updating the Validation Tool, documenting the project workflow continuously, making the call for data earlier, and planning for future aggregation efforts through attention to obstacles to county-level data standardization and automation. These recommendations are designed to be minimally disruptive for counties, yet ultimately lead to a statewide parcel layer that continues to improve with each annual iteration.

# 1 PROJECT BACKGROUND

## 1.1 Background

The **Version 6 Statewide Parcel Map Database Project** (V6 Project) was a joint effort between the Wisconsin Department of Administration (DOA) Division of Intergovernmental Relations and the State Cartographer's Office (SCO) that ran between January 1, 2019 and December 31, 2019.

Wisconsin Act 20 of 2013 created statutory directives through s. 59.72 and s. 16.967 for the state and local governments to coordinate on the development of a statewide digital parcel map, which is referred to as the Statewide Parcel Map Initiative, or Parcel Initiative. One of the statutory requirements was for DOA to determine a "**Searchable Format**" for parcel data and for all county data to be posted online in this standard. V6 is the fifth round of requesting that counties submit local data in the Searchable Format.

The V6 Project followed successful collaboration between DOA and SCO on similar efforts. In the past, DOA and SCO have partnered on a project to create statewide parcel and address point layers for the LinkWISCONSIN Address Point and Parcel Mapping Project (2013-2014), the Version 1 (V1) Project (2015), the Version 2 (V2) Project (2016), the Version 3 (V3) Project (2017), the Version 4 (V4) Project (2018), and the Version 5 (V5) Project (2019) .[1]

The V6 Project continued the approach of improving with each annual iteration through a process that allows for much involvement and collaboration with data contributors, who are primarily county land information offices, and data users—a wide array of persons from state agencies, private companies, and other entities and individuals.

### 1.1.1 V6 Project Goals

As part of the implementation planning for the statewide digital parcel map, the goals of the V6 Project were established in a memorandum of understanding (MOU) between DOA and SCO.

- **Tracking progress.** The statewide parcel layer is built in an iterative fashion. V6 will continue to track the progress made with investments to local governments, specifically on benchmarks for parcel dataset development instituted with the 2016 WLIP grant application and continued in the 2017, 2018, 2019, 2020, and 2021 grant applications.

- **Incremental improvement.** Improvement of the statewide parcel layer itself, as well as the workflow and methods for each step in the aggregation process, with each new version of the layer. As with the database, the hosting and display should keep pace with current technology and be continually improved to meet users' needs. Intake and aggregation process should become more efficient with time, facilitating other improvements and/or opportunities for value-added products.

- **Authoritative Automated Asynchronous Aggregation.** A long-term goal is to achieve the "Four A's" so county data stewards can submit datasets at any time or interval by automatically merging local data with the most current statewide database. The objective for this project is to move toward a more efficient, automated process for data aggregation where the locus of standardization labor is on the data contributors rather than the aggregator. Such a process would require fewer state resources be dedicated to the aggregation process and thereby reduce state costs for sustaining the statewide digital parcel map.

- **Outreach and technical assistance to counties.** This may take the form of further development of existing technical tools or the creation of new tools for counties and municipalities to use. It could also involve site visits and direct assistance.

- **Lean government principles and efficiency.** The V6 Project should seek to create and realize efficiencies in general, eliminate waste, and integrate or collaborate with other state GIS services where possible.

- **Responsiveness to public needs and economic development goals.** Evaluate parcel layer user suggestions and implement improvements where feasible.

[1] See V5 Final Report (2019 September); V4 Final Report (2018 November); V3 Final Report (2017 November); V2 Final Report (2016 November); V1 Interim Report (2016 June); V1 Final Report (2015 November); and Final Report: LinkWISCONSIN Address Point and Parcel Mapping Project (2014 September).

### 1.1.2 Project Timeline and Milestones

| V6 Statewide Parcel Map Database Project Milestones | |
|---|---|
| **Date** | **Version 6 Project Milestone** |
| 01/01/20 | V6 Project start |
| 01/17/20 | V6 Data Validation Tool finalized |
| 01/31/20 | Call for data ready |
| 03/31/20 | V6 Data submissions due |
| 06/10/20 | Draft database for purposes of QA/QC |
| 06/30/20 | V6 Parcel map available online |
| 09/30/20 | V6 Final report |
| 12/01/20 | Final PLSS Edition 2 deliverable |
| 12/31/20 | Final report addendum covering PLSS Edition 2 |

### 1.1.3 Project Team

| V6 Statewide Parcel Map Database Project Team | |
|---|---|
| Howard Veregin, Project Co-Lead | Wisconsin State Cartographer's Office |
| Peter Herreid, Project Co-Lead | Wisconsin Department of Administration |
| Brenda Hemstead | Wisconsin State Cartographer's Office (through April 2020) |
| Ana Wells | Wisconsin State Cartographer's Office |
| David Vogel | Wisconsin State Cartographer's Office |
| Thomas Kazmierczak | Wisconsin State Cartographer's Office |
| Hayden Elza | Wisconsin State Cartographer's Office |
| Abigail Gleason | Wisconsin State Cartographer's Office (student) |
| Holly (Xinji) Liu | Wisconsin State Cartographer's Office (student) |
| Joe Marks | Wisconsin State Cartographer's Office (student) |
| Josh Seibel | Wisconsin State Cartographer's Office (student) |
| Eli Wilz | Wisconsin State Cartographer's Office (student) |
| Davita Veselenak | Wisconsin Department of Administration |

### 1.1.4 Outreach

| V6 Conference Presentations and Outreach To-Date | |
|---|---|
| **71st Wisconsin Society of Land Surveyors Annual Institute** (Wisconsin Dells)<br>January 2020 | Upgrading Wisconsin's Geospatial Infrastructure |
| **Wisconsin Land Information Association (WLIA) Annual Conference** (Middleton)<br>February 2020 | Why Your County PLSS Data Matters |
| **Wisconsin Land Information Council (WLIC)**<br>February & October 2020 | WLIP program updates |

*Note.* Some outreach and activities scheduled for 2020 did not take place due to the COVID-19 pandemic.

## 1.2 Documentation and Communication of Standards

The Submission Documentation set forth the required data submission standards for the V6 Project. There are four benchmarks listed by the WLIP Strategic Initiative grant application:

- Benchmark 1 – Parcel and Zoning Data Submission
- Benchmark 2 – Extended Parcel Attribute Set Submission
- Benchmark 3 – Completion of County Parcel Fabric
- Benchmark 4 – Completion and Integration of PLSS

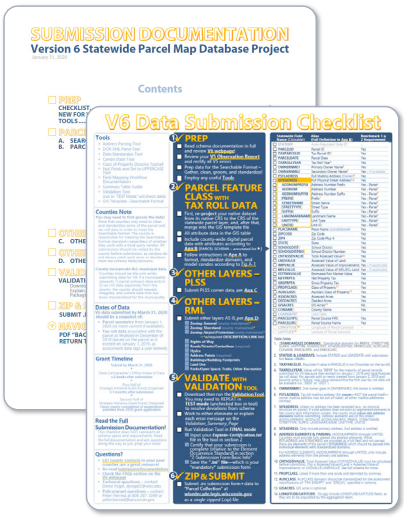


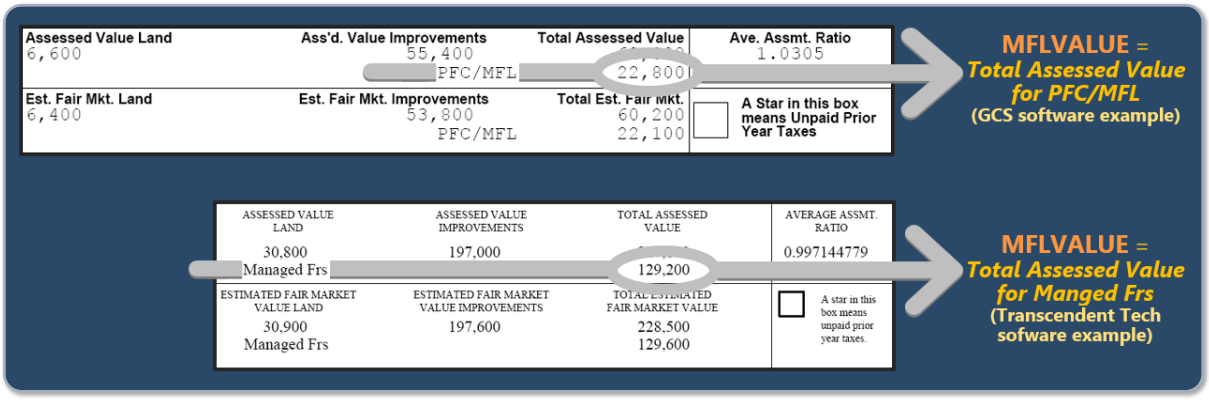

*Figure 1. V5 Submission Documentation and Data Submission Checklist*

Together, Benchmark 1 and 2 make up the Searchable Format. The Searchable Format is detailed in the Submission Documentation.

### 1.2.1 New for V6

The data counties were asked to submit for V6 was remarkably similar to the V5 data, as the V6 schema was nearly the same as in pervious years. However, there were some clarifications and a few other small changes for V6. The changes for V6 were highlighted at the beginning of the Submission Documentation.

- **FORESTVALUE Attribute Is Out, Replace With "MFLVALUE."** MFLVALUE is a new attribute name which is taking the place of FORESTVALUE for V6. MFLVALUE has a distinct definition. In previous years, FORESTVALUE (Assessed Forest Value) contained different types of values from county contributors, and was not applicable to most counties. The new field, MFLVALUE, has a precise definition so that it can be consistently populated with the assessed value of land for parcels/portions of parcels enrolled in Wisconsin's Managed Forest Law or Forest Crop Law programs. The field is named "MFLVALUE" in the GIS template. The image below illustrates which fields from the tax bill correspond to the values that belong in the new MFLVALUE field, for two separate tax bill examples generated by different software vendors.




- **IMPROVED Attribute No Longer Exists.** The IMPROVED attribute (optional last year) has been removed from the V6 schema. The field is not in the GIS template for V6 and should not exist in the dataset submitted for V6.

- **TAXPARCELID Should Be Populated as Available.** For V6, greater emphasis is placed on providing tax parcel identification numbers that correspond to the tax roll. Counties should submit a tax parcel identification number—whether in the PARCELID field or the TAXPARCELID field. TAXPARCELID should be

populated *if* the value present in the PARCELID field has alphanumeric characters different from the identification number displayed on the tax bill. Special character formatting such as dashes, periods, forward slashes, spaces, et cetera need not match the tax bill identification number perfectly, as long as the alphanumeric characters are the same.

- **AUXCLASS Domains for MFL Values Made Consistent With Assessment Roll.** AUXCLASS remains the field for tax exempt and special status property classes, like parcels enrolled in the Managed Forest Law program. Regarding dates of property enrollment, the definitions in previous versions of the Submission Documentation were inaccurate for MFL values (W5/W7 and W6/W8). These definitions have since been corrected for V6, as illustrated in the table below and in the schema definition for AUXCLASS.

| | V6 Definition | Translation From Previous Years |
|---|---|---|
| **AUXCLASS = W5** | MFL Entered After 2004 **Open** | [W5 was "~~MFL Before 2005 Open~~" which is now W7] |
| **AUXCLASS = W6** | MFL Entered After 2004 Closed | [W6 was "~~MFL Before 2005 Closed~~" which is now W8] |
| **AUXCLASS = W7** | MFL Entered Before 2005 **Open** | [W7 was "~~MFL After 2004 Open~~" which is now W5] |
| **AUXCLASS = W8** | MFL Entered Before 2005 Closed | [W8 was "~~MFL After 2004 Closed~~" which is now W6] |

- **AUXCLASS Domains Should Be Standardized.** While in previous years non-standard values were accepted in the AUXCLASS field for tax exempt and special parcels, this uncommon practice yielded values without definitions for the end user. For V6, records should have standardized domains in PROPCLASS/AUXCLASS.

- **CNTASSDVALUE Must Equal LNDVALUE + IMPVALUE.** In previous years, CNTASSDVALUE (Total Assessed Value) could include FORESTVALUE. Because for V6 FORESTVALUE has been re-defined and changed to MFLVALUE, CNTASSDVALUE must not include MFLVALUE.

- **No ESTFMKVALUE for Ag/Undeveloped/Agricultural Forest Parcels & AUXCLASS Parcels.** While most properties are assessed at full market value, some classes of property—specifically 4, 5, and 5M—are not. For V6, in order to avoid populating the statewide parcel map database with inaccurate/misleading information, counties are asked to null out ESTFMKVALUE (Estimated Fair Market Value) for parcels that are wholly or partially PROPCLASS 4, 5, or 5M; enrolled in the MFL/CFL programs (AUXCLASS W1-W9); and tax exempt (AUXCLASS X1-X4).

- **Submit PLSS Corner Data.** To maximize return on investment on expenditures related to the Public Land Survey System in Wisconsin, DOA is collecting corner data to be shared with SCO for the application Survey Control Finder and for a sub-project to create a statewide PLSS database.

- **Submit Other Layers.** DOA is continuing to combine the V6 data request with a request that has been separate in the past—that of Jaime Martindale of the UW-Madison Robinson Map Library (RML). Therefore, we are requesting a few other layers, in addition to parcels with tax roll attributes. PLSS, Roads/Streets/Centerlines, and Addresses must be submitted for V6, whether or not they have been updated since the submittal for the V5 data request in 2019. The remaining other layers listed in Appendix D need be submitted only if they have been updated/created since the county last submitted a copy.

- **Zoning Data Submission Requirements.** For V6, counties only need to submit three layers of county-maintained zoning data: 1) General, 2) Shoreland, and 3) Airport Protection. These layers may be submitted AS IS, except for the requirement that the zoning layers shall be complete. "Complete" means the GIS file must include either a DESCRIPTION or LINK field.

- **Searchable Format.** Counties will need to meet the Searchable Format in order to execute their 2020 WLIP Strategic Initiative grant and receive the first grant payment. In some cases in which a county does not meet the Searchable Format requirements with their V6 submission, the county may need to re-submit data and/or alter its 2020 grant agreement to address deficiencies in its parcel layer or native data.

- **Clarified Documentation.** The V6 documentation has been revised. Discard any old documentation and links. Replace with this updated Submission Documentation and V6 links. In the V6 schema, many attribute definitions have been altered so as to make them more clear or precise.

## 1.3 Call for Data

The official V6 data request was sent to each county land information officer on January 31, 2020 via email, and appears as Figure 2. It included a link to the Submission Documentation, which serves as a manual detailing the requirements of the Searchable Format.

Dear LIO,

On behalf of the Department of Administration, I am writing to request a subset of your GIS data. The data acquired through this request will be used to develop a statewide parcel layer for the next version of the Statewide Parcel Map Database Project, Version 6.

All counties must submit parcel/tax roll data in the Searchable Format standard no later than March 31, 2020. Submissions falling significantly short of the specs for the Searchable Format will not be accepted until they are rectified. A successful data submittal adhering to the Searchable Format is necessary in order to execute your county's 2020 Strategic Initiative grant agreement and receive the first payment.

**SUBMISSION DOCUMENTATION & V6 WEBPAGE**
The V6 checklist summarizes the data we are asking you to submit. The digital PDF checklist contains hyperlinks to attribute definitions and links to the full schema. Although the schema remains largely unchanged, a page titled New for V6 summarizes what's new.

You will want to read the Submission Documentation in full, in order to understand the details of the V6 request. In addition, the V6 webpage contains all the necessary submission information and links to several tools to help you format your data.

**SUBMIT PLSS + OTHER LAYERS**
Again for V6, all counties must **also submit PLSS corner data** (per Appendix C), and **additional GIS layers for RML** (Appendix D), which are being requested in order to aid in analysis of the statewide layer and as part of a collaborative effort with the UW-Madison Robinson Map Library.

**VALIDATE WITH VALIDATION TOOL**
The updated tool you must run before you submit your data, the Validation Tool, can check your data for deviations from the schema and is also required to create the mandatory Submission Form.

**SUBMIT DATA THROUGH WISE-DECADE**
After prepping your data and running the tool to create your Submission Form, submit your data to the WISE-Decade platform under the "Parcel Collection" module. Log in using your WISE-Decade credentials from the Legislative Technology Services Bureau.

Please submit your data by **March 31, 2020**.

**FEEDBACK AND HELP**
You may have questions about making your data align with the statewide schema. Your peer counties are a great resource, as is the FAQs section on the V6 webpage.

For technical questions, you can contact David Vogel at djvogel2@wisc.edu or 608-890-3793. Feel free to contact me with general questions as well.

We know that it could take a considerable amount of work to get your data into the statewide schema. Strategic Initiative grants were designed to aid in this task. We sincerely appreciate your efforts to help make V6 a success.

Thank you,

Peter Herreid
608-267-3369
Grant Administrator
Wisconsin Land Information Program

*Figure 2. V6 Call for Data*

# 2 TECHNICAL APPROACH

This chapter describes the strategy or a high-level version of the approach employed by the technical team in processing and aggregating local-level data for inclusion in the V6 final deliverable and statewide parcel map.

## 2.1 Tool Development

### 2.1.1 Updated Validation Tool

V6 featured an updated tool built by the State Cartographer's Office that counties were required to use before submitting data. The Validation Tool checked data for deviations from the schema, and was also required to create the mandatory Submission Form.

Data submitters could run the tool in test mode to flag potential errors in the data. The tool was run again in final mode in order to create the ".ini" Submission Form, a required part of the submission package.

For more details or to download the tool, see the Validation Tool Guide.

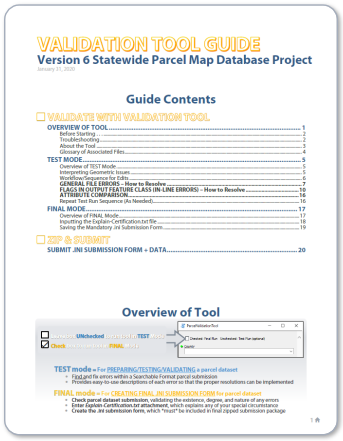



*Figure 3. Validation Tool Guide*

#### Validation Summary Page

The Validation Tool was updated for V6. It displays validation test results in a browser-displayed page called the "Validation Summary Page." The Validation Summary page is a an html file with a summary of Validation results that allows the user to visualize the potential errors observed in the dataset. This file opens automatically in a user's web browser upon completion of running the Validation Tool.

The Validation Summary Page 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)." The parcel data is ready for submission upon completion of an error-free Validation Tool test mode run and a corresponding Validation Summary Page file that says no errors have been found.

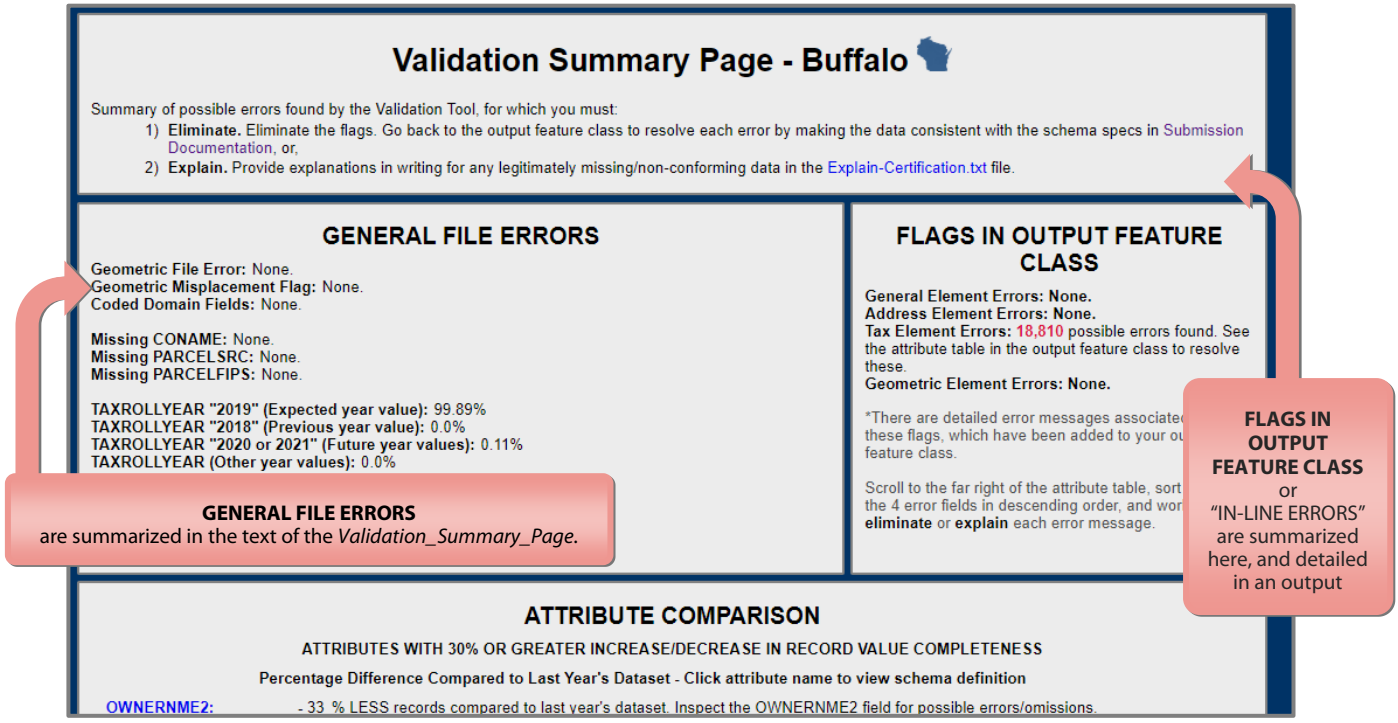



*Figure 4. Validation Summary Page (example). This displays in full "GENERAL FILE ERRORS" and summarizes error status for "FLAGS IN OUTPUT FEATURE CLASS."*

### 2.1.2 Geoprocessing Tool Development

To support counties in achieving efficient and accurate adherence to the standards in the Submission Documentation, the SCO developed a suite of publicly available geoprocessing tools using the ArcGIS ArcPy Module, Python 2.7, and open source libraries. In total, seven tools were created, and made publicly available through the data submission webpage.

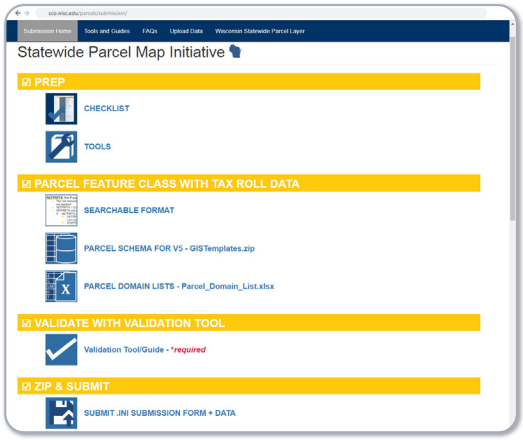



***Figure 5. V6 Data Submission Webpage with Links to Schema and Tools***

The tools were supported under ArcGIS version 10.3 through version 10.6. Each of these tools were designed to enable efficient solutions to the most common and time-consuming problems related to preparing parcel and tax roll data to be submitted in the statewide schema. Accompanying the tools were user guides that documented how to prepare the data, run the tool, and troubleshoot if necessary.

- **Address Parsing Tool.** Allows the user to parse site addresses from one long string into sub-address elements. Data submitters might use this tool if SITEADRESS data is not available as fully parsed address elements as required by the Searchable Format.
- **DOR XML Parse Tool.** Allows the user to translate Department of Revenue Tax Roll XML into a GIS table. For tax roll data in XML format that is to be used for parcel submission.
- **Data Standardize Tool.** Allows the user to standardize file geodatabase feature class data via the creation of a lookup table through a two-tool sequence. The first tool is used to create a summary table of a field. This table is edited and subsequently used as input to the secondary tool. The output of the second tool includes all original field domains as well as newly standardized domains in a new field.
- **Condo Stack Tool.** Allows user to model condominiums by stacking condo parcel geometries by owner. A data submitter might use this tool to model condo parcel geometries to match tax roll records with a 1:1 relationship.
- **Class of Property Dissolve Toolset.** Allows the user to format class of property data to statewide schema definitions. This suite of tools may be helpful if a submitter wishes to reformat their class of property information so as to meet the requirements of the schema definitions of PROPCLASS and AUXCLASS. This tool also handles various common formats that class of property exists as and may be helpful if the submitters data exists in one of these formats.
- **Null Fields And Set To Uppercase Tool.** Allows the user to format all attributes within a feature class to <Null> and UPPERCASE. This tool may be helpful to a submitter if they wish to format their blank fields or fields annotated with a specific string to a true SQL <Null> or if they wish to set all fields to UPPERCASE alpha characters.
- **Field Mapping Workflow Documentation.** Allows a user to map parcel or zoning attributes to the statewide schema. This is not a tool but rather a guide that may be useful to a submitter if they have PARCEL or ZONING data formatted to the schema specifications but the fields do not have the appropriate FIELD NAME, ALIAS NAME, DATA TYPE, or PRECISION.
- **Summary Table Guide.** Not a tool but a guide for GIS software summary tables, to examine data in preparation for submitting Searchable Format data. This guide is of particular use for cleaning, validating, and standardizing data.

The following table displays the number of downloads for each of the respective tools:

**Tool Download Stats**

| | # of Downloads V1 (2015) | # of Downloads V2 (2016) | # of Downloads V3 (2017) | # of Downloads V4 (2018) | # of Downloads V5 (2019) | # of Downloads V6 (2019) |
|---|---|---|---|---|---|---|
| **Validation Tool** | Not applicable | Not applicable | 108 | 118 | 84 | 117 |
| **Address Parsing Tool** | Not available | Not available | 48 | 46 | 36 | 27 |
| **DOR XML Parse Tool** | Not available | Not available | 24 | 36 | 17 | 34 |
| **Data Standardize Tool** | Not available | Not available | 28 | 27 | 22 | 40 |
| **Condo Stack Tool** | Not available | Not available | 21 | 19 | 9 | 16 |
| **Class of Property Dissolve Toolset** | Not available | Not available | 20 | 19 | 13 | 20 |
| **Null Fields and Set to UPPERCASE Tool** | Not available | Not available | 51 | 59 | 52 | 34 |
| **Field Mapping Workflow Documentation** | Not available | Not available | 36 | 34 | 21 | 19 |
| **Summary Table Guide** | Not available | Not available | 13 | 11 | 11 | 22 |

*Note.* Source of data is Google Analytics. Numbers represent unique downloads. Validation Tool began with V3 in 2016.

### 2.1.3 Preparation and Ingest

In the data request, land information officers were asked to submit data to the Legislative Technology Services Bureau (LTSB) of the Wisconsin State Legislature, through their WISE-Decade platform. WISE-Decade is LTSB's suite of mapping tools designed to assist counties and municipalities with legislative and legal requirements as required by state statute. Some file uploads were also accommodated using UW-Madison's enterprise Box.com account through an alternative upload widget.

The ingest phase began after the call for data. An automated email notification was sent to the project team any time a data submission to the WISE-Decade platform occurred. Once notified, the technical team would download the data via FTP login through Windows Explorer. After download, the data underwent a brief inspection, was documented as submitted, and then classified within the project's file directory. Depending on the amount of data submitted at any given time, the new data would either be assessed immediately or be queued for assessment according to the date the data was received. Also upon receipt of data, the county data directory was backed-up locally, while additional data backups were routinely made to an external drive throughout the development phases.

#### Robinson Map Library and Other GIS Data

For other, non-parcel GIS layers, the Robinson Map Library (RML) also performed an intake assessment of submitted GIS datasets. For V6, **461 other layers datasets were added to GeoData@Wisconsin**—comprised of rights-of-way; roads/streets/centerlines; hydrography; address points; buildings/building footprints; land use and parks/open space; trails; and other recreation data. RML staff and students write thorough and complete metadata for all of the data layers, archive them, and made them available for download on GeoData@Wisconsin.

### 2.1.4 Intake Assessment

Once data was copied to local directories, the required .ini Submission Form was automatically ingested into the technical team's master intake spreadsheet. This .ini file played an important role in cataloging the data submitted. Information obtained from the .ini file included feature class names, condo modeling format, submitter name and email address, generic error counts, completeness relative to V5 data, and a section that allowed contributors to explain unsolvable errors, missing data, and other known issues present within the data submitted.

Next, the team recorded general notes related to attribute quality and completeness, geometric location, and other issues observed. The focus of this assessment was to determine if data met the submission requirements and establish what processing steps would need to be performed to get the data into the Searchable Format for aggregation, as the majority of counties did not submit data that exactly matched the Searchable Format.

#### Showstop, Re-Approach, and Resubmit Requests

If, upon internal team discussion, it was determined that data was missing or incomplete, the county was re-approached and asked to resubmit corrected data or provide justification for the missing data. Roughly 26 counties had to be re-approached to obtain data missing from initial submission, to get clarification on peculiar data observations, and for the correction of erroneous data. In total, **approximately 34 emails were sent to resolve issues related to the fitness of data submissions**. In a few cases, up to four follow-up emails were required to an individual county before their data submission could be deemed complete and proceed past the initial assessment phase.

**V6 Versus Previous Re-Submits and Clarifications**

| | V3 (2017) | V4 (2018) | V5 (2019) | V6 (2020) | Change |
|---|---|---|---|---|---|
| # of counties that had to be re-approached | 29 counties (40%) | 38 counties (53%) | 19 counties (26%) | **26** counties (36%) | ↗ + **7** more counties |
| # of emails sent to resolve issues | 83 emails | 60 emails | 24 emails | **34** emails | ↗ +**10** more emails |

In a semi-automated process added for V6, any intake issues that required county follow-up were entered into an online form to be sent to DOA so that a follow-up email could be sent—either for missing data, questions to counties, or clarifications on the data submission.

After it was determined that the data submitted could be efficiently manipulated and processed, detailed processing steps were written and recorded in a Microsoft OneNote notebook. These steps provided the team with the information needed to massage the data into the final format and prepare it for the aggregation phase.

### 2.1.5 Geometric Gap Analysis

To identify gaps in the statewide parcel coverage where digital parcels do not exist, a manual inspection was performed on every dataset. It is the responsibility of the county to integrate all available parcel datasets into their parcel data submission, even if the municipal jurisdiction (city, village) is the data steward for the parcel dataset.

The geometric incompleteness of the V6 statewide parcel layer and the **3 counties yet to complete county-wide digital parcel mapping** are summarized in the table below.

**V6 Gaps Summary**

| County | Number of Munis with Gaps | Municipalities with Gaps in Parcel Coverage |
|---|---|---|
| **Buffalo** | 3 | Part of: Alma (C), Buffalo(C), Belvidere (T), Buffalo (T), Cochrane (V), Fountain City (C), Milton (T), Nelson (T); plus several small parcel gaps in various townships |
| **Burnett** | 5 | Part of: Swiss (T), Union (T), West Marshland (T), Grantsburg (T), Anderson (T) |
| **Crawford** | 5 | Part of: Mount Sterling (V), Gays Mills (V), Seneca (T), Wauzeka (T), Wauzeka (V) |

For V6, there was no missing geometric data in the form of gaps where parcel data is maintained by a municipality but not aggregated to county-level parcels. However, some tax roll data that is maintained by municipalities independent of counties presented some challenges.

## 2.2 Independent Data Stewards

**V6 Tax Roll Gaps Summary / Independent Municipalities**

| County | Municipalities with Independent Tax Roll Data and/or Independent Parcel Geometries |
|---|---|
| Ashland | City of Ashland |
| **Dane** | City of Madison |
| Dodge | City of Watertown |
| Douglas | City of Superior (performs export for Douglas County) |
| Eau Claire | City of Eau Claire |
| Fond du Lac | City of Fond du Lac |
| Langlade | City of Antigo |
| **Manitowoc** | City of Manitowoc (Transcendent Technologies), City of Two Rivers (Patriot Properties, Inc.) |
| **Milwaukee** | City of Milwaukee, City of Wauwatosa, and all other municipalities |
| Outagamie | City of Appleton |
| Racine | City of Racine |
| Rock | City of Beloit, City of Janesville |
| Rusk | City of Ladysmith |
| Washington | City of West Bend |
| Waukesha | City of New Berlin, City of Waukesha, City of Brookfield |
| Winnebago | City of Oshkosh, plus 3 other municipalities |

*Note.* * This list is not exhaustive. Other municipalities that maintain parcel and/or tax roll data independently of the county may exist.
- The fact that a county is listed here does not necessarily indicate that the county submission was incomplete—rather, it shows that extra effort was required by either the county and/or the project team to acquire and/or format the municipal data.
- DOA seeks information on additional independent municipalities. Please send information to WLIP@wisconsin.gov.

### 2.2.1 Aggregation

The process of aggregating individual county datasets began upon the completion of all required processing tasks for each county. After verifying these tasks were complete and ensuring that data was in the Searchable Format, the finalized feature class for each individual county was identified and the full path was documented to allow the technical team to run a batch processing tool for aggregation.

Next, a new statewide working database was created that contained a merged feature class consisting of all 72 individual county parcel datasets.

#### Statewide logic

Statewide logic in the ParcelValidationTool is tweaked each year, with adjustments and minor function modifications consistent with the schema.

State-level processing was performed on the resulting feature class. This processing included steps such as casting select fields from string to double, construction of the STATEID attribute for all records, creation of LATITUDE/LONGITUDE fields (populated with values for the inside centroid of each parcel polygon), and general data cleaning tasks (e.g., removal of leading/trailing spaces, converting empty strings to <Null>, setting all attributes to UPPERCASE).

### 2.2.2 Quality Assurance/Quality Control

Beginning with the V2 call for data in the year 2016, data submitted has been required to meet certain documented standards, which make up the Searchable Format. These attribute field standards, attribute domain standards, and geometric representation standards were assessed as part of the QA/QC phase. Maintaining high quality datasets from one version to the next is of paramount importance to the Parcel Initiative. A variety of QA/QC methods were used throughout the project, including manually-focused techniques, as well as more automated techniques that allowed for visualization across the entire state.

Manual cleanup techniques and tasks were performed across many of the datasets submitted. These included: address element standardization, address number cleanup, miscellaneous street name element parsing, excess field removal, etc. Often, the tasks were completed during the processing phase, prior to aggregation into the statewide feature class.

The automated QA/QC techniques were most often performed after the statewide feature class had been aggregated. With 3.5 million parcels, it was not feasible to manually inspect every record. For this reason, summary tables and a variety of maps were created during this process.

Summary tables were created as a byproduct of the state-level processing and provided a discrete set of domains that existed for a particular attribute field. These tables are particularly valuable for fields such as PREFIX, STREETTYPE, SUFFIX, and PROPCLASS, which have specific attribute domain standards. These tables, used in conjunction with the Data Standardize Tool, allowed for corrections to be made efficiently and accurately. Maps were produced, typically using a choropleth scheme, allowing the visualization of spatial trends within individual municipalities, counties, and statewide. These trends could be hard to observe from the tabular data alone. Maps provided another valuable tool for discovering errors and issues that existed in the data and allowed for corrections to be made.

### 2.2.3 Final Deliverables

The final parcel layer totaled 3.507 million parcels shown in Map 1 on the following page.

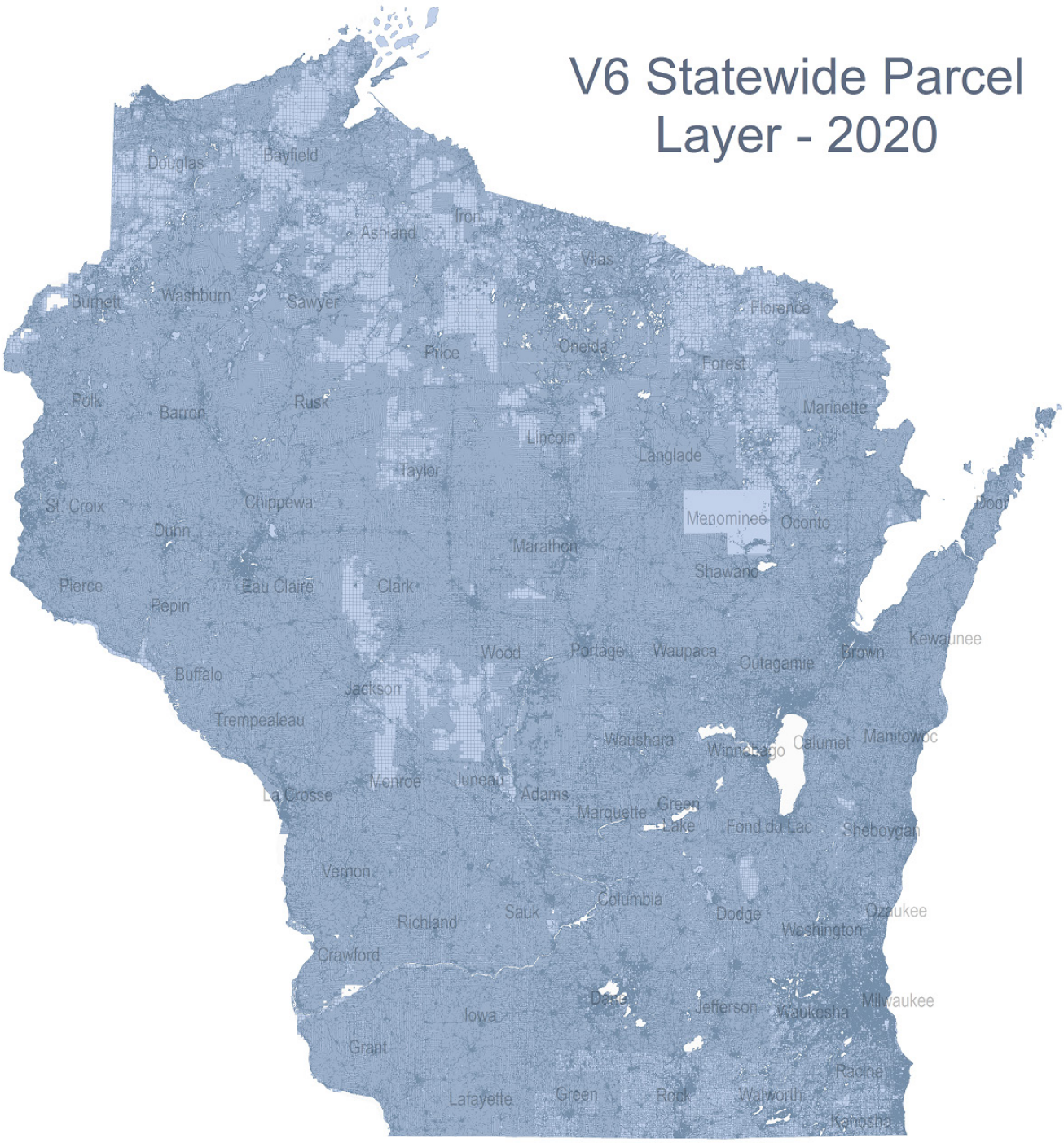
#### Geometric Coverage

Continued progress is being made in completing the digitization of parcels across the Wisconsin landscape, as indicated by the statistics below.

**V6 Spatial Coverage Versus Previous Years**

| | V1 | V2 | V3 | V4 | V5 | V6 | Additional Coverage in V6 | Percent Additional Coverage in V6 |
|---|---|---|---|---|---|---|---|---|
| Number of features | 3,434,149 | 3,466,359 | 3,486,200 | 3,491,037 | 3,504,785 | 3,507,127 | **2,342 features** | **0.07%** |
| Coverage (in square miles) | 53,656 | 55,280 | 56,060 | 56,193 | 56,403 | 56,410 | **7 square miles** | **0.01%** |

*Note.* The coverage in square miles calculation does not represent a true 1:1 comparison between the actual area of the state in square miles and total parcel coverage in square miles. In instances where condo parcels are stacked, the square mileage value is inflated.




***Map 1. Version 6 Statewide Parcel Layer Completed in June 2020***

### 2.2.4 Note on Zoning

Although five publicly available Wisconsin county-administered zoning layers were aggregated as part of the Statewide Parcel Map Initiative for V3 and V2 (in 2017 and 2016), zoning data was **not aggregated** at the statewide level for V4-V6 in 2018-2020.

However, three zoning types were collected for V6—county **general zoning**, **shoreland**, and **airport protection**.

The Searchable Format for V6 zoning data entails inclusion of **DESCRIPTION/LINK** information with the submission, in order to provide the user with definitions of the zoning classes.

The table below summarizes the zoning data collection between V2 and V6.

**V6 Zoning Data Submitted**

| Zoning Type | V2 Number of Datasets Collected (and number with errors) | V3 Number of Datasets Collected (and number with errors) | V4 Number of Datasets Collected (and number with errors) | V5 Number of Datasets Collected (and number with errors) | V6 Number of Datasets Collected (and number with errors) |
|---|---|---|---|---|---|
| County General Zoning | 14 / 49 | 21 / 56 | 7 / 54 | 4 / 53 | 6 / **50** |
| Farmland Preservation | 16 / 29 | 12 / 38 | not collected | not collected | not collected |
| Shoreland Zoning | 16 / 33 | 18 / 45 | 4 / 24 | 0 / 27 | 3 / **31** |
| Floodplain | 15 / 29 | 17 / 41 | not collected | not collected | not collected |
| Airport Protection Zoning | 9 / 16 | 5 / 23 | 1 / 12 | 0 / 13 | 1 / **12** |
| **Total errors/TOTAL SUBMITTED** | (45%) 70 /**156** | (36%) 73 /**203** | (13%) 12 /**90** | (4%) 4 / **93** | (11%) 10 / **93** |

*Note.* In some cases, zoning datasets are only submitted if they differ from the previous year.

Individual county datasets are publicly available through UW-Madison Robinson Map Library's geospatial data portal, GeoData@Wisconsin. All zoning types are bundled as a single feature class and are indexed on page 22 of the V6_Wisconsin_Statewide_Parcels_Schema_Documentation.

For the most current county zoning data, consult the individual county's land records websites.

Units of local government can also exercise zoning in Wisconsin, in which case end users might consult municipal/town web mapping sites for municipal-level zoning GIS data. It is generally best to contact the authoritative jurisdiction for the most complete zoning data.

For information regarding the statewide zoning layers from 2016-2017, please see the Parcel Project Zoning Change Log and page 5 of the V3_Wisconsin_Statewide_Parcels_Schema_Documentation.

## 2.3 Data Distribution

### 2.3.1 Database Download Webpage

The data was distributed via two primary means: a website with download links and a web-based mapping application. The V6 database was formally released to the general public on June 30, 2020, through the DOA land information email listserv and the data page.

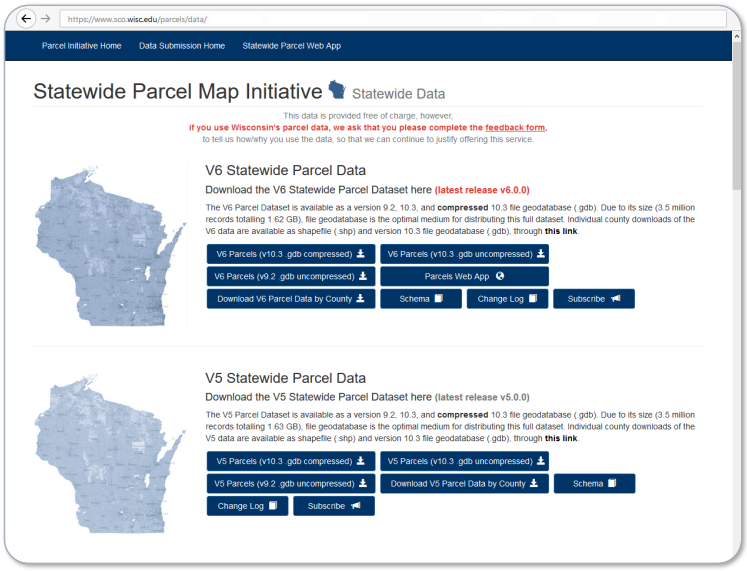



*Figure 6. V6 Data Page*

The custom webpage for data distribution was built and hosted by SCO, with the aim of flexibility. The site supports desktop, mobile, and tablet devices.

### 2.3.2 Web Application

Development of the web application for V6 followed suit with the technology used in developing the previous web applications—Web AppBuilder, the ArcGIS API for JavaScript, and feature services hosted by Wisconsin's LTSB. The V6 app design reflected the elements of the previous year's app with the addition of some enhancements added through custom code to target functionality not supported through Web AppBuilder.

As a GIS layer and application covering the entire state of Wisconsin, functionality for displaying and querying parcel data at statewide and regional levels—in addition to county and neighborhood levels—was important. The sheer amount of data in the parcel layer requires a unique strategy be employed to provide users with a fluid and seamless experience at all scale levels.

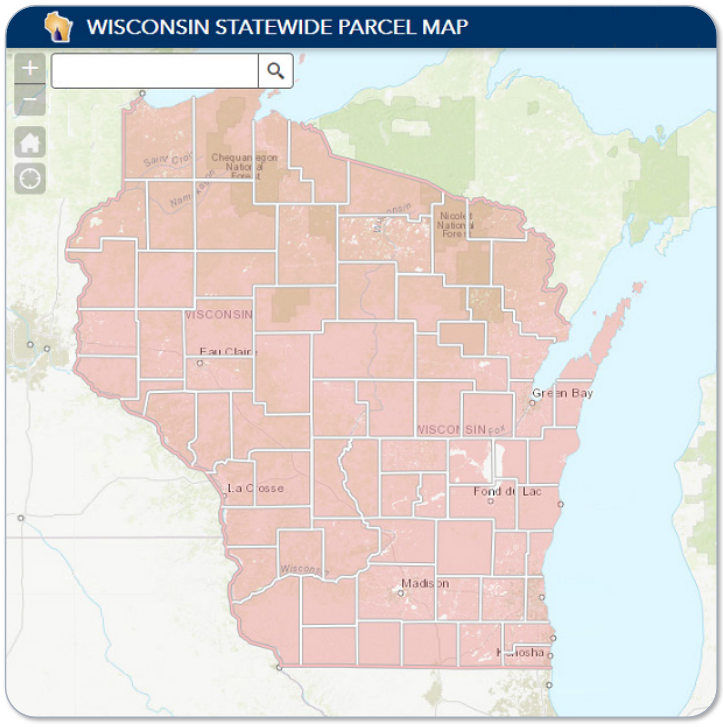



*Figure 7. V6 Web App*

### Improvements to the V6 Web App

- **Inclusion of the V6-V5 parcel data feature layers.** At the time of the release of the V6 statewide layer, only the impending V6 and V5 feature layers were included in the app at maps.sco.wisc.edu/Parcels. However, users can still download a historic copy of the V1-V4 data at sco.wisc.edu/parcels/data and from the Robinson Map Library.

- **Updates to supporting text/links and User Feedback Form.** All of the supporting text and links associated with the parcel application including, the Statewide Parcel Map splash screen, *About* section, *Search Tips*, and data download links were updated. Updates were also made to the user feedback form (shown in Figure 8) and land information county contacts page, which directs users to Wisconsin's county-maintained land information websites.


*Figure 8. V6 User Feedback Form*

- **Standardized site address field for searching.** By way of the LTSB feature service, the V6 parcel application includes a field called "**STAND_SITEADD**," which facilitates a simplified, more streamlined search of parcels by site address.
  - In the file geodatabase for the statewide layer, the site address field—SITEADRESS—appears "as is," with the physical street address of the parcel appearing exactly as it is provided by the county.
  - As a result of the differences in formatting for site address data at the county level, an end-user might need to perform multiple iterations of a search in order to find one desired address.
  - Particularly for the PREFIX and STREETTYPE fields, variations in spelling and abbreviations can be found in the SITEADRESS field.
  - The standardized site address field, STAND_SITEADD, is created by:
    ❶ **Concatenating the elements that make up SITEADRESS**, which counties are to submit as individual address elements:

    | ADDNUMPREFIX | ADDNUM | ADDNUMSUFFIX | PREFIX | STREETNAME | STREETTYPE | SUFFIX | UNITTYPE | UNITID |
    |---|---|---|---|---|---|---|---|---|

    ❷ **Further refining the PREFIX field**, so that it is standardized to a select number of domains:

| CTH | STH | USH | INTERSTATE |
|---|---|---|---|
| N CTH | N STH | N USH | |
| E CTH | E STH | E USH | |
| S CTH | S STH | S USH | |
| W CTH | W STH | W USH | |

- **Improvements to End User Schema Documentation.** The V6 end user schema (V6_Wisconsin_Statewide_Parcels_Schema_Documentation) was also updated for V6. Newly added were notes for end users detailing some of Wisconsin's assessment/tax data resources, Locating Property Information and Tax Assessment Data in Wisconsin.

## 2.3.3 Data Access and Download Statistics

Across the various formats that are offered, the statewide parcel database has received large numbers of downloads and access via web mapping services.

V2 received a total of over 4,000 downloads and nearly 1.8 million hits on web services in the year following the V2 release date. V3 received a total of over 3,070 downloads and nearly 2.6 million hits on web services in the year following its release date. V4 received a total of ~5,346 downloads and nearly 4.5 million hits on web services. **V5 received a total of over 7,352 downloads and over 10,000,00 million hits on web services in the year following its release date.** Download and web app statistics appear on the following page.

## Statewide Parcel Layer Download and Access Statistics

| | V1 Parcels | Downloads | Hits on Services or App Views/Requests |
|---|---|---|---|
| **V1** | V1 Parcels (during V1 year) | 3,625 Total | unknown |
| **V2** | **V2 Parcels** | | |
| | V1 Parcels (during V2 year) | 131 | 451,374 |
| | V2 Parcels (during V2 year; all formats) | 859 | 1,341,401 |
| | V2 Individual County Parcels, all 72 counties combined (all formats) | 3,248 | NA |
| | | 4,238 Total | 1,792,775 Total |
| **V3** | **V3 Parcels** | | |
| | V3 Parcels (during year after release; all formats) | 868 | unknown |
| | V3 Individual County Parcels, all 72 counties combined (all formats) | 2,203 | unknown |
| | | 3,071 Total | |
| **V4** | **V4 Parcels** | | |
| | V4 Parcels (during year after release; all formats) | 1,142 | 4,453,517 |
| | V4 Individual County Parcels, all 72 counties combined (all formats) | 4,204 | NA |
| | | 5,346 Total | 4,453,517 Total |
| **V5** | **V5 Parcels** | | |
| | V5 Parcels (during year after release; all formats) | 1,715 | 10,090,958 |
| | V5 Individual County Parcels, all 72 counties combined (all formats) | 5,637 | NA |
| | | 7,352 Total | 10,090,958 Total |
| **V6** | **V6 Parcels** | | |
| | V6 Parcels (~two months after release; all formats) | 404 | 2,217,121 |
| | V6 Individual County Parcels, all 72 counties combined (all formats) | 1,243 | NA |
| | | 1,647 Total | 2,217,121 Total |

*Note.*

- Data that is not available is denoted with "unknown."
- The source download data is Google Analytic events, as well as Box access statistics. Numbers are approximate.
- The source for hits figures is LTSB. Figures for V2 hits are approximate.
- "**Hits**" numbers are subject to variation in definition. Here, hits may be "transactions." For ArcGIS server, a transaction is defined as any time the server or services is hit or pinged. Therefore, the number of hits is not an indicator of the number of unique users. A transaction is counted each time that a user makes a request to the service and data is returned.
  - For example, each of these actions within the parcel web app would be counted as a transaction:
    a) searching the web app on owner name, parcel ID or site address;
    b) panning the map to an uncashed area when viewing the map at neighborhood level (large scale); and
    c) clicking on the map to procure the parcel attribute information of an area.

## Statewide Parcel Layer Web Mapping Application Statistics

| | Sessions | Users | Pageviews |
|---|---|---|---|
| **V1 App** (July 31, 2015 – Oct 16, 2016) | Data not available | Data not available | Data not available |
| **V2 App** (Oct 17, 2016 – September 6, 2017) | 9,788 | 4,271 | 16,402 |
| **V3 App** (Sep 7, 2017 – July 30, 2018) | 31,013 | 15,602 | 56,423 |
| **V4 App** (July 31, 2018 – June 30, 2019) | 75,815 | 42,258 | 117,338 |
| **V5 App** (June 30, 2019 – June 30, 2020) | 121,326 | 65,239 | 164,188 |
| **V6 App** (June 30, 2020 – August 2020; ~2 months only) | 26,848 | 15,150 | 33,914 |

*Note.*

- The first date in the date range represents the public release date for the web app.
- Data source is SCO's implementation of Google Analytics.

## Zoning Data Download Stats

### Zoning Download Statistics

| | | Downloads | Hits on Services or App Views/Requests |
|---|---|---|---|
| **V1** | **V1 Zoning** | | |
| | NA – No statewide zoning data was produced as part of V1 | NA | NA |
| **V2** | **V2 Zoning (Aggregated for V2)** | | |
| | Wisconsin_Zoning_2016 - All 5 zoning layers in one database | 128-174 | NA |
| | Airport | 19-36 | 3,524 |
| | Farmland | 39-56 | 3,837 |
| | Floodplain | 26-44 | 4,448 |
| | General | 61-80 | 8,138 |
| | Shoreland | 27- 47 | 4,469 |
| | | 300-437 Total | 24,416 Total |
| **V3** | **V3 Zoning (Aggregated for V3)** | | |
| | Wisconsin_Zoning_2017 - All 5 zoning layers in one database | 127 | unknown |
| | Airport | 17 | unknown |
| | Farmland | 37 | unknown |
| | Floodplain | 27 | unknown |
| | General | 65 | unknown |
| | Shoreland | 28 | unknown |
| | | 301 Total | |
| **V4** | **V4 Zoning** | | |
| | SCO Data Page – All Zoning (all zoning types combined; from January 2017–Dec 2018) | 113-194 | NA |
| | GeoData@Wisconsin -"**2018**" year data (GeoData stats not available) | NA | NA |
| | GeoData@Wisconsin - Any year zoning data (GeoData stats; January 2017–Dec 2018) | 89 | NA |
| | | 202-283 Total | |
| **V5** | **V5 Zoning** | | |
| | SCO Data Page - Zoning (all zoning types combined; from January 2019–Dec 2019) | 196 | NA |
| | GeoData@Wisconsin - "**2019**" year data (GeoData stats not available,except Q4 [20]) | 20 | NA |
| | GeoData@Wisconsin - Any year zoning data (2019 sans September 2019) | 227 | NA |
| | | 443 Total | |
| **V6** | **V6 Zoning** | | |
| | SCO Data Page - Zoning (all zoning types combined; from January 2020–Sept 2020) | 154 | NA |
| | GeoData@Wisconsin - "**2020**" year zoning data (from January 2020–Sept 2020) | 67 | NA |
| | GeoData@Wisconsin - Any year zoning data (from January 2020–Sept 2020) | 183 | NA |
| | | 404 Total | |

*Note.*

- V2 zoning figures appear as a range (e.g., 128-174) due to differences in Google Analytics versus Box access statistics.
- "All zoning" means any and all zoning types—aggregated statewide layers (produced for V2/V3), individual county layers, and statewide layers produced by DATCP for farmland preservation zoning.
- Statewide GIS data for farmland and floodplain zoning may be available either from GeoData@Wisconsin and/or the following:
  - **Zoning – Farmland:** See Wisconsin DATCP for statewide farmland zoning data
  - **Zoning – Floodplain:** See FEMA for statewide floodplain zoning data

# 3 BENCHMARK PROGRESS ASSESSMENT

## 3.1 Observation Reports

The notes from the V6 Statewide Parcel Map Database Project intake process and assessment were communicated to counties through documents called the V6 Observation Reports. The reports were individualized for each county, and contained observations related to the data submitted, with focus on how local data compared to the statewide schema. The V6 Observation Reports showed precisely how local data compared to the benchmarks for parcel data laid out in the WLIP grant application and the Submission Documentation, evaluating how close counties came to the Searchable Format for submission of parcel data.

SCO staff documented what must be done yet to achieve the Searchable Format and thus meet Benchmarks 1 and 2. The intention is that the action items from the V6 Observation Report be used as a checklist to help develop and groom the county's data to meet the Searchable Format in the future.

For V6, a special symbol was added to prominently call attention to reoccurring errors for those counties who submitted data for V6 with the same deficiencies or errors that had been pointed out to them in the past as issues requiring attention to remedy.

Figure 9 shows an example of a V6 Observation Report.

Version 6 Statewide Parcel Map Database Project OBSERVATION REPORT **Calumet County**

**ACTION REQUIRED** TO MEET STATEWIDE SCHEMA

**PARCEL FEATURE CLASS** WITH TAX ROLL DATA

There are errors on this report which have reoccurred. The county will be asked to certify that these issues will be rectified prior to the next submission on the grant application. If flagged errors are observed in the future, the county's data will not be assessed until it is free from annually repeated errors.

- ✓ PARCELID
- ✓ TAXPARCELID
- ✓ PARCELDATE
- ✓ TAXROLLYEAR
- ✓ OWNERNME1
- ✓ OWNERNME2
- ✓ PSTLADRESS
- ✓ SITEADRESS
- ✓ ADDNUMPREFIX
- ✓ ADDNUM
- ✓ ADDNUMSUFFIX
- ✓ PREFIX – with standardized domains
- ✓ STREETNAME
- ✓ STREETTYPE – with standardized domains
- ✓ SUFFIX – with standardized domains
- ✓ LANDMARKNAME
- ✓ UNITTYPE
- ✓ UNITID
- ✓ PLACENAME
- ✓ ZIPCODE
- ✓ ZIP4
- ✓ STATE
- ! SCHOOLDIST – with standardized domains
  - SCHOOLDIST: Approximately 274 records with school district name values of 'SCHOOL DISTRICT OF CHILTON', 'SCHOOL DISTRICT OF NEW HOLSTEIN', 'SCHOOL DISTRICT OF STOCKBRIDGE', 'BRILLION PUBLIC SCHOOL DISTRICT.' These have the words "SCHOOL DISTRICT" at the beginning of the name instead of at the end. Move "SCHOOL DISTRICT" to the end of the district name and remove "OF" (e.g., CHILTON SCHOOL DISTRICT). Consult the Submission Documentation for guidance on standardized SCHOOLDIST values. This issue was also noted on a previous year's Observation Report. Please pay particular attention to resolving this prior to the next annual data submission.
- ✓ SCHOOLDISTNO – with standardized domains
- ✓ CNTASSDVALUE
- ✓ LNDVALUE
- ✓ IMPVALUE
- ✓ MFLVALUE
- ✓ ESTFMKVALUE
- ✓ NETPRPTA
- ✓ GRSPRPTA
- ✓ PROPCLASS – with standardized domains
- ! AUXCLASS – with standardized domains
  - AUXCLASS: At least 372 parcels missing values in PROPCLASS/AUXCLASS fields. For future data submissions, please work on ensuring the completeness of values in PROPCLASS/AUXCLASS. To acquire missing data and resolve this issue for future data submissions, you may need to work with your real property lister and/or local assessor(s).
  - Approximately 194 records with unstandardized values in AUXCLASS field (e.g., 'FM6,' 'FM7,' and 'FM8') which appeared only in the Calumet County data. This was noted on a previous year's Observation Report and was not resolved for V6. Please communicate with DOA prior to the next data submission cycle so that the obstacle to standardizing these AUXCLASS domains can be better understood and try to rectify this before next year's submission.
- ✓ ASSDACRES
- ✓ DEEDACRES
- ✓ GISACRES
- ✓ CONAME – with standardized domains
- ✓ PARCELFIPS – with standardized domains
- ✓ PARCELSRC – with standardized domains
- ✓ —Projection met statewide schema
- ✓ —County parcel fabric was complete (lacked gaps)
- ✱ —Condo modeling met statewide schema
  - CONDOS: In initial data submission, condo data was not included, because, as it was noted in Explain-Certification portion of Submission Form, the Condo Stack Tool still did not work with the Calumet County data. For future submissions, please contact the SCO technical team if the county needs assistance running the Condo Stack Tool or if there are any other questions prior to preparing data submission.

**OTHER LAYERS – PLSS**

- ✱ PLSS – PLSS corner data was submitted
  - PLSS: According to WLIP records, the county received Strategic Initiative grant funding to work toward achieving Benchmark #4 Completion and Integration of PLSS (for the year 2016). According to the Benchmark #4 requirement, all PLSS corner coordinate values established using Strategic Initiative funds should be tagged with their appropriate accuracy class (Survey Grade, Sub-meter, or Approximate). Therefore, we expected to see the "horiz_accuracy" field populated. Please make sure to populate for future submissions.

**OTHER LAYERS – RML**

- ✓ Zoning: County general – with DESCRIPTION/LINK
- ! Zoning: Shoreland – with DESCRIPTION/LINK – (Not administered by county)
- ! Zoning: Airport protection – with DESCRIPTION/LINK – (Not administered by county)
- ✓ Other Layers – with standardized file names

**SUBMISSION** FORM & PACKAGE

- ✓ Provided .ini submission form + data

**MISCELLANEOUS**

- The comments provided in this *V6 Observation Report* describe deviations from the statewide schema that require your attention. In order for your county to meet the Searchable Format requirement listed under state statue 59.72(2)(a), you will need to make the corrections noted on this report—as well as the *V1-V5 Observation Reports*—and ensure that the datasets submitted in the future exactly match DOA's schema specifications.
- Feedback on the annual parcel data submission process is welcome to DOA/SCO at any time.
- Thanks for your work to prepare your data submission. You can read end-user testimonials in the forthcoming *V6 Final Report* and the *V5 Final Report*. There are numerous users of the statewide parcel layer who appreciate your efforts to make the county's data available in a standardized format!

09/15/2020 | Calumet | Page 1 of 1

***Figure 9. V6 Observation Report (Example)***

### 3.1.1 OWNERNME1 – Redaction of Owner Names

**V6 Owner Name Redaction**

| County | Scope | Percent Redacted |
|---|---|---|
| **Kenosha** | Entire county dataset | **100.00** |
| Barron | Partial | 0.67 |
| Columbia | Partial | 0.22 |
| Dane | Partial | 8.34 |
| Jackson | Partial | 0.69 |
| Sauk | Partial | 0.11 |
| Sheboygan | Partial | 0.18 |
| Vilas | Partial | 0.24 |

For the owner name attribute, some counties redacted owner names. Partial owner name redaction was conducted by seven counties for V6, although some counties redacted only a very small number of records. An additional county—Kenosha—withheld all owner names, consistent with a local county board resolution.

Over time, this represents an improvement compared to the V1 database, in which 22 counties did not permit owner name display in the V1 statewide layer.

## 3.2 Benchmark Progress Assessment

### 3.2.1 Benchmark 1 & 2 Progress Assessment

Benchmarks 1-4 were initially defined in detail within the V1 Interim Report:

- Benchmark 1 – Parcel and Zoning Data Submission
- Benchmark 2 – Extended Parcel Attribute Set Submission
- Benchmark 3 – Completion of County Parcel Fabric
- Benchmark 4 – Completion and Integration of PLSS

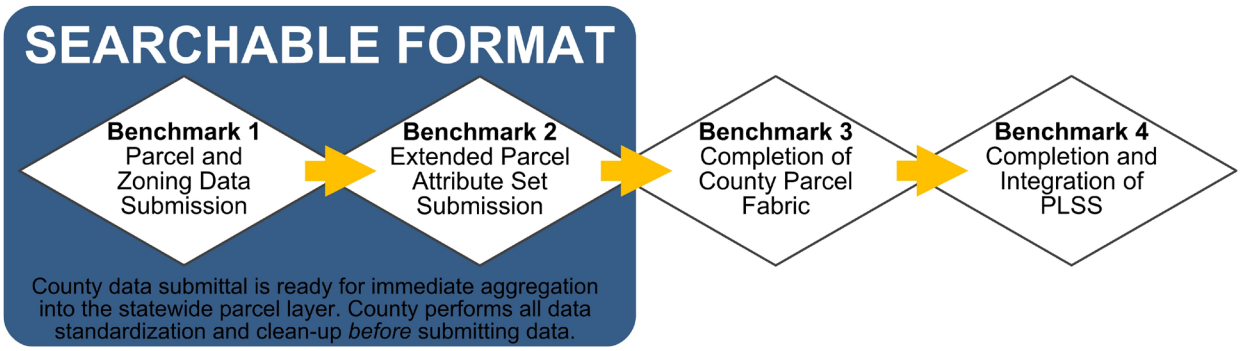



***Figure 10. Searchable Format with Benchmarks***

Benchmark 1 and 2 are explored below for the purpose of assessing progress between V2 and V6. For both of these benchmarks, progress between the successive projects is captured in comparing the individual V2 Observation Reports, V3 Observation Reports, V4 Observation Reports, and V5 Observation Reports.

**Benchmark 1 & 2 – Parcel/Zoning Data Submission & Extended Parcel Attribute Set Submission**
Benchmark 1 and 2 were satisfied by submitting parcel, tax roll, and relevant zoning information using the required standards detailed in the Submission Documentation. Because Benchmark 1 and 2 are closely related and go hand-in-hand, they are often discussed together. The main distinction is that for Benchmark 2, counties must submit parsed address components with their parcel data.

For parcel and tax roll data submitted for V1, V2, and V3, there were two submission format options—the Export Format and the Searchable Format. For V4 and beyond, the Searchable Format was the only submission option.

The Searchable Format is a format that directly meets the data model requirements of the final statewide parcel layer. This format is not expected to change in the foreseeable future and is intended that only essential modifications be made for future iterations of the statewide parcel database. The Searchable Format is the format that all counties will be expected to use for future versions of the project.

The "Export Format" was a format for data exchange. Data received in this format—from 2016-2017—was processed by the parcel aggregation team to meet the data model requirements of the final statewide parcel layer. This format was acceptable for counties to use for submitting parcel and tax roll data for the V1, V2, and V3 projects, but the Export Format was phased out for the V4 Project, when it was no longer accepted. The Export format is not compatible with the intended asynchronous update model and is a major obstacle to achieving the objective of automation and efficiency in statewide parcel aggregation. It was originally devised to accommodate variations in local data and allow counties time to gradually adjust to the submission requirements of the Searchable Format.

## Parcel Data Evaluated Against Benchmark 1 & 2

Assessing progress in county achievement of the Searchable Format—equivalent to attaining Benchmark 1 and 2—can be performed by referencing the V2, V3, V4, V5, and V6 Observation Reports. The reports track all substantial manipulation that needed to be performed on each county parcel data submission, on a per attribute basis. The table below summarizes the progress between V2 and V6.

**Benchmark 1 and 2 Progress Assessment**

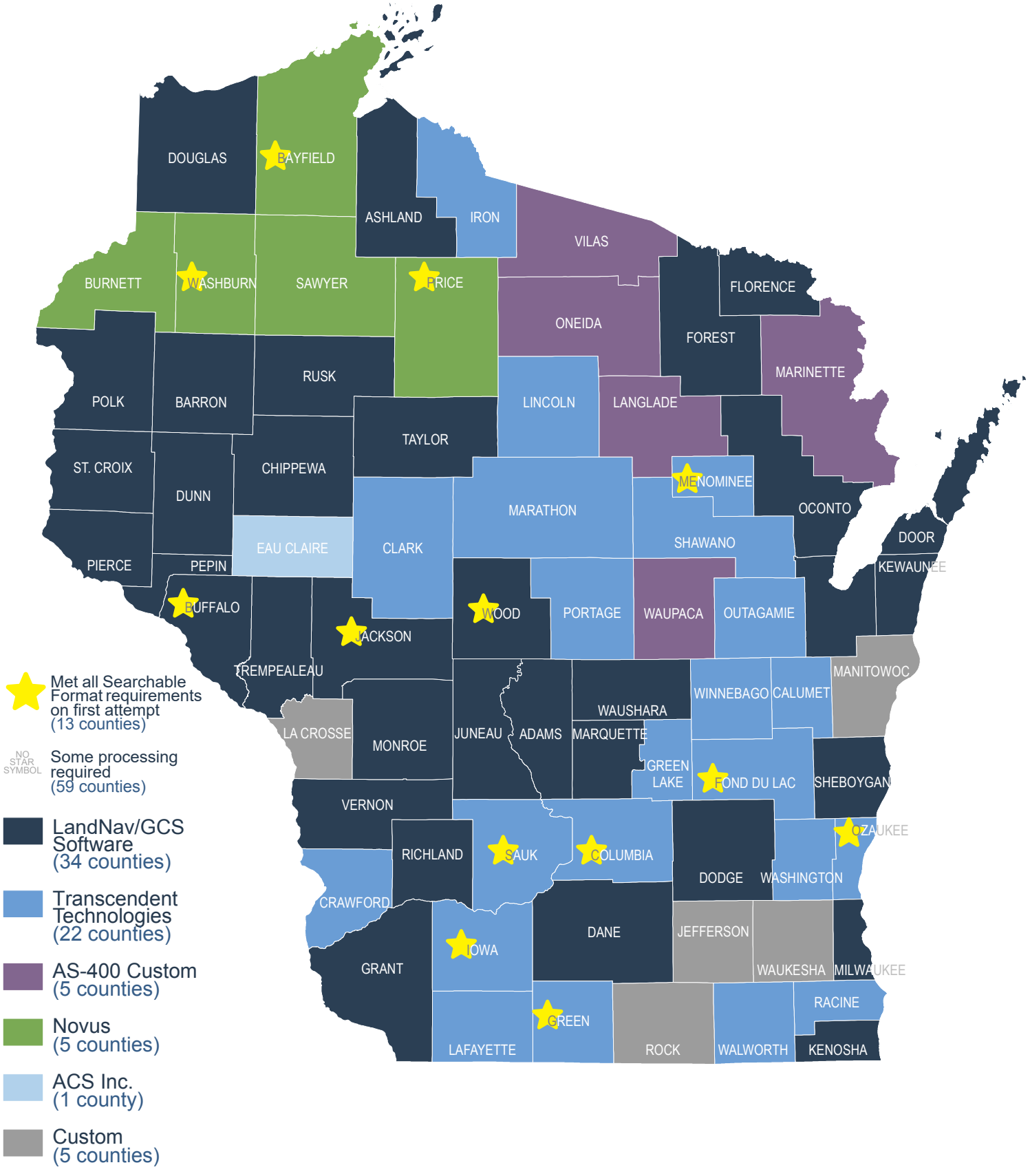
| Attributes | V2 Attribute Errors | V3 Attribute Errors | V4 Attribute Errors | V5 Attribute Errors | V6 Attribute Errors |
|---|---|---|---|---|---|
| PARCELID | 3 | 0 | 4 | 4 | 1 |
| TAXPARCELID | 1 | 30 | 4 | 2 | 1 |
| PARCELDATE | 40 | 8 | 4 | 4 | 4 |
| TAXROLLYEAR | 7 | 1 | 2 | 5 | 7 |
| OWNERNME1 | 1 | 1 | 1 | 0 | 1 |
| OWNERNME2 | 0 | 6 | 6 | 0 | 0 |
| **PSTLADRESS** | 31 | 42 | 30 | 24 | **21** |
| SITEADRESS | 19 | 3 | 1 | 2 | 3 |
| ADDNUMPREFIX | 12 | 4 | 5 | 0 | 5 |
| **ADDNUM** | 35 | 8 | 8 | 11 | **7** |
| **ADDNUMSUFFIX** | 17 | 10 | 8 | 12 | **10** |
| **PREFIX** | 19 | 5 | 11 | 15 | **24** |
| **STREETNAME** | 34 | 21 | 32 | 17 | **15** |
| STREETTYPE | 37 | 5 | 5 | 7 | 5 |
| SUFFIX | 15 | 3 | 2 | 1 | 2 |
| LANDMARKNAME | 8 | 0 | 0 | 0 | 0 |
| UNITTYPE | 16 | 1 | 1 | 3 | 4 |
| UNITID | 22 | 4 | 2 | 6 | 3 |
| PLACENAME | 11 | 1 | 0 | 1 | 0 |
| ZIPCODE | 59 | 1 | 3 | 2 | 0 |
| ZIP4 | 8 | 1 | 1 | 0 | 1 |
| STATE | 11 | 1 | 1 | 0 | 0 |
| SCHOOLDIST | 8 | 11 | 4 | 3 | 5 |
| SCHOOLDISTNO | 19 | 1 | 2 | 1 | 2 |
| IMPROVED | 18 | 0 | 3 | 0 | NA |
| CNTASSDVALUE | 7 | 0 | 4 | 3 | 2 |
| LNDVALUE | 3 | 0 | 2 | 0 | 0 |
| IMPVALUE | 3 | 0 | 2 | 0 | 0 |
| FOREST/MFLVALUE | 4 | 0 | 0 | 0 | 3 |
| ESTFMKVALUE | 7 | 2 | 50 | 0 | **33** |
| NETPRPTA | 7 | 2 | 2 | 1 | 3 |
| GRSPRPTA | 6 | 1 | 1 | 0 | 0 |
| PROPCLASS | 4 | 4 | 6 | 8 | 4 |
| **AUXCLASS** | 20 | 3 | 6 | 11 | **7** |
| ASSDACRES | 2 | 0 | 2 | 2 | 0 |
| DEEDACRES | 2 | 0 | 0 | 0 | 0 |
| GISACRES | 1 | 1 | 1 | 0 | 0 |
| CONAME | 7 | 2 | 2 | 0 | 1 |
| PARCELFIPS | 6 | 3 | 2 | 0 | 0 |
| PARCELSRC | 7 | 3 | 2 | 0 | 0 |
| PROJECTION | 19 | 5 | 2 | 0 | 0 |
| **NET TOTAL** | **556** | ↘ **194** | ↗ **218** | ↘ **141** | ↗ **174** |

The majority of counties came close to meeting the Searchable Format in their initial V6 parcel data submissions. Given the complexity and size of the local data, not all counties submit "perfect" Searchable Format submissions on their first attempt. Few counties met the standard for parcel data exactly with their initial data submission.

- Met Searchable Format for V6 parcel data submission on initial data submission: ~**13** counties (17%)
  Bayfield, Buffalo, Columbia, Fond du Lac, Green, Iowa, Jackson, Menominee, Ozaukee, Price, Sauk, Washburn, Wood

# V6 Submissions

## by Tax Parcel Computer System Vendor




*Map 2. V6 Submissions by Tax Parcel Computer System Vendor*

### 3.2.2 Benchmark 3 and Benchmark 4 Progress Assessment

Data for Benchmark 3 – Completion of County Parcel Fabric—collected via the 2020 WLIP grant application (at the end of calendar year 2019) is summarized below, as well as data for Benchmark 4 – Completion and Integration of PLSS. These are the four counties who have yet to complete county-wide digital parcel mapping and 44 of 72 have PLSS remonumentation work remaining.

| Benchmark 3 Progress | | |
|---|---|---|
| As of 2019 | Counties with Incomplete Parcel Fabric | Estimated Year of Parcel Fabric Completion |
| | Buffalo | 2020 |
| | Burnett | 2022 |
| | Crawford | 2022 |

| Benchmark 4 Progress | | |
|---|---|---|
| As of 2019 | Counties with Incomplete PLSS (Self-Reported; 44 of 72 counties ) | Estimated Year of PLSS Network Completion |
| | Adams | 2021 |
| | Ashland | 2100 |
| | Bayfield | 2040 |
| | Buffalo | 2027 |
| | Burnett | 2022 |
| | Chippewa | 2021 |
| | Clark | 2023 |
| | Columbia | 2021 |
| | Crawford | 2022 |
| | Dane | 2024 |
| | Douglas | 2030 |
| | Dunn | 2030 |
| | Eau Claire | 2025 |
| | Florence | 2035 |
| | Forest | 2035 |
| | Grant | 2050 |
| | Green | 2030 |
| | Green Lake | 2025 |
| | Iowa | 2021 |
| | Iron | 2030 |
| | Jackson | 2029 |
| | Lafayette | 2030 |
| | Langlade | 2030 |
| | Lincoln | 2022 |
| | Marathon | 2021 |
| | Marinette | 2050 |
| | Marquette | 2025 |
| | Menominee | 2021 |
| | Monroe | 2024 |
| | Oconto | 2031 |
| | Oneida | 2030 |
| | Portage | 2022 |
| | Richland | 2024 |
| | Rock | 2020 |
| | Rusk | 2030 |
| | Sauk | 2030 |
| | Sawyer | 2035 |
| | StCroix | 2021 |
| | Taylor | 2024 |
| | Vilas | 2030 |
| | Walworth | 2020 |
| | Washington | 2020 |
| | Waupaca | 2023 |
| | Waushara | 2030 |

## 3.3 E1/E2 PLSS Sub-Project

As part of V5 and V6, a full statewide Public Land Survey System (PLSS) layer, Edition 1 and Edition 2 were created and will be reported on separately.

For background information on PLSS in Wisconsin, see the State Cartographer's Office webpage on Land Surveying and PLSS Topics.

# 4 RECOMMENDATIONS

The collaborative exercise of DOA and SCO producing final reporting on each year's parcel aggregation project, complete with recommendations, is a requirement of the project MOU. The recommendations contained within each year's final report and documentation of lessons learned are essential elements of the WLIP's regular program planning activities, and serve as tools to help to evaluate the project and lay out a course for the future.

The WLIP engages in planning efforts on a regular basis, with an annual cycle that is an improvement cycle. It is a data-driven process, whereby data is collected, analyzed, considered alongside feedback received, reported on with recommendations for the future, and adjustments are made before beginning the cycle again. Planning efforts for the program exceed that which are documented in this report and on the WLIP webpage, but in terms of end products, the final report for the each year's parcel database serves as a record of critical evaluation, program planning, and active targeting of continuous improvement.

- **Recommendation Data Sources and References.** The recommendations in this report have been composed in a systematic way based on a multitude of factors and sources surrounding the V6 database and its predecessors. References include the county parcel data submissions, county notes provided by counties via the submission form, Observation Reports sent to counties, feedback from end users of the statewide parcel database received via email and by way of the online feedback form, WLIP grant application data, WLIP Retained Fee/Grant Report data, and workflow documentation from the technical team, among other sources.
- **Subject Matter Expert Consultation and Input Gathering.** Much research is involved in the recommendations that are selected to be in the final report. Research and input gathering has taken many forms, including speaking with end users, consulting state statutes, publicly available reference documents, state-level sources for parcel-related data such as the Department of Revenue and Department of Natural Resources, and consultation with major tax parcel software vendors. In cases where a change that has the potential to affect county workflows is recommended, there is consultation with county staff, which includes a sampling of LIOs, and in some cases, other land records staff, such as real property listers, surveyors, treasurers, and registers of deeds.
- **Weighing Recommendations for Change Versus Potential Costs.** These data sources, references, and ideas generated by parcel project staff are discussed at length before inclusion in a final report. The recommendations that follow are not meant as finalized recommendations immediately ready for implementation. Rather, the matter of their implementation involves consideration of issues like allocation of scarce staff resources and requests for county staff attention and assistance. Since the earliest days of the project, there has been mindfulness of the importance of the stability of the statewide schema and that that only essential modifications to the statewide data model should be made. For example, in the V3 Final Report, one recommendation stated, "Changes to the schema should be avoided and only essential modifications should be made." In keeping with this idea, the parcel project team has specifically avoiding adding entirely new attributes and features because of the potential disruption to county workflows.

WLIP Strategic Initiative grants have been available to assist counties in addressing the statutory directive for Searchable Format parcel data. The recommendations below are not meant to alter the Searchable Format or schema requirements from V6. There are not material changes to the parcel schema or submission requirements recommended for V7 at this time. In the past, some attributes, attribute definitions, and requirements for field values have been modified to make them more accurate according to statutory definitions, more precise, clear, or less ambiguous. Consistency with the information on property tax bills has been an overarching theme, as a service for citizens and end users.

Recommendations below cover several areas, such as technology, tools, data request details, project workflow, and sustainability. Importantly, they take into account state-level needs at the same time as those of other end users and the local governments who produce the data that makes up the statewide parcel layer.

## Recommendations for V7 and Beyond

1. **Enforce assessment workflow for repeated Searchable Format errors**
   - Issues with data submissions are noted on Observation Reports, and in some cases they are repeated from year to year within a particular county. For repeated, flagrant errors for county data submissions that lack an accompanying explanation, the recommendation is to establish a streamlined workflow that will allow for quickly contacting the county in a standardized manner and alerting them to the data deficiencies.
   - SCO would stop assessment immediately, notify DOA, and a standardized email would be sent highlighting the repeat/egregious error alerting the county that assessment will not continue until a new dataset with error resolved has been resubmitted.
   - This workflow would apply for zoning datasets missing DESCRIPTION/LINK and other repeated errors.
     - ▶ Create internal list of counties with repeated errors prior to receiving V7 data so the technical team knows which issues to watch for upon data submission and produce email template language by V7 call for data.

## 2. Emphasize the need for manual inspection of data and review of Observation Report items prior to submission

- While the Validation Tool has evolved from one project iteration to the next and progressively helped flag additional potential data problems, county data submitters must understand the Validation Tool is not a "catch all" tool that flags any and all issues within a dataset. It is simply a tool to aid in identifying discrepancies prior to submission.
- Checking of the county Observation Report to prevent repetition of errors from previous year, and a manual internal assessment of the data is also needed to ensure data consistency and quality.
  - ▶ Add Explain-Certification unfixable error explanation examples into Submission Documentation that submitters can reference when preparing their data for submission.
  - ▶ Consider Validation Tool update that requires full text sentence written out by submitter stating:

    *I certify that all errors identified by the Validation Tool have either been rectified or explained with legitimate explanations in the Explain-Certification.txt portion of this submission form.*
  - ▶ Consider providing some of the SQL statements the technical team uses to visually identify problems (e.g., NETPRPTA IS NULL AND GRSPRPTA IS NULL AND AUXCLASS IS NULL AND TAXROLLYEAR = '2020')
  - ▶ Make V7 call for data more strongly require that the V6 Observation Report be reviewed, and state the consequences if errors from previous reports are present in submission.
  - ▶ Print and send counties a copy of their V6 Observation Report as part of the V7 call for data communication.

## 3. Validation Summary Page addition of Inline Attribute Flags summary counts and queries for selecting records

- Consider including within the current Validation Summary page, a summary/count of the error flags that were received on a given run of the Validation Tool.
- This could aid counties in seeing where they have repeat errors. Potentially provide either a custom created text file with the appropriate queries counties could use to quickly select these records from their dataset. This would allow them to isolate all effected records with a specific flag and address those records in a more tactical manner.
- The creation of these queries could be in the form of a text file, which they can copy and paste from or as an additional page that pops up in the browser containing the relevant queries.
  - ▶ Tally/summarize the inline Validation Tool errors somehow, in order to see how common specific errrors are.

## 4. Strengthen Validation Tool checks

**ESTFMKVALUE**

- As of V6, the Validation Tool does not check if AUXCLASS values of X1-X4 or W1-W9 exist when ESTFMKVALUE is populated with a value greater than zero.
  - ▶ Change Validation Tool: Flag records that have AUXCLASS populated and ESTFMKVALUE field has values different from zero or Null.

**PREFIX**

- In V6, approximately 27% of the counties had missing values in the PREFIX field, some with a considerable number of records.
- Consider enhancing the outputs of the Validation Tool (the .ini submission form and the validation summary page) to better alert submitters about missing PREFIX values.
  - ▶ Specifically, we propose to review the .ini submission form and Validation Tool HTML summary page by providing a percentage of missing PREFIX values—between previous and current parcel submission—greater than a threshold value, for example 10%, that better indicates significant missing values.

**Attributes with Common Parsing Errors**

- Address common parsing errors if possible with tools, and clarify Submission Documentation as needed:
  - ▶ Provide more details on how to parse numbered streets (e.g., N 3rd STREET and N THIRD STREET).
  - ▶ Provide more details on how to parse single alpha character roads (e.g., COUNTY ROAD Q).
  - ▶ Address why so many counties falsely spell out "NORTH/EAST/SOUTH/WEST" when their intention is to name a single alpha street which should not have any directional indicators.

**From Explain-Certification Summary**

- Review V6_Explain_Certification_Summary for technical tweaks to make as part of V7 Validation Tool programming
  - ▶ 1) "AUXCLASS (X4) found and IMPVALUE / CNTASSDVALUE / MFLVALUE / NETPRPTA / GRSPRPTA / LNDVALUE field(s) is/are not <Null>. A <Null> value is expected in the field(s) for tax exempt parcels. Please correct."
    - ▶ This should should only be for fully X4 parcels—not partially X4 parcels.
  - ▶ 2) A handful of records have MFLVALUE equal to LANDVALUE by coincidence.
    - ▶ If possible adjust so that a flag is generated only if more than 10 records have MFLVALUE = LANDVALUE, in order to to exclude records that have legitimate data that falls under this coincidence.
  - ▶ 3) Other tweaks as identified from review of Explain-Certification Summary

**From LION 2020 Survey Results**

- Review LION Survey Results for technical tweaks to make as part of V7 Validation Tool programming
  - ▶ Examine parsing tools for fractions or hyphens (per Barron County)
  - ▶ Follow-up with select counties who made non-specific references to tool issues

### 5. Work to determine cause of missing PREFIX values

- Issues of PREFIX values being dropped/missing from parsed address elements was inexplicably common across datasets submitted for V6. The technical team is unsure of the cause of this, but some type of assessment could help identify underlying issues that caused this problem. This issue could be examined spatially to determine if any type of pattern can be observed.
  - ▶ Examine PREFIX issues:
    - ▶ Does it appear to exist in counties that all use a single taxroll software vendor?
    - ▶ Test counties that had issue against Address Parsing Tool to determine if any tool updates are required.
    - ▶ Reach out to counties to ask if they know the source of the problem and provide assistance in resolving if needed.
    - ▶ Enhance Validation Tool for PREFIX and related fields.
  - ▶ Provide better information from the Comparison and Completeness values between previous and current parcel submission values.
  - ▶ Check instructions in Submission Documentation and tool documentation to speak to common PREFIX errors.

### 6. Consider questions related to migration to ArcGIS Pro

- Based on any available data, prioritize the need for developing Python 3.x versions of the Validation Tool, as well as the tools provided to aid counties in preparing their data for submission. It is highly likely that both Python 2.7 and Python 3.x tools will need be maintained for a number of years, as data submitters are in various stages of transition to the ArcGIS Pro desktop environment.
  - ▶ Perform updates to existing tools deemed necessary by January 5th, 2021.

### 7. Web application and data download page updates

- For parcel web mapping application, add instructions for how users can switch the base layer map to imagery or what lay users often think of as a "satellite view."
  - ▶ *In the online web app, you can turn on a view of imagery—commonly thought of as a "satellite view". In the upper right-hand corner of the web application,* ***click the icon that resembles 4 squares****, as depicted in the image below. Then select "****Imagery****." Users might also try the county GIS webmapping application pages (linked in County_Contacts) to see the mapping tools they offer.*
- For the data download page at www.sco.wisc.edu/parcels/data:
  - ▶ Retire the V2/V3 zoning layers from the mini-site data download page so that they only exist in RML's GeoData@Wisconsin, a natural place for legacy data to be archived.
  - ▶ Retire/eliminate the email subscribe option button from the data webpage so there is no longer a need to maintain a separate list.

### 8. Targeted outreach for counties that have struggled to meet Searchable Format

- Over the course of the Parcel Initiative, counties overall have been able to improve how well their parcel data submissions comply with the required Searchable Format. But problems remain that cause inefficiencies in ingesting county information into the statewide layer. Since counties use different workflows, software and data formats, it is hard to make generalizations about why these problems occur and harder still to identify solutions. At this time, six years in the Parcel Initiative, it would be useful to address the issue in a comprehensive and systematic matter.
- We recommend outreach to counties identified as having systemic errors/issues in their parcel submission data. This could take the form of meetings with counties one-on-one via video conferencing or other online software to walk through issues, as well as learn more about their data conditions and obstacles. A goal would be to identify problems in their workflows and, where possible, provide solutions than will allow for more efficient data integration. The ultimate goal is to provide modifications to workflows and best practices at both the county and state level to streamline the data integration process.
- The V7 MOU includes a new deliverable:

  ***County data preparation assistance/outreach.*** *County data preparation assistance/outreach. Conduct outreach with and offer assistance to counties that have in the past experienced problems preparing or submitting data. Focus should be on a small subset of counties that have encountered recurring problems with data submissions, those that are characteristic of specific types of problems that occur across multiple counties, and those that are representative of the most common tax parcel software vendors in the state. The goal is to better understand what challenges counties face preparing and submitting parcel and tax roll data, provide solutions where possible, and document roadblocks so that they may be targeted in the future.*
- Before V7 data collection begins, discuss a plan for implementing this.
- Counties to consider targeting, based on V6 Observation Reports, plus possibly others:
  - ▶ Calumet, Forest, Florence, Iron, Oconto, Outagamie, Pepin, Rusk, Sheboygan, Waushara
  - ▶ Counties who can demonstrate via screen-sharing their land information system/database set-up/workflow.

### 9. Update workflow documentation before V7 and then continually during the creation of V7

- Workflow documentation has several benefits, including that is helps document the workflow process with an eye toward replicability of the project, provides information to be considered in planning efforts for future iterations of the statewide database, including helping to identify efficiencies and improvements to be gained and steps that might move the Parcel Initiative closer to the Four A's, and helps DOA understand the technical process better, such as what is QA/QC'ed and what is not.
- As such, the workflow documentation should be a living document that is scrutinized, refined, and added to throughout the development of each statewide parcel database.
  - Pre-V7 Workflow Update
    - Update the V6 workflow documentation before any V7 data is received, making minor updates for currency, such as the Statewide Logic section (which mentions calculating the obsolete attribute IMPROVED) and the Creation of Deliverables section (which should have added the task of creation of Excel/CSV files). Any documented as part of the workflow process will be less likely to be overlooked.
  - Continuous Workflow Updates
    - SCO share workflow documentation on a regular basis with DOA to help identify any gaps and areas for clarification and DOA provide feedback to SCO in a timely manner.
  - Publication of Workflow
    - Consider publishing workflow documentation as part of V7 Final Report. Publishing the workflow documentation is a transparency measure and also may help other states considering similar projects. The workflow documentation, along with the final report, would provide a very detailed roadmap as to how a statewide parcel database was completed in Wisconsin. It may also communicate the complexities and challenges of creating the statewide parcel map to counties, state agency officials, and other stakeholders.

### 10. Workflow Documentation additions

- Additions for V7 Workflow Documentation:
  - Elements related to showstopper communications
    - What is the process for determining showstoppers/questions to counties, and what are the major steps involved with sending a showstopper communication?
  - Elements related to Observation Reports
    - What are the major steps in the process for authoring Observation Report comments? Per the V7 MOU, include essential cross-references or hyperlinks that would be helpful to add (e.g., a reference or link to the Google Sheet for Assessment Reports)?
  - Elements that explicitly look forward (e.g., *V8 Validation Tool Prep*, *V8 Schema Issues to Consider*)
    - Elements that make a record of forward-looking activities and notes for the next year, or cross-references/hyperlinks if these are files that exist elsewhere.
  - Standard Exceptions List
    - Per the MOU, include or cross-reference each county's database or single list of "known issues/standard exceptions" (e.g., V4_Final_Report). These might be documented in different places (e.g., prior years' notes, intake notes, county submission form content, qualifying language/examples in submission documentation, data validation tool exception programming, et cetera) but should be gathered into one place as comprehensively as is feasible for V7.

### 11. Data assessment and benchmarking data for more attributes for V7

- Extensive checking of compliance with Searchable Format requirements is performed for several attributes and fields, particularly the address elements fields, but some some schema attributes undergo less scrutiny relative to their schema definitions and field value requirements.
- The V7 MOU requires Benchmarking Data for each county with checks on values for all attributes called for by s. 59.72(2)(a) and the Searchable Format.
- Example: OWNERNME1. For publicly owned parcels (AUXCLASS X1-X4), the same owner should be designated the same way if they own multiple parcels.
  - This would entail a county-level check for standardized owner names for public parcels—but *not* to the point that outside research is required nor that judgements be made about complexities like trusts, easements, et cetera. The check would be basic (e.g., is "CITY OF MILW" designated the same way for all occurrences in the Milwaukee County dataset).
  - Prior to receipt of V7 datasets, the project team should plan for any additional attribute checks for the intake and assessment workflow.

### 12. Revisit ESTFMKVALUE instructions for V7 call for data

- ESTFMKVALUE had 33 out of 72 errors on the V6 Observation Reports. The V6 Observation Reports had the following comment for the 33 counties:

  **ESTFMKVALUE:** The Estimated Fair Market Value field was accurately populated for taxable parcels assessed at full market value, however, some special cases where the field ESTFMKVALUE does not apply need to be nulled. As called for by the schema, null out ESTFMKVALUE for parcels that are wholly or partially:
  - Assessed at use value or 50% of market value (PROPCLASS 4, 5, or 5M)
  - Enrolled in MFL/FCL programs (AUXCLASS W1-W9)
  - Tax exempt (AUXCLASS X1-X4)

- Likely explanations for the high rate of errors include the fact that there was a new requirement for V6 to null out ESTFMKVALUE for more additional property classes, and the nulling of ESTFMKVALUE is unique to the Parcel Initiative's call for data. Counties do not need to null out ESTFMKVALUE for several of the property classes for other purposes. The problem extends across all tax roll software vendors. However, nulling errors for ESTFMKVALUE was fairly easy for the technical team at SCO to remedy as a statewide processing step.
  - ▶ Although this issue was addressed in the Observation Reports, the definition for ESTFMKVALUE and need for nulling records of certain property classes should be emphasized again in the V7 call for data—in the cover letter email and/or Submission Documentation.
  - ▶ Weigh need for processing on the state end versus perfect "contributor model" data and revisit Validation Tool flags for ESTFMKVALUE errors, advising edits to flags if appropriate.

### 13. Move up the call for data and pursue further efficiencies

- The call for data for the V1-V6 projects has come at the end of January. Given that the statewide parcel map database is now complete by June 30th and the final report completed in September/October, it should be possible to release the call for data before the end of the year.
- In fact, the V7 MOU currently has a timeline to make the V8 call for data ready by December 17, 2021. There are several possible benefits. It responds to a request by LIOs to move up the call for data, fostering good will, which may be reflected in more conscientious data checks and grooming before submission. Also, this would give counties and taxroll software vendors earlier notification of any changes to the parcel schema and allow them to plan ahead for data submission. Finally, it allows for more time for QA/QC, follow up with counties, and statewide processing to produce a statewide parcel dataset of higher quality or allows for earlier release of the dataset.
- It is a goal to continue to improve the efficiency of statewide data collection and aggregation after V7.
  - ▶ Look for ways to condense the tasks of data collection, assessment, and aggregation. This will allow more time for value-added work, such as QA/QC and county outreach, or an earlier release of statewide databases. It can also enable an earlier call for data, which may result in fewer submission errors because counties and their vendors can better plan ahead and prepare for the call for data. The V8 call for data must be ready by December 17, 2021 according to the V7 MOU. The timeline should further be tightened in the future, so that the V9 call for data must be ready by December 1st.
  - ▶ Make the V8 call for data by December 17, 2021 or preferably sooner, and take actions to enable a V9 call for data no later than December 1st.

### 14. Condense timeframe for the creation of the PLSS database and final report

- As the SCO has gained years of experience in updating a statewide PLSS database, it has become more efficient in completing annual updates. It has been noted that the effort for PLSS editions beyond E2 will be much lower than for E1. The base level of PLSS data can also be carried over from year to year, so that only changes to county's PLSS need much attention. This frees up more time in the year, which can be utilized to work towards making the call for data earlier and putting more value-added work, such as QA/QC and county outreach, into all aspects of GIS data collection, foremost parcels.
  - ▶ Utilize time gained with PLSS efficiency for earlier parcel call for data and other improvements.

### 15. Consider delaying signature of Strategic Initiative grant agreements until successful submission of data

- This recommendation involves delaying the DOA representative's signature of WLIP Strategic Initiative grant agreements until the county has adequately submitted parcel data in the Searchable Format, as well as other requested GIS data layers.
- For purposes of expediency and administrative efficiency, currently all agreements or large batches of grant agreements are processed for signature ahead of successful county data submittal.
- Instead of delaying the first payment of the grant, under this proposal, the signature of the grant agreement would be delayed until successful submittal of parcel data and other requested layers.
  - ▶ DOA explore how to implement delayed signature of grant agreement, including authoring potential new communication materials and planning for any changes to payment workflows.

### 16. Focus on obstacles to the Four A's at a policy level

- Great strides have been made since the passage of Act 20 of 2013 and the first version of the statewide parcel database. However, given the state of parcel data submissions, where only 20% of counties are meeting all submission requirements on their first attempt at submitting data, focus should be more intent on obstacles to automation of local GIS data to the state level. This has been more apparent with each year, as can be followed in successive years' project Final Reports.
- The 2019 WLIP Report elaborated specific obstacles to automation and areas for improvement in aggregation of local GIS data to the state level:
  - GIS gaps to fill yet.
  - Geospatial accuracy work and adjustments are ongoing. 65% of counties still working on PLSS completion/integration.
  - Only 20% of counties meet all Searchable Format standard requirements on first attempt
  - Data collection time is about 5 months.
  - Data validation and error reporting require several passes.
  - Local government capabilities are vastly different.

    - Unique local data situations can create exceptions to a standard data model.
    - Independent municipal data stewards present challenges.
    - Automated server-side aggregation may be a long way off.
- The obstacles to automation (the Four A's) are enormously important. They stand in the way of further progress in streamlining and modernizing the process of aggregating local GIS data to the state level. One action taken to address this is to stipulate that for V6 and V7, the project will include specific attention to documenting obstacles to automation.
- The Parcel Initiative has taken the approach that counties do not have to change their native workflow/databases, but the annual submission requirements from DOA require the native data be re-formatted for export in to meet the submission requirements. The formatting of native data to meet the requirements must happen each year. Otherwise, counties would have to maintain the data in the structure of the statewide parcel data model.
- It should be recognized that on the state-end, an external change may be needed before a drastically different approach is viable (e.g., county-wide assessment, a legislative change, DOR XML standard achieved by all counties and independent municipalities, developments facilitated by another state or federal agency).
- In other words, the obstacles to automation may involve issues that occur at the local level or are outside of the scope of what DOA/SCO can control—thus making understanding of obstacles to automation one area that stakeholders can help offer understanding and can possibly contribute solutions that might help make forward progress in this thoroughly collaborative project.

# Appendix
# A. V6 MOU Excerpt

Specific V6 Project deliverables:[2]

- **A draft V6 statewide parcel database and map layer** aggregated from existing county and municipal parcel datasets for purposes of internal quality assurance/quality control.
- **A statewide parcel database and map layer** aggregated from existing county and municipal parcel datasets in both GIS and CSV formats, using a documented update process that, at a minimum, includes the parcel attributes required by s. 59.72(2)(a), those listed in the parcel schema and Searchable Format standard detailed by the *V6 Submission Documentation* and recommended in the *V4 Final Report*, is aligned as closely as feasible with the property tax bill content prescribed by state statute and the Wisconsin Department of Revenue, and, if statewide benefits clearly outweigh the costs of implementation, enhanced with additional data fields (i.e., "Searchable Format 2.0").
- **Hosting and display of V6 parcel layers.** Employ a hosting solution for the statewide parcel database and map layer (with the potential for a third-party hosting solution), and publicly display the database and map layer along with end-user schema documentation, with delivery through platform(s) that provide a mechanism for linking to publicly available county land information websites, land information officer contact information, and other publicly available county GIS data layers and web mapping services.
- **Download/Export of data and data subset capabilities,** including a download by filter or download subset function, as well as individual county downloads.
- **Validation of county data submissions.** Provide an automated mechanism for evaluating county data submissions for fitness to submission requirements and data model while accounting for individual county differences, along with a report of possible deviations from the schema and directives on how to rectify errors.
- **Benchmarking data.** Provide data evaluating counties against current benchmarks, with parcel benchmark data as uniform as possible, ready to be provided to counties within six weeks after successful data submission date.
- **Workflow documentation.** Document the data intake and processing workflow in human-readable format in as few files as possible, with attention to differentiating aspects of workflow that are/are not and can/cannot be automated, any conditions in local government data that comprise legitimate data model exceptions (e.g., from prior years' notes, intake notes, county submission form content, qualifying language/examples in Submission Documentation, data Validation Tool programming, et cetera), and other obstacles in local data conditions that could hinder future efforts at automation.
- **Collection and delivery of ancillary data layers to the UW-Madison Arthur H. Robinson Map Library,** including county-maintained zoning layers that are not collected and/or aggregated by another government entity.
- **A final project report,** by September 30, 2020, written in collaboration with DOA. At a minimum, the report shall address:
    - Project Background
    - Technical Approach
    - Benchmark Progress Assessment – Assessment of where each county is at in terms of meeting the four benchmarks listed by the *V1 Interim Report* and the requirements for counties to achieve by the V6 call for data deadline of March 31, 2020.
        - Benchmark 1 – Parcel and Zoning Data Submission
        - Benchmark 2 – Extended Parcel Attribute Set Submission
        - Benchmark 3 – Completion of County Parcel Fabric
        - Benchmark 4 – Completion and Integration of PLSS
    - Recommendations for V7 – Recommendations not limited to but potentially overlapping content of workflow documentation.

[2] From V6 MOU (2019 June). Retrieved from https://doa.wi.gov/DIR/V6_Parcel_Project_MOU.pdf

# Appendix
# B. V6 User Feedback

## ABOUT V6 USER FEEDBACK

This appendix is a compilation of comments provided by users of the **V6** Wisconsin statewide parcel layer, received via email and by way of the V6 online user feedback form. This data has been cleaned. Questions and comments dealing with technical subject matter have been omitted. Some comments have been omitted due to lack of content, or combined, in the case of multiple comments from the same user. To view user feedback from previous years, see the V5 Final Report (for V5), the V4 Final Report (for V4), and the V3 Final Report (for V1-V3).

**Legend**

Light red text indicates Organization/Affiliation
User responses are broken down into the following sub-groups:

STATE GOVERNMENT
FEDERAL GOVERNMENT
LOCAL GOVERNMENT
PRIVATE SECTOR
NON-PROFIT ORGANIZATIONS
EDUCATIONAL INSTITUTIONS
PRIVATE CITIZENS

Total number of V6 responses that appear below: **243**
Date of last update: **July 6, 2021**

## STATE GOVERNMENT USERS

- WI Department of Natural Resources
  USES • -- To digitize Taxlaw parcels
  -- To generate a vector tile service for offline mapping
  -- To help delineate recreational and preservation lands
  -- To help update the Public Access Lands Atlas
  -- To evaluate wetland compensatory mitigation options for the wetland permit applicants.
  -- To oversee the cleanup of contaminated properties.
  -- Identify responsible or affected neighboring parties, is useful when seeking permission to inspections on private property, or when enforcement actions are involved.
  -- In discerning land ownership and ownership of manure storage structures associated with large fish kill events.
  -- To help track the locations of rare species and natural communities and to carry out land and species management practices.
  BENEFITS • Saves time in addressing business needs listed under uses.

- WI Dept. of Agriculture, Trade & Consumer Protection
  USES • We use this resource when planning out our state wide surveys for plant pests and diseases. It helps us with landowner contacts and identifying public or industrial land to target our surveys.
  BENEFITS • This has been immensely beneficial to us. We use it regularly and appreciate the effort and organization that it takes to compile these data.

- Wisconsin Historical Society
  USES • Mapping, research.
  BENEFITS • Makes updates much easier.

- State Government User [Anonymous]
  USES • Looking up assessed value of parcels and aerial information on parcel layout and improvements due to the fact that the municipality or county GIS map is currently not working.

- Wisconsin Department of Revenue State and Local Finance Division - Tax Incremental Financing (TIF)
  USES • My co-worker and I verify parcels boundaries and values when new TIDs are created. Usually we start with county information which is what makes your list of links [https://doa.wi.gov/DIR/County_Contacts.pdf] so helpful. But we do use the statewide parcel map if we cannot find what we need.

- Wisconsin Department of Public Instruction
  USES • Check on school district boundaries.
  BENEFITS • We get many questions about residency and voting.

- Wisconsin Office of Public Defender - Spooner Trial Office
  USES • Criminal Investigation - Examining where crimes occur and who the landowners are, where the boundaries and parcels are for the purposes of crimes. For example, if its a DUI they need to be on a public roadway. I have used this Database to find that a person was not - in fact - on a public roadway.

- Wisconsin Department of Natural Resources.
  USES • I plan to use this data to make the DNR's current wetland survey data more complete. We are currently missing owner and place information for several areas we have surveyed. This data should be able to be intersected with our survey polygons to provide that information.

## FEDERAL GOVERNMENT USERS

- US Census [*~9 responses realted to or citing "Census"; combined here*]
  USES • -- US Census enumeration.
  -- Search for owner of parcels for NRFU [Nonresponse Followup] Census data.
  -- Search for new house unit owner.
  -- Verifying land ownership to follow up with property owners to complete non-responses for community surveys.
  BENEFITS • -- We are able to obtain information on property owner and potential further contacts.
  -- Less time wasted in identifying and communicating with property owners.

- USDA – United States Department of Agriculture
  USES • We use it to maintain landownership records for our farm programs.
  BENEFITS • It helps us keep updated records for accurate participation.

- Federal Government User [Anonymous]
  USES • Proving eligibility for Disaster Assistance.

- BLM - Bureau of Land Management
  USES • Compare state level data with federal data.

## LOCAL GOVERNMENT USERS

- Village of Birnamwood
  USES • We have a GIS system for mapping and use this information with it.
  BENEFITS • Allows us to look at properties and owners.

- Franklin township, Kewaunee County Plan Commission member
  USES • It will help me visually locate parcels of land for my position on the town plan commission.
  BENEFITS • I need to locate land parcels for rezoning and land division.

- University of Wisconsin-Stevens Point, City of Stevens Point
  USES • I've used parcel data both as a private citizen and for the local government. As a citizen I've used it for numerous projects for my major in Natural Resources Planning at UW-Stevens Point. Maps created are generally land use maps. For my internship in the Community Development Department with the City of Stevens Point I've also created land use maps to analyze current uses in new TID districts within the City, and I'm using the parcel data today to analyze undeveloped lots within the City for the 2019 Housing Report.
  BENEFITS • We benefit from the free up to date data that is provided. This up to date data allows for the creation of better plans for the future of the City of Stevens Point. As a student I benefit because the school can get easy access to this data which provides.

- City of Tomah
  USES • Parcel data analysis.

- Local Government User [Anonymous]
  USES • Review what parcels looked like before a split.
  BENEFITS • Makes splits before and after more understandable.

## PRIVATE SECTOR USERS

- Davy Engineering Co.
  USES • Property research.
  BENEFITS • Site investigations for construction projects.

- Edge Consulting Engineers, Inc.
  USES • Finding property lines for new cell tower construction.
  BENEFITS • Finding all of the property info in one place saves time, rather than searching individual county websites.

- Ayres Associates - Telecommunications Division - OSP Designer
  USES • Base mapping for utility drawings (telco, electric, ROW), research, used as a template to learn how GDB schemas were built during my college GIS class.
  BENEFITS • This is essential to our CAD base design workflow. Having data within a single statewide GDB greatly increases productivity and saves time.

- Applied Ecological Services
  USES • Used for project boundaries when they're based on parcels (e.g. wetland delineations & solar projects, restoration projects).
  Identifying public/private land based on owner name. Identifying potential protected lands.
  BENEFITS • The parcels provide the most accuracy for project boundaries and confirm we have the correct location by providing owner name when available. The also help us determine land that is publicly owned that may be protected to help us ID areas where to expand.

- onX Maps
  USES • onXmaps, Inc. (onX) processes and compiles county parcel data into a statewide layer for display along with public lands, trails, hunting units, and recreation points-of-interest. Hunters, outdoor recreators, and government resource managers use our value-added map—accessible via GPS units, smartphones, and web map services—to determine public and private land boundaries.
  The map products that we sell are similar to an online parcel viewer; users can query individual parcels and view ownership information for one parcel at a time, but are not able to download a list of ownership or other such data. Further, the raw data is NEVER accessible for download or sold as a mailing list. The Terms of Use inform our customers that the data is not a substitute for a legal land survey, the data is subject to error, and is for informational purposes only.
  BENEFITS • Reliable updates allow us to plan for WI parcel updates in our Hunt app--our users appreciate it!

- Valley View Forestry LLC
  USES • We utilize the Statewide Parcel Database to provide additional context to our mapping needs and to identify and locate client properties.
  BENEFITS • It is wonderful to be able to access a consilidated database of the tax parcel information while maintaining our datasets rather than having to visit numerous different county sites and locating the individual county data sets under varying standards.

- Vandewalle & Associates
  USES • I have and will continue using this data in my jobs as an urban and regional planning consultant employed by municipalities across the state.
  BENEFITS • We are able to efficiently create property maps and pull assessment records for communities we work for across the state for things such as Zoning Maps, potential Redevelopment or TIF Districts, and more.

- RWE Renewables
  USES • Renewable energy developer use for site layout, landowner contact, and grid-scale planning for wind or solar energy generation.
  BENEFITS • Assists in site layout, planning, landowner contact for grid-scale renewable energy development.

- Thomas Wyse Forestry LLC
  USES • Managed Forest Law plan preparation and timber sale establishment and mapping.
  BENEFITS • It's a real time and cost saver to have all the parcel data available in one place and ready for use in GIS.

- Transcendent Technologies
  USES • Transcendent Technologies has used the State Parcel Fabric to add geographic reference to WDOR Real Estate Transfer Sales Data as a value added GIS based solution for our customers using our sales history module. The parcel data also provides a visual representation of property boundaries on our map.
  BENEFITS • The Statewide parcel database has provided us with uniform solutions across our partner counties and has offered a significant savings to our counties by standardized data vs creating customized solutions based on individual data schema.

- Private Sector User [Anonymous]
  USES • Parcel locations etc. for insurance purposes. Wi. insurance agent.
  BENEFITS • Comes in very handy on several occations.

- Courthouse Retrieval System
  USES • Incorporate the data into a service provided to realtors to allow them to view parcel location within their multiple listing tax software.

- Great Lakes Urban Forestry
  USES • Tree inventory.
  BENEFITS • Allows field crews to determine trees in or out of ROW.

- Halberg Engineering LLC
  USES • I design commercial buildings and use parcel data like this to confirm which municipality the building site is a part of.
  BENEFITS • I have frequently searched various county web sites for the information, but some municipalities (cities) extend across county lines themselves, so having a state wide resource is valuable to my business and, indirectly, to my clients who are small business owners throughout the state.

- Ellingson Companies/GIS
  USES • Used to understand people affected by projects we work on

- Private Sector User [Anonymous]
  USES • General parcel data on exhibits when scoping a potential job prior to survey or design work

- Geocaching.com
  USES • Using for the review of new geocaches for Geocaching.com.
  BENEFITS • This allows me to ensure new geocaches are not placed on private property without permission. In addition the application helps ensure that we are not placing geocaches on protected lands like State Natural Areas.

- Private Sector User [Anonymous]
  USES • Landscaping and development.

- Private Sector User [Anonymous]
  USES • To find the owner of a property I wish to purchase.

- Custom Course Maps
  USES • I make Disc Golf Maps and want to see who owns the land around a course and if there are vacated parcels nearby.

- Edina Realty
  USES • Real estate.

- CoreLogic – Data Acquisition-mapping
  USES • We use the data to aid us in the creation of value-added derivative products that we license to our clients. We combine the raw data we receive from the County with other data elements and use a patented process to standardize and normalize the data into our products.we will not resell or redistribute the County's original GIS data (in its original unadulterated form, format, and volume) to third parties.
  BENEFITS • We use the data to aid us in the creation of value-added derivative products that we license to our clients.

- TDS Telecom
  USES • Property ownership.

- CGC, Inc. [Engineering firm]
  USES • Determine parcel locations.

- Private Sector User [Anonymous]
  USES • Finding property owners information for recreational permissions.
  BENEFITS • So we can find places to metal detect and other outdoor activities.

- Precision Appraisals LLC
  USES • Real estate appraisal office.
  BENEFITS • We have not been able to get Ariel view or tax/assessment date online for Menominee County.

- Private Sector User [Anonymous]
  USES • Private forest management.
  BENEFITS • Regular use for verifying and integrating parcel spatial data.

- Private Sector User [Anonymous]
  USES • FOIA Requests for Phase I [Environmental Site Assessment]
  BENEFITS • Helps determine property boundries.

- AmericanOrtho.com
  USES • Insurance information.

- Private Sector User [Anonymous]
  USES • We permit for new communications lines and are required to show parcels and r/w on all prints
  BENEFITS • In all of our permits we have to draft within the right of way while still showing all utilities and parcel lines so this gives us an accurate depiction of where the right of way lies in order for us to draft, permit, and build communication lines.

- Equix/Mi-tech Services
  USES • We use it for getting a general idea of Right-of-Way for drafting communications design projects.
  BENEFITS • Very helpful with the addresses nested within the shapefile aside from the parcels themselves.

- GWB Professional Services, Gary Becker, CEcD Emeritus
  USES • I am a consultant who works for local governments on development-related issues. Although I can secure parcel data on a project by project basis for the County in which my project is located, having access to statewide parcel data allows me to do comparative analysis without having to pay for the data from counties outside the one in which the project is located. Most of the work I do is area analysis, looking at trends in property values both spatially and through time.
  BENEFITS • It allows me to perform analysis that could otherwise not be affordably accomplished without this resource.

- Private Sector User [Anonymous]
  USES • Mortgage on property verifying land situation.

- Private Sector User [Anonymous]
  USES • We use this data for GIS mapping applications for private clients.
  BENEFITS • This makes it easy to view landowners parcel boundaries.

- Private Sector User [Anonymous]
  USES • Autocad.

- Private Sector User [Anonymous]
  USES • Finding parcels for real estate investment purposes.
  BENEFITS • It saves us time using the statewide map to see all properties regardless of county.

- Private Sector User [Anonymous]
  USES • Landowner info for utility projects.
  BENEFITS • This has been a lifesaver when needing parcel data for utility projects in Wisconsin.

- Maurer Surveying, Inc.
  USES • Wealth of information used for private and work use.

- Jacobs Engineering Group
  USES • Used to find parcels impacted within 1 mile of a substation build within Adams County.

- JLL Milwaukee - Research/GIS Analyst
  USES • Various commercial real estate property analysis and data verification.
  BENEFITS • Increased quality of internal property database, therefore increased client knowledge and decision making intel (client = future office users/businesses).

- Baxter & Woodman, Inc. - Spatial Technology Dept.
  USES • We plan on using this data for internal projects where we cannot obtain parcel data from Municipality or County.

- Law Office of Rollie R. Hanson, S.C.
  USES • Look up requisite property information for completing eRETR's mostly (especially acreage). Also to look up/confirm ownership & to find Parcel ID (so the multiple search options are very helpful).
  BENEFITS • Provides the information we need to complete our work on a regular basis. Identifying properties owned, identifying property ownership, parcel ID, acreage, etc.

- Private Sector User [Anonymous]
  USES • Parcel info for siting information, mapping.

- Private Sector User [Anonymous]
  USES • Creating parcel maps for wetland mitigation banks, verifying site ownership for permitting, independent research etc.

- Richland Area Forestry, LLC
  USES • GIS mapping for forestry
  BENEFITS • Similar layers obtained in the past from DNR but not all counties available and the ones I use are now becoming outdated. I use the layers with GPS for orientation in the field and making GIS maps for WI managed forest law (MFL).

- Snyder & Associates
  USES • Preliminary/Conceptual Planning & Design In CADD.
  BENEFITS • Very helpful in preliminary/conceptual planning & design. Essential to keep this going.

- Private Sector User [Anonymous]
  USES • Figuring out which AHJ [authority having jurisdiction] to apply for permits through without having to call multiple municipalities.

- Audubon Companies - GIS Dept
  USES • Helpful in determining who to contact for different possible projects and to determine possible project costs using parcel geometry. These projects if they progress, can providing an influx of funds to individual residents, companies, local and state govt. and other entities within Wisconsin. Great tool and well delivered with ease of access and use.
  BENEFITS • Having an available parcel base layer to work with provides a quick method to help determine project costs and schedules.

- Parkitecture + Planning
  USES • Planning purposes with Rock Bike Coalition to extend and connect off-road multi use trail corridors in Rock County.
  BENEFITS • Very easy to find, access, and download county wide data. especially in Rock Co, rather than having to piecemeal data from each municipality.

- AT&T Labs
  USES • Service location analysis for telecoms, part of national effort.
  BENEFITS • Having access to fresh and consistent data with updates is important. Being able to get it direct is nice. The quality of both the data format and the data itself is good and appropriate. These data are great infrastructure upon which valuable new applications can be built WI is the best state overall for their parcel hosting.

## NON-PROFIT USERS

- Gathering Waters
  USES • We utilize the entire statewide layer to document the boundaries of protected lands under the ownership or easement of the state's 40+ land trusts. The Statewide Parcel Database is the literal foundation of this project, in that it both makes the effort possible and serves as the base upon which all of the boundaries are built. The database is, in a word, invaluable.
  BENEFITS • Please see my answer above under the 'Uses' query. In case this form is being aggregated with others and sorted by answer, I copy and paste my answer here:
  We utilize the entire statewide layer to document the boundaries of protected lands under the owne

- Northwoods Lands Trust
  USES • We use the parcel layer to do conservation work - specifically to map ownership of parcels that we protect through acquisition or conservation easements. We also use the parcel data to evaluate development around lakes.
  BENEFITS • We use the parcel layer a lot! It helps us do analysis, and create accurate maps of the properties that we work on.

- Landmark Conservancy
  USES • Conservation easement monitoring for non-profit.
  BENEFITS • Data assists with finding and accurately mapping parcels included in conservation easements.

- Bethany Baptist Church, Mason WI
  USES • Understanding what parcels are being referenced for tax-exempt forms to be filled out.
  BENEFITS • Gives accurate information about ownership of parcels to help with tax records.

- Ice Age Trail Alliance
  USES • The Wisconsin statewide parcel layer has greatly helped us in updating landowner database along the Ice Age National Scenic Trail. We are in the process of doing a virtual "walk through" of the Trail to improve the accuracy of our land ownership data - both geographic and owner information. Since the Ice Age Trail crosses 30 counties, it's much more efficient having all parcel data in one layer than working with multiple counties. Other staff use the statewide parcel layer for planning and management.
  BENEFITS • We have used the statewide parcel data to update property boundaries and ownership information along the Ice Age National Scenic Trail.

- Ice Age Trail Alliance, Lands Department
  USES • Trail development and conservation.
  BENEFITS • It make our work so much more efficient. the alternative is going to each county's website. those vary greatly and some are terrible. Furthermore the data are combined with our own to create informative maps used to make our important decisions.

- Aldo Leopold Foundation/My Wisconsin Woods
  USES • I manage a statewide database of all woodland owners in Wisconsin and I use the parcel layer daily to update parcel information for landowners who recently purchased property in order to connect them with forestry professionals and track forest management on the ground.
  BENEFITS • We used it to populate our database with 2017 data and its the foundation for our outreach and program. We couldn't have done it without one central location for the tax data statewide. Going county to county would have been impossible and formatting a nightmare!

- Non-Profit User [Anonymous]
  USES • Writing letters to community for encouragement during the pandemic.

- Diggers Hotline - Mapping Services Department
  USES • Diggers Hotline base map update, specifically for Iowa County.
  BENEFITS • Diggers Hotline is a non-profit corporation and is Wisconsin's One-Call center for utility facility locating, keeping both Wisconsin excavators and public utility lines safe. Certain counties are unable or unwilling to provide GIS data directly to us without charging, and we know it can be downloaded here.

- Regeneration Midwest/Midwest Healthy Ag project
  USES • We are conducting a grant-funded survey of farmers and rural residents related to agriculture, environment, and public health. We will use this information to gain a clearer understanding of the farmer and the land that they manage.

- Rock River Coalition - Friends of Badfish Creek Watershed
  USES • Adjacent property owner identification.
  BENEFITS • Improves efficiency when working on larger projects that cross county boundaries...

- Madeline Island Wilderness Preserve
  USES • Local land trust (Madeline Island, Ashland Co.)
  BENEFITS • GIS analysis of landcover and ownership for land conservation and management.

- Non-Profit User [Anonymous]
  USES • Investigate land ownership; Use for high resolution state boundary.

- Non-Profit User [Anonymous]
  USES • Names for lake association.

- N.E.W Metal Detecting Club and The Relic Recovery Bureau
  USES • Our metal detecting club in Appleton uses the parcel viewer to identify property owners in order to obtain permission to hunt properties. The tool has also become very important for us in identifying publicly owned properties.
  BENEFITS • It helps us identify public property and property lines to prevent trespassing.

## EDUCATIONAL INSTITUTION USERS

- Virginia Tech Agricultural & Applied Economics
  USES • Identify parcels in surrounding lakes for water quality hedonic pricing model.
  BENEFITS • Allows us to identify the parcels surrounding lakes of interest.

- Polytecnic School
  USES • Land parcel form.

- Educational Institution User [Anonymous]
  USES • Teaching real estate.
  BENEFITS • Looking at plats and surveys.

- Central Michigan University – Department of Geography and Environmental Studies
  USES • I hope to have a master's student work on an applied project examining shoreline property development or land prices.

- Educational Institution User [Anonymous]
  USES • I am enrolled in graduate school at UW-Madison and am using this for a final project.
  BENEFITS • I needed a county wide dataset for a final project. It was difficult to find a free, complete data set.

- University of Wisconsin-Milwaukee, Cultural Resource Management
  USES • The statewide parcel data serves as a primary resource for the GIS team at the UWM-CRM Program for both determining property ownership information as well as depicting property boundaries on project mapping.
  BENEFITS • The ease-of-use of the single, continuous data set and consistency of attribute information are a benefit to the daily operations within our program. The data set provides a single location for getting property information and has become a staple in our workflows.

- UW-Stevens Point
  USES • Used for a capstone project map.

- Northland College
  USES • Using parcel data to get an estimate of the population in certain areas. This data is then used towards Phosphorus Load estimates on waterways.
  BENEFITS • This is helping a student with their independent research project.

- St. Mary Catholic Schools
  USES • We use this to determine school district a family lives in for school purposes.

- Educational Institution User [Anonymous]
  USES • To make a map and right down property lines on it for a school project.

- University of Wisconsin-Madison / Wisconsin State Cartographer's Office
  USES • Adding attributes to building footprints in northern Ashland County.
  BENEFITS • The statewide parcel layer gives us easy access to up-to-date parcel information in a standardized format. This improves the quality and usability of our data product. Attributes from the statewide parcel layer are an important part of the building inventory we are creating. Planners will use the inventory to refine flood damage estimates and identify community-specific vulnerabilities. This will help Wisconsin communities be more resilient.

## PRIVATE CITIZEN USERS

- Private Citizen
  USES • Hunting, fishing. Purchasing and reviewing land.

- Private Citizen
  USES • To apply for a chicken keeping permit.
  BENEFITS • To identify the parcel number of our home.

- Private Citizen
  USES • I am looking at a house I'm interested in buying and want to see what is around the house, as far as how large are the surrounding parcels, and where is the adjacent public land (as it is advertised to have on 3 sides).
  BENEFITS • It will help me decide if I want to schedule an appointment to look at the house.

- Private Citizen
  USES • I wanted to see my property line and discuss where to pot a corner post with my neighbor.
  BENEFITS • It helped me quickly assess an approximate property line without paying an expensive land surveying service.

- Private Citizen
  USES • On the search for a property to purchase, and using this website to check property lines in conjunction with Google Satellite.
  BENEFITS • We can more easily compare to satellite photos where property lines are for properties we may be interested in purchasing.

- Private Citizen
  USES • Looking for property.

- Private Citizen
  USES • To better see the size of properties and get general info as to the value of them.

- Private Citizen
  USES • Land find and values.

- Private Citizen
  USES • Checking approx. where lot lines are.
  BENEFITS • I can see where the boundaries of my property are. I am also evaluating buying other property and it helps when walking those as well.

- Private Citizen
  USES • Need to contact my neighbor to ask about using a logging road for access that is tough from my land.

- Private Citizen
  USES • Looking for vacation/hunting property.
  BENEFITS • The amount of information and ease of use is impressive.

- Private Citizen
  USES • Locate a home I saw which was for sale.

- Private Citizen
  USES • Property lines.

- Private Citizen
  USES • Planning to sell. Gives me an idea as to price.

- Private Citizen
  USES • Its my right to know this information, the notion that the service provided need to be justified is rediculous.

- Private Citizen
  USES • Identifying ownership rights to land as part of my work, finding property of friends and family for recreational usage, and locating the exact acreage of property which I own.
  BENEFITS • My work requires an extensive knowledge of what property is owned by whom, and how these owners want their property to be maintenanced by us. Parcel maps give us a vital tool to accomplish this, and give us a competitive edge in our business.

- Private Citizen
  USES • Determining borders of family property. Ensuring I do not trespass when exploring public waterways
  BENEFITS • Was able to ensure my canoe trip did not lead to trespassing

- Private Citizen
  USES • While searching for rental properties, trying to find who owns the parcel because online scams are so prevalent. I want to make sure who I'm talking to actually owns it.
  BENEFITS • Yes, I have avoided communicating with anyone who seems to be running a scam.

- Private Citizen
  USES • Curious about land ownership.
  BENEFITS • It's data in a centralized place.

- Private Citizen
  USES • Research and verification of parcels offered for sale as to accuracy of acreage and location (address). Zillow sometimes seems to have inaccurate/conflicting information.

- Private Citizen
  USES • Identifying hunting land boundaries and finding info about market value.
  BENEFITS • Had all the info I needed. Will hopefully soon be buying the property.

- Private Citizen
  USES • Check who lives next door.

- Private Citizen
  USES • I needed my parcel number in order to apply for a permit to build a bedroom in my basement and this was the only website that had it currently available including five local gov't websites.
  BENEFITS • Parcel number was acquired (confirmed that "tax # is the same as "parcel")

- Private Citizen
  USES • Understanding where public and private lands are.
  BENEFITS • I don't worry about trespassing.

- Private Citizen
  USES • ATV trails and property ownership.
  BENEFITS • Learning land near home.

- Private Citizen
  USES • Identifying land for public use and owners of boundary units in case of game retrieval.

- Private Citizen
  USES • I am interested in the history of Price County, this is just another resource for my research.

- Private Citizen
  USES • House/property searching.
  BENEFITS • Searching layout of parcels and surrounding parcels owners information.

- Private Citizen
  USES • Address.

- Private Citizen
  USES • To see property lines when looking at land to buy.
  BENEFITS • I could see the land I was buying.

- Private Citizen
  USES • To figure out who owns a pond nearby.

- Private Citizen
  USES • Research.

- Private Citizen
  USES • Looking for my property lines.

- Private Citizen
  USES • Looking up duck hunting spots.

- Private Citizen
  USES • Research private land boundaries.
  BENEFITS • Help landowners better understand where their boundaries are.

- Private Citizen
  USES • Identify lot lines for use in certified soil testing.

- Private Citizen
  USES • Purchasing property.

- Private Citizen
  USES • Hunting.

- Private Citizen
  USES • Just one day I answered question about the lake and it's parcels that had me in the dark for years. Thank You.

- Private Citizen
  USES • Fishing from public land on WI lakes with my son.
  BENEFITS • We avoid trespassing on private property.

- Private Citizen
  USES • Plan to contact landowners to potentially buy more land.

- Private Citizen
  USES • Information for property search.
  BENEFITS • Ease of use.

- Private Citizen
  USES • Purchasing a home in a rural area. Owner did not boundaries marked.
  BENEFITS • We will be purchasing another home in a rural area and may need to verify boundaries.

- Private Citizen
  USES • Looking for real estate, looking at property lines.

- Private Citizen
  USES • Shopping for property.
  BENEFITS • Visualization of potential purchases and nearby usage.

- Private Citizen
  USES • Looking for a property and ownership info.
  BENEFITS • I've used it several times.

- Private Citizen
  USES • Curiosity about purchasing property.

- Private Citizen
  USES • Tree purchase.

- Private Citizen [with DOA/SCO email interaction]
  USES • I am interested in using your database to determine the APPROXIMATE GPS locations of my property boundaries. I realize an accurate determination would require a survey but I'm interested in getting close. However your map only shows GPS coordinates to three decimal points of accuracy. Would it be possible to show the fourth digit? Or is there a better way to determine GPS points for property boundaries? I would truly appreciate it! Cool service by the way!
  BENEFITS • Allows for easy reference to local property.
  BENEFITS + [After SCO update to the app to show coordinates to 4th decimal place in the coordinate widget]
  Wow . . . all I can say is thank you. When you fill out an online suggestion form one generally assumes it's going into the ether never to be read or emerge. The fact that you read it and actually made the change has actually renewed my faith in humanity. How cool is that?

  I don't have access to ArcGIS but I notice that QGIS is open source so I'm going to download a copy and play around with it out of curiosity. In the meantime, adding the four decimal point will get me within a reasonable degree of accuracy. I recently bought a neighboring piece of property and at least two of the corners are in the middle of a wetlands (what I would actually call a swamp) and I honestly have absolutely no idea where they are located within 250 feet. This winter when things freeze up I'm hoping to hike in and see if there are any benchmarks, fences or evidence of the corners from previous surveying. Your points and a GPS should get me to within 20 feet which is perfect.

  Thanks again for your response and for great service and a great tool. If there is any way for me to get you any more public thanks I'd be delighted. I plan on sharing this story.

- Private Citizen
  USES • Hunting.

- Private Citizen
  USES • Property line.

- Private Citizen
  USES • So I'm not trespassing.

- Private Citizen
  USES • Purchasing property.

- Private Citizen
  USES • Property line.

- Private Citizen
  USES • Hunting.

- Private Citizen
  USES • View lot and values.

- Private Citizen
  USES • Needed to look up the parcel number for our property.

- Private Citizen
  USES • To see who lives around here.

- Private Citizen
  USES • Search parcels that are listed for sale.

- Private Citizen
  USES • Farmland owners.
  BENEFITS • Great resource.

- Private Citizen
  USES • Identifying current ownership and dimensions of historically family property.
  BENEFITS • Clear maps and identifications aid us in our discussions. Family reunion is being planned—for 2022 now.

- Private Citizen
  USES • Real estate.

- Private Citizen
  USES • Find parcel number to apply for the lottery and gaming credit.

- Private Citizen
  USES • Build home.

- Private Citizen
  USES • Find land for sale.

- Private Citizen
  USES • Land purchase.

- Private Citizen
  USES • Lot line locations.

- Private Citizen
  USES • Real estate shopping and recreation scouting.
  BENEFITS • It's free information that's publically available as opposed to paying for a service.

- Private Citizen
  USES • Double checking lot lines of MLS listed lots of land for sale.

- Private Citizen
  USES • Checking potential properties for sale, land values, taxes.
  BENEFITS • Gives us ann idea of general neighbors/land ownership in areas of interest. Property and land values.

- Private Citizen
  USES • My parents bought a lot by Mercer.

- Private Citizen
  USES • Hunting.
  BENEFITS • So we do not trespass.

- Private Citizen
  USES • I like to look up land owners and find parcel lines and pins.

- Private Citizen
  USES • Personal inquiry.

- Private Citizen
  USES • Look at public land.

- Private Citizen
  USES • Hunting.

- Private Citizen
  USES • We are buying a new house and having access to this data in such a nice interactive way is really helpful to, pun intended, get a lay of the land!
  BENEFITS • I believe making data accessible to the general population will always have a benefit.

- Private Citizen
  USES • Genealogical research.

- Private Citizen
  USES • Recently deceased uncle.

- Private Citizen
  USES • I used to find the assessed value and real estate taxes.
  BENEFITS •Don't have to search so hard to find information

- Private Citizen
  USES • Public hunting and backpacking.
  BENEFITS •To prevent trespassing.

- Private Citizen
  USES • Property owner considering future land acquisition.

- Private Citizen
  USES • Survey for home purchase. Needed parcel information.

- Private Citizen
  USES • Personal use, checking on my parcel number & tax information.

- Private Citizen
  USES • I used this application to locate and verify the size of a parcel I am considering to purchase.
  BENEFITS • I benefitted by verifying the information of a parcel being sold was accurate.

- Private Citizen
  USES • To locate lot lines.

- Private Citizen
  USES • To find and survey public lands for potential hunting and hiking activities for my family.
  BENEFITS • The topo and satellite view maps are very helpful in analyzing public lands in Wisconsin for recreational purposes.

- Private Citizen
  USES • Searched for parcel numbers to be sure that tax keys and parcel numbers were synonymous in connection with completing HT110s for my mother, following my father's death. Four properties were searched for; I was unable to locate the parcel information for at least two of them.

- Private Citizen
  USES • Creating a map of hunting land.

- Private Citizen
  USES • Locating property lines to prevent trespassing for recreational use.
  BENEFITS • Allows the ability to contact owners to discuss where their property lines are and how best to avoid violating their rights and preventing serious altercations.

- Private Citizen
  USES • When I find a pile of fieldstone, I use this map to find the landowner, so I can inquire about purchasing.
  BENEFITS • I would have no way of knowing the landowner without the map online.

- Private Citizen
  USES • Verifying property line and checking out the surrounding area
  BENEFITS • It clarified things.

- Private Citizen
  USES • Landscape planning.

- Private Citizen
  USES • Wanted to see our properties on a platt book level.

- Private Citizen
  USES • To look into properties that I want to buy without going to each specific county's GIS.

- Private Citizen
  USES • I am a public historian and I am in the process of using the statewide parcel layer for historical analysis and exhibits. The parcel boundaries are useful for precisely mapping historic sites, as well as for visualizing broad changes in property use and ownership to tell the histories of cities and small towns in Wisconsin.
  BENEFITS • I am currently consulting with the Prairie du Chien Historical Society to prepare maps for new museum exhibits in a restored local historic site scheduled to open later in 2021. The parcel layer will be an important component to maps showing the historical development of the city. I have found that the statewide parcel database offers the most convenient access to local parcel boundaries, as this data is not always readily available to the public in shapefile or geodatabase format from city and county offices.

- Private Citizen
  USES • Seeing property boundaries when looking for real estate to purchase.
  BENEFITS • It's very helpful too see very accurate property boundaries.

- Private Citizen
  USES • Review actual property lines of prospective parcel considering for purchase. Make measurements of lot lines and acreage.
  BENEFITS • Able to measure parcel dimensions and compare to topographic map layer for property under consideration for purchase.

- Private Citizen
  USES • Identify land owned.

- Private Citizen
  USES • To determine the accuracy/error of the map.

- Private Citizen
  USES • Determine acreage of parcels.

- Private Citizen
  USES • View possible property for purchase.

- Private Citizen
  USES • To inspect the size of our lot and compare it to nearby locations.
  BENEFITS • I think its a great tool.

- Private Citizen
  USES • I use the application to verify parcel boundary's for possible land purchase.

- Private Citizen
  USES • I am making trails on my own property and wanted to compare topography.

- Private Citizen
  USES • Examining parcel lines for planning as well as analyzing tax assessed property value.

- Private Citizen
  USES • I wanted to know where about our property lines are.

- Private Citizen
  USES • Finding parcel ownership related to historical research.
  BENEFITS • As I work with information in multiple counties, having a one-stop source for tis information is very useful as opposed to having to seek out the information from many county sources that are sometimes incompatible or difficult to locate.

- Private Citizen
  USES • Checking land ownership for recreational use requests. Checking land ownership for agricultural land rental.
  BENEFITS • I can now easily establish who owns the land and obtain permission to hunt on it.

- Private Citizen
  USES • We are looking to purchase property and using this data to locate land boundaries, property owners, state land, and other information that will help us find a property we are interested in.
  BENEFITS • Landowner contact information. Property lines. Who owns adjacent properties and which lands are state owned.

- Private Citizen
  USES • I use the tax parcel shapefiles to create a GIS project to function as a statewide plat book along with other basemaps and aerial photography. I also export individual tax parcels for the purpose of making maps for things like logging access, timber sale maps, etc.
  BENEFITS • I am a forester in Central Wisconsin and I use the statewide parcel data to help create a GIS project that functions as a statewide plat map. I like having everything in one spot, and the statewide parcel layer allows me to accomplish that, and makes my job much easier. Within a few minutes of talking with a landowner on the phone and a couple clicks I can have their parcels and the imagery pulled up without having to leave my desk or fumble through plat books. Having previously worked in the State of Michigan, where they like to charge you over 5,000 dollars for a single county, this service is essential.

- Private Citizen
  USES • Curiosity mainly but also to help with land navigation while hiking and other outdoor activities. It looks like it can be a useful tool for me!

- Private Citizen
  USES • This is an incredibly helpful system for research purposes. I am a private citizen (and UW Alum). My family and I have been searching for land to purchase and so many other services offered do not even compare to the quality of your service. Thank you for providing this!!

- Private Citizen
  USES • Viewing parcel and its property lines at a residential address.

- Private Citizen
  USES • Trying to figure out why the lot lines and road names are incorrect. Some of the gps mapping services are sending people down the wrong road to get to my res.

- Private Citizen
  USES • Research a parcel that is splitting a property.

- Private Citizen
  USES • Lot size.

- Private Citizen
  USES • I was looking into farm land values in WI.
  BENEFITS • As an individual, it's nice to have access to public information online which in the past I would have had to order print information. It saves paper Saves time Probably saves money for counties because people can search on their own instead of taking up the time of employees.

- Private Citizen
  USES • It's very interesting to see how much my dream houses are worth. Also I have used it to find an old HS classmate. When I my phone died, I lost his number, but I knew approximately where he lived. I was so appreciative that this helped me connect with him again. In addition, it helps me learn and remember the names of my neighbors - so I don't have to rely on my terrible memory.

- Private Citizen
  USES • Checking land values.

- Private Citizen
  USES • I'm considering the purchase of a parcel from an architect. He sent me some drawings showing the lot was adjacent to a lake and told me it's in the town of LaGrange. There are several lakes near that area. Without this tool, I wouldn't have been able to look up his name to see that he really does own this lot. Turns out that it's adjacent to Middle Lake. Very beautiful!
  BENEFITS • Your tool helped me to feel comfortable that the property exists and that he's the owner of it. Thank you.

- Private Citizen
  USES • I'm a citizen of Wisconsin who is an aspiring data scientist. I was looking to match up parcel data with tax assessments for a local municipality; looking at changes in the assessments with respect to time. I'm not working for anyone except for my curiosity at this point.

- Private Citizen
  USES • Well placement.

- Private Citizen
  USES • Interest in family history.

- Private Citizen
  USES • Interested in buying property, doing research.
  BENEFITS • The more informed I am about the land I want to buy, the better my decision will be. I want to be environmentally friendly, and to do so I need to know about the environment of the properties.

- Private Citizen
  USES • Parcel database to compare property taxes.

- Private Citizen
  USES • Driveway easement changes before a township meeting.
  BENEFITS • Needed parcel information before a township meeting to interpret an easement letter.

- Private Citizen
  USES • Hunting property.
  BENEFITS • Making it easier to not trespass, and to get the correct permission from the right people—in turn minimizing legal issues and promoting community and better communication.

- Private Citizen
  USES • Researching potential land purchases.
  BENEFITS • Obtaining better visibility for lot lines and verifying land is as advertised.

- Private Citizen
  USES • Learn the property line of the school I am attending to avoid trespassing on neighboring property.

- Private Citizen
  USES • Land owner.

- Private Citizen
  USES • Identify size of parcel to develop art installation in Montello, WI.

- Private Citizen
  USES • Mapping our trails to tree stands on hunting land.
  BENEFITS • Able to see newly purchased hunting land layout.

- Private Citizen
  USES • Reviewing land plots for potential home purchase.
  BENEFITS • This has helped determine who and where our neighbors are in a new, rural Wisconsin home.

- Private Citizen
  USES • Mapping recreation opportunities.

- Private Citizen
  USES • Verifying my parcel ID numbers are correct.
  BENEFITS • This website can help other landowners verify their parcel #'s.

- Private Citizen
  USES • Details on land to purchase.

- Private Citizen
  USES • Very helpful when we needed to identify owner of the rental property next to use because a tree fell on our garage and they did not take any action. We were able to contact the property company to discuss fixing it.
  BENEFITS • We were able to contact the property company to discuss fixing it.

- Private Citizen
  USES • Looking up property owned by our family and who owns adjoining properties.

- Private Citizen
  USES • Checking land size and border line locations.
  BENEFITS • Gives me peace of mind, lets me sleep at night.

- Private Citizen
  USES • Land owner and property lines.

- Private Citizen
  USES • Landscape my property.

- Private Citizen
  USES • Home search.

- Private Citizen
  USES • Checking for property land contact info for hunting requests.
  BENEFITS • Connecting with property owners.

- Private Citizen
  USES • Possible purchase.

- Private Citizen
  USES • To conduct a quick ownership check before proceeding out to public use land. Want to make sure the parcel is what I think it is.
  BENEFITS • Easier than going to each county's GIS system or register of deeds as things change fast. Parcels cross counties.

- Private Citizen
  USES • Finding boundaries of national park vs private land.

- Private Citizen
  USES • Verification.

- Private Citizen
  USES • We are buying a home and want to know if the land surrounding it is privately owned or public.

- Private Citizen
  USES • To determine land ownership in order to seek permission to enter the property for the study of geological features and other amateur geologist related activities.