WLIP Program Plan: 2016–2021

CONTENTS

WISCONSIN DEPARTMENT OF
ADMINISTRATION

OVERVIEW

Since it was created in 1989, the Wisconsin Land Information Program (WLIP), now administered by the Division of Intergovernmental Relations within the Wisconsin Department of Administration (DOA), has provided public funding to Wisconsin counties for the modernization of local land records. The purpose of this document is to provide structure and give direction for the WLIP for 2016-2021, in a manner similar to the county land information plans mandated by state statute 59.72(3)(b).

Conservatively assuming that the last two-year revenue trend will continue, annual revenue for the Land Information Fund would equal $6.3 million. This plan proposes continuing to fund county Base Budget, Training & Education, and Strategic Initiative grants, such that 90% of revenue from the Land Information Fund is targeted toward county grants. The remaining 10% is targeted toward Program administration, contracting for the Statewide Parcel Map Initiative, and facilitation of access to WLIP-funded data.

Note that the key proposals comprising this program plan could be implemented within the bounds of the current statutory and administrative authority of the Program. In other words, this plan was designed such that the state legislature would not need to give additional authorization for DOA to implement it.
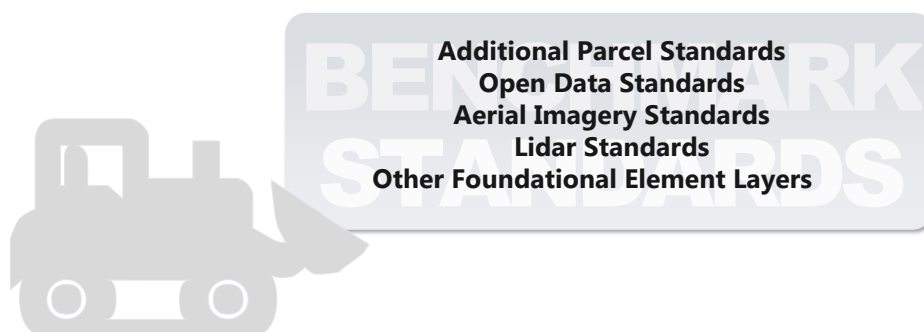
WLIP Strategic Goals

- Strategic Goal #1 – Administer County Grants and Institute Standards
- Strategic Goal #2 – Continue Progress on the Statewide Parcel Map Initiative

Summary of Key Points

- Every county that retains less than $100k in a year will continue to be eligible for an annual Base Budget grant to reach the $100k threshold, and every county will continue to be eligible for an annual $1,000 Training & Education grant.
- Strategic Initiative grant funding will continue to be allocated equally among all 72 counties for 2018-2021.
- In 2018, counties would be eligible for Strategic Initiative grant funding to complete Benchmark Set I – Parcels.
- Beginning in 2018, each county would be eligible for Strategic Initiative grant funding to work on the new Benchmark Set II – Open Data.
- Beginning in 2018, after achieving Benchmark Set I and Set II, counties could choose from a menu of Benchmark Set III options that include PLSS, aerial imagery, lidar, and additional layers to be determined with community input.
- DOA will continue to carry out the duties of the department under s. 16.967(3), including administering county grants, instituting standards, and statewide projects, primarily the Statewide Parcel Map Initiative.
- DOA will work with counties to facilitate open data, enabling greater access to county GIS data.

Summary of Work Ahead

- The community will have the opportunity to help develop benchmarks by June 30, 2017 for:

Additional Parcel Standards
Open Data Standards
Aerial Imagery Standards
Lidar Standards
Other Foundational Element Layers

1 INTRODUCTION

1.1 Purpose

The purpose of this document is to provide structure and give direction for the WLIP for 2016-2021. This plan is designed to provide a framework for future program planning and implementation activities.[1]

1.2 Strategic Goals

The Wisconsin Land Information Program is governed by s. 16.967 and s. 59.72, as well as Administrative Rule Adm 47. While these statutes direct and enable DOA to accomplish much in the realm of land information, they also limit DOA's authority and discretion. More exactly, DOA cannot spend Land Information Fund dollars on land information outside of what is enabled by s. 16.967. Titled "Aid to Counties," subsection seven specifically limits grant awards to counties.[2] Future WLIP projects will focus on two major emphases of the land information duties of the department as listed by s. 16.967: 1) County grants and instituting standards; and 2) the Statewide Parcel Map Initiative.

Strategic Goal #1 – Administer County Grants and Institute Standards

The main tool for carrying out DOA's duties is **grants awarded to counties**. Therefore, most of the program administration is in a broad sense administration of county grants, which extends well beyond clerical tasks to the creation and implementation of grant requirements, standards, and more. Since Act 20 of 2013, grant requirements have grown to include detailed standards for sharing parcel data in the form of benchmarks to be achieved with the support of Strategic Initiative grants. Developing and **instituting benchmarks and standards** will be a main focus of future Program activities, to be achieved by the following objectives:

▶ Adopt and enforce a formal open data policy, wherein county land information offices shall make available and discoverable online, without charge and without restrictive licensure, data funded with WLIP retained fees or grants, with basic metadata and download capability (by 2019)
▶ Facilitate more convenient access to WLIP-funded data, by creating an overlaying portal as a simple, central point of access for WLIP-funded data (by 2017)
▶ Assist counties in completing Foundational Elements, with additional benchmark standards to be developed (ongoing)

Strategic Goal #2 – Continue Progress on the Statewide Parcel Map Initiative

The creation of a single statewide digital parcel map with geometric and tax roll information from 72 disparate information sources is an immensely complex task. While the Version 1 Statewide Parcel Map has been successful in a number of ways, **work related to the Parcel Initiative is nowhere near complete**. For further innovation and efficacy of future iterations of the statewide parcel map, the Program will seek to accomplish the following objectives:

▶ Produce a complete statewide parcel map comprised of standardized and integrated local parcel datasets that meet DOA's searchable format standard (by 2018)
▶ Further develop and standardize parcel data to address other state, local, and private sector business needs (ongoing)
▶ Create a spatially accurate statewide parcel map by progressing towards a complete and integrated PLSS (47 counties to be completed by 2020)

Concentrating program activities on these areas is necessary to achieve real, concrete, significant progress with coordinated county land records modernization and in the Parcel Initiative. In other words, it is necessary to *focus* efforts in order to ensure success.

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[1] It is intended that this plan guide the WLIP through 2021, while at the same time *neither guaranteeing nor restricting any particular course of action*. The figures in this plan do not indicate a pre-commitment to spending. This document includes a budget scenario that may change. The Program is mindful that utilization of Land Information Fund revenue must be consistent with statutory spending authority, as described by s. 16.967, and should be for well-defined activities with statewide benefits.
[2] With the qualification that counties may pass through funding to other local governmental units.

1.3 Program Background

The WLIP dates back to the Wisconsin Land Records Committee, created in 1985 and charged with making policy recommendations to improve land information in the state. Based on the work of that committee, the WLIP was created through 1989 Wisconsin Acts 31 and 339. That legislation also created the Wisconsin Land Information Board and gave it the authority to implement the Program. In addition, the original legislation contained a provision that required each county to establish a land information office in order to participate in the Program.

A core activity of the WLIP is planning for land records modernization. In 1991, the first instructions for completing plans for county-wide land records modernization were released, highlighting the Program's focus:

> The objective of the Program is to facilitate the development of land information systems in the State of Wisconsin that are integrated, vertically and horizontally. This is not to suggest the creation of a single, centralized land information system. Rather, the intent is the development of a decentralized confederation of systems where those with existing land records responsibilities would continue to collect, maintain and keep custody of land information . . . . A primary objective of the Program is the organization and sharing of Land Information.[3]

The 1991 document went on to explain other components of the Program, including the grant process and the retained recording fees funding mechanism that provides funding to both counties and the state.

Furthermore, the instructions listed the original eight Foundational Elements (geographic frameworks; parcels; wetlands; soils; zoning; institutional arrangements; communications, education and training; and public access arrangements). The Foundational Elements incorporate nationally-recognized "Framework Data" elements, the major map data themes that serve as the backbone required by users to conduct most mapping and geospatial analysis. Since the Foundational Elements were initially defined, they have evolved over the years, to their most recent expression in the 2015 *Uniform Instructions for County Land Information Plans*.

County land information plans are intended to give strategic direction for counties, as mandated by s. 59.72(3)(b). This is similar to the annual land information integration and modernization

FOUNDATIONAL ELEMENTS

PLSS
Public Land Survey System Monuments
Other Geodetic Control and Control Networks

Parcel Mapping
Parcel Geometries
Assessment/Tax Roll Data
Non-Assessment/Tax Information Tied to Parcels
ROD Real Estate Document Indexing and Imaging

LiDAR and Other Elevation Data
LiDAR
LiDAR Derivatives
Other Types of Elevation Data

Orthoimagery
Orthoimagery
Historic Orthoimagery
Other Types of Imagery

Address Points and Street Centerlines
Address Point Data
Building Footprints
Other Types of Address Information (e.g., Address Ranges)
Street Centerlines
Rights of Way
Trails

Land Use
Current Land Use
Future Land Use

Zoning
County General Zoning
County Special Purpose Zoning
Municipal Zoning Information Maintained by the County

Administrative Boundaries
Civil Division Boundaries
School Districts
Election Boundaries
Utility Districts
Public Safety
Lake Districts
Native American Lands
Other Administrative Districts

Other Layers
Hydrography Maintained by County or Value-Added
Cell Phone Towers
Bridges and Culverts
Other Layers

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[3] Wisconsin Land Information Board. (1991). *Recommendations and Requirements for County-Wide Plans for Land Records Modernization*.

plans submitted annually by state agencies in accordance with section 16.967(6), Wis. Stats. The statute requires certain agencies to submit to DOA a land information modernization and integration plan. Eleven agencies are named in the statute, but all state agencies using geospatial data or land information systems are encouraged to create and submit a land information report.

In the 2000s, the state agency plans followed a narrative format addressing the architecture of applications, information, technology, organization, and security. In most recent years, they have taken the form of an inventory of geospatial data holdings, available on the WLIP webpage.

1.3.1 Act 20 and the Statewide Parcel Map Initiative

In a 2012 report on statewide deer herd management, Deer Trustee Dr. James Kroll wrote, "It is our opinion, Wisconsin once was viewed as an innovator for geospatial information services, but has fallen behind" (p. 17). The Deer Report identified Wisconsin's GIS deficiencies for deer herd management, and other purposes like economic development and forestry. It contained recommendations, one of which to adequately fund the development of geographic information systems (GIS) in Wisconsin.

In order to implement the Deer Trustee's recommendations, in the 2013-15 biennial budget the Governor included an initiative to create a statewide digital parcel map, increase revenue for the Wisconsin Land Information Program, and update the state's land cover map through the Department of Natural Resources. As part of Omnibus Motion #249, the Joint Committee on Finance added the directive to target the new Land Information Fund revenue primarily toward county land information systems as part of the Parcel Initiative, a guiding factor in the design of this program plan.

The 2013-15 biennial budget was enacted as Act 20 of 2013 and had significant implications for the WLIP:
* Act 20 created the Land Information Fund, a segregated appropriation for state program revenue with statutory direction not to lapse funds from the appropriation
* It added a statutory directive to fund WLIP Base Budget grant eligibility up to the $100k threshold
* It increased WLIP Training & Education grant eligibility from $300 to $1,000 per county
* It directed DOA to create a statewide digital parcel map in coordination with counties
* It directed counties to meet a searchable format standard for parcel information

The Statewide Parcel Map Initiative born from Act 20 of 2013 is important for improving the quality of Wisconsin's real estate information, economic development, emergency planning and response, and other necessary citizen services, hence it's centrality to current Program activities.

1.3.2 The WLIC

The Wisconsin Land Information Council (WLIC) was created by DOA through administrative action in June of 2015. The purpose of the council is to advise DOA on matters relating to the WLIP, such as the allocation of grant funds, efficacy of grant projects, guidelines to coordinate land records modernization, legislative changes, and new sources of funding to pursue. The 12-member council is made up of private sector, local government, and state government stakeholder group representatives appointed by the DOA Secretary for three-year terms.

WLIC Member	Sector Representing	Referred By
Don Dittmar – Chair	Land information officers	Land Information Officers Network
Adam Derringer – Vice Chair	Geospatial professionals	Wisconsin Land Information Association
Al Brokmeier	Real property listers	Wisconsin Real Property Listers Association
Daniel Frick	County surveyors	Wisconsin County Surveyors Association
Maria Holl	Public safety or emergency communications	Wisconsin Emergency Management Association
Cori Lamont	Realtor industry	Wisconsin Realtors Association
Mark Paulat	State or federal government	Wisconsin Department of Revenue
Kristeen Pelot	Land title or financial lending industry	Wisconsin Land Title Association
Tim Statz	Utilities industry	Wisconsin Utilities Association
Nathan Vaughn	Licensed professional land surveyors	Wisconsin Society of Land Surveyors
Howard Veregin	State cartographer	State Cartographer's Office
Cynthia Wisinski	Register of deeds	Wisconsin Register of Deeds Association

1.4 WLIP Strategic Planning Process

This document is a result of a planning process that may be characterized as strategic. The process from which this document was devised has been informed by and a part of other planning efforts. It is built on a tradition of collaboration between DOA and members of the Wisconsin geospatial community, from professionals representing various levels of government, the private sector, educational institutions, and non-profit organizations. A guiding principle has been the necessity and importance of listening to stakeholder needs and concerns.

Following the passage of Act 20 of 2013, while not labeled as a formal "strategic plan," the *Statewide Parcel Map Initiative Planning Process Framework* was an early effort for DOA to begin the dialog on how to employ the increase in Land Information Fund revenue. That document was prepared by WLIP staff in May of 2014 and released to the public as a concept document which proposed funding Strategic Initiative grants. It made parcels a clear priority—in particular, helping counties complete their parcel fabrics and meet the statutory requirements for posting certain parcel information online by 2017.

The *Planning Process Framework* came with a commitment to two-way communication. Comments were invited; feedback was compiled and made available on the WLIP webpage. The organizations who wrote expressed general support for the Strategic Initiative grant concept of allocating $50k in annual strategic funding eligibility to each county, as well as for county benchmarks or performance measures. The document also featured a plan for county, state agency, and other stakeholder outreach, which was soon after implemented. As part of that outreach, the WLIP grant administrator traveled to all 72 counties in 2014 and 2015, attending land information council meetings, gathering information, and listening to concerns.
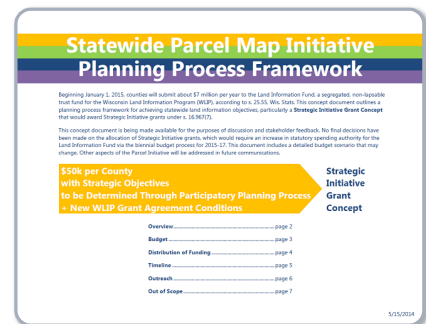
Another tool for planning has been the WLIP survey. DOA has made the authorship of the survey a community process by leading a workgroup to develop the survey questions, such as the 2014 WLIP Survey, which measured land information office priorities. Such workgroups feature representatives from various stakeholder groups, in order to ensure broad representation of interests. Similarly, the 2015 *Uniform Instructions for County Land Information Plans* was written by a DOA-led workgroup spanning several weeks, where interested parties had opportunities for authorship, drafts were released to the land information e-mail list serv, and the content was revised with the idea that it should reflect a multitude of voices.

Another strategic planning process that fed into the current state of the Program was the hiring of the state's Geographic Information Officer. When DOA management decided the position would be moved from its former home in the Division of Enterprise Technology to the WLIP, the working draft of the GIO position description was released for public comment. The process took public feedback into account before the position description was finalized. Here again, it was made clear that the Statewide Parcel Map Initiative was a priority, along with other issues like data sharing.

Continuing on the road of collaboration, the Version 1 Statewide Parcel Map Project is another example of DOA working with the community on planning tasks. With parcels the first priority, the V1 Project was able to achieve success in creating the state's first publicly available statewide parcel map.

In a way, V1 set the standard for setting geospatial data standards. The *V1 Interim Report* offered the first set of Wisconsin's GIS data standards to eventually be tied to WLIP grants. However, before finalizing and enforcing the standards, they were derived from national standards, carefully researched by DOA and the State Cartographer's Office, and offered to the community for review. The standards, which took the form of benchmarks, were adjusted based on feedback and finalized in the 2016 Strategic Initiative grant application.

V2, the Version 2 Statewide Parcel Map Database Project, took the first set of benchmark standards to the implementation stage, through the data request and V2 submission documentation. Even before the data request was finalized, a pilot project was conducted with a handful of counties and the major vendors of tax parcel software, so that stakeholders had yet another chance to weigh in on standards and benchmark requirements.

Finally, the formation of the WLIC was a step to guide the Program's strategic planning and also a collaborative process. In January of 2015, the ad hoc Geospatial Strategy Working Group with membership from many of Wisconsin's geospatial associations and organizations released a report called *A Geospatial Vision for Wisconsin*. After meetings between DOA and various groups, the council appointee list and charter were drafted, released for public comment, and revised. The Council itself was created in the summer of 2015.

The planning process for this document was discussed at the first meeting of the WLIC on October 28, 2015 and drafting of this document began shortly thereafter. The strategic goals and implementation tasks in this plan can be seen as the product of:

- The Program's duties as defined by statute
- What the Program is enabled to fund as defined by statutes and administrative rule
- The desire to gain a greater return on Wisconsin's land information investments in counties
- The desire to maximize federal and outside funding opportunities
- Motions passed by the WLIC
- Feedback received in public comments
- Consideration of Program history dating back to *The Larsen Report* and previous strategic planning efforts like 2007's *Wisconsin Location Matters*
- The intergovernmental relationship between DOA and county land information offices
- Data, research, and analysis of information related to geospatial data and land information systems
- Considerations of Program administrability, foremost existing staff and budget constraints

When drafts of this document were made available for review, many public comments were received. Feedback totaled 36 pages for Draft 1, 27 pages for Draft 2, and 20 pages for Draft 3. See the timeline below for other details regarding the process of writing this document.

Date	Milestone
02/10/2016	Draft 1 plan reviewed and discussed by WLIC
03/24/2016	Draft 1 plan public comments reviewed and discussed by WLIC
04/12/2016	Draft 2 plan concepts discussed by WLIC
04/27/2016	Draft 2 plan distributed with public comments deadline of May 27
06/08/2016	Draft 2 plan reviewed and public comments discussed by WLIC
06/30/2016	Draft 3 plan distributed with public comments deadline of July 22
08/01/2016	Draft 3 plan reviewed and public comments discussed by WLIC
08/09/2016	Final plan released

There are a few points to be made here. First, *strategic planning has been in the works in its current form since at least the passage of Act 20 of 2013*. The approach of the Parcel Initiative from the LinkWISCONSIN Address Point and Parcel Mapping Project to V1 and V2—incremental progress and an iterative model with collaborative work—is an approach that allows for flexibility and well-informed, strategic decision making. Second, major decisions from DOA on the Land Information Fund have consistently been communicated in draft form before finalized, with opportunities to listen to community input and work together.

1.4.1 Plan Updates

Although this plan has a vision five years into the future, it is intended that this plan be updated at least every three years. However, it could be amended at any point before a comprehensive update takes place. In this sense, this plan provides structure and predictability, but not at the cost of allowing flexibility in implementation details and adaptability. The Wisconsin Land Information Council should review progress in implementation of the plan on at least an annual basis.

This plan is intended to give strategic direction for only the WLIP, with the implication that more detailed planning is to follow, and some uncertainty is inevitable. As such, much more detailed planning, research, and testing are required for most of the action items in this plan. Therefore, this plan should mainly serve as a framework and guide for more detailed planning. In this sense, program planning does not end with the adoption of this plan, rather it continues in more detail.

1.4.2 Community Authorship

The success of the Program depends on many partners. It entails cooperation with other stakeholders, consisting of those in private industry and state, regional, and local government.

The bulldozer symbol indicates an opportunity for community members to contribute their time and expertise to develop or implement the ideas in this plan throughout this document. For instance, a bulldozer appears each place that community members will be asked to participate in development of specific benchmark standards that will become future grant requirements.

= Work is Ahead for All Involved!

Details Are **To Be Determined**

The bulldozer is a short-hand way to indicate that there is a great need for expertise from outside of DOA in order to implement this Program plan in a way that benefits the diverse range of WLIP stakeholders. While there is ample work for all to do to execute the ideas herein, there may also be land information needs that are not addressed in this document. Therefore, DOA welcomes comments, feedback, and Program suggestions at any point. Detailed proposals that identify areas of potential collaboration with DOA may be submitted to the Program at any time.

Participation in the Development of Standards

The effectiveness of county land information systems depends on continued leadership and engagement from members of the community. As part of this Program plan, **DOA invites the submission of data standards**, to draw upon the expertise of the community and support the creation of ever-important standards. Standards for the collection, maintenance, and representation of land data are essential because they enable the sharing and efficient transfer of information between producers and users. As the key to interoperability, standards allow organizations to more effectively use geospatial data and technology.

In Wisconsin, the need for institutionalized standards for land records modernization was identified early on by what is known as *The Larsen Report*:

> Standards for the collection, maintenance and representation of land data are essential. Many of these standards must be established on a national or statewide basis to insure integratability. Among these are standards for mapping, filing and recording land records.[4]

And the authors of the *Final Report of the Land Records Committee* that led to the establishment of the Program warned more strongly:

> Indeed, if land information systems proliferate without guidelines or standards to direct their development, the problem of incompatible land data will worsen, defeating a major purpose of modernization.[5]

Standards essential to immediate implementation of this plan will be developed in a collaborative process led by DOA (for additional parcel benchmarks, open data, aerial imagery, and lidar, as detailed in Chapter 4), but standards for other layers can be submitted independent of these efforts. Should any person or group wish to submit a standard for consideration, the standards should be consistent with practices of standards developing bodies and should follow the following guidelines:

- Standard must be consistent with law
- Standard should take into consideration national and international standards, and be based upon them if appropriate
- Standard should consider both benefits and costs, and not create unnecessary obstacles to current workflows
- Standard should be written with technical experts and/or certified, licensed professionals
- Standard should consider all affected stakeholders, with an emphasis on public participation

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[4] Larsen, Barbara, et. al. (1978). Land Records: The Cost to the Citizen to Maintain the Present Land Information Base, A Case Study of Wisconsin (p. 7).
[5] Wisconsin Land Records Committee. (1987). *Final Report of the Wisconsin Land Records Committee: Modernizing Wisconsin's Land Records* (p. 8).

- Ideally the standard development process will involve developing a draft model through presentation and discussion at public forums, providing the draft standard to the public for evaluation, and revising the document according to comments received
- Standard should ideally be arrived at by consensus
  - Consensus is defined as general agreement, but not necessarily unanimity, and includes a process for attempting to resolve objections by interested parties, as long as all comments have been fairly considered, each objector is advised of the disposition of his or her objection(s) and the reasons why, and the consensus body members are given an opportunity to change their votes after reviewing the comments.[6]
- Standard should be submitted as a formal document addressing the items above and containing the proposed standard, implementation(s) details, and assessment information if performance measures are necessary to enforce the standard.
- Submittals are strongly encouraged to include supporting letters from constituents, trade associations, and/or other organizations that indicate support by a meaningful constituency.

DOA will review recommendations and move forward based on an evaluation of the draft standards. Amendment procedures may be set up and may include meeting with workgroups and the WLIC. If DOA endorses the standard, it may be included in the grant application as the official standard.

1.4.3 Determination of Benchmark Standards and Grant Requirements

The annual WLIP grant application communicates the amount of grant funding each county will be eligible to receive, how it can use the funding, and what requirements accompany the grants. The completed county grant application becomes the scope of work that the county is required to complete during the grant period, as per the executed grant agreement. As WLIP grants are awarded on an annual cycle, decisions regarding funding prioritization, standards, and requirements for inclusion in the grant application must be approved on this cycle by DOA management.

DOA has established a schedule of releasing the grant application for the upcoming year by October 1st. In order to meet this deadline, all grant funding criteria must be ready for DOA management's review by June 30th. Because the parcel benchmarks and standards have essentially been determined for 2017 grants (as the original four parcel benchmarks defined in the 2016 grant application), the next major milestone will be for 2018 grants. Therefore, the *new 2018 benchmark standards must be ready for review by DOA management by June 30, 2017*. In determining the grant benchmark standards described in Chapter 4, DOA will seek input from stakeholders and the WLIC.

The new benchmark standards offered in this document are provisional. Benchmark standards and requirements are not finalized until the grant application release in October. Figure 1 illustrates the annual cycle of grant application development.

March 31st — Draft benchmark standards for NEXT YEAR'S grants ready for public review

June 30th — Benchmark standards submitted to DOA management for incorporation in NEXT YEAR'S grant application

October 1st — NEXT YEAR'S grant application released with benchmark standards

Figure 1. Annual grant cycle deadlines – For determination of benchmark standards/requirements

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[6] U.S. Office of Management and Budget Office of Information and Regulatory Affairs. (1998). *Circular No. A-119 Revised*. https://www.whitehouse.gov/omb/circulars_a119/

1.5 Scope

There is a need to move the Program forward on the ground one step at a time. This plan intentionally excludes some tasks and is limited in scope, as the Program seeks to follow a realistic strategy for what is achievable by 2021. However, this plan does not seek to not limit what the WLIP can accomplish by 2021. If objectives in the plan can be achieved earlier than scheduled, the plan can be updated to include more objectives.

1.5.1 Out of Scope

To keep a realistic and manageable scope of work that is within the bounds of DOA authority for the WLIP as described by s. 16.967, the current document does not address certain points.

Expanding Spending Authority

According to s. 20.505(1)(ub), DOA is enabled to spend Land Information Fund revenue on the WLIP as governed by s. 16.967 up to a limit of $7,673,300. Legislative changes could expand or limit duties of the department for the WLIP described by s. 16.967. For example, a new statutory directive could hypothetically authorize the Program to expand purchasing power on a statewide level, on behalf of counties. Another example would be expanding statutory authority to award grants to state agencies, which current statutory authority does not allow. This program plan intentionally avoids the need for legislative changes, in order to focus WLIC attention, staff efforts, and land information community engagement on goals and objectives that could be accomplished within the existing structure put in place by statute and administrative rule.

Use of Land Information Fund Revenue for Other Activities

According to s. 20.505(1)(ub) and (ud), Land Information Fund revenue could be used to fund comprehensive planning grants or DOA review of municipal incorporations and annexations. However, comprehensive planning grants have not been funded since 2010 and are not likely to occur in the future. Also, Land Information Revenue has not been used to fund municipal incorporations and annexations in recent years. Both comprehensive planning grants and review of municipal incorporations and annexations are considered outside the scope of this plan and WLIP budget.

Budgeting for Other Possible Funding Sources

While DOA seeks to leverage additional sources of funding to achieve land information goals, whether it be from federal agencies, other state agencies, local governments, or the private sector, this plan does not count on or budget for funding other than the recording fees collected through the Land Information Fund. Political strategizing to capture additional funding is not within the scope of this plan and is left to other entities, such as organizations representing sector interests. An example of another source of potential county land information funding is the cell phone fee for police and fire protection, which amounts to about $20 million in annual revenue. This revenue was in part previously used for E911 address point and other sorts of mapping, but is beyond the scope of this plan to address.

2 PROGRAM FUNDING

WLIP funding for county land records modernization takes the form of register of deeds document recording fees retained at the county level and WLIP grants awarded. Counties may retain $8 of the $30 fee for land information and must submit $7 of every $30 fee to the Land Information Fund, which subsidizes WLIP grants. In order to be eligible to retain fees or receive grants, counties must meet program requirements, including utilizing funding consistent with a county land information plan approved by a county land information council and submitting annual reports on expenditures.

ROD Document Recording Fee	
$15	County Undesignated
$8	County Retained for Land Information
$7	State Land Information Fund
$30	

2.1 Distribution of Funding to Counties

DOA awarded a total of $6.4 million in WLIP grants for 2016. Fees retained by counties for land information are projected to total $7.2 million statewide, based on recent document recording levels.

Figure 2 shows the approximate amount of WLIP funding to counties statewide by funding category—retained fees and three types of grants (Training & Education, Base Budget, and Strategic Initiative).
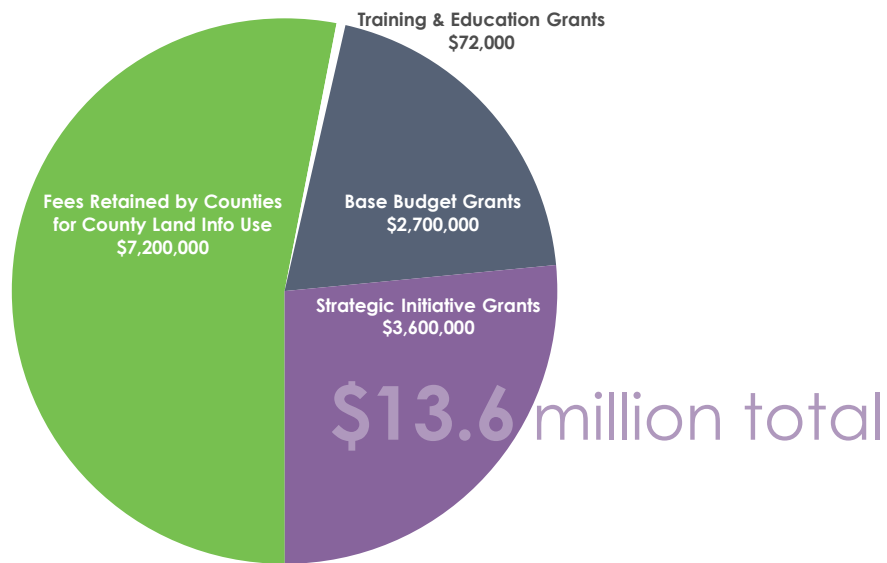

Training & Education Grants
$72,000

Base Budget Grants
$2,700,000

Fees Retained by Counties for County Land Info Use
$7,200,000

Strategic Initiative Grants
$3,600,000

$13.6 million total

Figure 2. 2016 County land information funding – Retained fees and grants

Training & Education grants provide funding to enable county staff to stay current with innovations in land records and GIS technology. Strategic Initiative grants are employed to meet statewide objectives for land information, specifically, the four benchmarks laid out in the 2016 WLIP grant application. Base Budget grants mitigate large disparities in retained fee funding by ensuring that every county has at least $151k in land information funding.

Figure 3 on the following page shows the current distribution of WLIP funding to counties.
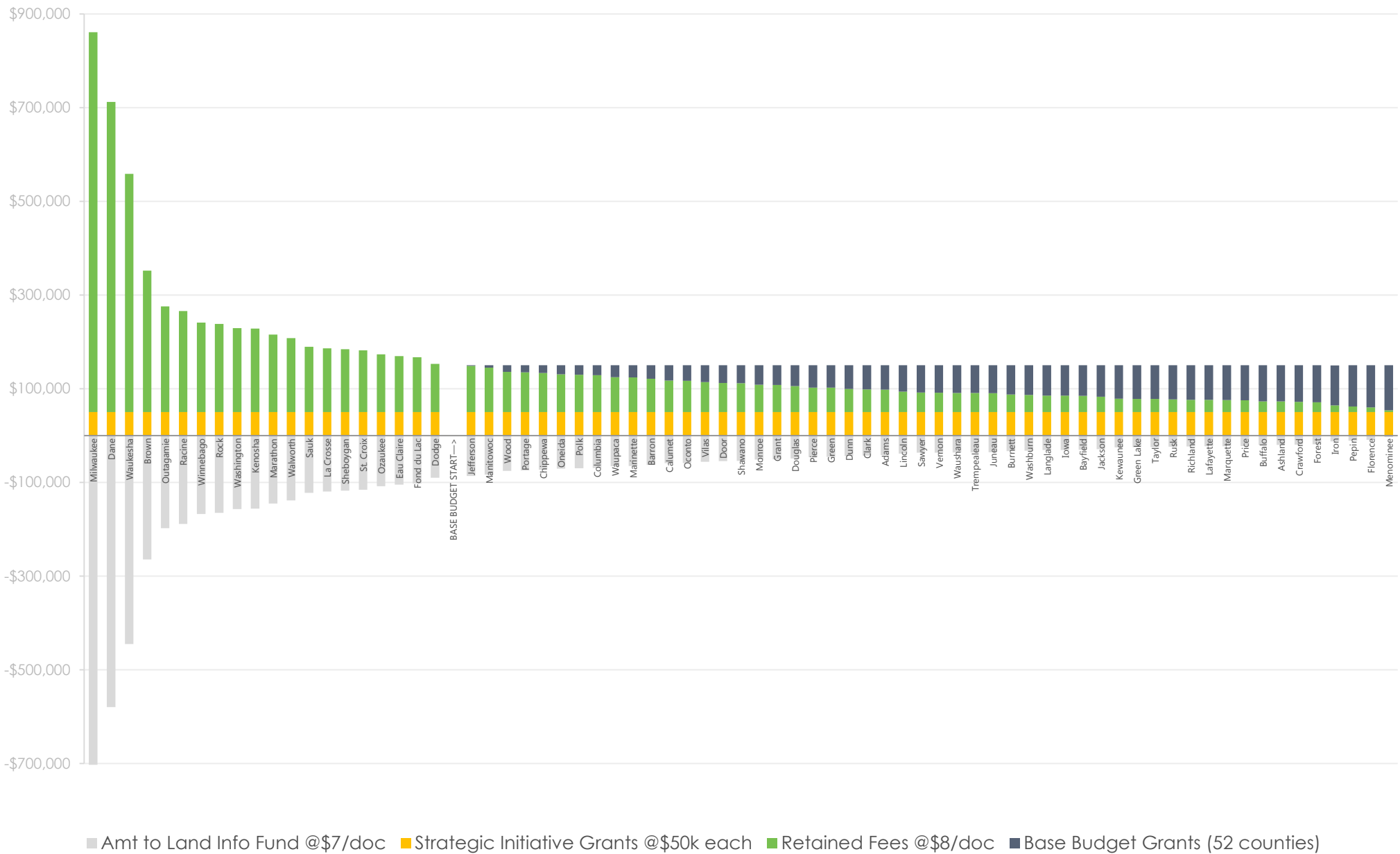
Figure 3. Distribution of all funding to counties for 2016

Legend: Amt to Land Info Fund @$7/doc | Strategic Initiative Grants @$50k each | Retained Fees @$8/doc | Base Budget Grants (52 counties)

2.2 Expenditure of County Retained Fees and Grants

Counties submit annual expenditure reports on how WLIP retained fees and grants were utilized in the previous year and categorize their expenditures in a *Retained Fee/Grant Report*, in keeping with s. 59.72(2)(b). In 2015, WLIP retained fees and grants—totaling $10.3 million—were devoted to the areas depicted in Figure 4.
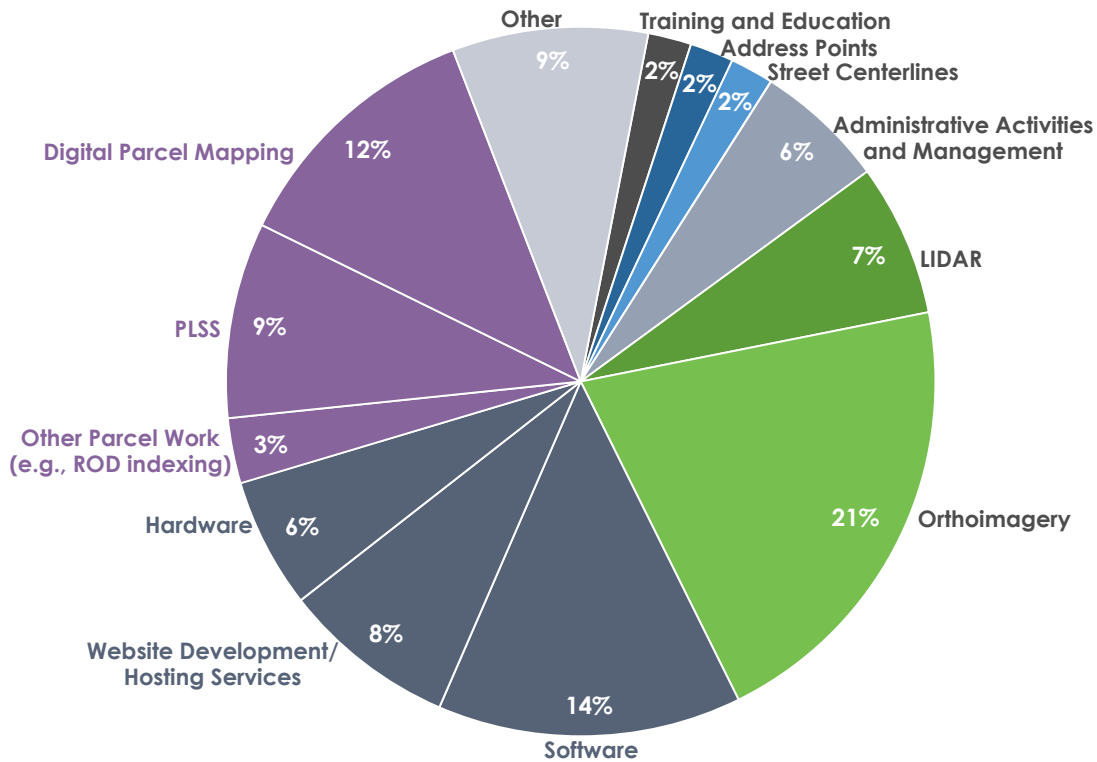


Figure 4. County 2015 expenditures reported

As 2015 was a year in which several counties invested in aerial imagery under the WROC consortium, orthoimagery spending was higher than average in 2015, constituting an estimated 21% of WLIP expenditures. Otherwise consistent with previous years, Figure 4 illustrates that about one quarter of WLIP funding was used for the development and maintenance of county parcel datasets, including Public Land Survey System remonumentation and other parcel work. (PLSS expenditures for 2016 are summarized in Figure 5.) About another quarter of funding was used for computer hardware, software, and website development and hosting. These expenditures help to provide convenient access to land records through searchable databases, online interactive maps, and various types of mapping applications. The remaining quarter of funding supported a diverse range of activities, including the acquisition of lidar, as well as the development of address points and street centerlines.

Figure 5. Total PLSS Spending for 2016

2.3 Revenue Trend

The number of documents recorded and thus Land Information fund revenue varies from year to year. For each of the last two years, the annual total has equaled about 900,000 documents. However, the last two-year average is well below historic averages, as represented in Figure 6.
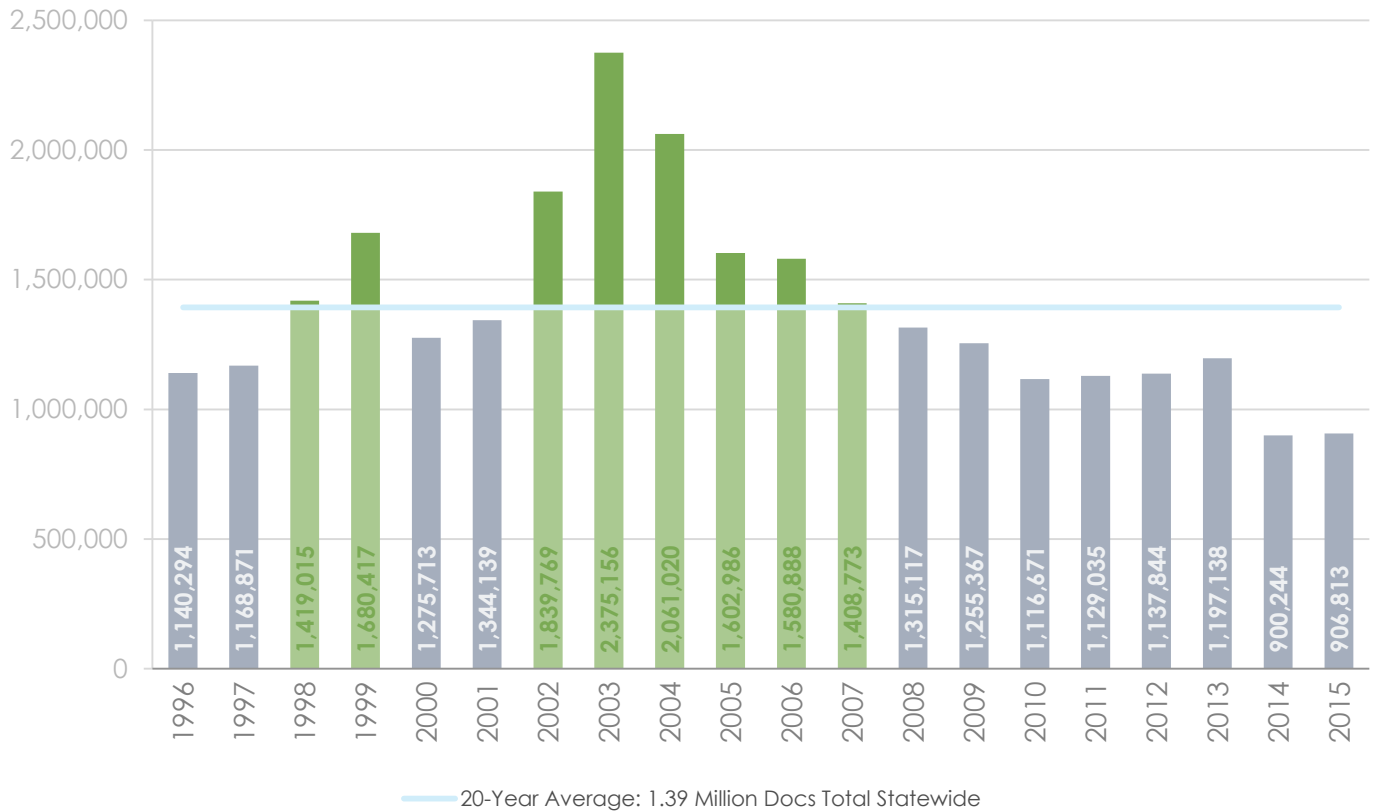
Figure 6. Number of register of deeds documents recorded statewide under s. 59.43(2)(ag)1 or e

The last five-year average is 1,054,215 documents recorded, which would correspond to $7.4 million in Land Information Fund revenue (at $7 submitted per document recorded). Again, this program plan is built around the $6.3 million revenue projection, based on the last two-year average of 900,000 documents recorded statewide.

3 CURRENT PROJECTS

The Land Information Fund is divided so that the overwhelming majority of funds—more than 90%—goes to local governments for county land information projects. Currently, less than 10% is dedicated to contracting for the Parcel Initiative and Program administration. This chapter describes the county projects funded by the WLIP, the Statewide Map Parcel Initiative projects for 2016-2017, and administration of the Program.

3.1 County Grants and Retained Fees

With regard to the WLIP, county land information projects can be funded by retained fees and the three types of grants—Base Budget, Training & Education, and Strategic Initiative.

Current county grant projects are detailed in individual county land information plans, available at www.doa.state.wi.us/WLIP. These plans were last updated in 2015, with county land information council approval and finalization by March 31, 2016. The three-year plans detail the status of county Foundational Element completion and maintenance, the integration process of land records into a county land information system, and current and future county projects.

3.1.1 Retained Fees

The WLIP enables a portion of the register of deeds document recording fees to be retained by the county for land information use. Specifically, counties may retain $8 of the $30 recording fee under s. 59.43(2)(ag)1 or (e). Retained fees totaled $7.2 million statewide for 2015. This funding must be spent to implement a county land information plan, according to s. 59.72(5).

Counties submit annual expenditure reports on how WLIP retained fees and grants were utilized in the previous year and categorize their expenditures in the *Retained Fee/Grant Report*, according to s. 59.72(2)(b). These are due at the end of June for the previous year's expenditures, and are posted on the WLIP webpage as a way for the public to review WLIP expenditures on a per county basis. In addition, county reports are summarized each year in the Program's annual report.

3.1.2 Base Budget Grants

The WLIP will award Base Budget grants to a sum of $2.7 million in 2016. Every county that retains less than $100k in a year is eligible for a Base Budget grant to reach the $100k threshold. Because counties with modest real estate market activity do not generate substantial land information office revenue, Base Budget grants are provided in order to enable eligible counties to develop, maintain, and operate a basic land information system, as well as develop and maintain Foundational Element data layers.

Counties that retain less than $100k in retained fees for land information are eligible for a Base Budget grant according to the formula below.

WLIP Base Budget Grant Eligibility Formula
$100k – ROD document recording fees @ $8 per document recorded
Example: County records 5,000 documents
$100k – (5,000 x $8)
$100k – ($40k)
$ 60k = Base Budget grant eligibility

In 2015 and 2016, the first two years in which Base Budget grants were fully funded to the $100k threshold, they totaled about $2.7 million statewide per year.

3.1.3 Training & Education Grants

The WLIP funds $1,000 Training & Education grants, totaling $72k per year. Training & Education grants may be used for the training and education of county employees for the design, development, and implementation of a land information system.

3.2 Strategic Initiative Grants 2016-2017

Every county is eligible for a $50k Strategic Initiative grant in both 2016 and 2017, for the purposes of working toward benchmark standards for parcel data formatting, completeness, and accuracy.

The WLIP funds Strategic Initiative grants amounting to $3.6 million total statewide for 2016. Strategic Initiative grants awarded in 2016 and 2017 are designed to aid county achievement of the four benchmarks accompanying the Parcel Initiative laid out in the 2016 WLIP grant application, focused on goals of parcel quality, completeness, and data standardization.
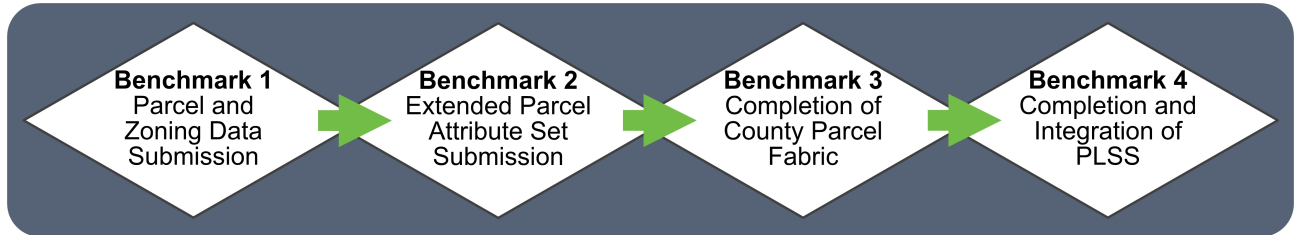

Benchmark 1
Parcel and Zoning Data Submission

Benchmark 2
Extended Parcel Attribute Set Submission

Benchmark 3
Completion of County Parcel Fabric

Benchmark 4
Completion and Integration of PLSS

Figure 7. The four benchmarks for parcel dataset development from the 2016 WLIP grant application

Counties must prioritize their Strategic Initiative grant activities toward achieving the benchmarks in numerical order, beginning with Benchmark 1, proceeding to Benchmark 2, and so forth.

Note that there is a waiver on Benchmark 4 to allow counties to use Strategic Initiative grant funding to acquire lidar data. This exception to the benchmark was instituted so that counties would not forgo a federal funding opportunity that requires at least 50% match, i.e., the United States Geological Survey (USGS) 3DEP Program.

If a county meets all of the benchmarks, it may use the remaining balance of its Strategic Initiative grant to fund county-specific strategic projects. For 2016 Strategic Initiative grants, only six counties applied some Strategic Initiative grant funding to other county-specific strategic projects, totaling 6% of the Strategic Initiative grant funding for 2016.

Also note that Strategic Initiative grants are funded at the $50k level for 2016-2017 because Land Information Fund Revenue was increased beginning on January 1, 2015, and Strategic Initiative grants were not first awarded until 2016. Therefore, the accrual of revenue allowed Strategic Initiative grants for 2016-2017 to be $50k—larger than they might be in future years.

3.3 Program Administration

For 2016, services provided by the Program and administration expenses total $400k. With respect to staff budget, WLIP staff within the Division of Intergovernmental Relations in the Department of Administration presently include 3.35 total positions: program manager (0.35 position), geographic information officer, grant administrator, and project coordinator.

2016 WLIP Staff Budget	
Salaries	$242,536
Benefits	$ 92,746
Supplies and Overhead	$ 55,000
Travel	$ 10,000
Total	$400,282

WLIP staff currently carry out the duties of the department under s. 16.967(3) for administration of the Program by engaging in activities including but not limited to the following:

- Awarding and administering WLIP grants to counties, with development of the annual grant application and attendant benchmarks and standards
- Logging monthly county retained fee revenues and number of documents recorded
- Recording annual county retained fee and grant expenditures, and reporting summary statistics in an annual Program report
- Producing project reports and other documentation of Program activities
- Creating, administering, and reporting on the annual WLIP survey of counties
- Reviewing and approving three-year county land information plans and amendments
- Preparing guidelines to coordinate the modernization of land records, currently by instituting benchmarks for county parcel datasets and via the updated instructions for three-year county land information plans
- Maintaining and distributing an inventory of land information available for the state, through the provision of county and state land information plans online, which inventory land information resources and access points
- Making Program materials available to the public online
- Identifying additional sources of funding (e.g., coordinating county applications for lidar through the USGS 3DEP Program)
- Coordinating and staffing the Wisconsin Land Information Council
- Maintaining statewide land information officer list and regularly communicating with land information officers on matters relating to the Program
- Meeting, communicating, and coordinating with county land information officers, register of deeds, surveyors, real property listers, treasurers, public safety officials, realtors, state agency GIS personnel, Department of Revenue staff, vendors of land records software, and other stakeholders
- Through the geographic information officer, providing technical assistance and advice to state agencies with land information responsibilities
- Coordinating with the GIS units of Wisconsin's state agencies, primarily through the State Agency Geospatial Information Committee
- Coordinating with the State Cartographer's Office (SCO) to maximize efficiencies between the statutory duties of SCO and DOA
- Striving to meet the Governor's "Lean Government" initiative to make state government operate more efficiently by engaging in coordination, not only amongst counties and state agencies, but also between state agencies and local governments
- Coordinating with Department of Revenue on collection of tax roll data
- Analysis of legislation and drafting of fiscal impact statements relating to land information
- Researching best practices, current technology, industry developments, and standards
- Managing the Statewide Parcel Map Initiative
  - Devising the V1 and V2 parcel, tax roll, and zoning data submission documentation with SCO
  - Data request, data acquisition oversight, and data sharing logistics
  - Tracking of benchmark achievement with SCO (see page 21)
  - Arranging for technology for statewide dataset distribution and access to the statewide database with SCO
  - Collection of user feedback for Program assessment purposes with SCO
  - Outreach and community engagement
- Engaging in program planning and budgeting, including the engagement of stakeholders in participatory planning processes and other strategic planning and implementation tasks

3.3.1 Statewide Parcel Map Initiative

The Statewide Parcel Map Initiative is a central focus of Program efforts, where DOA acts as a coordinator, bringing together locally-produced data into a seamless statewide product consumed by a vast variety of users. Municipalities and counties create and maintain parcel and tax roll data, but the utility of this data extends well beyond county boundaries, thus demonstrating the need for statewide aggregation.

When Act 20 directed DOA to create a statewide digital parcel map in coordination with counties and to author a searchable format standard for parcel information, the WLIP had to make this ambitious statewide project a reality. Building on the success of the LinkWISCONSIN Address Point and Parcel Mapping Project, DOA has partnered with the State Cartographer's Office (SCO) as a contractor to carry out data standardization and aggregation efforts. The WLIP currently funds SCO on the Parcel Initiative for

approximately $115k per year, which includes the cost of software. To define the DOA/SCO collaboration, an MOU has been signed for each phase of the project through the end of 2018. The MOUs define the scope of work and SCO responsibilities in creating each iteration of the statewide parcel layer and can be found on the WLIP webpage.

| MOU	Duration	Years	Amount	Annual Cost
V1	July 1, 2014–September 30, 2015	1.25	$121,765	$ 97,412
V2	October 1, 2015–December 31, 2016	1.25	$136,951	$109,561

The primary project objectives successfully achieved by the Version 1 Statewide Parcel Map Database Project (V1 Project) were:
- Establishing a statewide parcel GIS map layer by integrating county-level parcels and property tax roll datasets
- Recommending a searchable format for parcel attributes for the V2 Project and beyond
- Making recommendations on WLIP Strategic Initiative grants for parcel mapping activities in the form of benchmarks for parcel dataset development

The SCO-DOA project team is currently working on the V2 Statewide Parcel Map Database Project. As with V1, SCO is going well beyond aggregating county parcel datasets. SCO activities include but are not limited to:
- Applying lessons learned and best practices from the V1 Project
- Public comments period with revisions to the *V1 Interim Report*, which drafted schema standards
- Collection and review of user feedback from the V1 layer
- Schema development, including outreach to state agency and other users
- Development of V2 submission documentation
- A V2 pilot project, in collaboration with common vendors of tax parcel data software and counties
- Preparation and ingest of 72 county parcel and tax roll datasets with data/metadata assessment, parcel gap assessment, staging data for processing, attribute schema development, and field mapping documentation
- Local-level processing, including processing and joining auxiliary tables; parsing, concatenating, and transposing; and other processing as needed
- Aggregation, including configuring and mapping fields and aggregating datasets
- State-level processing, with aggregation of state-level data, QA/QC, and standardization
- Creating geoprocessing and other tools to assist counties in standardizing and formatting data to meet Benchmarks 1-2
- Developing and prototyping a process to update the statewide parcel layer to facilitate asynchronous updates on a county-by-county basis
- Developing a prototype solution to display county-maintained zoning data
- Evaluating county progress in meeting parcel benchmarks
- Preparing a report to the legislature by January 1, 2017 on progress in developing the statewide digital parcel map as required by s. 16.967(6)(b)

V1 Statewide Parcel Layer
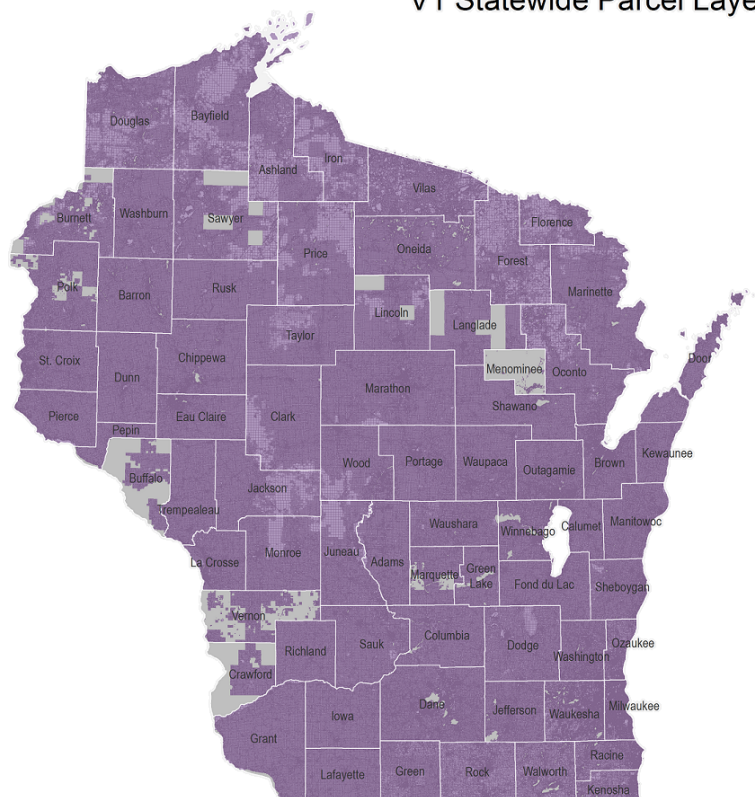
Map 1. Version 1 statewide parcel layer completed in June 2015

4 FUTURE PROJECTS: 2016-2021

This plan proposes future projects assuming that the last two-year revenue trend will continue, which equals $6.3 million in Land Information Fund revenue per year. Ninety percent of this revenue is targeted toward county grants.

Program Administration 7%
Parcel Initiative Contractor 2%
Facilitation of Access to County Data 2%
T & E Grants 1%
Base Budget Grants (52 Counties) 43%
Strategic Initiative Grants (72 counties) 46%
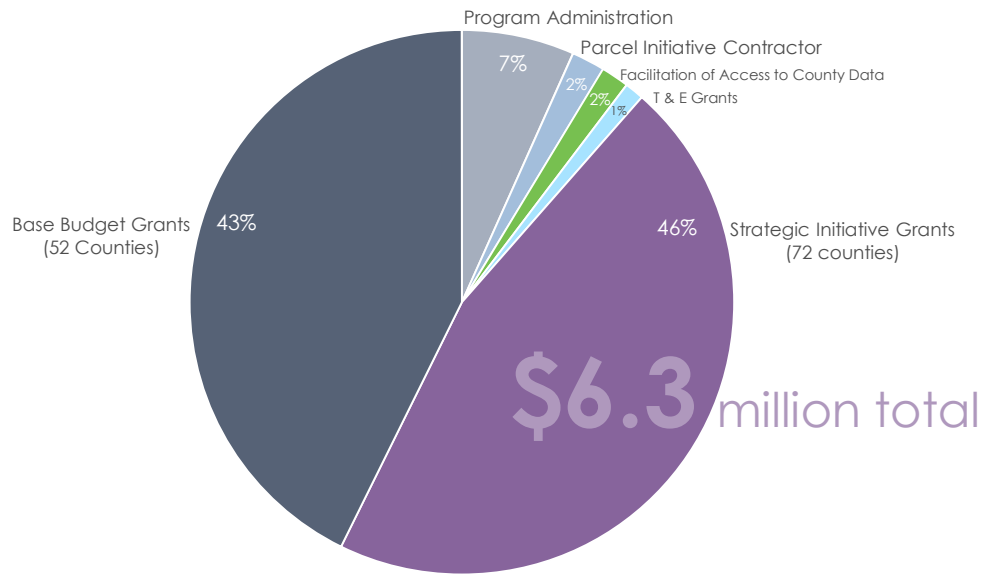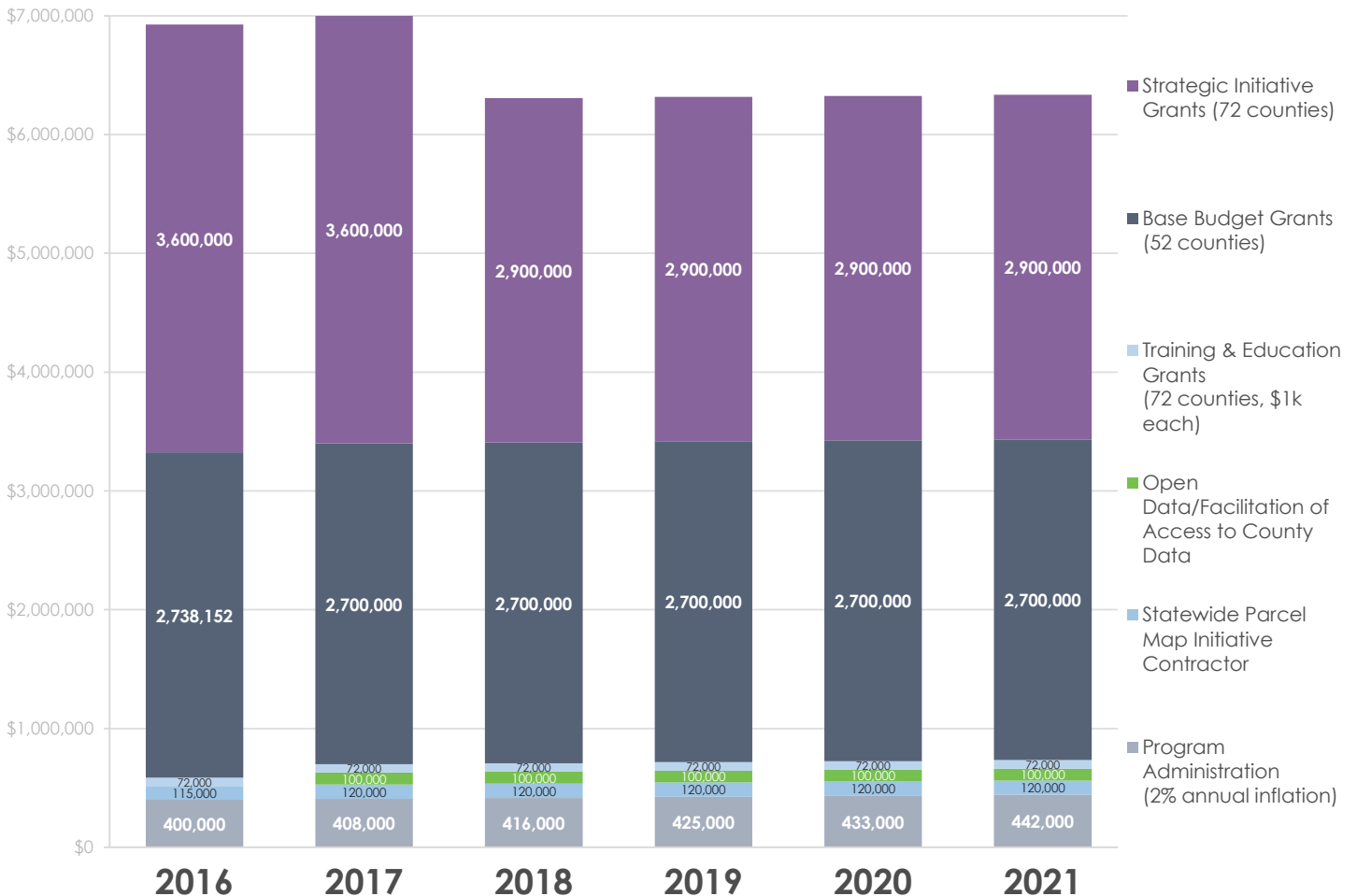$6.3 million total

**Figure 8. (Above) Projected average annual Program budget with proposed projects for 2018-2021
(Below) Projected Land Information Program budget with proposed projects for 2016-2021**

Legend:
- Strategic Initiative Grants (72 counties)
- Base Budget Grants (52 counties)
- Training & Education Grants (72 counties, $1k each)
- Open Data/Facilitation of Access to County Data
- Statewide Parcel Map Initiative Contractor
- Program Administration (2% annual inflation)

	2016	2017	2018	2019	2020	2021
Strategic Initiative	3,600,000	3,600,000	2,900,000	2,900,000	2,900,000	2,900,000
Base Budget	2,738,152	2,700,000	2,700,000	2,700,000	2,700,000	2,700,000
		72,000	72,000	72,000	72,000	72,000
		100,000	100,000	100,000	100,000	100,000
	72,000	120,000	120,000	120,000	120,000	120,000
	115,000					
Program Admin	400,000	408,000	416,000	425,000	433,000	442,000

4.1 County Grants and Retained Fees

4.1.1 Future Retained Fees

Counties may continue to retain $8 of the $30 of the register of deeds document recording fee under s. 59.43(2)(ag)1. or (e). This funding must be used to implement a county land information plan, per s. 59.72(5). Beginning in 2018, if a county chooses to apply retained fee funding to completing or updating Foundational Elements for which WLIP benchmark standards have been set, then those retained fee-funded projects must progress toward meeting the benchmark standards.

4.1.2 Future Base Budget and Training & Education Grants

Every county that retains less than $100k in a year will continue to be eligible for an annual Base Budget grant to reach the $100k threshold, and every county will continue to be eligible for an annual $1,000 Training & Education grant.

For planning purposes, it is worth noting that if in the future the number of documents recorded returns to the historical average and county retained fee revenue increases, the total amount of Base Budget funding distributed to counties would decline, as fewer counties require a grant to reach the $100k threshold. Beginning in 2018, if a county chooses to apply Base Budget funding to completing or updating Foundational Elements for which WLIP benchmark standards have been set, then those Base Budget projects must progress toward meeting the benchmark standards.

4.2 Strategic Initiative Grants 2018-2021

Strategic Initiative grant funding will continue to be allocated equally among all 72 counties for 2018-2021.

Strategic Initiative grants would be $40k per county beginning in 2018, based on current revenue levels. If document recording levels return to the previous five-year average, grants could again total $50k per county.

Strategic Initiative Grant Formula
Land Info Fund revenue of $6.3 million – ($6.3 million × 10% for Program administration) = $5.67 million for county grants
$5.67 million – $2.7 million Base Budget grants – $72,000 Training & Education grants = $2.9 million
$2.9 million / 72 = ~$40,000 per county

If recording levels were to rise again to over 1 million documents recorded document per year (the 20-year average being 1.4 million docs recorded), there would be adequate revenue to fund county Training and Education grants, Base Budget grants, and Strategic Initiative grants to the $50,000 level, with additional revenue remaining. In such a scenario, DOA should consider, in collaboration with the Wisconsin Land Information Council and community, awarding special Strategic Initiative grants targeted towards the completion of priority Foundational Element layers or datasets to be determined.

4.2.1 Benchmarks

Beginning in 2018, Strategic Initiative grants will be awarded to achieve a new assortment of benchmarks. A "benchmark" is a standard or achievement level on a specific measure of data quality or completeness, which is tied to grant requirements. In other words, benchmarks are standards that guide the development of WLIP-funded data.

At the same time, it has always been the intention of the WLIP to offer counties the greatest flexibility possible in utilizing WLIP funding, while meeting other business needs, such as those of state agencies and companies working across county boundaries. As an early document on policy objectives emphasized the Program's distinct local government orientation, "this Program seeks to develop modern, integrated land information systems from the 'bottom up.' The design and intent of this legislation is to provide flexibility and discretion for local governments in developing their own land information programs."[7]

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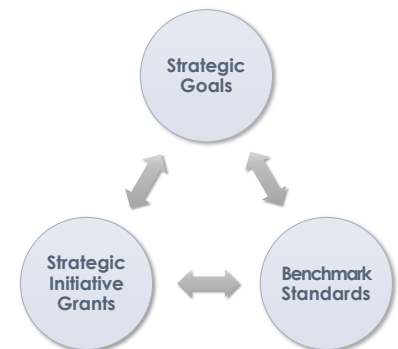
[7] Wisconsin Land Information Board. (1991). *Policy Objectives and Program Implementation in Light of the Enabling Legislation, 1989 Wisconsin Acts 31 and 339.*

Benchmark Progress and Assessment

With an eye toward accountability and in an effort to check county progress on benchmark achievement, each version of the Parcel Initiative has included assessment metrics and reports. The status of county efforts toward achieving benchmarks is analyzed and reported on in phases:

- Phase 1 – Assessment data is specifically named as a deliverable in the project MOUs
- Phase 2 – County data is submitted and analyzed
- Phase 3 – Assessment data is sent to individual counties in documents called "Observation Reports," which are designed to help counties determine grant projects for the following year and accompany the grant application
- Phase 4 – County data is reported on in a final project report at both the statewide and individual county level, with the report and associated data published online

According to the terms of the V1 MOU, DOA/SCO created an *V1 Interim Report* and *V1 Final Report* that included "quantitative assessment of each county parcel dataset according to metrics identified to assess quality and completeness." The benchmark data itself was published as Digital Appendix N to the *V1 Interim Report*, and mailed to each county as V1 Observation Reports, as shown in Figure 9.
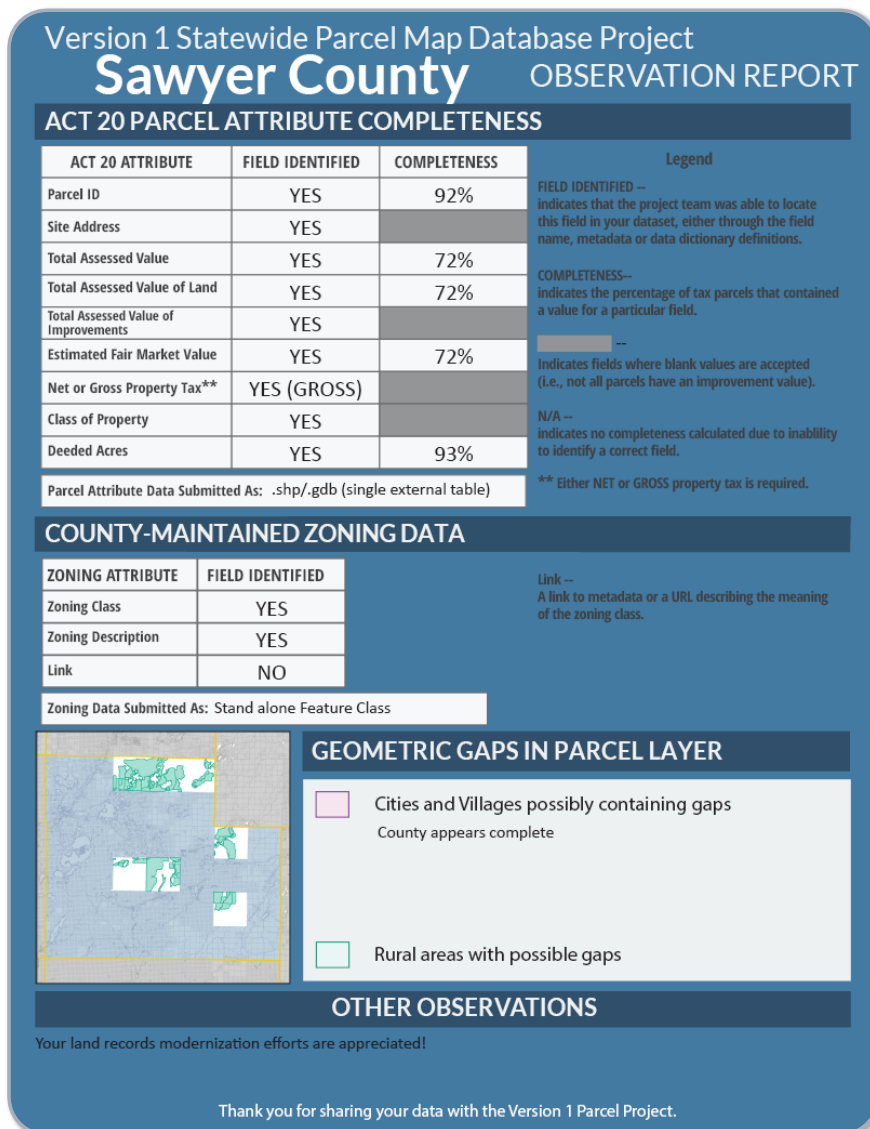
For V2, SCO will provide data evaluating counties against the searchable format standard, which is Benchmarks 1 and 2. The V2 Project also includes a report to the state legislature/final project report. That report will include an evaluation of whether the desired project results are being achieved and whether objectives established by the legislature are being met, among other things.

V3/V4 will follow a similar pattern, with the MOU laying out the task of benchmark progress assessment, evaluating where each county is at in terms of meeting the four original benchmarks and the requirement for counties to achieve the searchable format standard by the V4 data submittal deadline of March 31, 2018.

Not only do accountability measures extend beyond those above, but the precedent has been set for future Strategic Initiative grant projects to follow the pattern of measuring county progress toward achieving benchmarks.

Figure 10 on the next page depicts the proposed benchmarks for 2018-2021, broken down into Set I, II, and III—parcels, open data, and a menu of other options, respectively.

Map 2. V1 Observation Report Example

SET I – PARCELS

- Note that all counties are projected to be complete with the original parcel benchmarks by 2018, but meeting the original parcel benchmarks still has first priority
- County must achieve bench-marks in order for Set I

Benchmark 1
Parcel and Zoning Data Submission

Benchmark 2
Extended Parcel Attribute Set Submission

Benchmark 3
Completion of County Parcel Fabric

Additional Parcel Benchmark(s)
Details TBD

SET II – OPEN DATA

- County must achieve Set I before moving to Set II
- Benchmark Set II details to be determined by June 2017 for 2018 grant application
- See preliminary definition of "Open Data" on page 23.

Open Data Benchmark
Details TBD

SET III – MENU OF OPTIONS

- In no particular order
- County must achieve Set I and Set II before moving to Set III
- Benchmark Set III details to be determined by June 2017 for 2018 grant application

PLSS Benchmark
Completion and Integration of PLSS

Imagery Benchmark
Details TBD

Lidar Benchmark
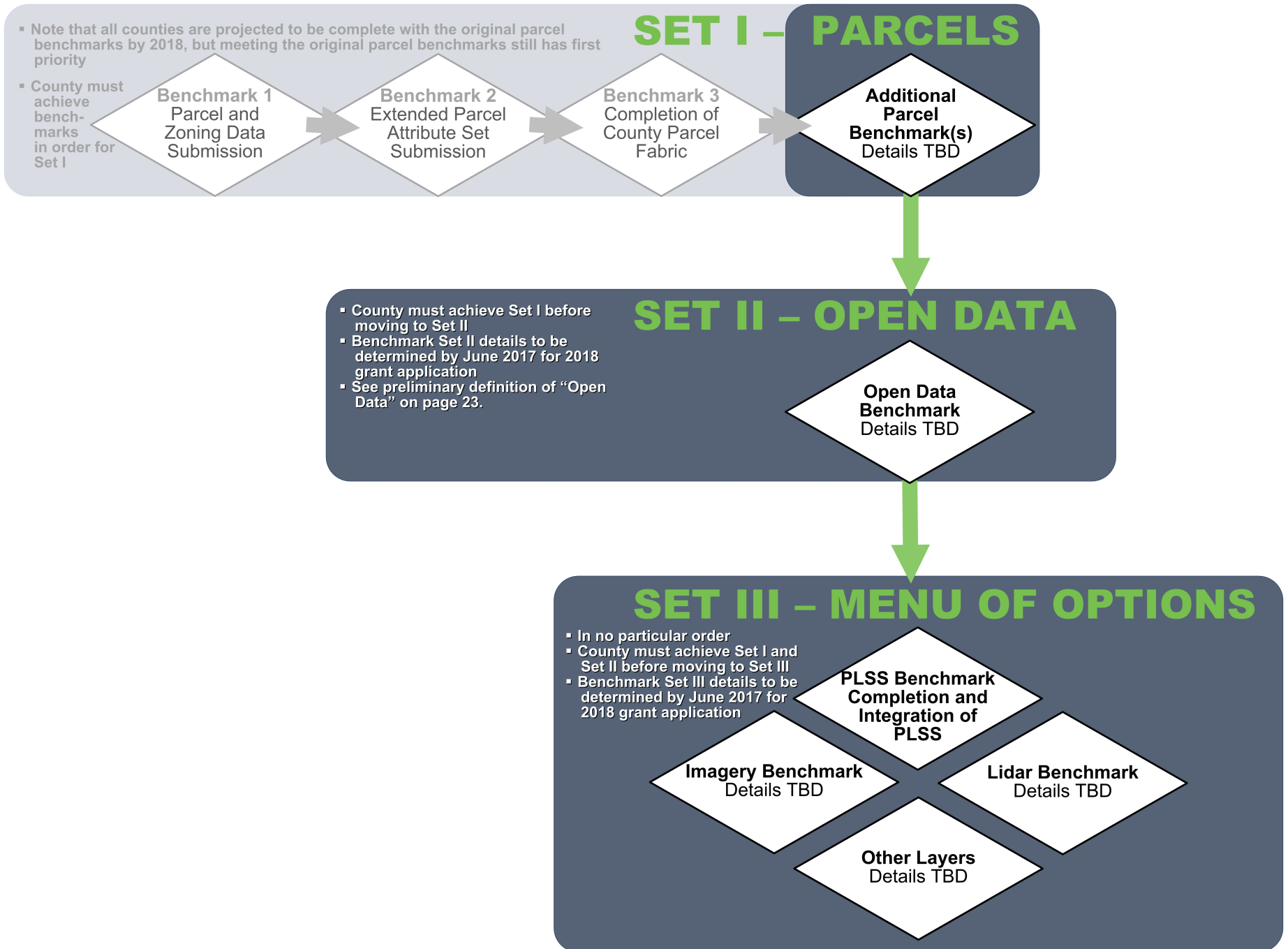Details TBD

Other Layers
Details TBD

Figure 9. Proposed Strategic Initiative Benchmarks for 2018-2021

4.3 Benchmark Set I – Parcels

In 2018, counties would be eligible for Strategic Initiative grant funding to complete Benchmark Set I – Parcels.

In order to achieve the objective of the Parcel Initiative for a complete statewide parcel map comprised of standardized and integrated local parcel datasets, it is necessary that counties first meet the parcel benchmarks originally laid out in the 2016 grant application and the V2 submission documentation. Three of the four original benchmarks for parcel data will become Benchmark Set I for 2018-2021 grants:

- ◆ Set I Benchmark 1 – Parcel and Zoning Data Submission
- ◆ Set I Benchmark 2 – Extended Parcel Attribute Set Submission
- ◆ Set I Benchmark 3 – Completion of County Parcel Fabric

Utilizing 2016 and 2017 Strategic Initiative grants, all counties are scheduled to be complete with Benchmark Set I by March 31, 2018 (with the exception of Vernon and Burnett counties, who will likely need more time to achieve the digital parcel fabric completion required by Benchmark 3. Vernon and Burnett counties may continue with a "PLSS first approach" to completing the parcel fabric).

Put simply, Set I benchmarks will be largely complete by 2018. The majority of counties will continue progress on PLSS completion and integration in 2018 and beyond. As such, counties will continue to have the option of applying Strategic Initiative grant funding towards PLSS in 2018, an option that falls under Benchmark Set III below.

4.3.1 Additional Parcel Benchmarks To Be Determined

As the Parcel Initiative evolves, there will continue to be a need for Strategic Initiative grant funding to address additional priorities for parcel completion and standardization. Additional benchmarks for parcel data development would be defined and finalized as part of the V3-V4 Parcel Projects. The following list includes possible examples of additional parcel benchmarks, but they are tentative and listed in no particular order.

◆ Set I Benchmark – Additional Parcel Benchmarks To Be Determined
- **The community will have the opportunity to help develop standards for ADDITIONAL PARCEL BENCHMARKS by June 30, 2017**
  Provisional benchmark examples:
- Public lands classification for parcels—slated for first consideration, given the Deer Report and state agency needs
- Right of ways tied to parcels
- Land use mapping tied to parcels
- Municipal zoning and other key land use regulations tied to parcels
- Department of Revenue's tax roll standards and data submittal requirements
- Additional real estate and housing data from the Department of Revenue's PA-500 Residential Property Record Assessment Card

4.4 Benchmark Set II – Open Data

Beginning in 2018, each county would be eligible for Strategic Initiative grant funding to work on the new Benchmark Set II – Open Data.

Following the trend of government transparency and open government, the WLIP will require counties to make public geospatial data freely and openly available by enforcing benchmark standards for open data.

An open data benchmark is important to maximizing the return on public funds invested in county land information data through the WLIP. State statute 16.967(7), governing the Program's distribution of grants, actually prioritizes making public records in the county's land information system accessible on the Internet before other county grant expenditure activities. Furthermore, s. 59.72 (3)(b) directs counties to include within their land information plans a goal to provide access to public land records on the Internet.

Consistent with the Public Records Law, county land information offices shall make available and discoverable online in the public domain, without charge and without restrictive licensure, data created, acquired, maintained, or developed with WLIP retained fees or grants, with basic metadata and download capability.

OPEN DATA

Providing Strategic Initiative grant funding will enable counties to defray the cost of making data publicly available, and is intended to decrease the amount of requests for data the county receives. As of April 2016, seventeen counties supply their GIS datasets online for download.

Set II Benchmark 1 – Open Data
- **The community will have the opportunity to help develop standards for OPEN DATA by June 30, 2017**
  Provisional benchmark requirements:
- Consistent with the Public Records Law, county land information offices shall make available and discoverable online in the public domain, without charge and without restrictive licensure, data created, acquired, maintained, or developed with WLIP retained fees or grants, with basic metadata and download capability.
- Existing local, state, and federal laws regarding non-public or sensitive data apply.
- It is permissible for counties to include appropriate legal disclaimers on their website and in their metadata when providing open data (e.g., accuracy disclaimers, map is not a survey disclaimer).
- Providing documented data to a third-party who makes the data publicly available is sufficient to meet the definition of open data.
  - Possible means of data access at the county level:
    - County provides dataset downloads by website/FTP/WAF/cloud
    - County provides linked open data via other technical means
    - County provides data to DOA, who—in coordination with a third-party or state agency—makes data available in the public domain on behalf of county. Examples would be contributing to the Legislative Technical Services Bureau (LTSB), UW-Madison Robinson Map Library (RML), SCO, and/or WisconsinView.
- Definitions (to be authored in a future community effort):
  - "Discoverable" means _____
  - "Without charge" means _____
    This does NOT include fees otherwise provided by law, such as the allowable cost of reproduction for public records under s. 19.35(3)(b), or the allowable Register of Deeds document copying fees allowed under s. 59.43(2)(b)
  - "Without licensure" means _____
  - "Data" means _____
  - "Download capability" means _____
  - "Basic metadata" includes _____

Data would be collected by DOA to meet this benchmark and then made available online by a state entity with a disclaimer directing the user to the county for the most current and comprehensive datasets (as the current V1 parcel map application does).
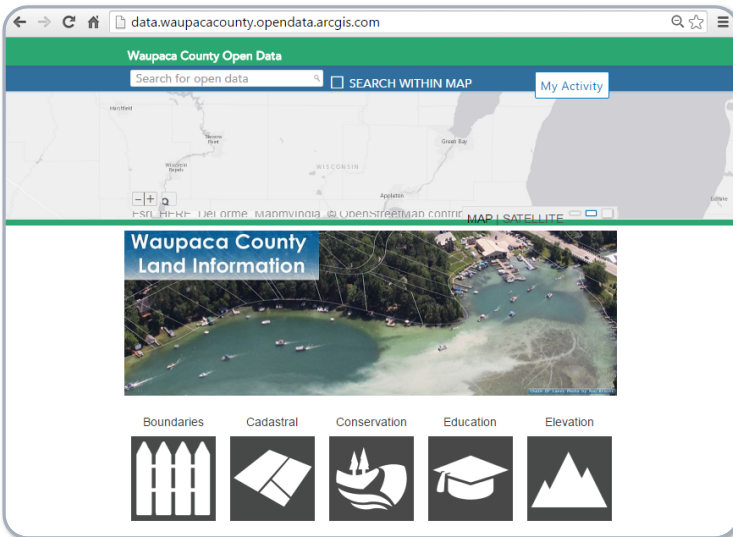
Map 3. Waupaca County's Open Data Site

Based on available data, the open data benchmark will not be tremendously expensive for counties to meet and therefore will leave funds remaining to achieve other benchmarks. The goal will be to enable counties to meet the benchmark by submitting data to state agency repositories at no cost. The costs for alternatively providing data on county websites (linked via a common WLIP point of access) would presumably be relatively small, as in likely less than $5,000 (including county staff time costs) in average set-up costs and less than $2,000 in average annual maintenance costs. This is according to costs identified in a 2016 survey of counties that currently make their land information data available for download.

4.5 Benchmark Set III – Menu of Options

Beginning in 2018, after achieving Benchmark Set I and Set II, counties could choose from a menu of Benchmark Set III options that include PLSS, aerial imagery, lidar, and additional layers to be determined with community input.

After parcels and open data, counties will choose from a menu of options which may be addressed in no particular order. Including menu options under Benchmark Set III will allow counties to apply Strategic Initiative funds to the area(s) of their choosing. The requirements that make up each benchmark listed in this menu are not Program mandates—meaning they do not have to be achieved by all counties—rather, they would constitute requirements *if* a county were to apply grant funding toward them. Benchmark Set III is to be expanded beginning no later than with 2019 grants to include other Foundational Element layers, such as perhaps address points and street centerlines. Only after Benchmark Set I, II, and III have been achieved may a county apply Strategic Initiative grant funding to other county-specific strategic projects.

PLSS is one Set III option. Progressing to a maintenance phase of a complete and integrated county PLSS framework is essential to the geospatial integrity of parcel mapping. Most legal descriptions describing land have been written in reference to the PLSS. The accuracy of parcel boundary lines mapped in GIS and publically displayed online is therefore dependent on the accuracy of a county's PLSS. Although GIS is not a substitute for a property survey by a professional land surveyor, a complete PLSS increases the spatial accuracy of GIS to the point where it can be reliably used for a myriad of purposes. As such, PLSS has been and will continue to be a strategic priority for the Parcel Initiative.

Aerial imagery and lidar are also Set III options. Both complement and enhance the accuracy of parcel mapping. Aerial imagery identifies features pertinent to parcel boundaries, such as fence lines, block corners, and surface water. Additionally, problem areas with parcel mapping are easier to spot with high resolution aerial imagery. Lidar can directly aid in the definition of parcel boundaries along shorelines and in the accurate application of floodplain mapping to parcels, among other benefits to property owners. Moreover, both aerial imagery and lidar can aid in the discovery of PLSS monuments.

A number of surveys have ranked aerial imagery and lidar as some of the most needed datasets, including a 2012 Wisconsin Geographic Information Coordination Council survey, the 2014 WLIP Survey, as reported in the 2014 WLIP Annual Report, and most recently, support was expressed for aerial imagery and lidar in a survey conducted by the WLIC Vice-Chair in response to Draft 1 of this program plan. Furthermore, a publication released by the SCO in 2014 called *Wisconsin Aerial Imagery: A Blueprint for Moving the State Forward* described the unmet demand for current imagery. In terms of lidar, in order for some counties to participate in the USGS 3DEP Program that funds up to 50% of lidar costs, they may need to apply Strategic Initiative grant funding to the match requirement, so as not to miss out on this federal funding opportunity.

4.5.1 Set III Menu Option – Completion and Integration of PLSS

The benchmark for PLSS completion and integration and associated requirements are not expected to change from the 2016 WLIP grant application, which defined satisfactory completion and integration of a county's PLSS network.

- ◆ Set III Menu Option – PLSS Completion and Integration
  Benchmark requirements:
  - Achieve satisfactory completion and integration of the county PLSS framework, as defined by the county in its "Project Plan for Achieving Benchmark 4 PLSS Completion and Integration" within its land information plan

Eligible grant activities include remonumenting, rediscovering, and establishing survey-grade coordinates for PLSS corners, and integrating corner GPS coordinates into the parcel fabric.

The need for an accurate PLSS network must be balanced with the desire to facilitate statewide parcel mapping. In some cases, lower-quality coordinates may be substituted, as they are sometimes justifiable due to factors such as cost, accessibility, or land ownership (e.g., corners on public forest land, meander corners, etc.). However, lower grade coordinates should be the exception, rather than the rule. If PLSS remonumentation activities will not be completed for some fraction of the corners in the county, the county should provide a rationale or explanation to account for the missing corner data in their land information plan.

This benchmark requires submittal of a digital copy of all county PLSS corner coordinates values for inclusion in the State Cartographer's Office online PLSSFinder upon project completion. With this data submittal, accuracy class indication is required. Accuracy classes include survey-grade, sub-meter, and approximate.

PLSS Corner Coordinate Accuracy Classes	
Survey-grade	Coordinates collected under the direction of a professional land surveyor, in a coordinate system allowed by s. 236.18(2), and obtained by means, methods and equipment capable of repeatable 2 centimeter or better precision
Sub-meter	Accuracies of 1 meter or better
Approximate	Accuracies of within 5 meters or to coordinates derived from public records and other relevant information

As of 2015, only nine counties reported to be complete, integrated, and in maintenance phase of their PLSS.[8] (This figure does not include SEWRPC counties that may be "complete," but are upgrading from NAD 27 to a more current datum.) Forty-seven counties estimate that they will be complete and in maintenance phase of their PLSS by 2020, with Strategic Initiative funds included as part of these projections.

It is estimated that it would take about $30 million to complete the PLSS framework statewide,[9] so that all 72 counties have reached the maintenance and monument perpetuation stage. At the 2016 rate of grant and retained fee spending on PLSS and non-WLIP sources of funding, it is estimated that PLSS will be completed and in maintenance phase statewide in about ten years. However, there would likely be some individual county exceptions, as currently ten counties estimate a completion timeline extending beyond 2025. Also note, the option to apply Strategic Initiative funds to PLSS is an important source of funding; however, other funding sources must continue to play a strong role to cover the significant costs of PLSS work and maintenance.

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[8]Data source: 2016 WLIP grant applications
[9]Data source: 2016 county land information plans

4.5.2 Set III Menu Option – Acquisition of Aerial Imagery Base Product Set

Including aerial imagery under Benchmark Set III will assist counties to keep aerial imagery current with specifications that meet governmental and private business user needs. As of April 2016, four counties did not have 12-inch product that is less than six years old (Clark, Dunn, Green, and Price). Counties would also be eligible update their imagery under this benchmark.

In utilizing Strategic Initiative grant funds to acquire aerial imagery, counties would still have the ability to buy up to a higher level of resolution or to purchase additional products, such as oblique imagery, lidar, and planimetrics. Counties would also have the ability to purchase aerial imagery on a more frequent basis, such as every three years. The grants are intended to help counties afford at least the 12" base product at least every five years.

Aerial Imagery Status 2016

Acquisition Year
- 2010
- 2012
- 2013
- 2014
- 2015
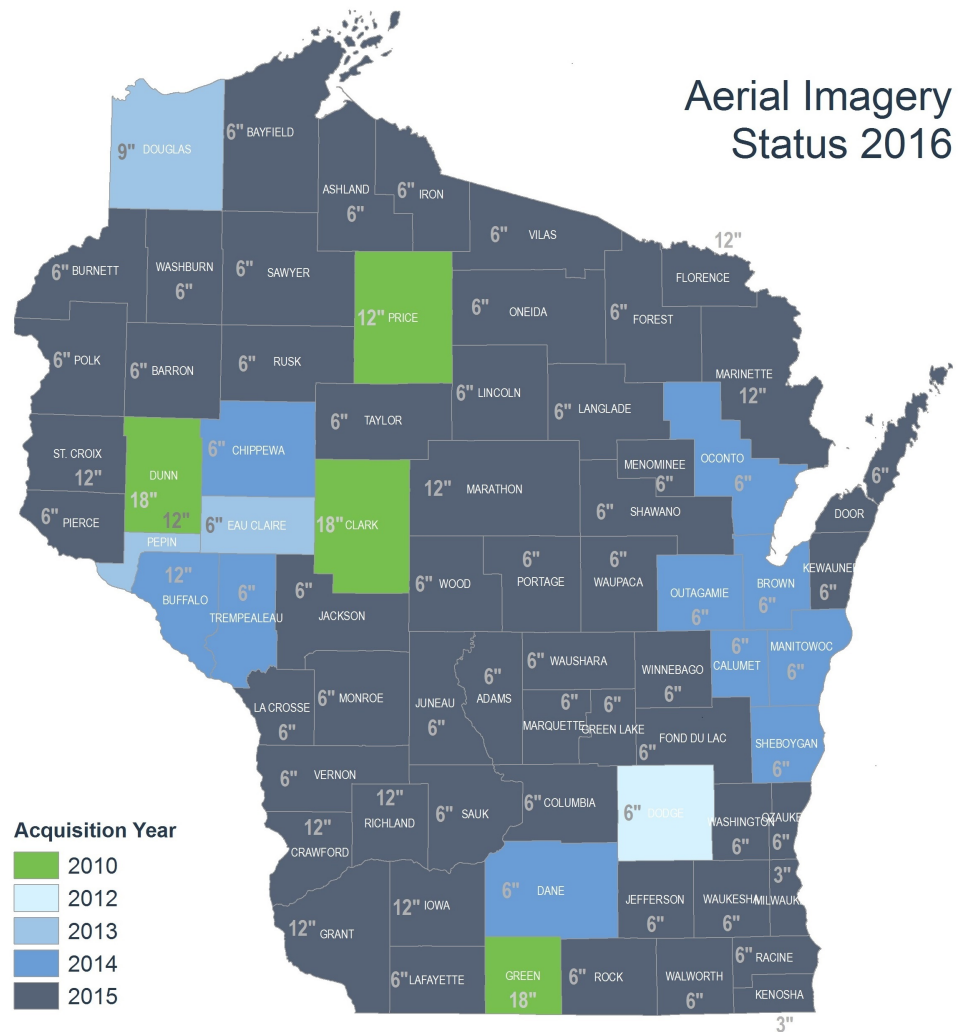
Map 4. County aerial imagery status for 2016

Set III Menu Option – Acquisition of Aerial Imagery Base Product Set
- **The community will have the opportunity to help develop standards for AERIAL IMAGERY by June 30, 2017**
  Provisional benchmark requirements:
- Acquire imagery that is spring leaf-off collection, at least 12" spatial resolution, ASPRS Class II accuracy or better (precise specifications are to be determined)
- Is less than six years old
- Is made available online with download capability
- Meets basic metadata requirements

As with PLSS and lidar, it is not intended that Strategic Initiative grant funding cover all of county orthoimagery costs. Retained fees, Base Budget grants, other county funding sources, as well as contributions from private and governmental entities could help the county pay for imagery.

4.5.3 Set III Menu Option – Acquisition of Lidar Base Product Set

Under this benchmark option counties would be eligible to use Strategic Initiative grant funds to acquire lidar (as six counties lack lidar data) or update an original lidar dataset.

Although the vintages, specifications, and product packages differ, at the current rate of acquisition, every county should have a lidar dataset by 2020.

It is also important to update lidar datasets, complete product suites, and take advantages of advances in technology. By 2020, 24 county lidar data-sets will be at least eight years old. These counties would be eligible to use Strategic Initiative grant funding to update their lidar datasets.
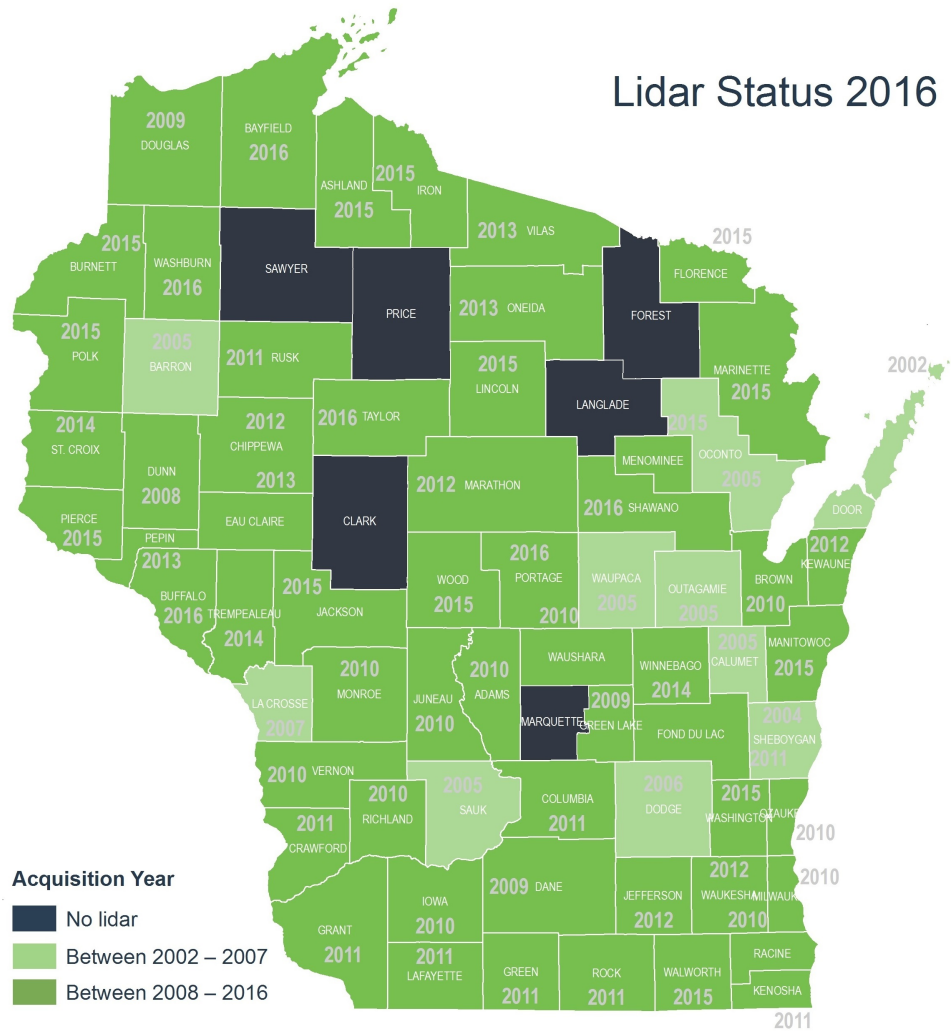
Map 5. County lidar status for 2016.

Set III Menu Option – Acquisition of Lidar Base Product Set

- **The community will have the opportunity to help develop standards for LIDAR by June 30, 2017**
  Provisional benchmark requirements:
- Acquire a lidar product set that includes a point cloud, digital elevation model, breaklines, and contour mapping (precise specifications are to be determined)
- Is current to within eight years old
- Is made available online with download capability
- Meets basic metadata requirements

Federal USGS 3DEP grants have been important to achieving lidar coverage statewide. DOA coordinated successful multi-county grant applications in both 2015 and 2016 and intends to continue to work with counties to capture federal funding for lidar. DOA can also work with counties to extend the typical grant deadline to allow counties the flexibility to make payments over the course of two years. Counties would also be able to accrue Strategic Initiative grant funding over the course of at least two years to meet the expense of lidar.

4.5.4 Other Layers To Be Determined

Beyond the new benchmark standards to be created for 2018 grants, DOA will continue to work to identify and create more standards and benchmarks for additional Strategic Initiative grant categories to be determined no later than beginning with 2019 grants. This could include additional parcel attributes and features, as well as additional Foundational Element layers, such as address points and road centerlines.

Set III Menu Option – Other Layers
- **The community will have the opportunity to help develop standards for OTHER FOUNDATIONAL ELEMENT LAYERS by June 30, 2017, and again by June 30, 2018**
- Details are to be determined

4.5.5 Other County-Specific Strategic Projects

Once a county has met all of the Set I, Set II, and Set III benchmarks, it may spend Strategic Initiative grant funds on a different, non-benchmark project listed in the county land information plan, with the completion of other Foundational Element layers prioritized. A county may not apply Strategic Initiative grant funding to other county-specific strategic projects until Benchmark Set I, II, and III have been achieved.

While DOA wants to reward efficient use of Strategic Initiative grant funding and does not wish to punish counties for good progress, there is a goal of minimizing the amount of Strategic Initiative grant funding not directly spent on meeting statewide benchmark standards. Given the list of existing benchmarks for parcels and PLSS, new benchmarks identified for 2018 grants, additional benchmarks to be identified for 2019-2021 grants, and the ability of DOA to award grants for Strategic Initiative projects to be completed in future years, it is unlikely that more than a small minority of counties would be able to spend funding on other county-specific strategic projects.

4.6 Future Program Administration

DOA will continue to carry out the duties of the department under s. 16.967(3), including administering county grants, instituting standards, and statewide projects, primarily the Statewide Parcel Map Initiative.

WLIP staff will seek to accomplish the tasks listed in the previous chapter (on page 18), as well as further tasks related to program administration and the Statewide Parcel Map Initiative, including facilitation open data as a means to access to WLIP-funded data.

Program administration encompasses tasks related to administering county grants and attendant benchmark standards, the Statewide Parcel Map Initiative, and facilitation of access to data. For 2018-2021, WLIP staff within the Division of Intergovernmental Relations in the Department of Administration is projected to include 3.35 total positions: program manager (0.35 position), geographic information officer, grant administrator, and project coordinator.

Future WLIP Staff Budget	
Salaries	$242,536
Benefits	$ 92,746
Supplies and Overhead	$ 55,000
Travel	$ 10,000
Total	$400,282

In calculating future staff expenses, note that the numbers for these projections are in 2016 dollars. It is assumed that the nominal dollar amount will rise with inflation, at a rate consistent with the Consumer Price Index, but the real dollar amount for DOA staff expenses is not expected to increase. However, costs are estimated and subject to change.

4.6.1 Future Statewide Parcel Map Initiative

The V3 and V4 statewide parcel map databases will be created in 2017 and 2018. By 2018, the goal is to make statewide parcel aggregation more efficient by implementing the "Four A's"—authoritative, automated, asynchronous aggregation—which would allow counties to continually update their parcels in

the statewide layer. Part of DOA's role in the V1/V2 project is to collect, translate, standardize, and aggregate data from local contributors—what is considered an "aggregator" role. The aggregator role is relatively expensive and time-consuming when compared to its alternative, the "steward" role. The Parcel Initiative was designed to phase out the aggregator role over successive cycles of development, with DOA moving to the role of a steward, which will be less costly and time consuming.

In order to achieve the goals of automated asynchronous aggregation of parcel data into a statewide parcel database, an additional MOU with SCO for the V3 and V4 parcel projects has been executed. This gives a framework for the development of the Parcel Initiative through 2018.

MOU	Duration	Years	Amount	Annual Cost
V3-V4	January 1, 2017–December 31, 2018	2	$234,244	$117,122

After V4 is completed in 2018, there exists the possibility of a request for proposals (RFP) or other means of selecting a contractor for the statewide parcel layer. SCO's role may or may not continue as is. It is expected that the costs for actual aggregation of common parcel attributes listed in the schema for parcel Benchmarks 1 and 2 will decline because the process of creating a statewide parcel map will be more automated. However, there will still be costs associated with maintenance and updates to the statewide parcel map, including the need for oversight, troubleshooting the parcel map aggregator, and providing technical assistance to counties.

While the V2-V4 projects will set a course for the Parcel Initiative to address other aspects of GIS parcel and tax roll dataset completion and standardization, it will take additional coordinating work to implement and achieve additional Set I benchmarks statewide—such as integration of public lands information. Such work could enable statewide derivative layers to be created by DOA and its contractor from these parcel attributes or descriptors.

One example of a potential project to be conducted by a Parcel Initiative contractor is the creation of a statewide PLSS layer. An aggregated statewide PLSS layer could enhance and maximize the investment of the statewide parcel layer. It would benefit the statewide parcel map by displaying parcel fabric areas in need of improvement to positional line accuracy. This is of particular importance along county and state boundaries and for the development of a seamless statewide parcel map.

The creation of a statewide PLSS layer would especially benefit state agencies as a new and improved version of DNR's Landnet, which is a statewide PLSS layer developed in the mid-1990s and still in use today. DNR relies on statewide PLSS data to manage over 48,000 parcels scattered throughout Wisconsin. Since the 1990s, millions of WLIP dollars have gone into updating county PLSS. In order to track progress and judge the efficacy of this major category of WLIP expenditure activity, a statewide PLSS layer may be necessary.

4.6.2 Open Data & Facilitation of Access to Data
DOA will work with counties to facilitate open data, enabling greater access to county GIS data.

DOA's main role in facilitating access to data is to remove institutional barriers to WLIP-funded data. As stated at the outset of this chapter, because the WLIP funds the creation and maintenance of *county* datasets, WLIP-funded *county* data is the domain in which DOA can directly enhance access to GIS data. For the LinkWISCONSIN Address Point and Parcel Mapping, V1, and V2 projects, 100% of counties and cities participated by sharing their address point and parcel datasets. The Program seeks to encourage and facilitate this data sharing trend, and provide support for open data practices (defined on page 24).

Facilitation of Access to County Parcel Data
For public access to parcels and tax roll data in V1, DOA is utilizing ArcGIS Online, with hosting by the Legislative Technology Services Bureau. Subsequent versions of the parcel map have the potential to remain the same or be migrated to another platform.

The implementation of parcel standards is important to the facilitation of data sharing. The original parcel benchmarks included in the 2016 grant application implemented detailed parcel data standards for a core set of 41 attributes, defined in the V2 submission documentation. DOA and SCO will be working with

counties through March 2018 to implement and assess these parcel and tax roll data standards in all 72 counties, before moving on to implementation of additional parcel standards for 2018 grants. In addition to Strategic Initiative grants, continuing to provide support solutions, such as tools to aid counties in data standardization, will assist counties to meet the benchmark standards.

Facilitation of Access to Other County Data

The Program seeks to build on its success with parcels by working to make other WLIP-funded county datasets available in the public domain. One concrete way of accomplishing this is by making open data a Strategic Initiative grant benchmark, as Benchmark Set II does. Statewide achievement of the open data benchmark should obviate most of the need for data consumers to make requests to counties for their data, as it will be available for download. These county datasets for download would either be available in state agency repositories or linked from a WLIP portal.

By requesting common Foundational Element county datasets on behalf of and in concert with other state agencies, DOA can assist to enhance existing portal and/or repositories of county data. DOA plans to work with other organizations to make an expanded call for data in early 2017. These organizations include at least the Legislative Technical Services Bureau (LTSB), UW-Madison Robinson Map Library (RML), the State Cartographer's Office (SCO), and perhaps the UW-Madison Space Science & Engineering Center (SSEC).

The LTSB technical team has created an upload application called WISE-Decade as a collection and access point for county data, already in use for collecting parcels for the Parcel Initiative and school district boundaries for the Department of Public Instruction, as well as administrative boundaries required for LTSB's own statutory responsibilities.

For many of the vector datasets, DOA will request data and share it with RML for public distribution. The RML map librarian has identified a selection of datasets to be requested based on actual requests received and usage statistics. Data is organized, labeled, and made discoverable online. Importantly, RML also archives historic copies of the county data it receives. It has the ability to accommodate municipal and state agency datasets.

Data Access and Expanded Data Request			
Organization	**Upload Mechanism**	**Access Mechanism**	**Data Requested**
Legislative Technical Services Bureau	WISE-Decade application	Wisconsin State Legislature Open GIS Data (ArcGIS Open Data)	• County parcels • County zoning • Administrative boundaries • School districts
UW-Madison Robinson Map Library/SCO	WISE-Decade application	GeoData@UW-Madison (Open Geoportal)	**Vector Data** • Roads • Land use • Zoning • Building footprints • Hydrography • Parks, open space, recreational data • Address points (beginning in 2017)
UW-Madison Space Science & Engineering Center, LTSB, or other	SSEC upload or other	WisconsinView (RealEarth/ArcGIS Online) or other	**Raster Data** • Lidar • Aerial imagery (beginning in 2018)
SCO	SCO upload or other, e.g., WISE-Decade application	PLSSFinder or other	• County PLSS – for Strategic Initiative funded corners (beginning in 2017) • County PLSS – all existing corners (TBD)

The provision of raster datasets, namely aerial imagery and lidar, is more complex and costly due to the sheer volume of data—about one terabyte of raster data per county for an original dataset. WisconsinView is one model for providing aerial imagery and lidar online for download. Alternatively, Wood County offers an example of a county solution for the provision of aerial imagery and lidar datasets online. Users have the ability to download tiles with data from the Wood County data distribution application. Provision of aerial imagery and lidar raster datasets for download online may take more time than vector datasets.

WLIP Portal

The "WLIP Portal" will bring together the expanded call for data, open data, and other data access solutions of which the details are to be determined. The WLIP portal would function as a gateway for open data collected through the expanded county data request.

An outline of an arrangement for data access is illustrated in Figure 12. It depicts a network in which counties retain stewardship of their land records and DOA facilitates access to county data in three ways:
- First, by assisting counties to achieve the open data benchmark;
- Second, by requesting data from counties on behalf of other agencies for their public portal/repositories; and
- Third, by creating an overlaying portal as a simple, central point of access for WLIP-funded data.

Such an arrangement would make the data easier to access and use, and thus capable of serving many more purposes than in the past. ***Exactly what data is classified as open data and available online for download, with which specifications, are details to be determined in future planning efforts in collaboration with the WLIC and community***. While the GIO will continue to explore options for a more comprehensive statewide central geoportal/repository solution, the WLIP Portal solution could be an intermediate step in advance of a more comprehensive solution to the land information community's data access needs.

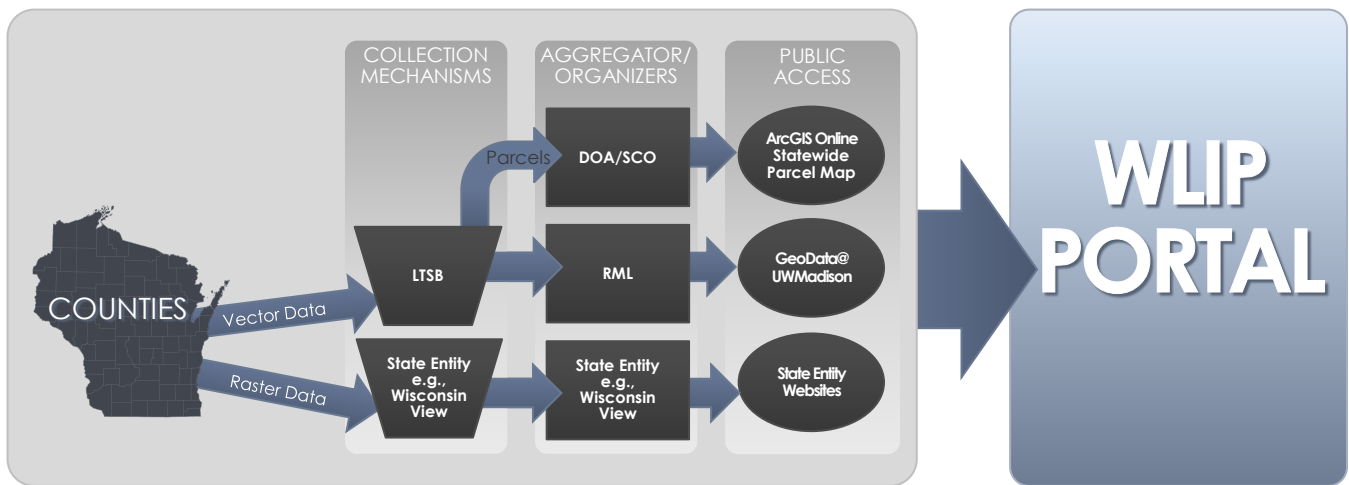**Figure 10.The WLIP Portal concept, where implementation details are to be determined**