

Comments on 2016 WLIP Survey

State Cartographer's Office/Robinson Map Library, January, 2017

Q6. Benchmark 2.1 -- Open Data

DOA Text: Consistent with the Public Records Law, county land information offices shall make available, accessible, discoverable, and downloadable online in the public domain, without charge and without restrictive licensure, complete electronic data created, acquired, maintained, or developed with WLIP retained fees or grants, with core metadata, through a single, standardized ordered table/list of downloadable data and land information records search tools, with the table/list posted online and the URL submitted to DOA as a record for the WLIP Portal.

Our Comments: In our opinion, even an initial solution to a statewide geoportal should be more than a table or list of datasets available online. An "open data benchmark" that can be achieved through a multiplicity of access options, websites, and formats will not provide users with the capabilities they need. And once this solution is put in place there will be tremendous inertia associated with improving it, since data producers will have invested time, energy and resources in its development. It will be hard to move toward a more managed solution; hence it makes sense to have this managed solution in mind as we develop the first iteration.

Rather than asking data producers to deliver their entire warehouse of data at once, we should develop priority datasets and invest in these datasets to ensure they have decent metadata, are discoverable, and are adequately managed and curated. This approach will not only ensure that priority datasets will be of high quality and high value to the user community, but will also reduce the amount of extra "busy work" that local data producers will need to do to assemble and release their entire repository of data. Simply stated, we should focus on quality, not quantity. We should prioritize development and access for the most important layers and phase in other, less critical layers over time.

We need to distinguish between open data benchmarks that deal primarily with policy issues, and a statewide geoportal that the WLIP has identified as a separate area of investigation for the GIO. Meeting an open data benchmark will not solve all data access problems.

Q7. Downloadable Definition

DOA Text: Downloadable means made available for download by one or more of the following methods:

- *County-configured download option. Download is made available via a web server, FTP, etc.*
- *WFS option. A web feature service (WFS) shall meet this requirement if it allows the end-user to download the entire dataset.*
- *Third-party hosting option. Download capability may be met by providing documented data to a third-party or state agency, who makes data available in the public domain on behalf of the county. Examples include but are not limited to: GeoData@Wisconsin; WisconsinView;*

WISE-Decade; regional planning commissions such as NCWRPC, etc.

- *Raster data exception. For raster data acquired prior to 2018, the county may provide it to the user per user request, on a hard drive supplied at the cost of the user.*

Our Comments: A state geoportal should be designed to serve the needs of the state’s citizens, including the private sector, non-profit organizations, private citizens, educators and students, and government agencies at all levels. The purpose of a geoportal should be to provide streamlined geospatial data access to individuals and organizations that can use the data in ways that expand its utility, thus enhancing return on investment and demonstrating the value of and need for quality geospatial data. Focusing on the user draws attention to issues like ease of discovery and access, and the importance of usability as an essential element in geoportal design. A statewide geoportal cannot be effective when viewed merely as a “checkbox” to fulfill an administrative requirement.

This focus on usability has implications for the completeness and quality of metadata, the ability to perform searches by keyword or geographically, a degree of standardization in data format, consistency in interface design and system behavior when accessing different datasets, etc. In short, hosted data must be curated, its metadata must be created and managed, older versions of datasets must be archived, spatial footprints and keywords must be created, and so on.

Exposing all WLIP-funded data to the public is a worthwhile future goal, but there is little to be gained by the exercise if users cannot make use of the data effectively. Providing access to all of these datasets without considering quality, metadata, completeness, and standardization will inevitably cause confusion. We cannot expect the increasingly heterogeneous user community to adopt and accept the terminology and logic of the geospatial community. If we really want to make our data usable and expand the breadth of geospatial data use in the state, we need to make an effort to communicate with users in ways that they will understand.

Q8. Without Charge Definition

DOA Text: Without charge means free of charge to the user. However, 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 authorized by s. 59.43(2). The county has the ability to charge and collect fees for customers who make special requests for custom map making and printed maps.

Our Comments: We agree with the idea of making data available without charge, assuming this could be enforced fairly and consistently.

Q9. Without Restrictive Licensure Definition

DOA Text: Without restrictive licensure means without license, copyright, patents, trademarks, contractual terms, or other arbitrary restrictions, or under a well-known Open Data license such as an Open Data Commons license. There are no restrictions on copying, publishing, distributing,

transmitting, adapting, or otherwise using the data for non-commercial or commercial purposes. However, the county may make the datasets available subject to the terms of an optional data disclaimer (e.g., accuracy disclaimers, map is not a survey disclaimer).

Our Comments: We agree with the idea of making data available without restrictive licensure, assuming this provision could be enforced fairly and consistently. A standard Open Data license would be the most convenient for users.

One note: the wording of Q9 is a bit confusing. We suggest the following: “Q9. Without restrictive licensure means (a) without license, copyright, patents, trademarks, contractual terms, or other arbitrary restrictions, or (b) published under a well-known Open Data license such as an Open Data Commons license.”

Q10. Complete Definition

DOA Text: Complete means that all public data funded with WLIP retained fees or grants is made available. Public data is data that is not subject to valid privacy, security, or privilege limitations, with the finest possible level of granularity that is practicable and permitted by law and other requirements. Existing local, state, and federal laws regarding non-public or sensitive data apply. If a county determines that, according county board resolution or law, any subset of data provided needs to be redacted in order to be displayed publicly, counties are responsible for redaction prior to publication.

Our Comments: We agree with the idea of making all WLIP-funded data available. In fact, this statement should be made stronger to include data even partially funded by the WLIP, as follows: “Q10. Complete means that all public data funded **or partially funded** with WLIP retained fees or grants is made available.”

Q11. Data Definition

DOA Text: Data means electronic data funded with WLIP retained fees or grants. Data includes the following, in a commonly- used, searchable, machine-readable format.

Our Comments: There is no reason to repeat the WLIP funding statement here, as this is more appropriately discussed in Q10. We suggest changing the question as follows: “Data means any electronic data ~~funded with WLIP retained fees or grants~~ includes including the following, in a commonly- used, searchable, machine-readable format.”

Q12. PLSS

DOA Text:

- *Public Land Survey System Monuments – with hyperlinks to digital images of tie sheets online via an “online tie sheet” attribute*
- *Other Geodetic Control and Control Networks*

Our Comments: This question should refer to Public Land Survey System corners, not

monuments. Monuments are the physical objects in the ground. Corners refer to the data (including locations) recorded for these monuments (or even in cases where monuments do not exist).

Given that PLSSFinder is the recognized point of access for county PLSS data according to the parcel initiative (Bench Mark #4), and given the fact the Wisconsin County Surveyors Association endorses PLSSFinder as a vehicle to provide information about the status of PLSS completion and maintenance in the state, efforts to collect PLSS corner data characteristics should be conducted with the following goals in mind:

- a) Standard data model and file formats to simplify aggregation of county datasets;
- b) Accuracy statements attached to coordinate values to improve integration of PLSS and parcel data;
- c) Hyperlinks to online tiesheets;
- d) Date stamps or other attributes to identify currency and changes over time; and
- e) Access to complete, county-wide data updated to reflect ongoing maintenance on the ground.

These characteristics will ensure collected county data can be accurately and efficiently integrated for access in PLSSFinder (or other applications).

Q13. Parcel Mapping

DOA Text:

- *Parcel Geometries – parcel geometries and tax roll data in the Searchable Format, updated by March 31st for the previous calendar year*
- *Assessment/Tax Roll Data – if not joined to or integrated with parcel feature class, updated by March 31st for the previous calendar year*

Our Comments: Given that the Wisconsin statewide parcel map is intended to be aggregated on an annual basis for the foreseeable future, and that there is a standard for submitting data to the parcel project, it is recommended that any additional requests for parcel or tax data be provided in their native format. Providing this data in native form would prevent against duplicating submission efforts, help preserve some of the native granularity of jurisdictional datasets, and better satisfy the needs of archivists such as Robinson Map Library. However, if a statewide parcel map data submission is enough to satisfy this requirement of submitting parcel geometries and tax attributes then this comment can be disregarded.

Q14. LiDAR and Other Elevation Data

DOA Text:

- *LiDAR*
- *LiDAR Derivatives*

- *Other Types of Elevation Data*

Our Comments: We suggest naming this category “Elevations” since LiDAR is one of several different collection technologies that can be used to generate elevations.

In addition, it would be useful to cite specific elevation products such as:

- Bare-Earth Digital Elevation Model (DEM)
- Bare-Earth Elevation Contours
- LiDAR point clouds
- Digital Surface Model (DSM)
- Bare-Earth Digital Terrain Model (DTM)

Useful reference:

http://www.mngeo.state.mn.us/committee/elevation/research_education/MnLiDARGlossary.pdf

Q15. Orthoimagery

DOA Text:

- *Orthoimagery*
- *Historic Orthoimagery*
- *Other Types of Imagery*

Our Comments: We suggest naming this category “Aerial Imagery” since not all imagery is necessarily ortho-rectified. Sub-categories should include:

- Orthoimagery
- Oblique Imagery
- Satellite Imagery

It seems unnecessary to designate a category of imagery called “historic” since historic imagery merely refers to a date of acquisition. Acquisition dates are an important piece of metadata that applies to all forms of imagery.

Q16. Address Points and Street Centerlines

DOA Text:

- *Address Point Data*
- *Building Footprints*
- *Other Types of Address Information (e.g., Address Ranges)*
- *Street Centerlines*
- *Rights of Way – No need to separate out if maintained with parcels*
- *Trails – Trails, along with county parks, open space, and recreational data*

Our Comments: The request of each of these types of geospatial data appears to be appropriate. Note that “address ranges” are conventionally stored as a series of fields within a routable street centerline or road network dataset. With this convention in mind, address

ranges may be most properly requested as an aspect included in the requested street centerline dataset (either as an integrated field or a table joinable to the street centerlines).

Q17. Land Use

Our Comments: None

Q18. Zoning

DOA Text:

- *County General Zoning*
- *Airport Protection*
- *Floodplain*
- *Farmland Preservation*
- *Shoreland*
- *Municipal Zoning Information Maintained by the County*
- *Link(s) to webpage/table/list with municipal zoning websites sites*

Our Comments: Given that the Wisconsin statewide parcel map also intends to aggregate these zoning layers on an annual basis for the foreseeable future, and that there is a standard for submitting this data, it is recommended that any additional requests for parcel or tax data be provided in their native form. Providing this data in native form would prevent against duplicating submission efforts, help preserve some of the native granularity of jurisdictional datasets, and better satisfy the needs of archivists such as Robinson Map Library. However, if a statewide parcel map data submission is enough to satisfy this requirement of submitting zoning data then this comment can be disregarded.

Q19. Administrative Boundaries

Our Comments: None

Q20. Other Layers

DOA Text:

- *Hydrography Maintained by County or Value-Added – link to DNR/FEMA hydro layer if no changes made by county, clearly denote if value-added in metadata*
- *Cell Phone Towers*
- *Bridges and Culverts*
- *Other Layers – as desired by county*

Our Comments: Regarding “Other Layers – as desired by county” we feel that the portal should be built based on the needs of users, rather than by what data happens to be available. A transportation category should also be added, with layers such as street

centerlines, railroads, trails, etc.

Q21. Metadata

Our Comments: None

Q23. Standardized ordered table/list

DOA Text: Standardized ordered table/list means an ordered table/list (OTL) shall be established, maintained, and regularly updated in a timely manner by or on behalf of the county, preferably at a persistent URL, containing the downloadable Open Data datasets (under standardized names and in an order to be determined) with metadata, and links to land information records search tools with land information officer contact information. The OTL should include at least the following fields for downloadable data:

- *Data Layer Name or Sub-Layer Name. Column 1.*
- *Dataset Title. Column 2. As link text, following naming convention TBD.*
- *AccessURL. Column 2. The hyperlink destination for the Dataset Title.*
- *Notes. Column 3.*

Our Comments: As stated earlier, we believe that a statewide geoportal needs to be more than a table or list of datasets available online, accessible by a variety of different mechanisms. A statewide geoportal cannot be effective when viewed merely as a “checkbox” to fulfill an administrative requirement.

Furthermore, we think that the list of available datasets needs to be reorganized, possibly augmented, and made more precise and specific in terms of individual layers. As an example, in Q14 the survey refers to (a) LiDAR, (b) LiDAR derivatives and (c) other types of elevation data. Each of these is a very broad category that could include a variety of different data products, formats, uses, levels of resolution, and quality levels. It would be useful to define what is needed in terms of geospatial data, and spend time and resources making sure that those layers are available, rather than providing access to every available dataset without regard to data characteristics and potential uses

Q25. Land information records search tools

Our Comments: None

Q26. Submitted to DOA

DOA Text: Submitted to DOA as a record means the URL for the OTL must be submitted for inclusion in the WLIP Portal. WLIP Portal means a portal serving as a catalog of all Wisconsin county land information OTLs. Such a WLIP Portal is consistent with Wisconsin Land Information Council motion #2016-06-08-03, “The GIO can continue to explore a statewide repository/portal 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.

Our Comments: As noted earlier, we believe that even an initial solution to a statewide geoportal needs to be more than a table or list of datasets available online. We advocate for a more refined approach that provides necessary data to users in a more consistent, streamlined manner. The geoportal has been identified as a separate area of investigation for the GIO, and effort should be expended on this investigation, starting with an analysis of user needs based on existing/historic surveys as well as outreach and information gathering.

Q27. Benchmark 3.2 -- Acquisition of Aerial Imagery Base Product Set

DOA Text: *Beginning in 2018, county aerial imagery acquisitions must meet the following minimum specifications:*

- *Imagery that is spring leaf-off collection, 4-band RGB-NIR, at least 12- pixel resolution Meets horizontal accuracy at the following resolutions:*
 - *12-inch pixel resolution - Meet or exceed horizontal accuracy of +/-4.8 feet at the 95% confidence level*
 - *6-inch pixel resolution - Meet or exceed horizontal accuracy of +/-2.4 feet at the 95% confidence level*
 - *3-inch pixel resolution - Meet or exceed horizontal accuracy of +/-1.2 feet at the 95% confidence level*
- *Is less than six years old*
- *Is made available online with download capability – either hosted by the county or with third-party hosting option, e.g., WisconsinView*
- *Meets basic metadata requirements for Open Data benchmark*

Our Comments: DOA should reach out to multiple aerial imagery service providers and encourage them to provide feedback on the proposed accuracy standards. Specifically, are these accuracy standards readily achievable by most service providers using current industry best-practices?

What national standards were used to develop the proposed WLIP accuracy standards? We assume ASPRS, but the source of this information must be cited. See:

[http://www.asprs.org/wp-content/uploads/2015/01/ASPRS Positional Accuracy Standards Edition1 Version100 November2014.pdf](http://www.asprs.org/wp-content/uploads/2015/01/ASPRS_Positional_Accuracy_Standards_Edition1_Version100_November2014.pdf)

and

http://www.asprs.org/wp-content/uploads/2015/01/PERS_March2015_Highlight.pdf

It may be more useful to specify WLIP accuracy standards using table B.5 (page A14) in the 2014 ASPRS positional accuracy standards. The information presented by ASPRS in table B.5 is simple, and clearly identifies “recommended use” scenarios that are easily relatable by most GIS users without a deep knowledge of photogrammetry. Therefore, we feel it is advisable to more closely follow the ASPRS language of specifying a horizontal accuracy class (in cm) as

described in the ASPRS documents referenced above.

Metadata for aerial imagery should include a horizontal accuracy statement that follows ASPRS standards, e.g., "This data set was tested to meet ASPRS Positional Accuracy Standards for Digital Geospatial Data (2014) for a ___ (cm) RMSE_x/RMSE_y Horizontal Accuracy Class. Actual positional accuracy was found to be RMSE_x = ___ (cm) and RMSE_y = ___ (cm) which equates to Positional Horizontal Accuracy = +/- ___ at 95% confidence level."

Four-band imagery is desirable, but our experience is many users do not yet know how to utilize the fourth near-infrared band in their daily work. Therefore, we believe it would be wise to require three-band color imagery (RGB) only, and consider the fourth band as optional. If service providers include the fourth band at no charge, we would view this as an added bonus, but not a requirement at this time.

Counties should provide a copy of their final signed imagery acquisition contract to the Department of Administration within 30 days after it is signed by the county and service provider. This should be done to: 1) track the statewide expenditures on aerial imagery services, 2) ensure procured products meet WLIP standards, 3) allow partners such as the State Cartographer's Office to track and inventory upcoming aerial imagery projects.

Counties should provide series-level metadata to DOA when their aerial imagery project is complete and has been delivered by their service provider. This will allow partners such as the Robinson Map Library and State Cartographer's Office to update aerial imagery catalogs/portals.

Q28. Benchmark 3 -- Acquisition of Lidar Base Product Set

DOA Text: Beginning in 2018, county lidar acquisitions must meet the following minimum specifications:

- *A lidar product set that includes a point cloud, digital elevation model, hydro breaklines, and contour mapping*
- *Minimum required specs for countywide aerial lidar collections will be:*
 - *Nominal Point Spacing (NPS): ≤ 0.7 meter*
 - *Nominal Point Density (NPD): ≥ 2 points per square meter RMSE_z (non-vegetated): 10 cm**
 - *Nonvegetated Vertical Accuracy (NVA) at 95% confidence level: 19.6 cm Vegetated Vertical Accuracy (VVA) at 95th percentile: 29.4 cm*
 - *Minimum classification scheme (classes 1, 2, 7, 9, 10, 17, 18) Hydro breaklines collected for ponded water ≥ 2 acres*
 - *Hydro breaklines collected as double line for streams ≥ 20 feet in width***
- **For vertical accuracy testing of lidar data, the checkpoint requirements will follow the ASPRS Positional Accuracy Standards for Digital Geospatial Data, published in November 2014.*
- ***Current national standards use 100 feet as the threshold for collection double line streams. A requirement of 20 feet is based on the needs of county departments and state floodplain managers in Wisconsin.*
- *Is current to within eight years old*

- *Is made available online with download capability – either hosted by the county or with third-party hosting option, e.g., WisconsinView*
- *Meets basic metadata requirements for Open Data benchmark*

Our Comments: Our comments on aerial imagery (Benchmark 3.2) also apply to LiDAR Benchmark 3.3.

Q29. Benchmark 3.4 -- Other Layers

DOA Text: *Other County-Specific Strategic Projects (2018). 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.*

Other Layers Possibly To Be Determined (for 2019 grants and beyond). 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—beginning with 2019 grants. This could include additional layers, such as address points and road centerlines.

Our Comments: The WLIC passed a resolution (unanimously, 2016-06-08 meeting) asking that the GIO investigate priorities beyond current grant cycles, i.e., “incorporate a statement that through the WLIC that a process will be put in place to incorporate stakeholder input to identify strategic priorities, for both the priority elements that are identified in this program plan and for the future, i.e., post-2020. This effort is to be led by the state GIO. This assessment should include consideration of standards, benchmarks, and funding allocation models.”

We believe that this resolution should be acted upon in a more systematic way than through a single survey question asking for suggestions for additional layers. We should be reaching out to users and coming to some conclusions about what data is generally most valuable so that the WLIP can invest in these resources. Without this outreach, it is not reasonable to expect users to spontaneously step forward with detailed “supporting evidence”, business plans, etc., as has been suggested by DOA in past discussions and presentations.

Q30. Current Parcel Benchmarks

DOA Text: *Next, if you have thoughts on CURRENT parcel benchmarks, enter them here. This is a good place to comment on the statewide parcel schema, as found in the V2 Submission Documentation. You might comment on your parcel attribute needs, parcel business use needs, desired, statewide schema suggestions, parcel aggregation feedback, statewide zoning aggregation, tax roll data attached to parcel geometries, etc.*

Our Comments: PLSS data is the cornerstone of parcel map accuracy, and should be

prioritized as a step in the statewide parcel project. PLSS data integration takes us beyond Bench Mark #4. Further effort will be needed to create a seamless, statewide PLSS layer—with point, line, and polygon geometry—to both support parcel map accuracy improvement efforts as well as the foundation for other data layers.

Q31. Additional Parcel Benchmarks

DOA Text: Let's continue to think about the future after 2018—specifically, ADDITIONAL parcel benchmarks for 2019 or beyond.

Our Comments: Important benchmarks for parcel data include: assessment data; PLSS data/enhanced positional accuracy including county boundary issues; right-of-way inclusion; legal descriptions; and inclusion of hydrography. Questions about what standards are to be used for address parsing also need to be determined, as well as the question of physical/site address versus USPS postal/mailing address differences.

Q32. Other Ideas

DOA Text: Do you have any thoughts on anything else Strategic Initiative funding might be dedicated to, or a dream vision for the Program?

Our Comments:

- A publically accessible geoportal with standardized data across all counties, sufficiently funded so that it can be maintained properly.
- Standards for data of all types so that data from all counties can be easily integrated and used together.
- A way for municipalities to get WLIP funding.
- Incentives for counties to collaborate.
- Bring back competitive grants to spur innovation.