

AGENDA
JEFFERSON COUNTY LAND INFORMATION COUNCIL

ROOM 203, COUNTY COURTHOUSE
311 S. CENTER AVE., JEFFERSON, WI 53549
2:00 P.M. ON WEDNESDAY, JUNE 19, 2019

Andy Erdman, Staci Hoffman, John Jensen, Joanne Larson, Todd Lindert,
Jim Morrow, Steve Nass, John Rageth, Tracy Saxby, Patricia Cicero and Matt
Zangl

- 1) Call to Order
- 2) Roll Call
- 3) Certification of Compliance with Open Meetings
- 4) Review and Approval of Agenda
- 5) Public Comment (members of the public who wish to address the Council on specific agenda items must register their request at this time)
- 6) Approval of September 13, 2018 Land Information Council Meeting Minutes
- 7) Communications
- 8) Retained and Grant Fee Report - Andy Erdman
- 9) Report on the Register of Deeds Back Indexing Project - Staci Hoffman
- 10) Report on the Parcel Map Improvement Project. – Andy Erdman
- 11) Report on Light Detection and Ranging (LiDAR) Terrain Mapping Project - Andy Erdman
- 12) Report on the small Unmanned Aircraft Systems (sUAS) Program – Andy Erdman
- 13) Report on Back Scanning of Building Plans and Drainage Board Records. - Tracy Saxby
- 14) Report on Land Use Inventory by UW Whitewater Students – Andy Erdman
- 15) Discussion and Possible Action on Proposed 2020 Land Information Program Budget
- 16) Discussion and Possible Action on Proposed Education and Strategic Initiative Grants for 2020

If you have questions regarding these matters, please contact the Land Information Office at 920-674-7254.

A quorum of any Jefferson County Committee, Board, Commission or other body, including the Jefferson County Board of Supervisors, may be present at this meeting.

Individuals requiring special accommodations for attendance at the meeting should contact the County Administrator at 920-674-7101 24 hours prior to the meeting so that appropriate arrangements can be made.

MINUTES OF THE JEFFERSON COUNTY LAND INFORMATION COUNCIL

ROOM 203, COUNTY COURTHOUSE
311 S. CENTER AVE., JEFFERSON, WI 53549
8:30 A.M. ON THURSDAY, SEPTEMBER 13, 2018

Andy Erdman, Staci Hoffman, John Jensen, Joanne Larson, Todd Lindert,
Jim Morrow, Steve Nass, John Rageth, Tracy Saxby, Mark Watkins, Matt Zangl

- 1) Call to Order
The meeting was called to order by Erdman at 8:33 a.m.
- 2) Roll Call
Members present at 8:33 were Erdman, Hoffman, Larson, Morrow, Rageth, Saxby, Watkins and Zangl.
- 3) Certification of Compliance with Open Meetings
Erdman verified that the meeting was being held in compliance with Open Meetings.
- 4) Review and Approval of Agenda
- 5) Public Comment (Members of the Public who wish to address the Committee on specific agenda items must register their request at this time)
There was no public comment.
- 6) Approval of July 31, 2018 Land Information Council Meeting Minutes
A correction was made on item #15: it should read John "Rageth" rather than John "Acketz."
Motion by Hoffman/Rageth to approve the minutes; motion passed 8-0.
- 7) Communications
A memo was introduced from Ayres and Associates regarding the LiDAR Project Profile 2019. Erdman explained and noted that monies have been put in the budget. If Jefferson County is able to get a grant, we will participate.
- 8) Discussion and Possible Action on the Draft Jefferson County Land Information Plan for 2019 – 2021.
Each of the current and future projects as listed in the Plan were explained by Erdman and discussed. He explained the project cycle for plans and grants. Erdman showed estimated budget information for all of the projects, and spoke of ongoing costs, which are \$37,800 for 2019. Grants and retained fees are anticipated to be \$51,000. Erdman explained the plan update process, including submittal to the Department of Administration and peer review.

Data sharing was explained. Hoffman spoke of a recent Attorney General opinion allowing a lower cost for data sharing.

Erdman covered other long-term projects. Frequency for updates to the orthoimagery was discussed. Currently, 2018 pictometry air photos are not rectified, and may be off by as much as six feet. Hoffman suggested that we wait until the next plan to make changes. Discussion followed.

Budget edits were discussed. This included tablets and orthoimagery for 2020.

Motion by Watkins/Nass to approve the Draft Jefferson County Land Information Plan for 2019-2021 as submitted, with the edits proposed in this meeting. Motion passed 8-0.

- 9) Adjourn
Motion by Watkins/Zangl to adjourn the meeting. Motion passed 8-0 at 9:31 a.m.

Tracy Saxby, Secretary

If you have questions regarding these matters, please contact the Land Information Office at 920-674-7254.

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LIDAR-DERIVED BUILDING OUTLINES



Jefferson County – LiDAR Project Profile 2019

Why LiDAR now?

LiDAR technology has been used in Wisconsin since the early 2000's for high accuracy topographic mapping. Jefferson County did its last LiDAR project in 2012. The 2019 lidar projects will be the most accurate countywide datasets in Wisconsin due to improved technology and new specifications (0.3-foot vertical accuracy).

- Unique opportunity for funding new and update lidar projects
- Path is paved
- Recent and sustained success with federal partnerships
- Group of counties with high likelihood of success is formed
- Lidar will be 7 years old since last acquisition

Opportunity for federal funding

A group of counties in Wisconsin are planning to submit an application for 3DEP funding to help pay for lidar in 2019. This group is made up of counties that are flying lidar to achieve Quality Level 2 standards (2 ppsm) for the first time. The application for 2019 funding is built on the success of 3DEP funding that we won in 2015, 2016, 2017, and 2018 for Wisconsin county lidar projects.

The major improvements since 2010

- Point density improves from 1 ppsm to 2 ppsm
- Vertical accuracy improves from 19 cm to 10 cm RMSEz
- Data supports 1-ft contour interval

Data Deliverables

Base QL2 project datasets and reports:

- Raw swath point cloud, LAS format v1.4
- Base classified point cloud (does not include buildings or veg), LAS format
- Hydro flattening breaklines (100-ft streams and 2 acre ponds), ESRI shapefile format
- Bare earth DEM, 32-bit floating point grid
- Contours, auto-generated, ESRI shapefile format
- Vertical accuracy report (NVA and VVA)
- Tile schematic, ESRI shapefile format
- Data acquisition and processing QC reports

Recommended LiDAR enhancements to the base QL2 requirements:

- Improved hydro breaklines (20-ft and wider streams and 2 acre ponds)
- Improved 1-ft contours (topologically cleaned, all types)
- Automated classification of buildings and vegetation
- Bare earth dataset – class 2 points only

Additional Lidar Derivative datasets for consideration:

- 2D building outlines generated from building classified points
- Further improved hydro breaklines (8-ft and wider streams and 1-acre and larger ponds)
- Digital Surface Model (DSM) of first returns
- Intensity imagery raster
- Culvert collection and hydro-enforced DEM

*Note – the Jefferson County lidar delivery will be in Wisconsin State Plane Coordinate System, South Zone.

Cost Breakdown – pursue 3DEP funding at 50% match

Jefferson County plus 100 meter buffer is approximately 622 square miles

Base Project to meet QL2 specifications: not-to-exceed \$132,486

Jefferson County share: \$66,243

USGS share: \$66,243

Recommended LiDAR enhancements to the base QL2 requirements: \$23,800

- Improved hydro breaklines (20-ft and wider streams and 2 acre ponds)
- Improved 1-ft contours (topologically cleaned, all types)
- Automated classification of buildings and vegetation
- Bare earth dataset – class 2 points only

Additional Lidar Derivative datasets:

- 2D building outlines, .shp format: \$10,500
- Further improved hydro breaklines (8-ft streams, 1-acre ponds): TBD based on need
- Digital surface model, .flt format: TBD based on need
- Intensity imagery, .tif format: TBD based on need
- *Culvert collection and hydro enforced DEM: TBD based on need

*Culvert collection option requires new lidar and aerial imagery for extraction of culvert lines.

Overall LiDAR project funding source breakdown:

Jefferson County

- Lidar Base Project: \$66,243
- Recommended Lidar Enhancements: \$23,800
- Additional Lidar Derivatives: To-be-determined at a later date

USGS

- 3DEP grant - \$66,243

Total project fees not-to-exceed: \$156,286

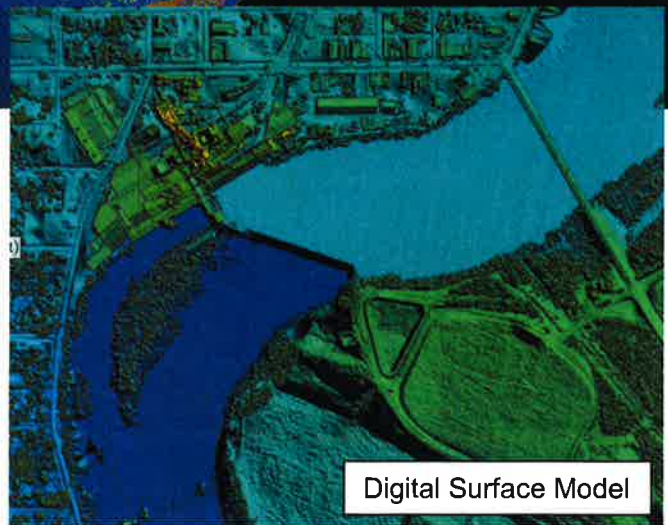
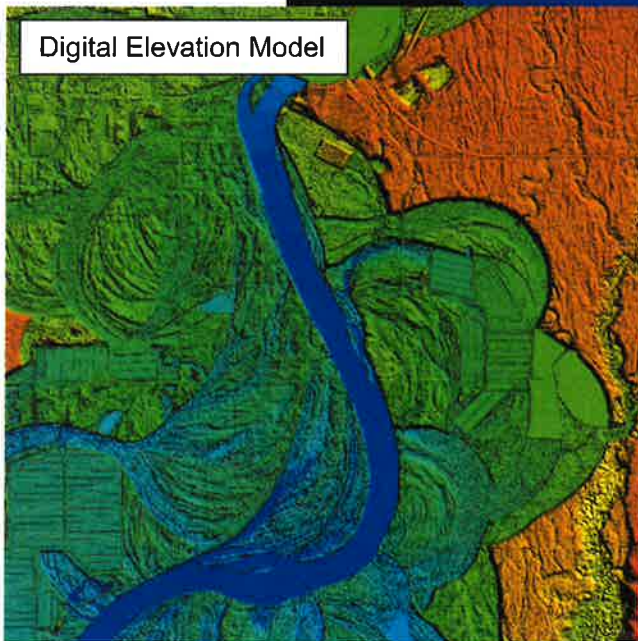
Contracting

The total project cost to the county is \$90,043 which includes the lidar base project and the recommended lidar enhancements. Additional lidar derivatives will increase the county project cost. If the grant application is successful, the county would contract with Ayres Associates for the full amount required to complete the project, which is \$156,286. The county would have a partnership agreement with WI DOA – WLIP for the USGS 3DEP match (\$66,243).

Timeline

The grant application will be submitted to USGS in October 2018. We will hear if the grant has been awarded in December 2018 or January of 2019. If successful, the next step is to move forward with contracting for the spring 2019 flight. The final datasets will be delivered by March of 2020 at the latest.

LiDAR Datasets



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Jefferson County
 NEXT YEAR BUDGET DETAIL REPORT

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PROJECTION: 2020 2020 Budget

ACCOUNTS FOR:
 General Fund

	VENDOR	QUANTITY	UNIT COST	2020	1
12503	Land Information Program				
12503	421001 - State Aid				
	Strategic Initiative Grant	1.00	50,000.00	-57,000.00 *	
	Education Grant	1.00	1,000.00	-50,000.00	
	Base Budget Grant	1.00	6,000.00	-1,000.00	
12503	424001 - Federal Grants				-6,000.00
12503	451305 - Land Info/Deeds Fee				-16,560.75
	Land Information Program	11,750.00	8.00	-94,000.00 *	
	Retained Fees			-94,000.00	
12503	512141 - 25311 Social Security				8.00
12503	514151 - 25311 Per Diem				110.00
12503	521219 - 25313 Other Professional Serv				
	Register of Deeds Back Indexing	1.00	25,000.00	25,000.00 *	25,000.00
12503	521220 - 25308 Consultant				
	Custom GIS and Imaging Support	1.00	3,000.00	3,000.00 *	3,000.00
12503	521220 - 25310 Consultant				
	Custom GIS Website Support	1.00	3,000.00	3,000.00 *	3,000.00
12503	521296 - 25308 Computer Support				
	Land Information FileDirector Support	1.00	13,321.00	32,651.00 *	13,321.00
	ESRI GIS Software Support	1.00	19,170.00	19,170.00	
	Carlson Survey Software Support	1.00	160.00	160.00	

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Jefferson County
 NEXT YEAR BUDGET DETAIL REPORT

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PROJECTION: 2020 2020 Budget

ACCOUNTS FOR:
 General Fund

		VENDOR	QUANTITY	UNIT COST	2020	1
12503	531303 - 25308 Computer Equipmt & Software					4,000.00 *
	Desltop PC Replacements		8.00	500.00		4,000.00
12503	531312 - Office Supplies					100.00
12503	531313 - 25311 Printing & Duplicating					50.00
12503	531324 - 25312 Membership Dues					345.00 *
	Wisconsin Land Information Association		1.00	200.00		200.00
	Wisconsin Society of Land Surveyors		1.00	145.00		145.00
12503	532325 - 25312 Registration					1,720.00 *
	WLIA Annual Conference		4.00	400.00		1,600.00
	WLIA Regional Meeting		1.00	120.00		120.00
12503	532332 - 25312 Mileage					250.00
12503	532335 - 25312 Meals					60.00
12503	532336 - 25312 Lodging					328.00
12503	594819 - 25305 Capital Other Equipment					144,294.00 *
	Pictometry - Thrid Year Final Payment		1.00	30,312.50		30,312.50
	Final 25% LiDAR Terrain Mapping Project		1.00	33,121.50		33,121.50
	LiDAR enhancements to the base QL2 requirements		1.00	23,800.00		23,800.00
	2D building outlines from LIDAR		1.00	10,500.00		10,500.00
	2020 Orthoimagery		1.00	46,560.00		46,560.00

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|Jefferson County
 |NEXT YEAR BUDGET DETAIL REPORT

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PROJECTION: 2020 2020 Budget

ACCOUNTS FOR:

General Fund

	VENDOR	QUANTITY	UNIT COST	2020	
12503	594950 - Operating Reserve				985.65
12503	699700 - Resv Applied Operating				-48,340.90

TOTAL Land Information Program .00
 TOTAL General Fund .00

TOTAL REVENUE -215,901.65
 TOTAL EXPENSE 215,901.65

GRAND TOTAL .00

** END OF REPORT - Generated by Andy Erdman **

May 2, 2019

Andy Erdman, Director
Jefferson County Land Information Office
311 S Center Ave. Room 101
Jefferson, WI 53549



Dear Andy:

Thank you for the opportunity to submit a proposal for orthoimagery for Jefferson County as a part of the Wisconsin Regional Orthoimagery Consortium (WROC). We understand that Jefferson County would like to obtain new 4-band digital orthoimagery to enhance and update the County's GIS base mapping layers and to support its land information needs and the needs of its partners. This letter describes the project approach and fees for 6-inch pixel orthoimagery across the County. The total project area is 582 square miles (county-wide). The Wisconsin-based WROC contracting team of Ayres Associates and Quantum Spatial will provide the following services.

Proposed Project Services – Orthoimagery

We understand Jefferson County's need to update its orthoimagery base layer, and its desire to do this as part of WROC 2020. Aerial imagery acquisition, processing, and ortho delivery will occur in 2020. We are proposing a county-wide 6-inch pixel orthoimagery project, with options for 3-inch buy-ups for the municipalities that are interested in higher resolution orthos.

Scope of Work

The Ayres/Quantum team will provide the County with 4-band orthoimagery at 6-inch pixel resolution across 582 square miles, plus a 500-ft buffer around the County boundary as shown in Exhibit A. The 4-band orthoimagery will be developed from aerial photography that is acquired using a calibrated, digital photogrammetric camera, during leaf-off spring conditions.

The delivered orthoimagery will consist of GeoTIFF tiles based on PLSS quad sections (or other tile format agreed upon). Additionally, we will provide MrSID or alternate format compressed tiles and a project-wide mosaic. The 6-inch orthoimagery will conform to ASPRS Level 2 standards for 1" = 100' scale mapping with an orthoimage ground sample distance (GSD) of less than 6 inches. The orthoimagery will be produced to meet or exceed a horizontal accuracy of 1.4-feet RMSE.

Orthoimagery DEM

We will use a digital elevation model (DEM) derived from the countywide LiDAR, which is suitable to achieve the stated accuracy standards for 6-inch orthoimagery. Our technicians will carefully review the DEM and make updates where necessary.

Ground Control

The Ayres/Quantum team will collect airborne GNSS and an inertial measurement unit (IMU) data from equipment that is tightly coupled with the digital camera sensor. In addition, we will perform ground control survey for the project at existing control locations or photo-identifiable points.

4-band Orthoimagery

As part of our aerial imagery collection, the near-infrared (NIR) band will be captured along with the RGB natural color bands. We have included 4-band stacked GeoTIFF and MrSID files in our standard delivery. These datasets can be viewed in either natural color or color infrared (CIR) band configurations in a

single file, rather than creating multiple datasets. If you are interested separate deliveries of 3-band natural color or CIR datasets, we can provide budget estimates for those additional services.

Orthoimagery Project Deliverables:

Deliverable products included in the estimate are as follows:

- Digital ortho tiles in GeoTIFF format
- Project-wide mosaic in MrSID, JPG2, or ECW format
- Ortho tile index in vector format
- Ground control locations in vector format
- Metadata, FGDC compliant

Municipal Buy-up Options:

Municipalities have the option to buy up to higher resolution orthos as part of your countywide project. Under this approach, any buy-up areas are extended favorable WROC pricing because the aircraft and sensor system will be in the County for the 6-inch countywide flight. In return, the County gains access to higher resolution orthos over the urban areas or other townships of interest. We can provide WROC unit pricing for municipal buy-up areas upon your request.

Partner Funding:

Partner funding assistance to consortium members is proven as an effective way to aid in the funding of WROC projects. Established relationships with partners from previous consortium efforts present the opportunity of continued funding assistance to WROC program members.

Additionally, by starting our WROC 2020 efforts early, our team is successfully securing new partners at the local, regional, and state levels to provide a larger, more diverse group of funding partners. In the end, organizations of all sizes, from the public and private sector will contribute to the funding assistance success of WROC 2020.

Proposed Fees – Orthoimagery Services:

The following fee is a not-to-exceed amount that is calculated using WROC unit pricing. These costs do not include cost shares from WROC partners. Partner funding that is secured through WROC will be provided to the County to help reduce the overall cost of this project.

Orthoimagery project

County-wide 4-band orthos, 6-inch pixel resolution:	\$ 46,560.00
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I hope that we have provided the information you require to proceed with planning for your WROC projects in 2020. In the event that you require additional information or clarification on the proposal details, please feel free to contact me at 608.443.1207.

Sincerely,



Ayres Associates Inc
Zachary Nienow, GISP
Project Manager
Direct: 608.443.1207

Exhibit A

Jefferson County Project Area, 582 square miles

