Fly Dane 2022+ Project Proposal

Background:

The Fly Dane Partnership was established in 2000, so that the county, municipalities, public and private entities could pool financial resource and leverage economies of scale for the acquisition of high resolution digital aerial imagery. The project specifications grew to include digital terrain data with the 2005 project. The acquisition of LiDAR data in 2009/2010 provided additional first return surfaces and extraction of other features. With the Fly Dane 2014 aerial imagery project, the update timeline was reduced from five years to three years, because of the increased dependency of timely imagery. The 2017 project updated the digital aerial imagery and digital terrain model. The 2017 project acquired the next generation of LiDAR data and secured the USGS 3D Elevation Program (3DEP) funding allowing the county to acquire a terrain surface to support 1-foot contours county-wide. The Fly Dane 2020 project was a changed in the partnership model, where access could no longer be restricted to partners or fees for data because of State Open Data requirements. Under the new model, Dane County covered the cost of the countywide 6-inch resolution color acquisition and allowed local municipalities the buy-up option to 3-inch resolution color imagery. In the end, twelves local agencies participated to obtain the largest acquisition of 3-inch color imagery ever, 417 square miles. This large coverage area allowed the municipalities to optimize the economy of scale and provided a 40% cost savings.

These projects resulted in increasing use of digital aerial imagery and digital terrain data across Dane County. Aerial photography is a foundational dataset used in online web mapping applications (DCiMap), department applications (911 Dispatch), as a base layer for data development (street centerlines, building footprints) and hard copy maps. Detailed digital terrain data has been a critical dataset for the updating of the FEMA Floodplain mapping across the county, watershed and run-off modeling, view shed analysis and cartographic representation.

Project:

There is an increasing need for more frequent flights to provide more timely base imagery and its use to updating of core datasets that depend on this base imagery. Staff is recommending going from a project every 3 years to a project every 2 years. With the increased frequency of imagery acquisition, staff would also work with Purchasing Department to look at a multi-year vendor contract. The LIO staff is proposing a Fly Dane 2022 project that would focus on aerial imagery update only. This project would follow the model developed for previous Fly Dane Partner projects. The 2022 project would acquire countywide 6-inch resolution color imagery that would be available as open data. As with previous Fly Dane projects, it would provide an optional municipal upgrade of 3-inch resolution color imagery for those municipalities interested in a higher resolution product.

Cost Estimates/Funding:

The cost estimate would follow the pricing from the Fly Dane 2020 project. The project pricing used the statewide project WI Regional Orthoimagery Consortium or WROC. The proposed 2022 project would again look to leverage the WROC contract. Project costs over the last several years have largely stabilized that provides a greater confidence in future project estimates. The Municipal Buy-Up costs would be covered by the municipalities/agencies that select this option. It is expected that fewer municipal and regional partners may take advantage of the municipal buy-up in 2022. Some municipalities are likely unable to because of the higher unit cost and that the county is providing a 6-inch product. However, there may be greater participation in 2024 and future projects.

Cost Estimate:

Base:

Specifications:

- 6-inch resolution
- Color
- 4-band
- ASPRS Class 1 accuracy
- Countywide

*Potential WLIP Grant

Costs:

- ~$80/mi^2
- ~ $100,000

Municipal Upgrade:

Specifications:

- 3-inch resolution
- Color
- 4-band
- ASPRS Class 1 accuracy
- Municipal

Costs:

- ~$400/mi^2
- Unit cost go down with a larger coverage area, to ~$200/mi^2 if over 400 sections selected
- Municipal cost

Funding:

Following the Fly Dane 2020 project, Dane County would be funding the base level project. The state is expected to continue the WLIP Strategic Initiative Grants (SIG) that should provide up to $50,000 in funding. Some remaining in the Fly Dane Reserve Fund that would be used and some LIO funding could be leveraged. In addition, here would also be Capital Funding that would be used, based on the agreement with the Controller's Office and not obligating the LIO to debt service.

As with the Fly Dane 2020 project, staff recommends that the municipalities looking to acquire 3-inch resolution imagery, cover the cost of the enhanced product. The Fly Dane contract would

provide a very competitive pricing model that encourages municipals and regional agencies to come together to lock in the lowest unit cost.

Base:

LIO Budget	–	Fall 2021
WLIP Strategic Initiative Grant	–	~$50,000
Dane County	–	~$50,000

Municipal Upgrade:

Municipal	–	~100%

Timeline:

Due to the county budget process the LIO has to identify the Fly Dane project in 2021 so that vendor contracts and funding can be solicited. The following is a general timeline for consideration.

LIO Budget	–	Fall 2020
Contracting	–	Winter 2021
Partner Outreach	–	Winter/Summer 2021
Finalize Specifications	–	December 2021
Data Acquisition	–	Spring 2022
Data Delivery	–	Fall 2022

Future Considerations:

Increased frequency of imagery acquisition will result in increased data storage and server demands. This may require future budgeting to meet the needs of increased data storage. The LIO will work closely with IM staff to provide and support the necessary server capacity to support these increasing data requirements.

Conclusion:

It is recommended that Dane County go to a 2-year imagery acquisition cycle starting with the next flight in 2022. The proposed Fly Dane 2022 project will be building on successes and lessons learned from previous Fly Dane projects.

Respectfully,
Fred Iausly