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CASE STUDY

Douglas County Improves Decision-Making and Cost Efficiency with 1-Inch GSD Imagery from EagleView

Background

Douglas County, Nebraska is the state's largest county and contains the state's largest city, Omaha. As a region mostly consisting of urban and suburban areas, Douglas County has multiple departments that use imagery on a daily basis to conduct asset management and decision-making. Imagery is "a very important product to what we're doing," explains Mike Schonlau, GIS Administrator for Douglas County.

The county started using 6-inch GSD imagery in 2010. They upgraded to 4-inch GSD in 2013 and 3-inch GSD in 2016, by which time Douglas County was primarily contracting with EagleView. "We were really impressed with 3-inch imagery," said Schonlau. Users were excited to see more detail, and then EagleView introduced 1-inch GSD imagery in 2020.

Tasked with deciding if 1-inch GSD was worth the cost, Schonlau decided to test it out.

Challenge

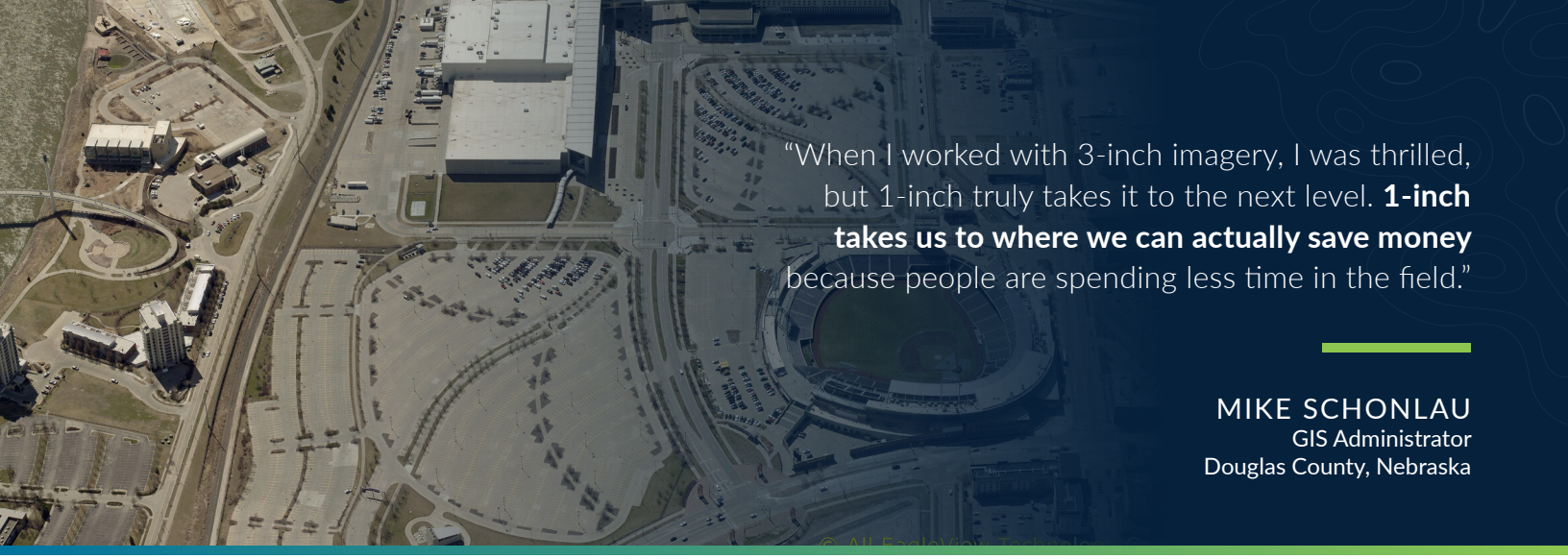
Once Douglas County's departments experienced 1-inch GSD imagery, "it was an immediate hit," Schonlau said. He received only positive feedback across all city and county departments. The value was clear: county employees were reducing in-field assessments and site trips because 1-inch GSD imagery delivered nearly every detail they needed. The challenge was not convincing the people doing the work; it was to demonstrate the value of 1-inch GSD to management and those in charge of funding.

"I focused my efforts on the people who held the purse strings," Schonlau explained. He aimed to illustrate the value of the upgrade by making the business case for 1-inch GSD with real-life case studies from across the county.

Solution

Schonlau worked to obtain examples of how 1-inch GSD was transforming county work. He spoke with multiple departments to get a swath of feedback and was able to show where 3-inch GSD was not enough to replace the field verification process. He demonstrated the tangible, bottom-line impact of 1-inch GSD where it helped to cut time spent on site visits and money spent on fuel costs, vehicle maintenance costs, safety issues, and more.

It became clear that 1-inch GSD was not only a cost-saver, but it also reinforced decision-making across the board. In the appraisal process, for instance, Schonlau found that appraisal employees were able to conduct shorter field visits and complete appraisals with more confidence. 1-inch GSD imagery reinforced the data they collected in the field and gave them the ability to complete more accurate work from the office.



"When I worked with 3-inch imagery, I was thrilled, but 1-inch truly takes it to the next level. **1-inch takes us to where we can actually save money** because people are spending less time in the field."

MIKE SCHONLAU
GIS Administrator
Douglas County, Nebraska

Impact

The county decided to upgrade to 1-inch GSD, and "the upgrade paid for itself in a short amount of time," said Schonlau. Douglas County now regularly uses 1-inch GSD across 20 departments for dozens of use cases, including:

Public Works
When employees are trying to identify manhole covers and uses, only 1-inch GSD makes clear the design, purpose, and condition of the manhole. Users can tell if a manhole is for the city or for utilities, and they can even detect writing on the pavement from inspectors who have left important notes about the specific location.

Parks and Recreation
The Parks and Recreation department uses 1-inch GSD to drill down into granular details about assets such as playgrounds. They can gather information such as conditions of slides and swing sets—saving them trips to the location.

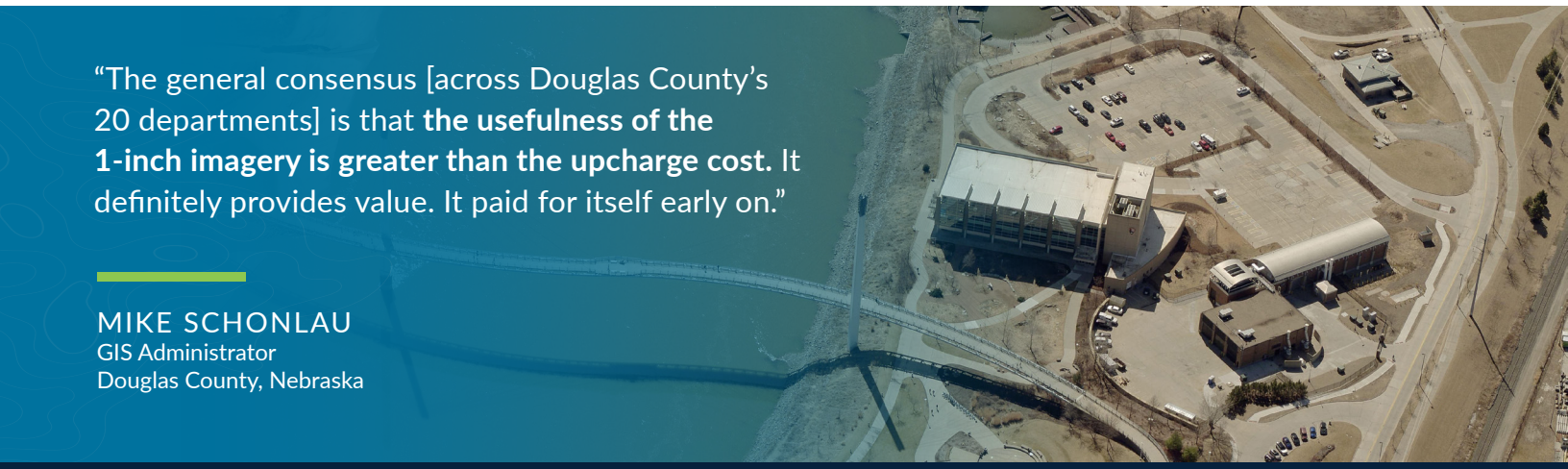
Property Appraisal
With 1-inch GSD, appraisers gain access to data that depicts details down to the make, model, and year of a property's HVAC unit. When it comes to roof composition and siding types, appraisers can confidently assess roofs and see important information about siding that saves them significant time and costs.

Facility Management
When examining imagery of rooftop equipment, facility managers are able to detect details such as hail damage or the age of certain hardware—giving them greater confidence in equipment upgrade and purchase decisions.

See Appendix for comparisons of 3-Inch Ortho vs. 1-Inch Ortho

"The general consensus [across Douglas County's 20 departments] is that **the usefulness of the 1-inch imagery is greater than the upcharge cost.** It definitely provides value. It paid for itself early on."

MIKE SCHONLAU
GIS Administrator
Douglas County, Nebraska



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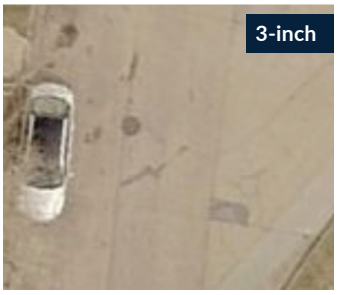
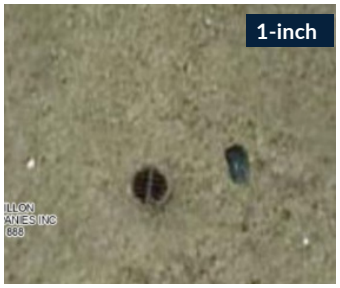
See the Difference:
3-INCH VS 1-INCH

Public Works - Sewer
Asset Management – Sewer Collection System

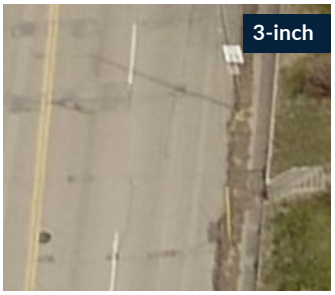


Public Works - Traffic
Asset Management – Sign & Signal Inventories

Public Works - Sewer
Asset Management – Sewer Collection System

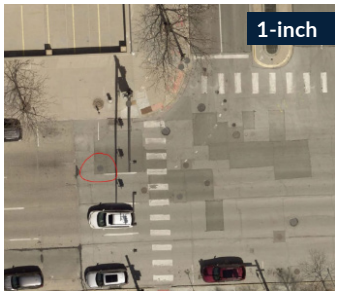


Public Works - Traffic
Asset Management – Traffic Signs



Public Works - Sewer
Asset Management – Exposed Pipes

Public Works - Design
Above-Ground Utilities



Public Works - Streets
Pavement Cracking and Condition Assessment

Planning
Planned Bike Lanes

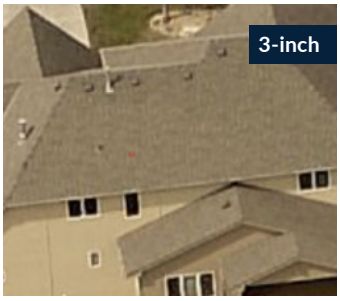
See the Difference:
3-INCH VS 1-INCH

Parks & Rec
Asset Management - Playground Equipment

Facility Management
Rooftop Equipment and Layout

Appraisal
AC Units

Appraisal
Roof Composition



Appraisal
Siding Type (horizontal or vertical)

Ortho Tile Deliverable Specs

2022 1" Ortho Tiles
- Tile Size - .028 square miles
- Tile File Size - 319 Mb
- Format - GeoTIFF
- Total Size - 4.07 Tb
- Total Number of Tiles - 13,400
- Total Number of Files - 13,400

Observations
- Bigger tile size paid off for processing (i.e., bigger files > more tiles)
- GeoTiff optimal for image clarity
- Need more storage, but storage is cheap
- Windows had no problems

Ortho Storage Details

On-Premise
- Network-attached storage (NAS)
- Data source for local mosaic datasets
- Plans to discontinue this starting next year

Cloud
- Amazon Web Services (AWS) S3
- Used for all agency ortho archives (Glacier Deep Archive)
- Most current orthosstored differently for rapid access (Standard-IA)
- Public download site
- Planning a move from hosting tile caches on ArcGIS Online to S3-hosted cloud data stores

Cloud Costs

$51.25 per month "Current Orthos"
- 4.1 Tb
- Standard-Infrequent Access (IA) storage class
- $0.0125/Gb per month

$4.06 per month "Archive Orthos"
- 4.1 Tb
- Glacier Deep Archive (GDA) storage class
- $0.00099/Gb per month