



The Hexagon Imagery Program (HxIP)

Montana State Imagery Working Group Meeting
March 16, 2017

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Mike McGuire – Ascent GIS, Inc.

Hexagon Imagery Program (HxIP)

“Create a global high quality 30cm data set to meet the needs of the geospatial professional “

- **Truly professional program**
 - Fully rigorous acquisition and photogrammetric processing standards
 - The leading North American and European firms as partners
- **Multiple content products:**
 - RGB (3 band) cached ortho tile streaming service
 - RGBR (4 band) ortho tile streaming service and hard delivery
 - High density surface models (planned)
- **Nationwide Coverage with Planned Refresh Schedule:**
 - Wide area coverage (WAC) 1 foot GSD on a 2 – 3 year cycle
 - High value areas (UAC) 6 inch GSD on a 18-24 month schedule

Background

- **HxIP began in 2014**
 - Leveraging the Leica sensor expertise – ADS100
 - Engaging the leading aerial acquisition firms (NAIP contractors) in the US
 - Valtus authorized resellers
- **Initial program definition**
 - 1 ft wide area (WAC) coverage with 3 to 4 year refresh
 - 1 ft urban (HVA) coverage - < 2 year refresh
 - All leaf-on acquisition
 - Coverage included continental USA, populated areas of Canada and Western Europe

HxIP Evolution

- **Program has evolved to include**
 - More frequent refresh rates
 - Higher resolution in urban coverage areas
 - Expanded territory
 - *Future data sets may include elevation, oblique, street level*
- **Recent program modifications**
 - 1 ft wide area coverage (WAC) with a fixed 2 year refresh
 - 6 in urban coverage (UAC) - < 2 year refresh with urban areas being defined as >50,000 population.
 - Some leaf-off acquisition
 - Coverage to now include Hawaii, Puerto Rico, US Virgin Islands and British Virgin Islands

HxIP Current Status



HxIP Status Map

Hexagon Imagery Program: Status of Data Availability

[Contact Us](#) [Valtus Webstore](#) [Download HxIP Shapefile](#)

↑

MT 4E

id:
0

Location:
MT

Resolution:
WAC 30cm

Estimated Delivery Date:

Year:
2016

Status:
Online

Country:
US

Block:
MT 4E

Map Legend

HxIPStatus2017

- Processing
- Planned

HxIPStatus2016

- Online
- Loading
- Processing
- Planned

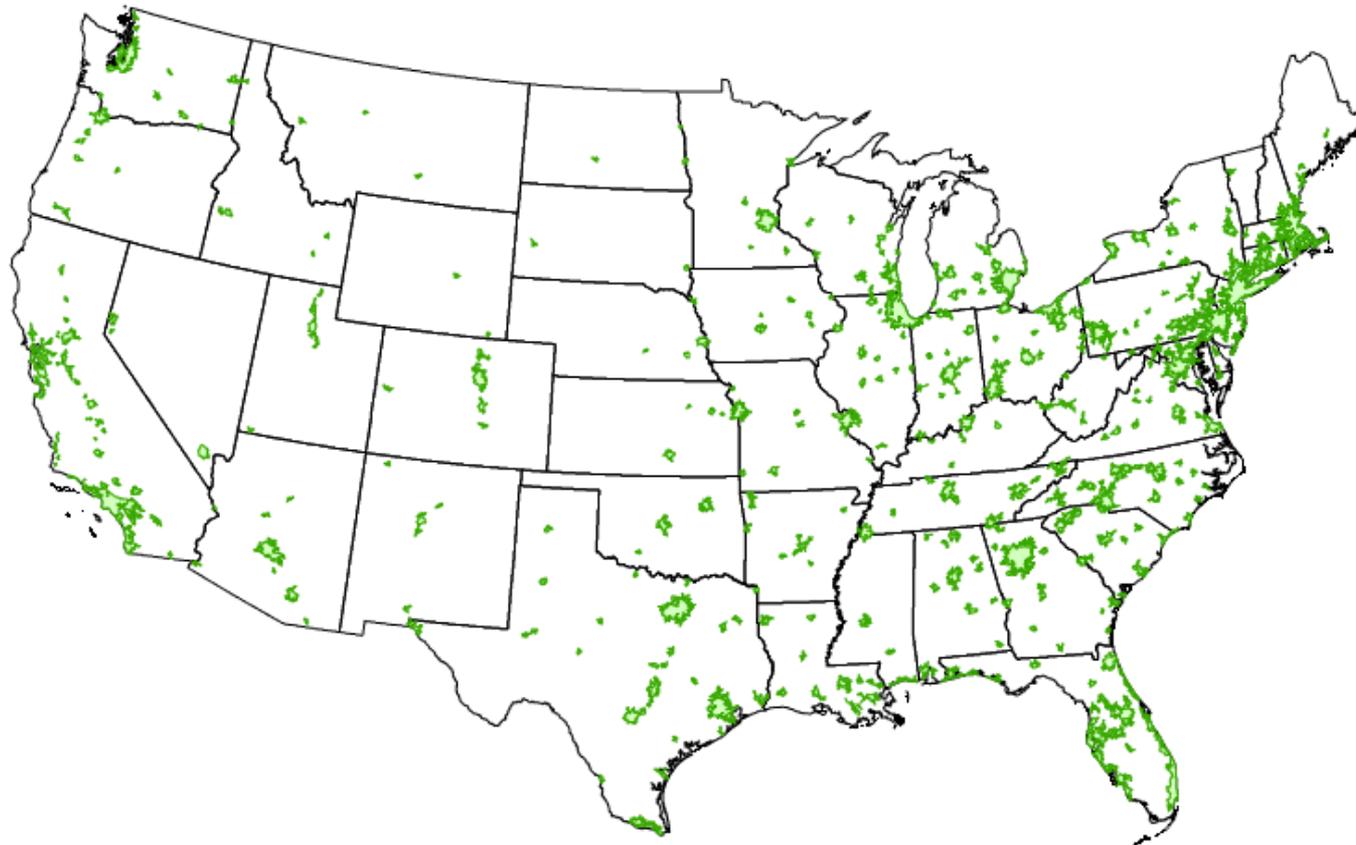
HxIPStatus2015

- Online
- Processing
- Planned

HxIPStatus2014

- Online

HxIP Urban Coverage Areas



-  All urbanized over 50K population
-  State Boundary



HxIP Status Map

Hexagon Imagery Program: Status of Data Availability

[Contact Us](#) [Valtus Webstore](#) [Download HxIP Shapefile](#)

↑🔍 🔍 ↺

Address Search 🔍

Great Falls

Multiple Features Selected (1/2) ◀ ▶

id:
0

Location:
MT

Resolution:
UAC 15cm

Estimated Delivery Date:
Q2 2017

Year:
2016

Status:
Processing

Country:
US

Block:
Great Falls

Map Legend

HxIPStatus2017

- Processing
- Planned

HxIPStatus2016

- Online
- Loading
- Processing
- Planned

HxIPStatus2015

- Online
- Processing
- Planned

HxIPStatus2014

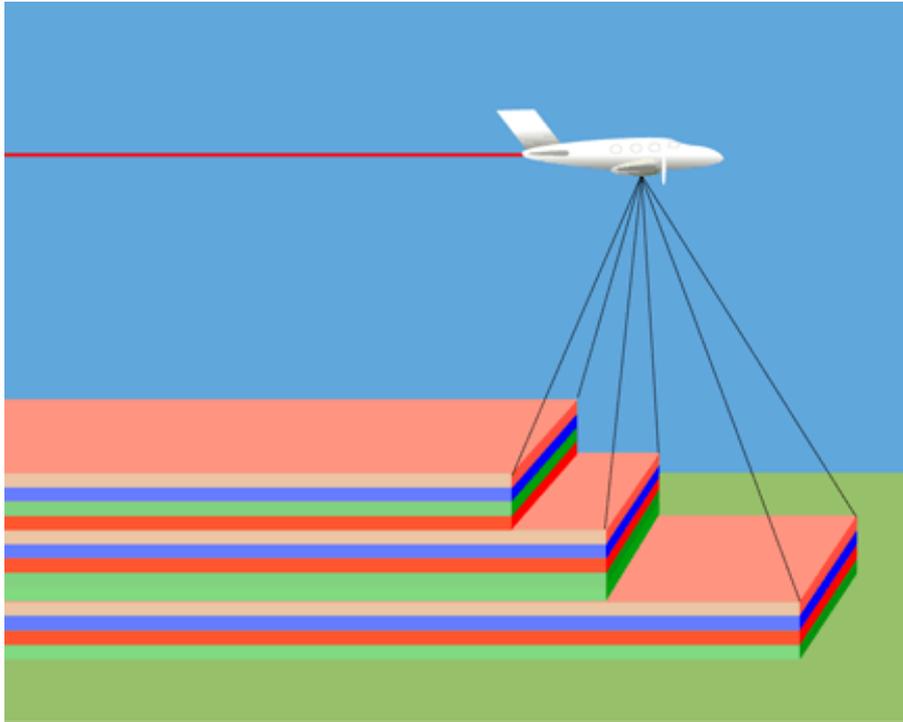
Hexagon Imagery Program ©2017 Valtus Base map attribution



HxIP Current Program members

	NAFTA	EU
Content Providers	Quantum Geospatial Surdex Corporation North West Geomatics Fugro Geospatial Kucera International Inc. CompassData	COWI Blom Pasco (AeroData) CompassData
Technology Providers	Valtus (Hosting Platform) Hexagon Geosystems (Sensors & Production Software)	Valtus (Hosting Platform) Hexagon Geosystems (Sensors & Production Software)
Resellers	Hexagon Geospatial Valtus Distribution Partners Ascent GIS, Inc.	Hexagon Geospatial Blom URBEX Valtus Distribution Partners

Hexagon Technology – The ADS100



Hexagon Technology – The ADS100





Program Specs

Specification	30cm Program
(Planned) allowable GSD	Maximum 0.4 meter
Accuracy	RMSE _{x/y} = 1.2m RMSE _r = 1.7m CE90 = 2.6m CE95 = 3.0m
Minimum sun angle	30°
Cloud/cloud shadow	≤10% and not obscuring HVA area or paved roads or other transportation network
Smoke/fire	May be cause for rejection
Persistent smoke (volcano, factory, crop burn, etc.)	Allowable – not cause for rejection
Snow/ice cover	Permanent snow/ice is acceptable
Specular reflection	Allowable provided shoreline and surrounding features are not obscured
Maximum allowable image shear	≤ 3 pixels
Band-to-band pixel misregistration	≤ 0.5 pixel and no perceivable color fringing
Sidelap	Minimum 27%
Non-pixel data	DN value of 0 and 255 reserved for non-data
Acceptable image blemishes, scratches, artifacts, etc.	Imagery should be blemish and artifact free
Flooding/standing water	Acceptable as long as paved roads or agricultural field boundaries are not obscured
Smear and/or occlusion	No stated policy but subject to call-out
Clipping	Cumulative luminosity pixel count for bins 0-5 and 250-255 shall not be less than 98%, preferably > 99%
Contrast	Difference between cumulative pixel counts containing 99% and 1% of the data shall be greater than 59% of the bit depth, ±4% Target: 150 Minimum: 140 Maximum: 160
Brightness	Mean pixel count within ±7.5% of the middle DN value Minimum: 108 Maximum: 147
Color balance	Neutral objects shall be have a DN difference of no more than 5 for any RGB triplet
Bridge warp/smear	Bridge/freeway/causeway warp/smear is not acceptable
Building seamline sheer	Within HVAs only

Strategic relationships to facilitate ease of access for the professional user to HxIP data

- **Valtus Imagery Services**
 - Physical delivery, web streaming services through multiple protocols, as well as other products (ie. stereo and DSM)
- **Ascent GIS**
 - Reseller & Imagery Production Services

Program Pricing

- **Per square mile model**
 - **Hard pixel delivery via Valtus Store**
 - 30cm \$9.00 per square mile
 - 15cm \$18.00 per square mile
- **Per user subscription model annual subscription fee**
 - Unlimited use, all applications \$2,000
 - No geographic restrictions
 - Based on concurrent users
 - Flexible licensing terms
- **County Government Pricing**
 - Extended licensing terms
- **State Government Pricing**
 - Extended and flexible licensing terms

Getting Started



[DOWNLOAD AERIAL DATA](#)

Hexagon Store



100% Focused on GIS

save time by signing in

Account Required

You are required to have either a Valtus business or credit card account to make purchases on our site. Valtus business account purchases are invoiced on a monthly basis. Credit card account purchases are billed to a major credit card. Click "credit card" below to create a credit card account. Your credit card account will be ready for use immediately.

credit card

Or to apply for a Valtus business account click on "business" below. Please note that Valtus Business Accounts require a minimum of 2 business days for approval and are reserved for those users who anticipate their annual imagery and/or LiDAR purchases to be in excess of \$5000.

business

Already a Client

Access your account and let us automatically enter your information for you. All that's required is your email address and password.

Email Address :

Password:

Please note: Passwords are case sensitive.

login

Forgot your password? [Click here.](#)

We're here to help...

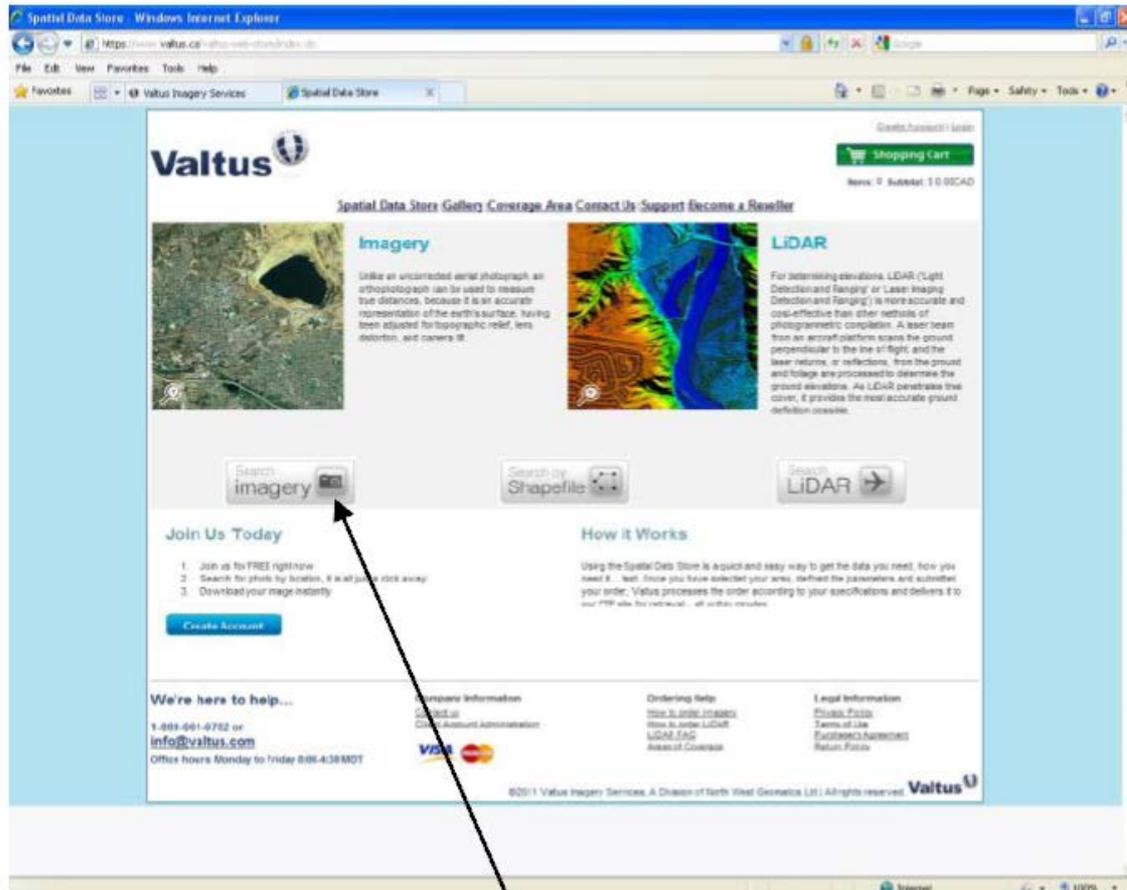
(509) 747-2495 ext. 14
mikem@ascentgis.com



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version: 3.7.33-10988

The Imagery Store



Upload a Shapefile

The screenshot shows the Valtus Imagery Services website in a Windows Internet Explorer browser. The page features a navigation bar with links for 'Spatial Data Store', 'Gallery', 'Coverage Area', 'Contact Us', 'Support', and 'Become a Reseller'. A shopping cart icon is visible in the top right corner, showing 'Items: 0' and 'Subtotal: \$ 0.00CAD'. The main content area is divided into three sections: 'Imagery', 'LiDAR', and 'Shapefile'. Each section has a corresponding image and a brief description. Below these sections are three search buttons: 'Search imagery', 'Search by Shapefile', and 'Search LiDAR'. A black arrow points from the bottom of the page to the 'Search by Shapefile' button. The footer contains contact information, company information, ordering help, and legal information.

Valtus Imagery Services - Aerial Photography Web Store - Windows Internet Explorer
https://www.valtus.ca/valtus-web-store/index.do
environment canada weather

File Edit View Favorites Tools Help
Favorites Google Maps Calgary, AB Windows Customize Links
Valtus Imagery Services - Aerial Photography Web Store Page Safety

Create Account | Login
Shopping Cart
Items: 0 Subtotal: \$ 0.00CAD

Spatial Data Store Gallery Coverage Area Contact Us Support Become a Reseller

Imagery
Unlike an uncorrected aerial photograph, an orthophotograph can be used to measure true distances, because it is an accurate representation of the earth's surface, having been adjusted for topographic relief, lens distortion, and camera tilt.

LiDAR
For determining elevations, LiDAR (Light Detection and Ranging) or "Laser Imaging Detection and Ranging" is more accurate and cost-effective than other methods of photogrammetric compilation. A laser beam from an aircraft platform scans the ground perpendicular to the line of flight, and the laser returns, or reflections, from the ground and foliage are processed to determine the ground elevations. As LiDAR penetrates tree cover, it provides the most accurate ground definition possible.

Search imagery
Search by Shapefile
Search LiDAR

Join Us Today

1. Join us for FREE right now.
2. Search for photos by location, it is all just a click away.
3. Download your image instantly.

Create Account

How it Works

Using the Spatial Data Store is a quick and easy way to get the data you need, how you need it... fast. Once you have selected your area, defined the parameters and submitted your order, Valtus processes the order according to your specifications and delivers it to our FTP site for retrieval... all within minutes.

We're here to help
1-800-661-6782 or
info@valtus.com
Office hours Monday to Friday 8:00-4:30 MDT

Company Information
Contact Us
Client Account Administration
VISA
MasterCard

Ordering Help
How to order Imagery
How to order LiDAR
LiDAR FAQ
Areas of Coverage

Legal Information
Privacy Policy
Terms of Use
Purchase Agreement
Return Policy

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Upload Shapefile Cont.

Valtus Imagery Services - Aerial Photography Web Store - Windows Internet Explorer

https://www.valtus.ca/valtus-web-store/shape-file-upload-submit.do

File Edit View Favorites Tools Help

Valtus Imagery Services - Aerial Photography Web Store

Welcome tammy.peterson@valtus.com | Logout

Shopping Cart

Spatial Data Store | Gallery | Coverage Area | Contact Us | Support | Become a Reseller

cancel check-out

User Shapefile: LIDAR_Request_Extent_N83z12.shp
 Output Format: JPEG
 Coordinate System: EPSG:NAD83 | UTM zone 12N

*Best - refers to best layer available based on coverage, date and resolution

Legend	Product	Covered	Price	Full Res.	Buy
	NWQ_0_4m_PREM *Best 07-Aug-2007 to 11-Sep-2007	100 %	\$4,234.70 for 0.4 m.px	Preview	<input type="checkbox"/>
	NWQ_1m_STD 07-Jul-1999 to 29-May-2006	100 %	\$2,552.35 for 1.0 m.px	Preview	<input type="checkbox"/>

cancel check-out

Data CC-BY-SA by OpenStreetMap

We're here to help
 1-800-561-6782 or
 info@valtus.com
 Office hours Monday to Friday 8:00-4:30 MDT

Company Information
 Contact Us
 Client Account Administration

Ordering Help
 How to order imagery
 How to order LIDAR
 LIDAR FAQ
 Areas of Coverage

Legal Information
 Privacy Policy
 Terms of Use
 Business Assessment
 Return Policy

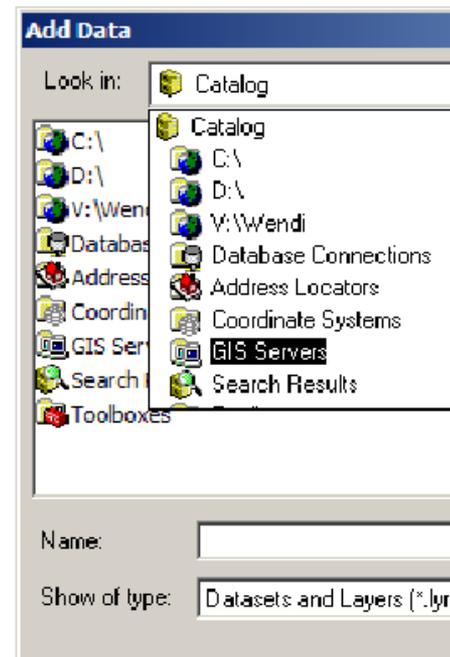
Valtus

Streaming Services

- Click the “Add Data” button, or navigate to File - Add Data - Add Data...



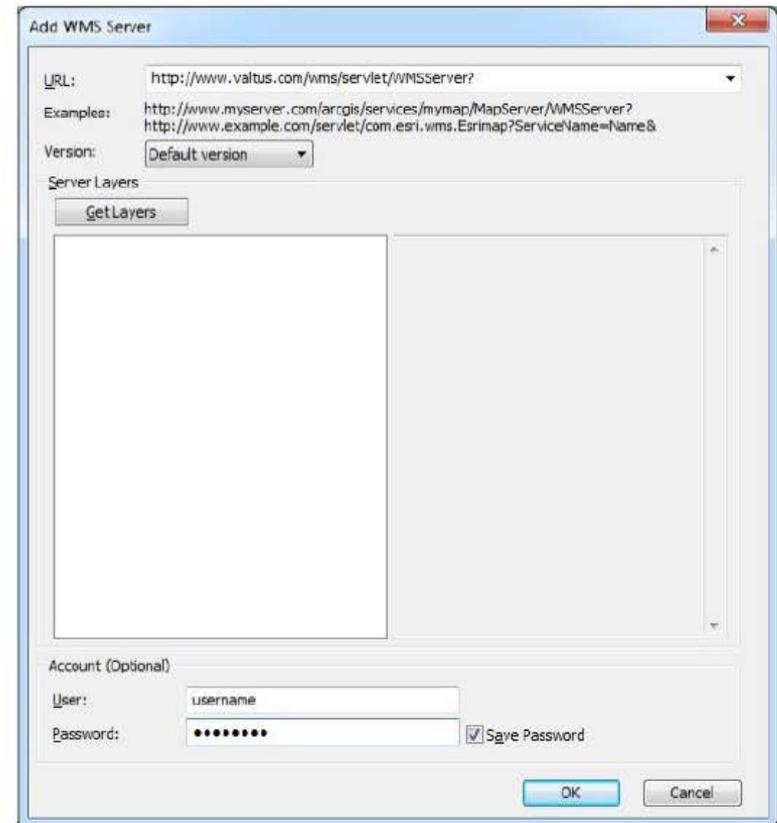
- Choose “GIS Servers” from the drop down menu:



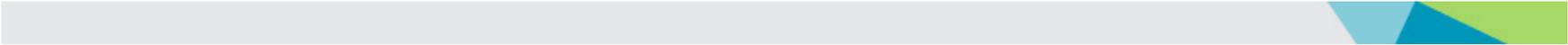
Streaming Cont.

To Load Views as a WMS service:

- Double-click "Add WMS Server"
- The Add WMS Server window opens. In the URL field, add the URL <http://www.valtus.com/views/wms>
- Under Account (Optional) Fill in your username and password. Click the 'Save Password' box if you would like ArcMap to remember your password. Click OK.



Review



Product

- One Foot or Better
- 4 Band Color

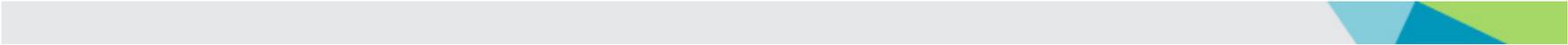
Deliverables

- Hard Pixels
- Streaming Services

Why Ascent GIS?

- Over 19 Years Providing New/Archive Imagery To NW Clients
- Relationships with all NAIP/Hexagon Contractors
- Production Services
- Frontline Support

THANKS



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Cell: 509-995-2961

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www.ascentgis.com