

2015 NAIP Summary Briefing

1 December, 2015

Ron Hoffmann, President
John Boeding, Vice-President Operations
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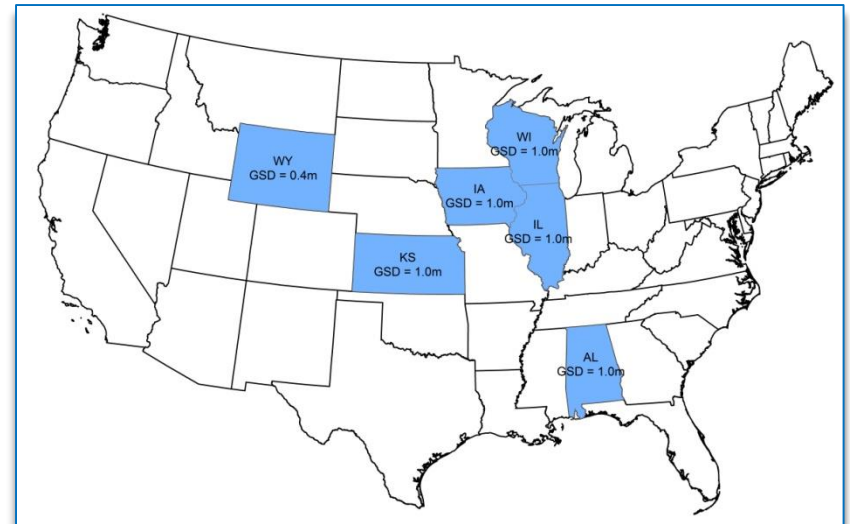


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State Project Areas

State	DOQQs	Sq Mi	Seasons
Alabama	3,481	54,515	1
Illinois	4,131	59,028	1**
Iowa	4,239	58,733	1
Kansas	5,902	86,212	2
Wisconsin	4,484	59,640	1
Wyoming*	7,357	100,582	1
6 States	29,594	418,710	7 Seasons



* 0.5-meter resolution buy-up + SGM point cloud + stereopairs

** Altered to 1 season from 2 due to flooding

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2015

- Exclusive use of Leica ADS100 camera
- Acquisition at 40cm GSD (4 states)
 - Flying height ~16,500' AGL
 - Windows/flooding → later start than normal.
 - Delivery of (all six states) 1m DOQQs was completed on-time to USDA
 - HR processing to 30cm for Hexagon Imagery Program
- Further improvements in image processing/production
 - Continued to improve Block and Global balancing
 - 5-day EAWS and PROD services



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Acquisition

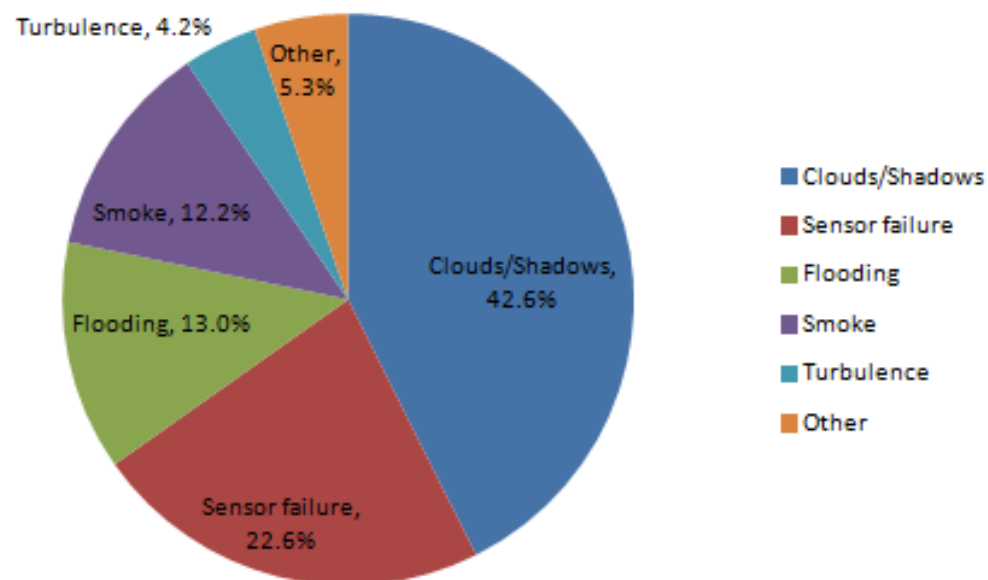
- Five (5) aircraft
 - Suredex – 4 Cessna 441 (Conquest) w RVSM
 - DAS – 1 Cessna 441 (Conquest) w RVSM
- Total project time span:
 - 97 / 129 days involved acquisition – 75% (higher than years past)
- Adverse weather situation
 - Wet in Midwest/South (excess flooding)
 - Fire/smoke in all states
- Utilization
 - SDX a/c – 6k fewer miles flown than in 2014
 - Subcontractor – only used 14% of subcontractor capacity (vs. 2014)

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Rejections

Reject Reason	split %
Clouds/Shadows	42.6%
Sensor failure	22.6%
Flooding	13.0%
Smoke	12.2%
Turbulence	4.2%
Other	5.3%
	100%



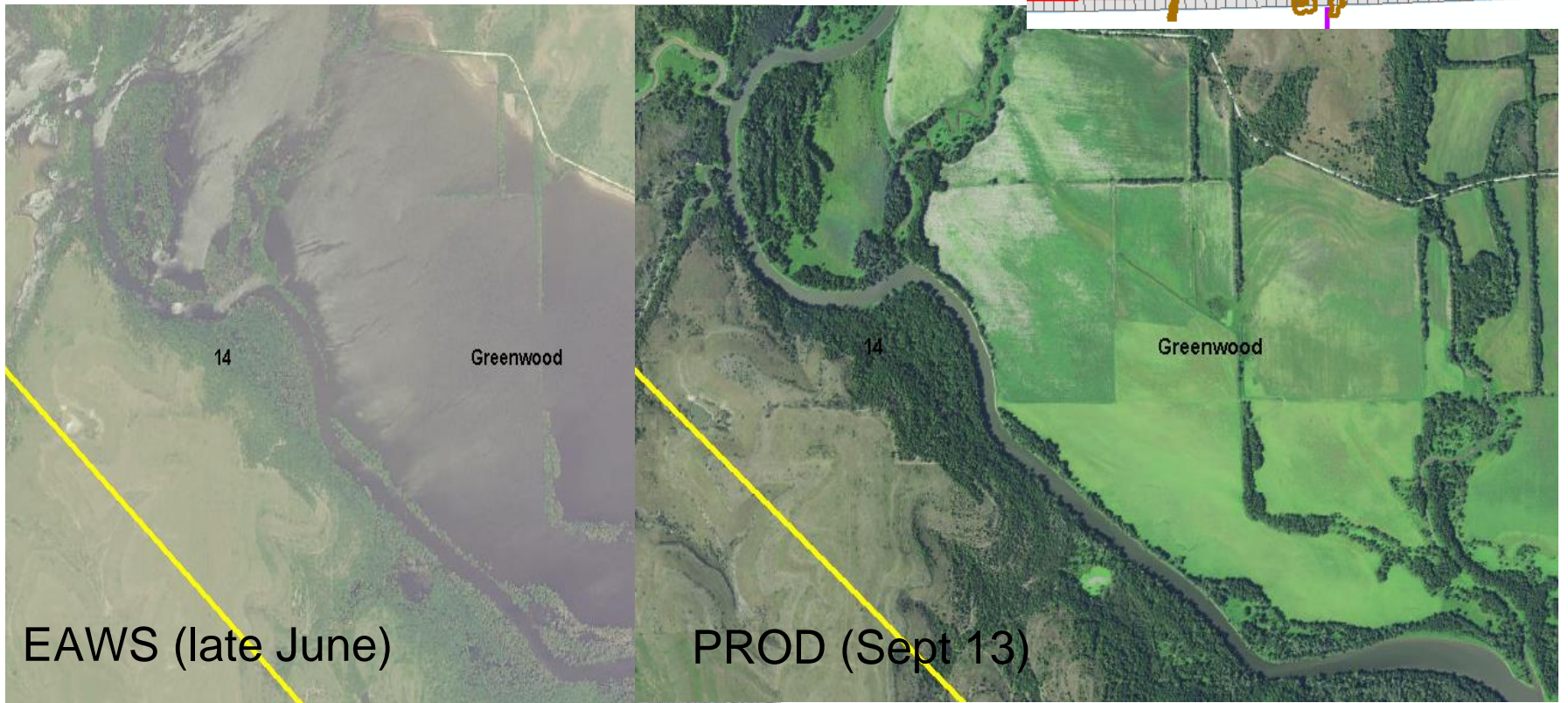
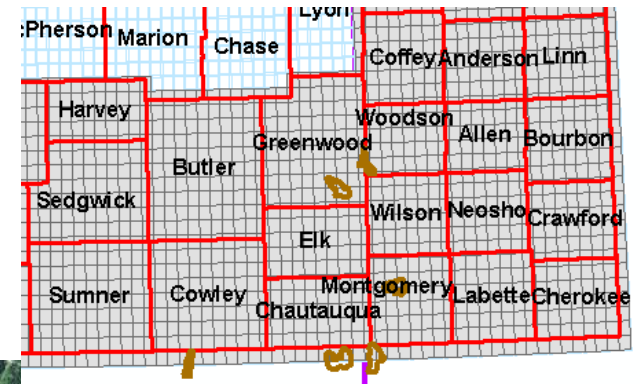
36.1% of re-flights contained fragmented rejections

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KS season 1 flooding

- Re-flown & made 9/20 ext deadline

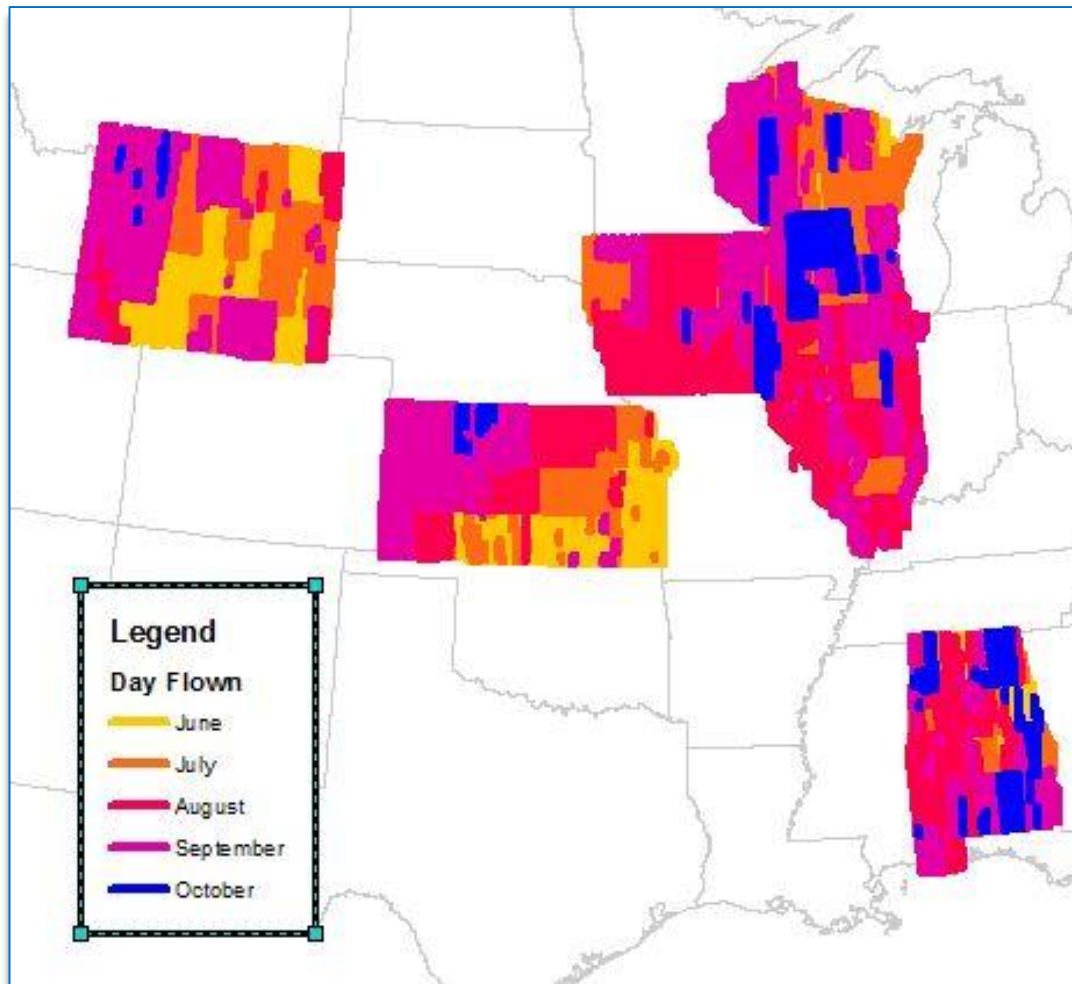


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Acquisition Chronology

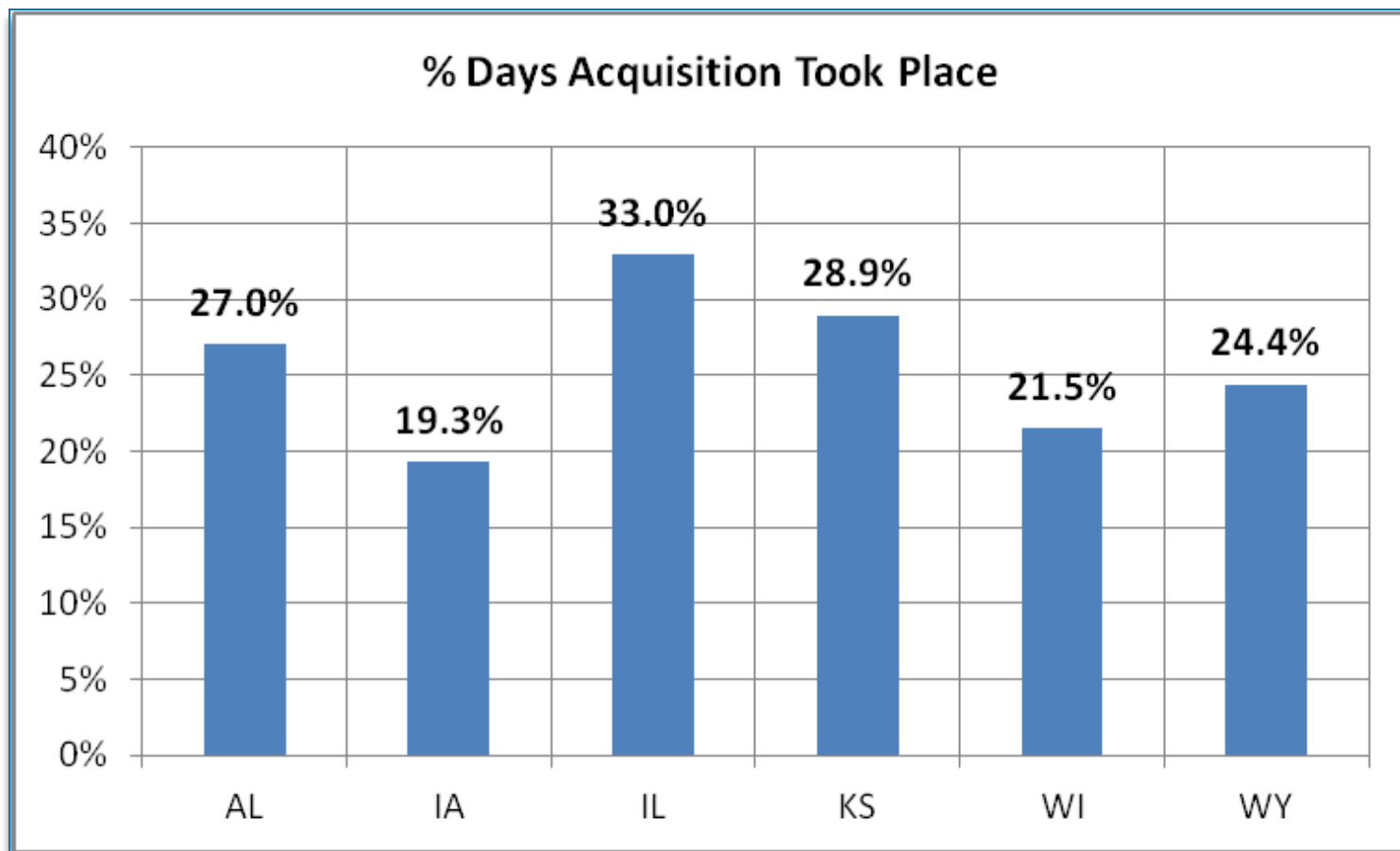
Month	% total	Cumulative
June	17.1%	
July	24.2%	41.3%
August	26.3%	67.6%
September	27.1%	94.7%
October	5.3%	100.0%



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Acquisition Cont...

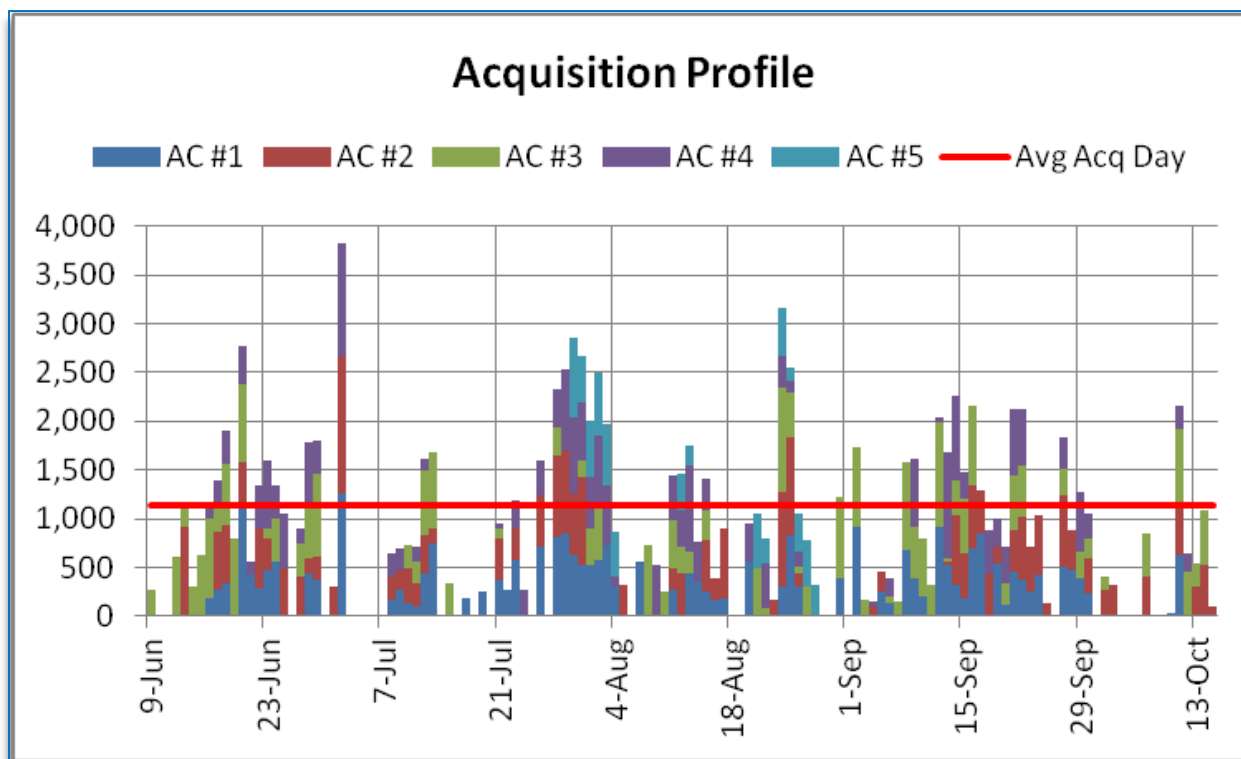


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Acquisition Profile (Aggregate FSLM/Day)

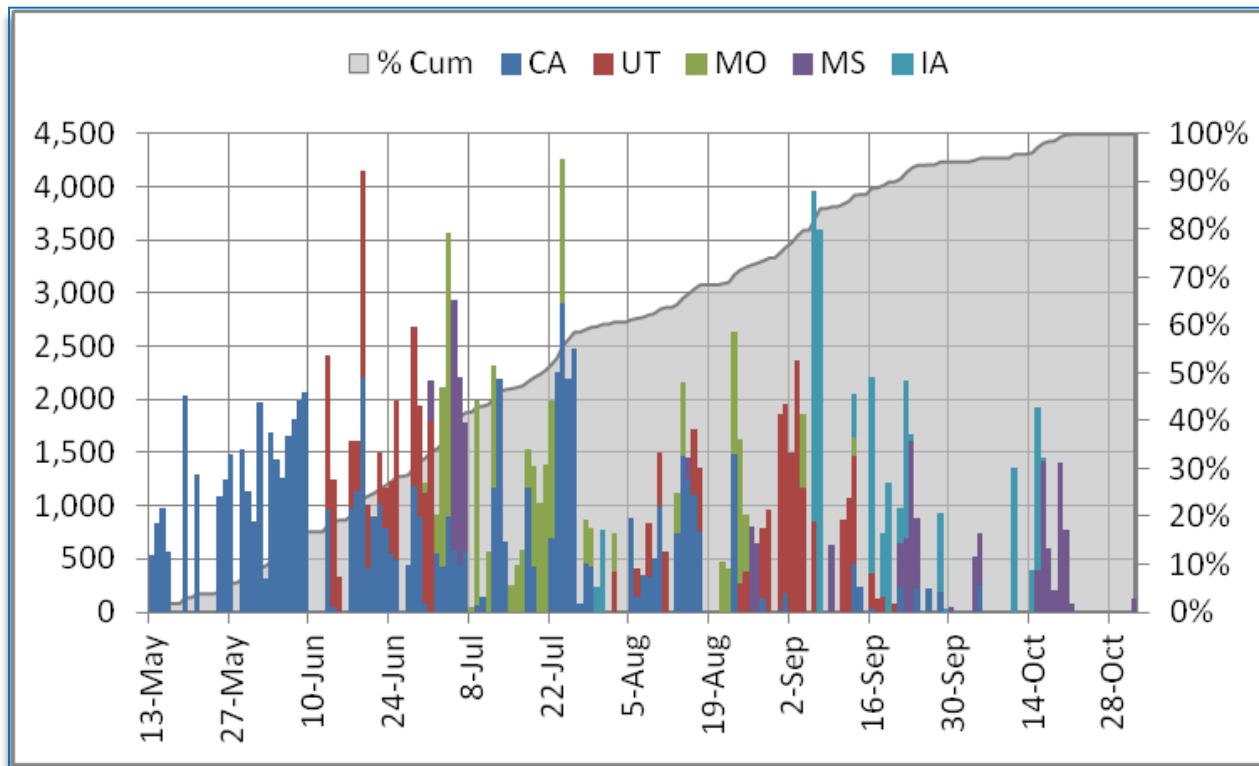
Nautical Flight Line Miles Per Day



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FY-2014 daily profile

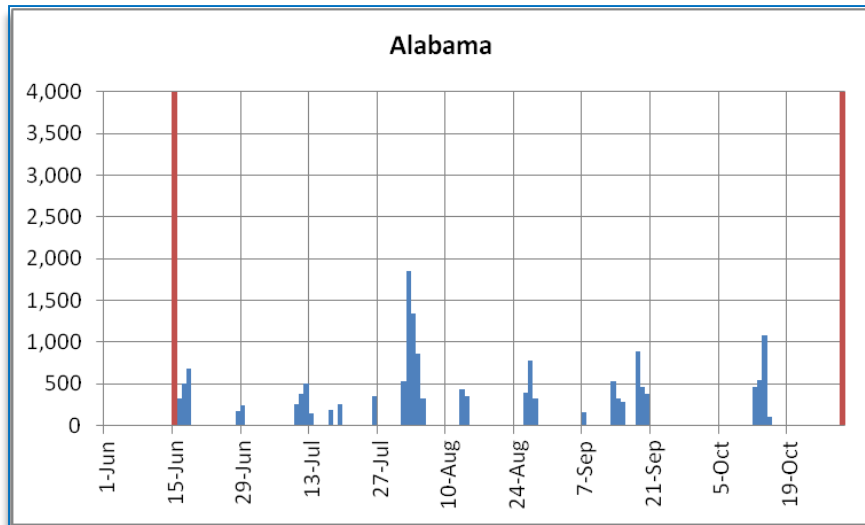


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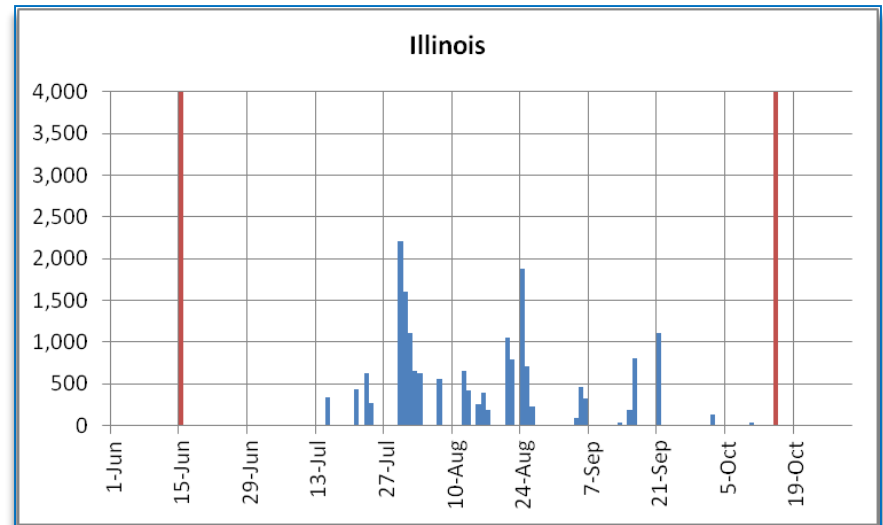


Nautical FLM per day and contracted season window(s)

Alabama – typical gulf coast state



Illinois – flooding early in season
delayed start

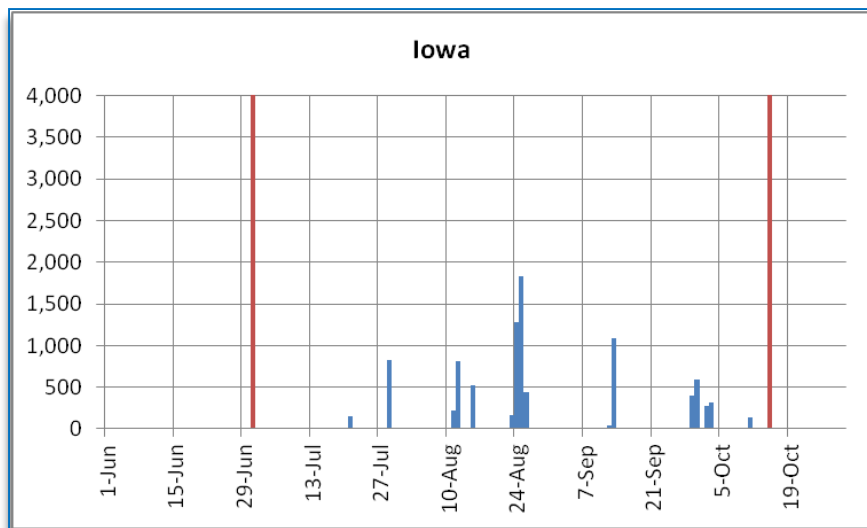


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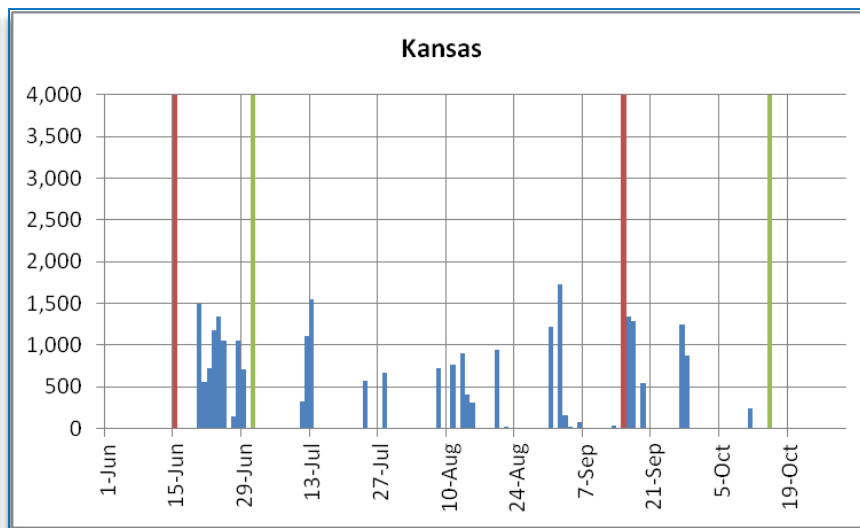


Nautical FLM per day and contracted season window(s)

Iowa – early season rain



Kansas – flooding, smoke

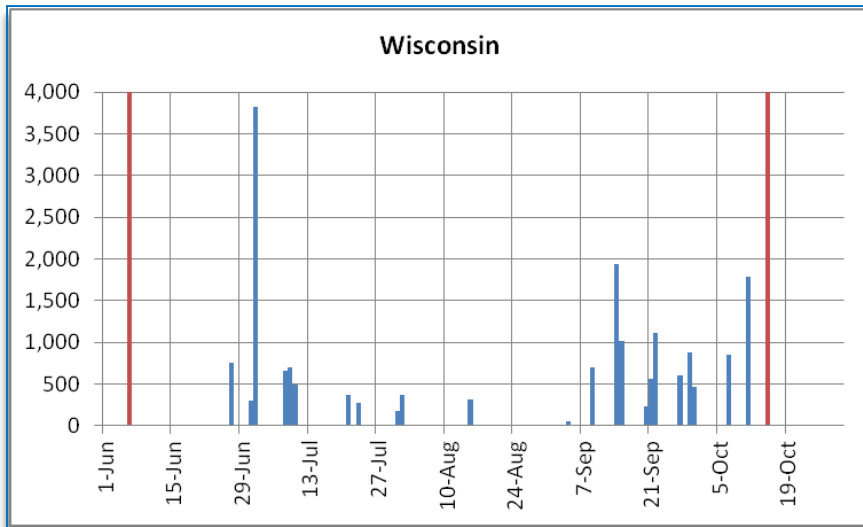


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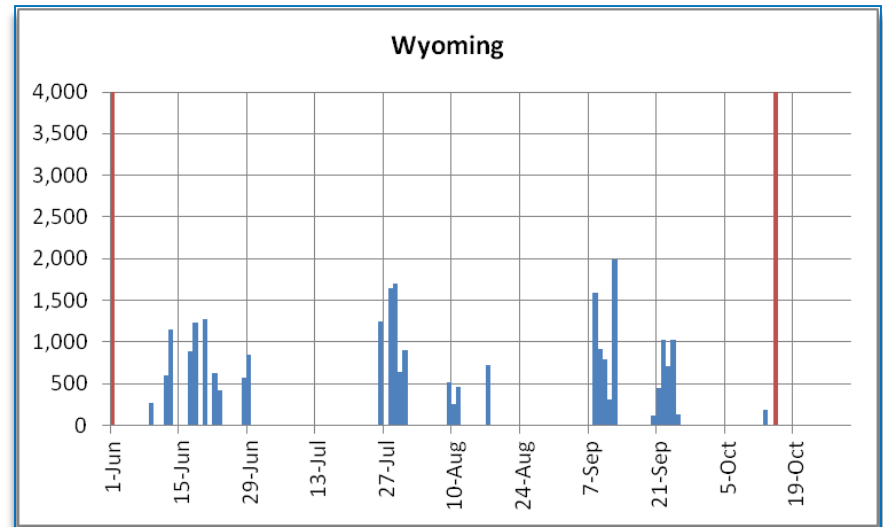


Nautical FLM per day and contracted season window(s)

Wisconsin – flooding, smoke



Wyoming – snow, smoke

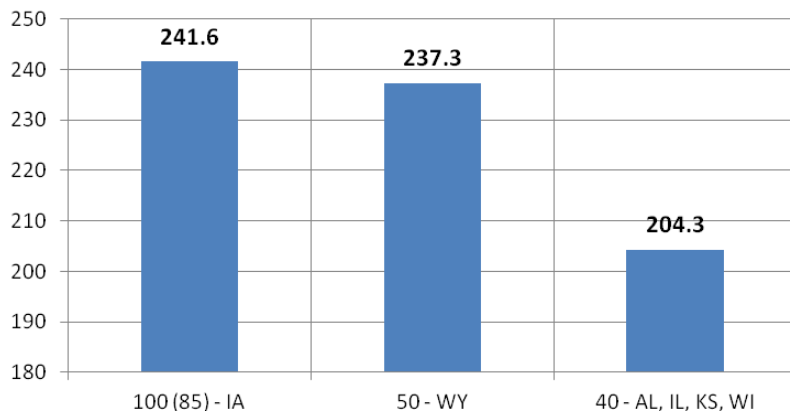


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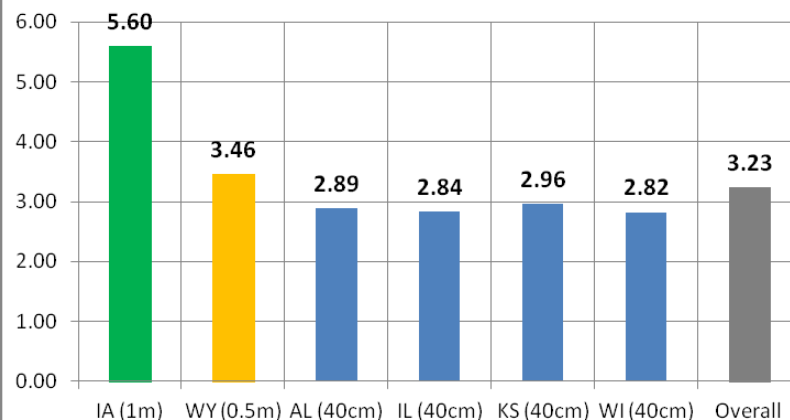


Varying (Native) GSDs and Metrics

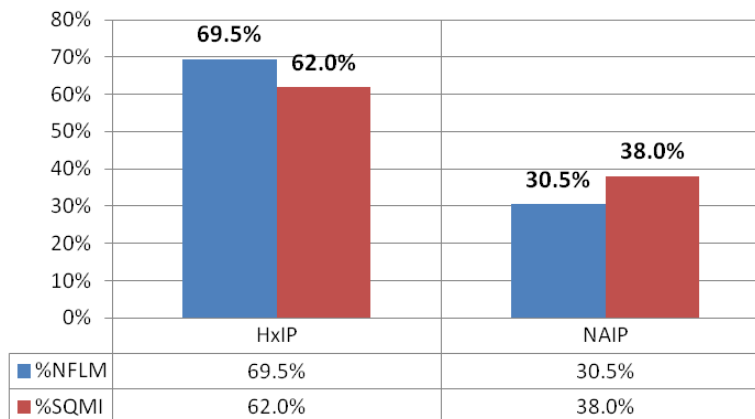
Airspeeds (Knots) vs Native GSD



Sq Mi/FLM



HxIP vs NAIP NFLM and SQMI

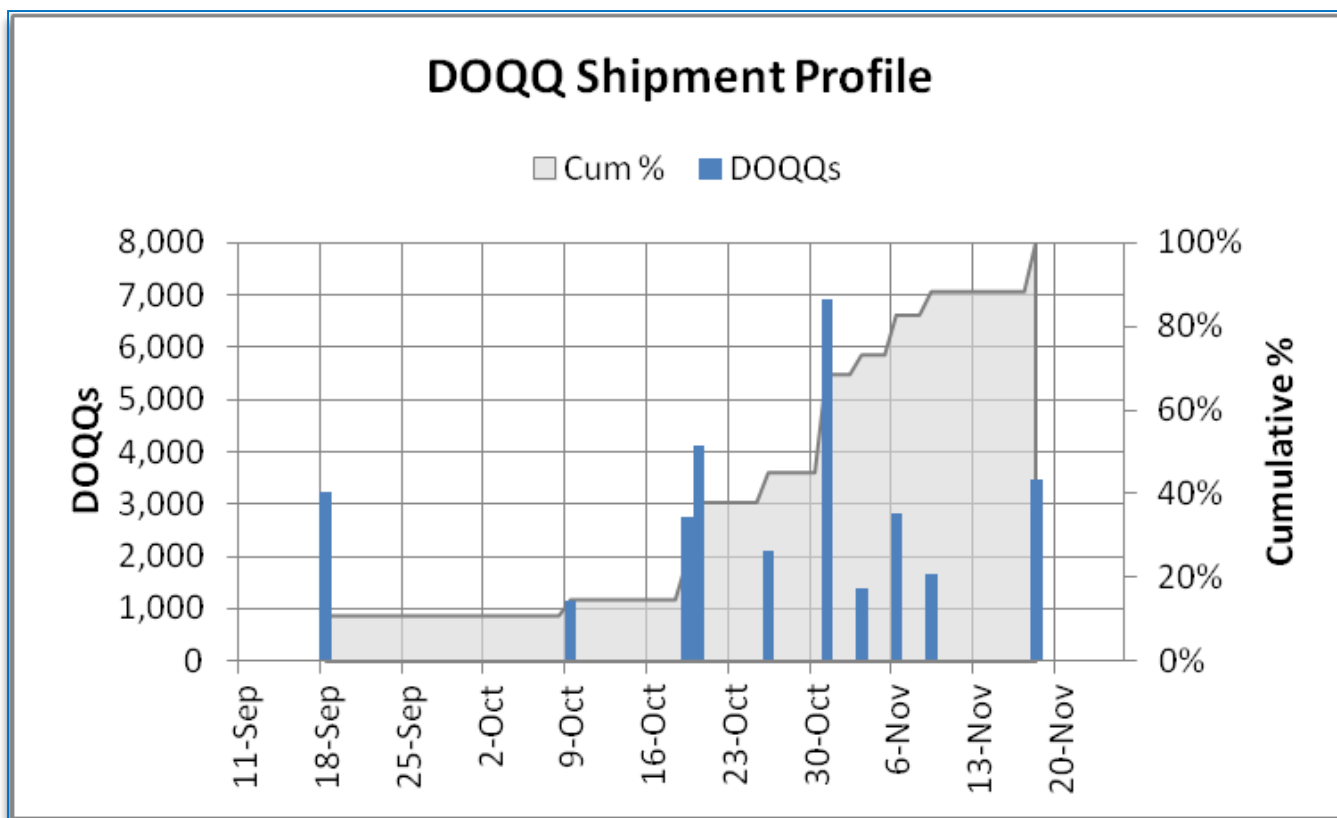


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DOQQ Shipment Profile

10 shipments
2,959 DOQQs per shipment ('14 avg was 2433 doqq)



Early Access Web Services (EAWS)

- Suredex used ESRI ImageServer
 - Organic and cloud resources
- WebSitePulse software for reporting
- Heavily automated process – some touchup required
- Demand never exceeded resources

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Production EAWS Report Summary

Unique Users By Date

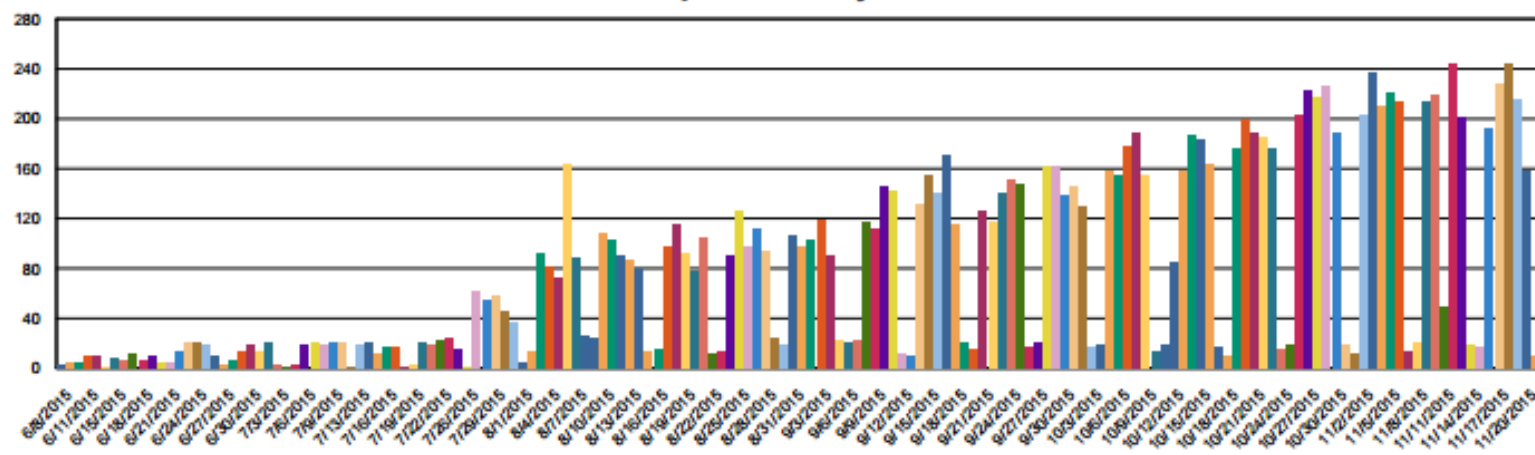
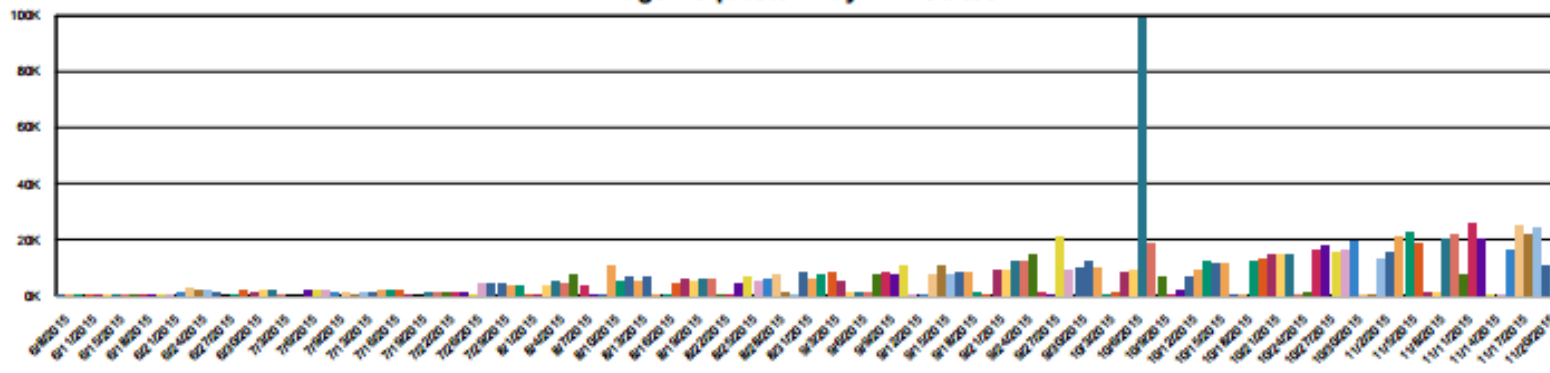


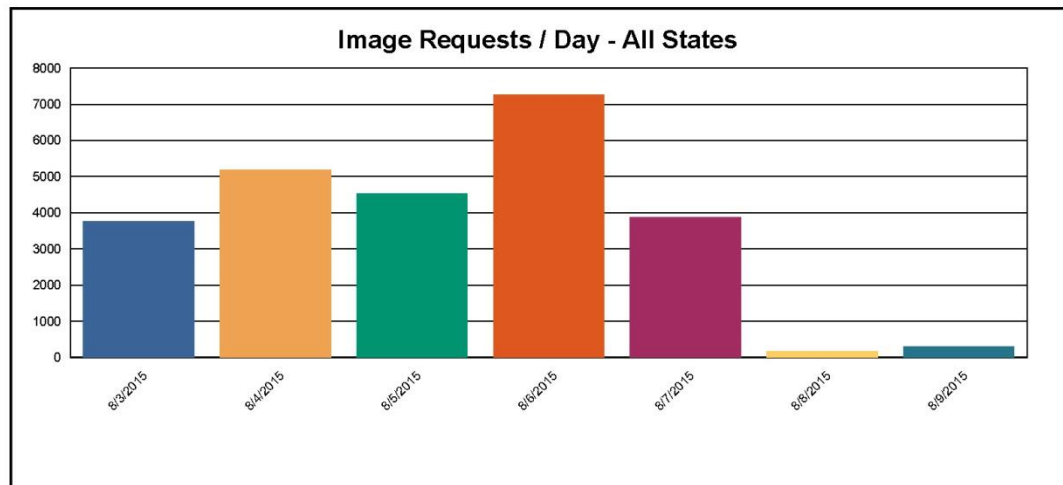
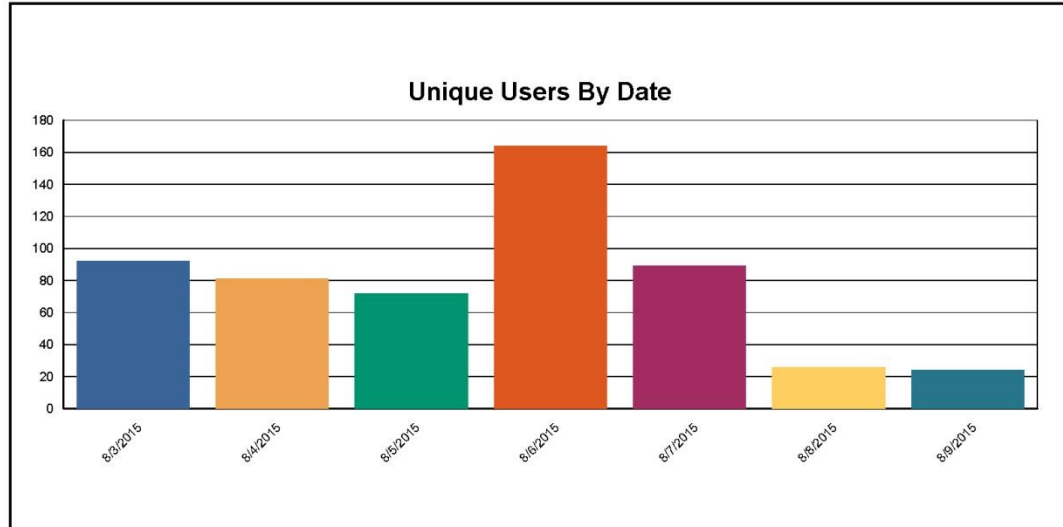
Image Requests / Day - All States



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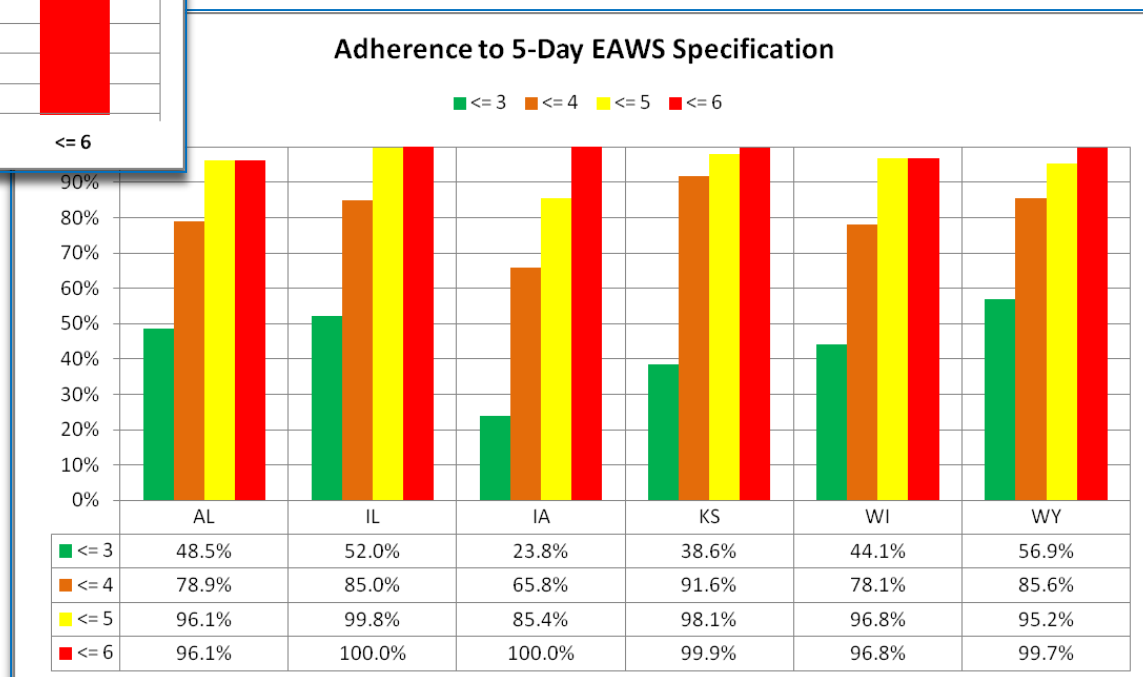
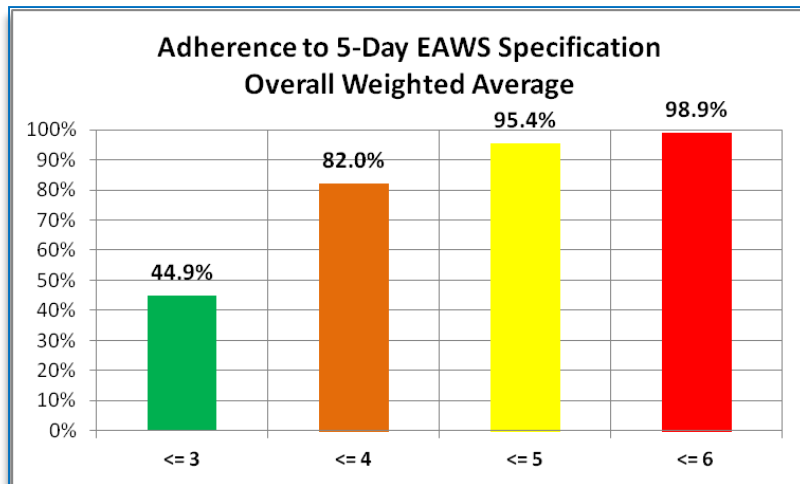
5-Day EAWS Report Summary



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Adherence to EAWS 5-Day Specification



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Questions??



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WY BUY-UP

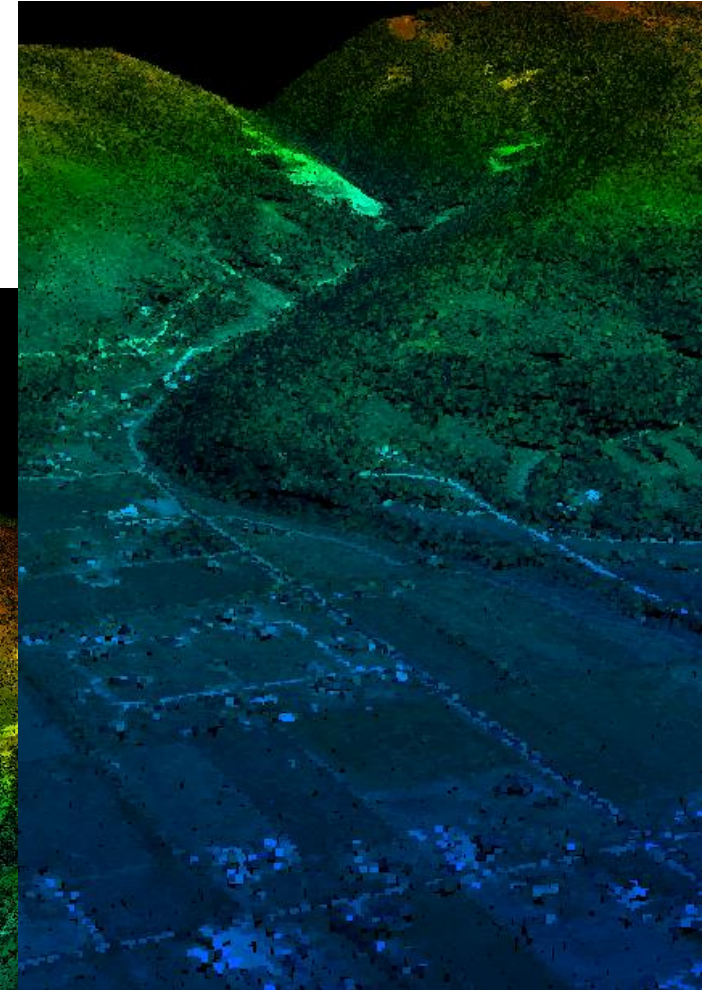
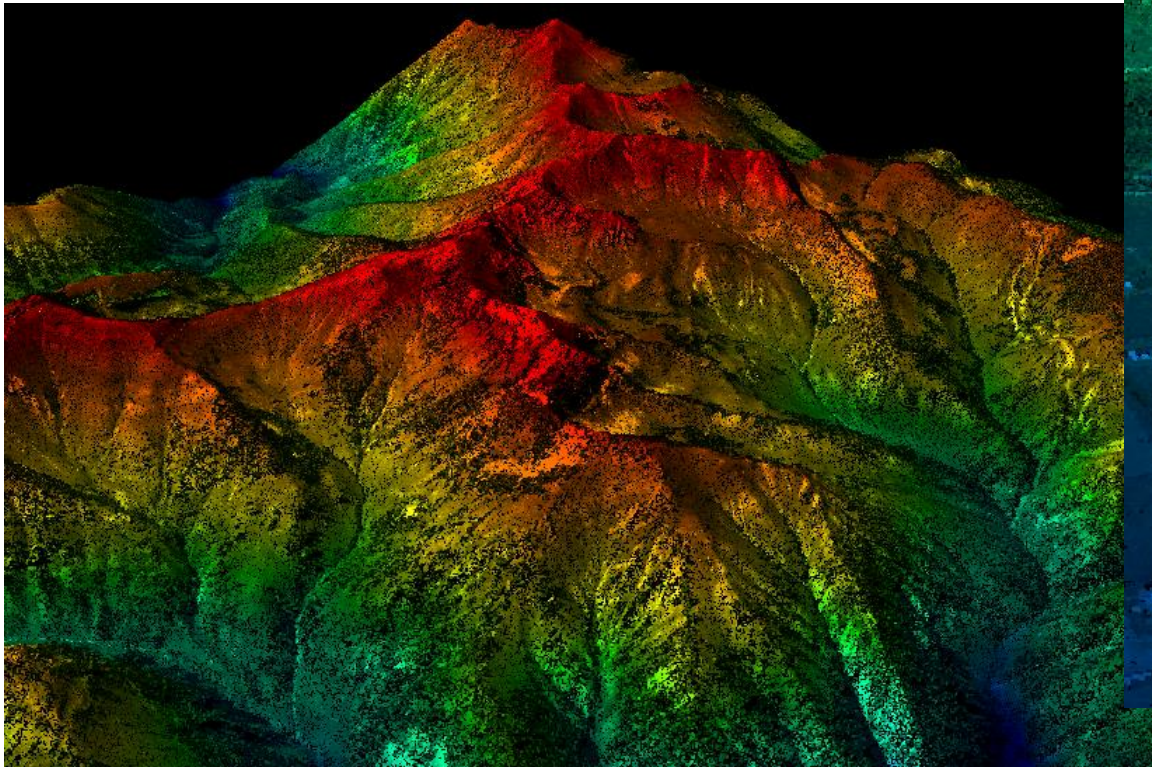


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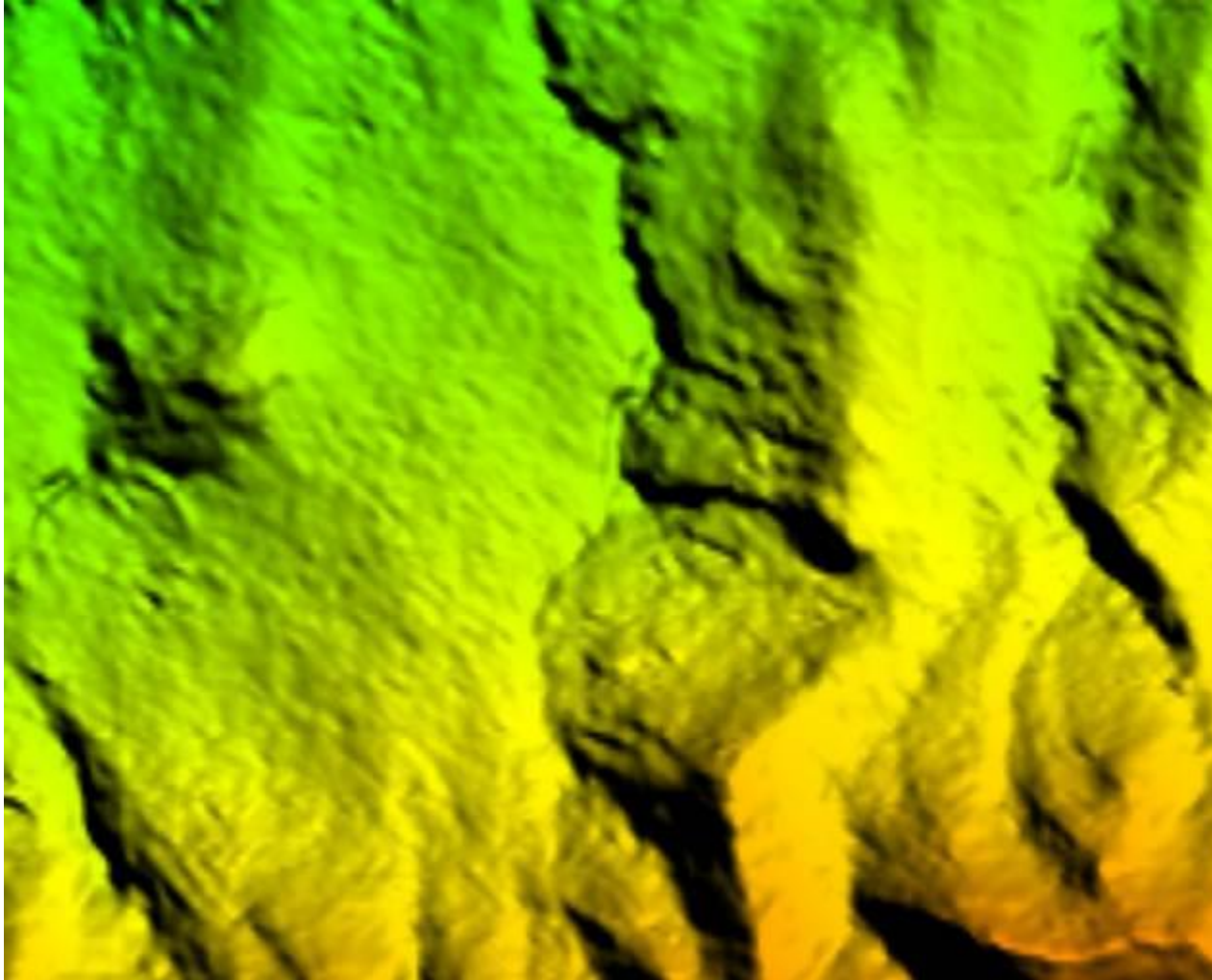
Deliverables

- Stereo imagery (native 0.5m gsd)
- SGM point cloud (1-4m spacing)



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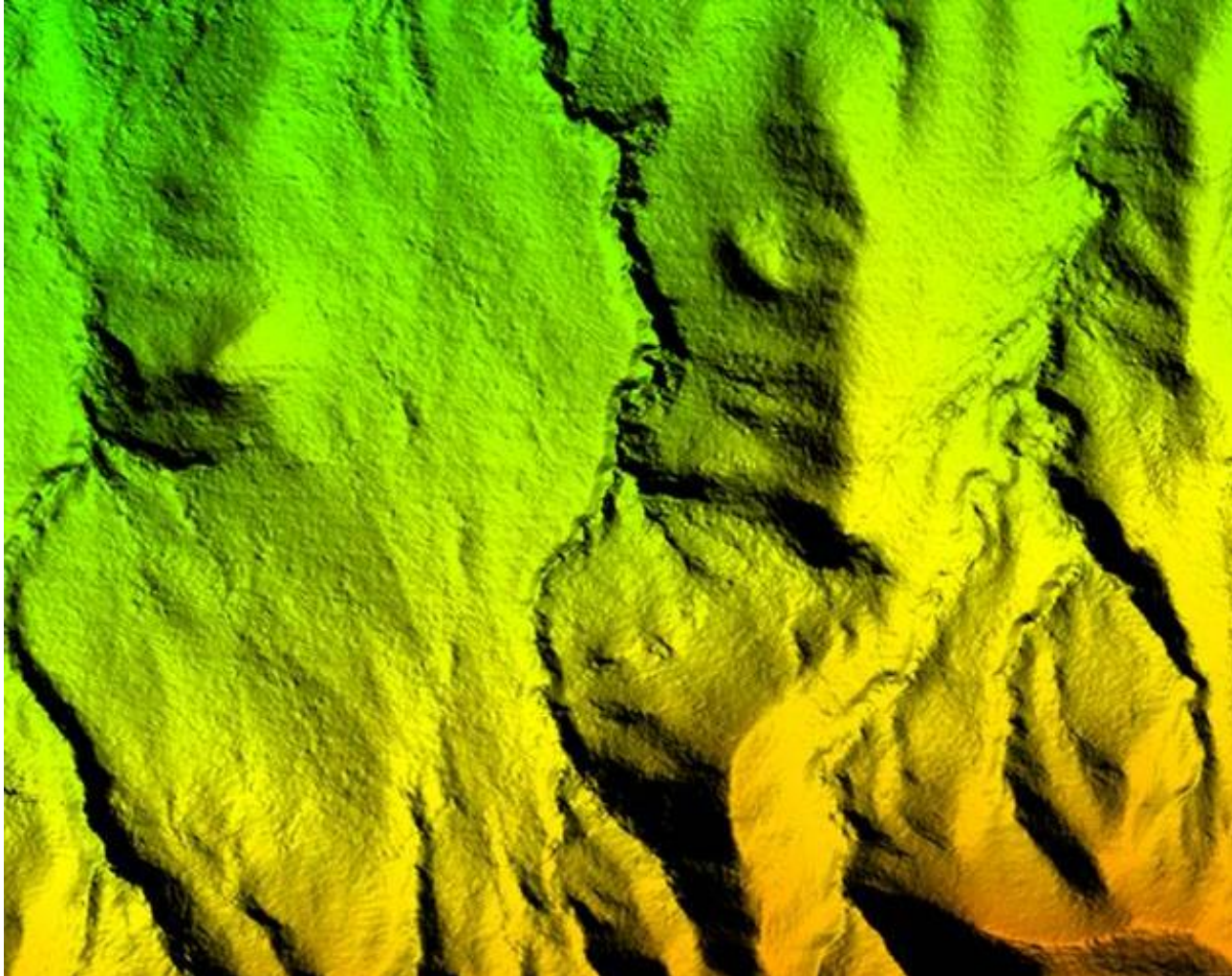
4m spacing



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1m spacing



Items to consider for SGM

- Point spacing → Compression → Storage space
 - 4m LAZ = 9mb; 1m LAS = 134mb (~18 sq km)
- Point classification (Automatic vs Manual Review)
- File format (LAS vs. LAZ vs. other)
- File naming (referencing / location)
- Deliverable footprint (existing tile layout or new)
- Processing time (minimal impact)
- Additional attribution
 - Surface normals
 - NIR