

NOVEMBER 1, 2019

**ASPRS EASTERN GREAT
LAKES REGION
FALL 2019 MEETING**



***PHOTOGRAMMETRIC AND REMOTE SENSING SERVICES
FOR NEW ENERGY SOURCES***

PRESENTED BY:
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EVOLVING ENERGY LANDSCAPE



Beckjord coal plant circa 2013

Internet clip-art circa 2019

OLD AND NEW ENERGY MARKETS

Traditional Energy Mapping Clients

- Coal
- Hydro
- Nuclear

New Energy Mapping Clients

- Natural Gas
- Wind
- Solar

TRADITIONAL ENERGY PROJECTS

- Coal pile volumetric calculations
- Fly ash landfill mapping
- Plant site planimetric mapping
- Hydroelectric reservoir topo/bathy surveys
- Cooling pond thermal surveys

NATURAL GAS: RELATED FEATURES

Well pads

- Slide / Slump analysis
- Hydrologic flow analysis
- Check grades / match designs

Pipeline Corridors

- Existing & planned
- Slide / Slump analysis
- Right-of-way management

NATURAL GAS: WELL PAD PROJECTS

November 2011 flight:

- Marshall Co, WV – 300 sq mile area
- 6” GSD Orthos / 200–scale plan mapping
- 2’–contours / 1 ppsm lidar

February 2019 flight:

- Logan/Hardin Co, OH – 23,000 acre site
- 3” GSD Orthos / 50–scale plan mapping



NATURAL GAS: PIPELINE PROJECTS

April 2018 flight:

- PA-WV 200 mile planned & existing corridor
- 6" GSD Orthos / 100-scale plan mapping
- 2'-contours / 10 ppsm lidar

April 2015 flight:

- NY 500 mile mostly planned corridor
- 10 ppsm lidar

September 2014 flight:

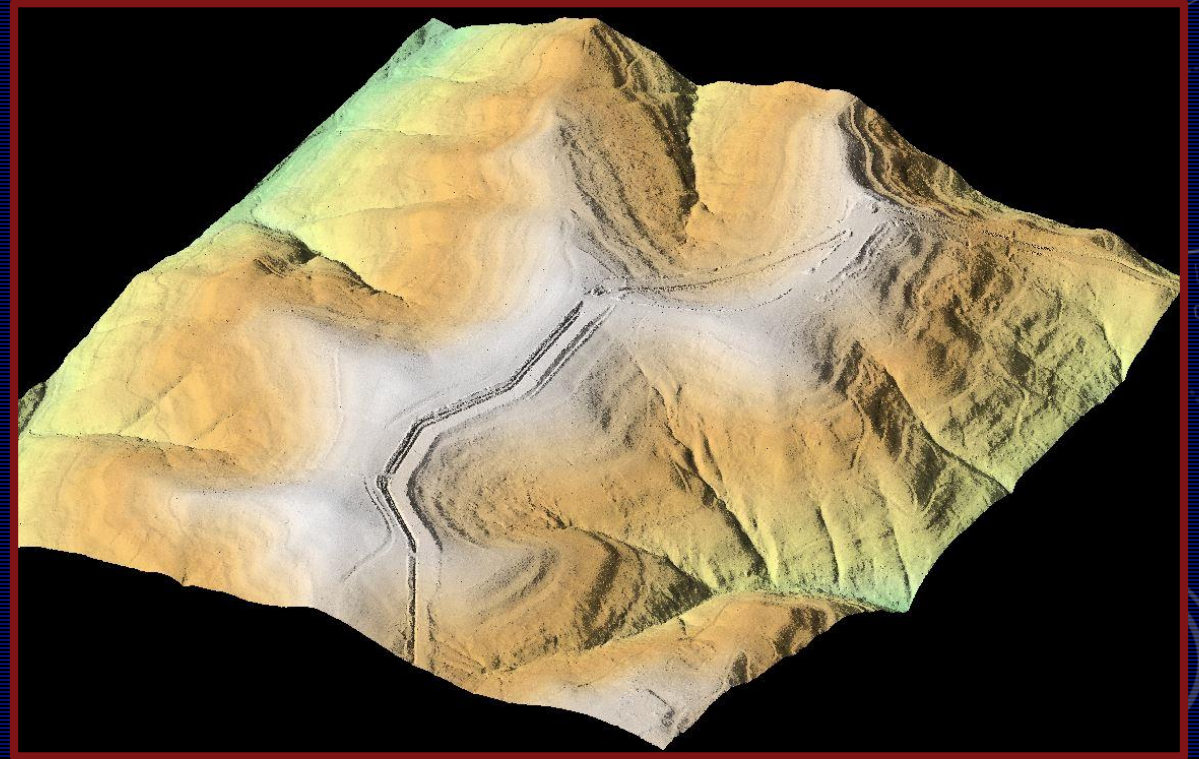
- WV 20 mile mostly planned corridor
- 10 ppsm lidar

March-April 2014 flight:

- WV-VA-NC 600 mile mostly planned corridor
- 6" GSD Orthos / 100-scale plan mapping
- 2'-contours / 1 ppsm lidar

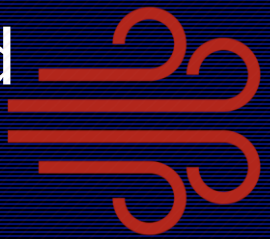
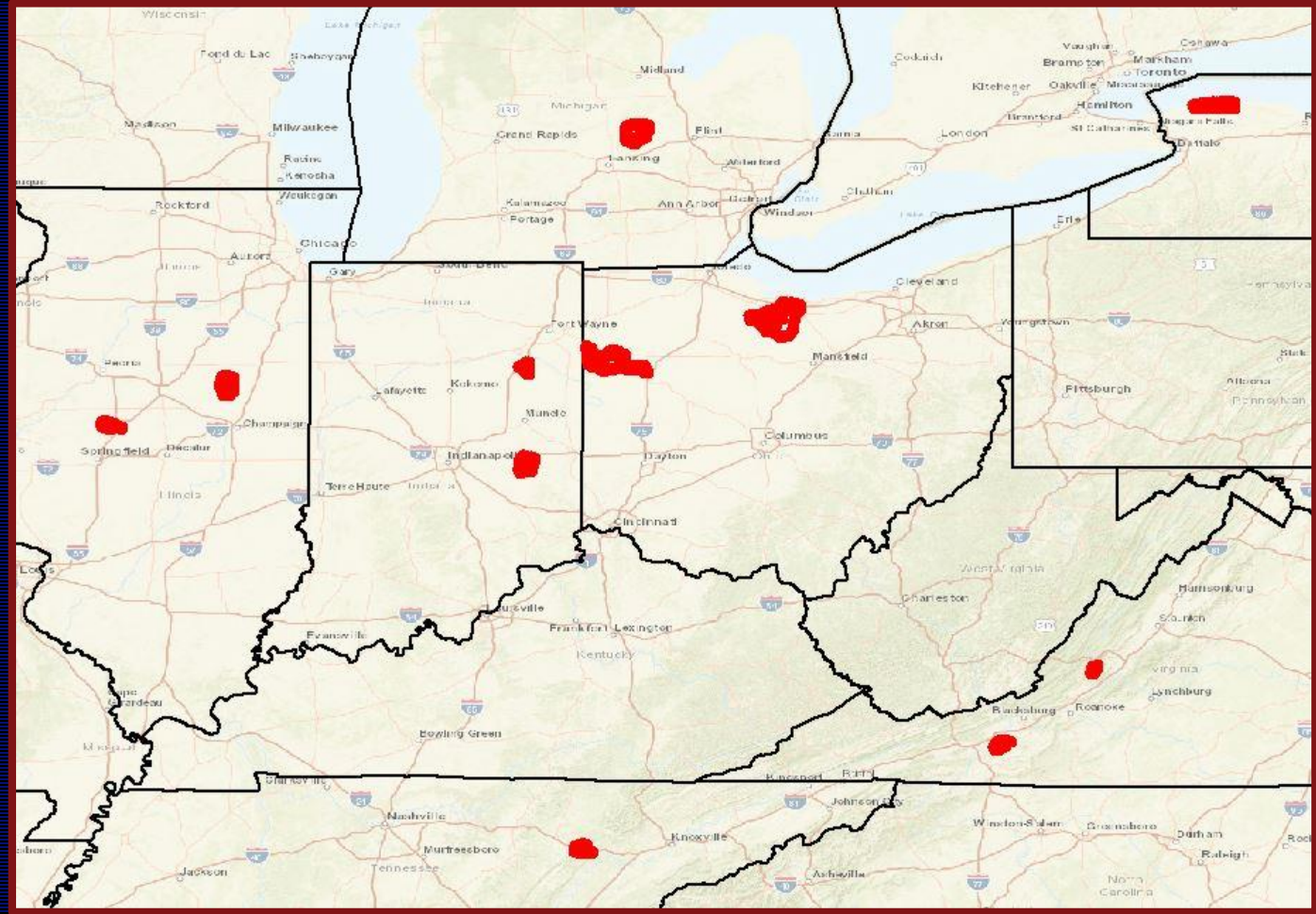


NATURAL GAS: PIPELINE PROJECTS



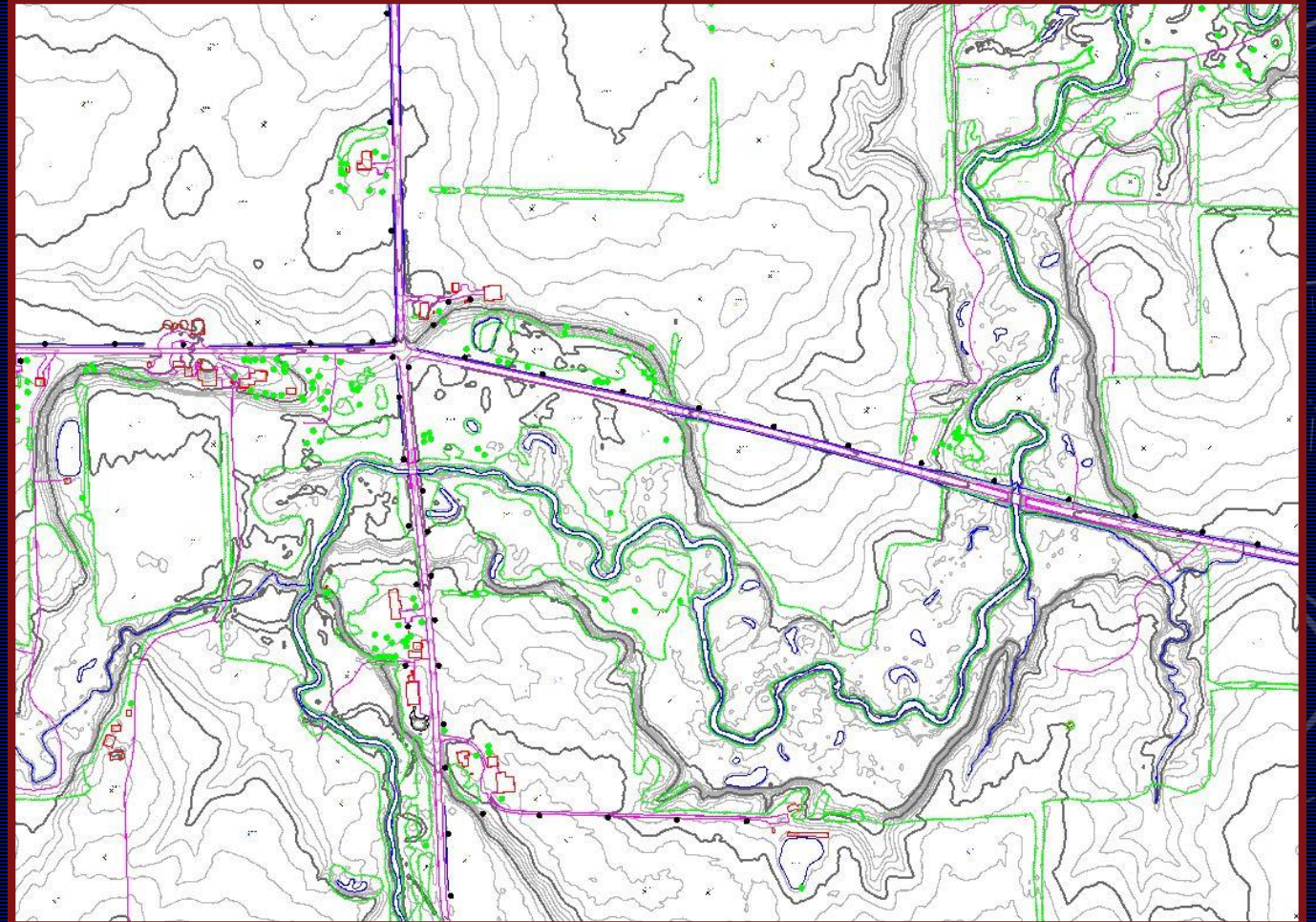
WIND FARM PROJECTS

- Primarily planned sites
- Typically large, rural areas
- Discretion is paramount
- Many sites proposed across Midwest & East Coast
- Some sites ultimately cancelled



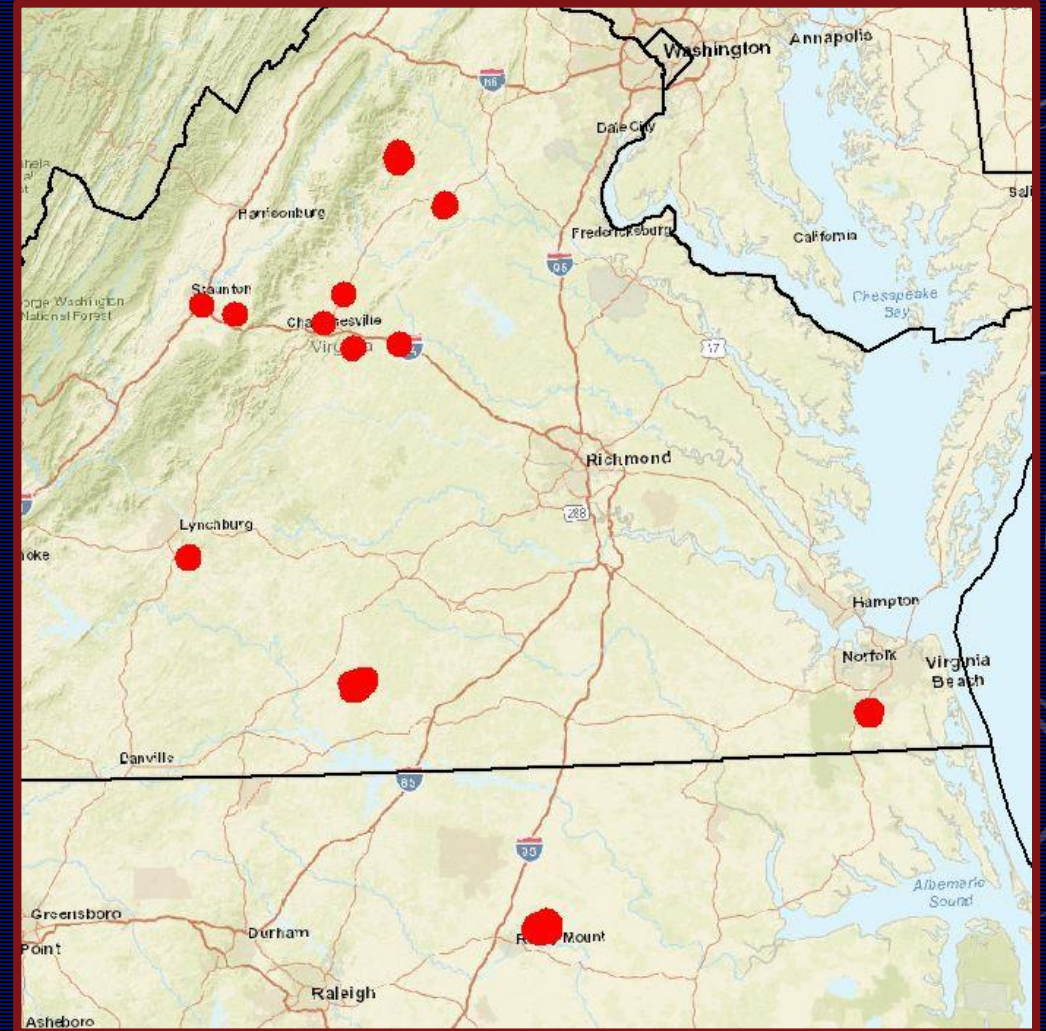
WIND FARMS – RELATED FEATURES

- Typically 100 scale plan with 2' contours
- Hydrological/topography analysis for site design
- Building proximity analysis



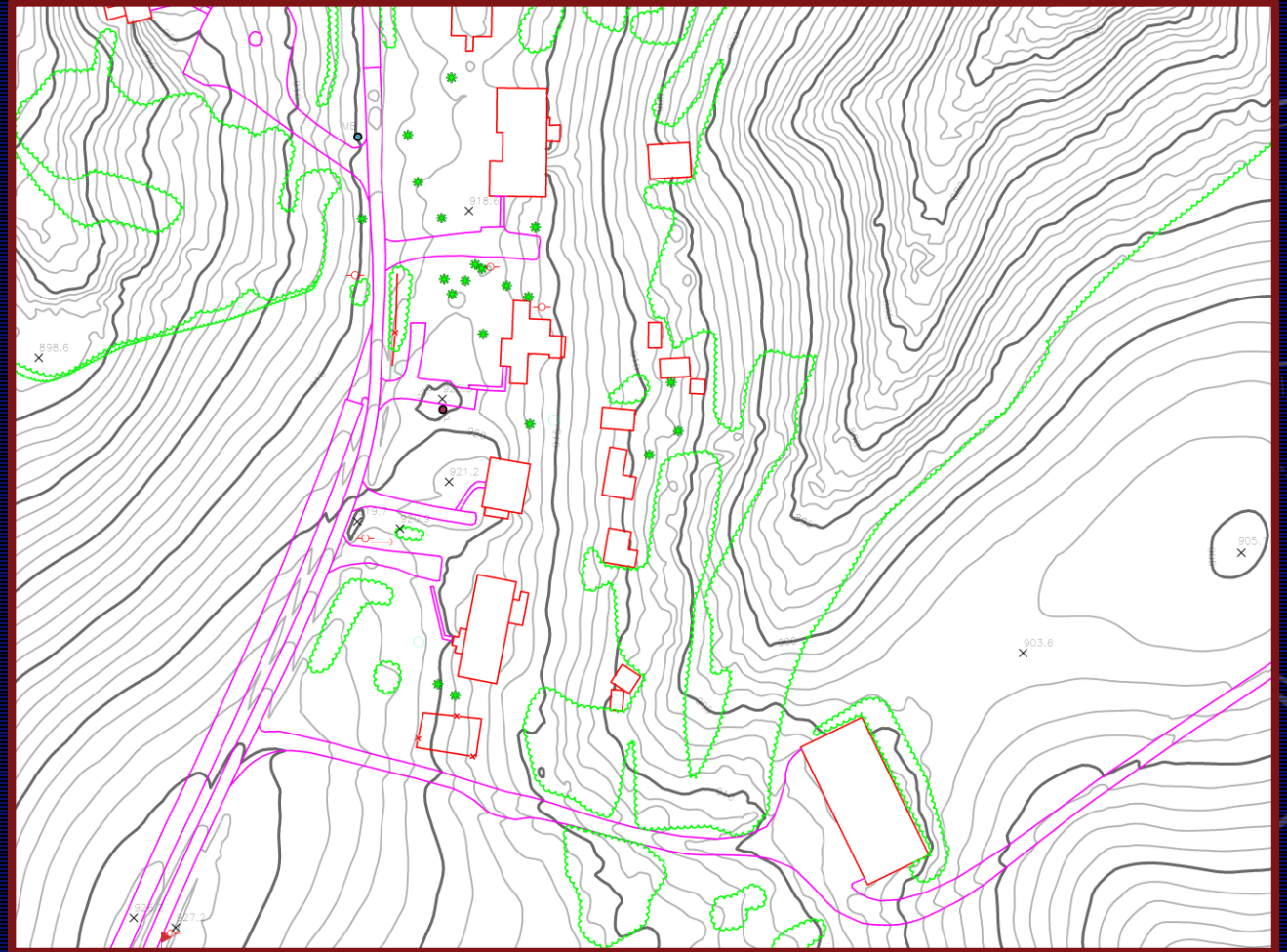
SOLAR FARM PROJECTS

- Primarily planned sites
- Typically smaller areas
- Usually less controversial with local community
- Many sites mapped with partner in Virginia



SOLAR FARMS – RELATED FEATURES

- Typically 50 scale plan with 1' contours
- Hydrological/topography analysis for site design
- Merged with field survey data for ALTA surveys



CHALLENGES

- Projects can be locally unpopular
- Site access may be limited
- Projects can be put on hold or canceled
- May need to be flown leaf-on
- Challenging delivery schedules
- AOs change, sometimes after site is flown
- Market volatility: Gas prices, funding/incentives for wind & solar



QUESTIONS?


Kucera
International, Inc.



THANK YOU!

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