

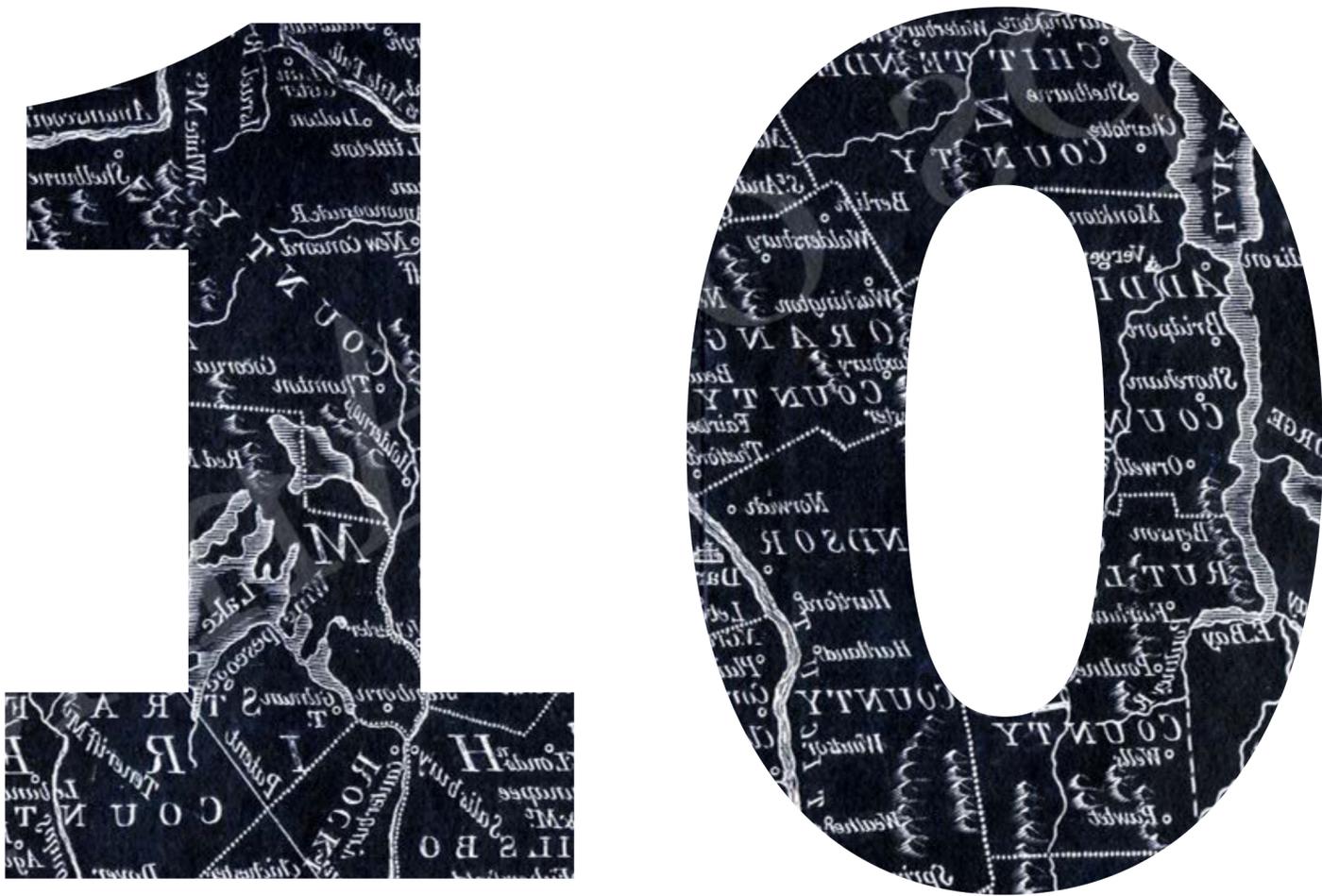
GIS & the State of Vermont:

# Top 10 List

VERMONT CENTER FOR GEOGRAPHIC INFORMATION  
JOHN E. ADAMS, DIRECTOR

Presentation to House Committee on Energy and Technology  
March 2, 2017





# Orthoimagery and Historic Imagery

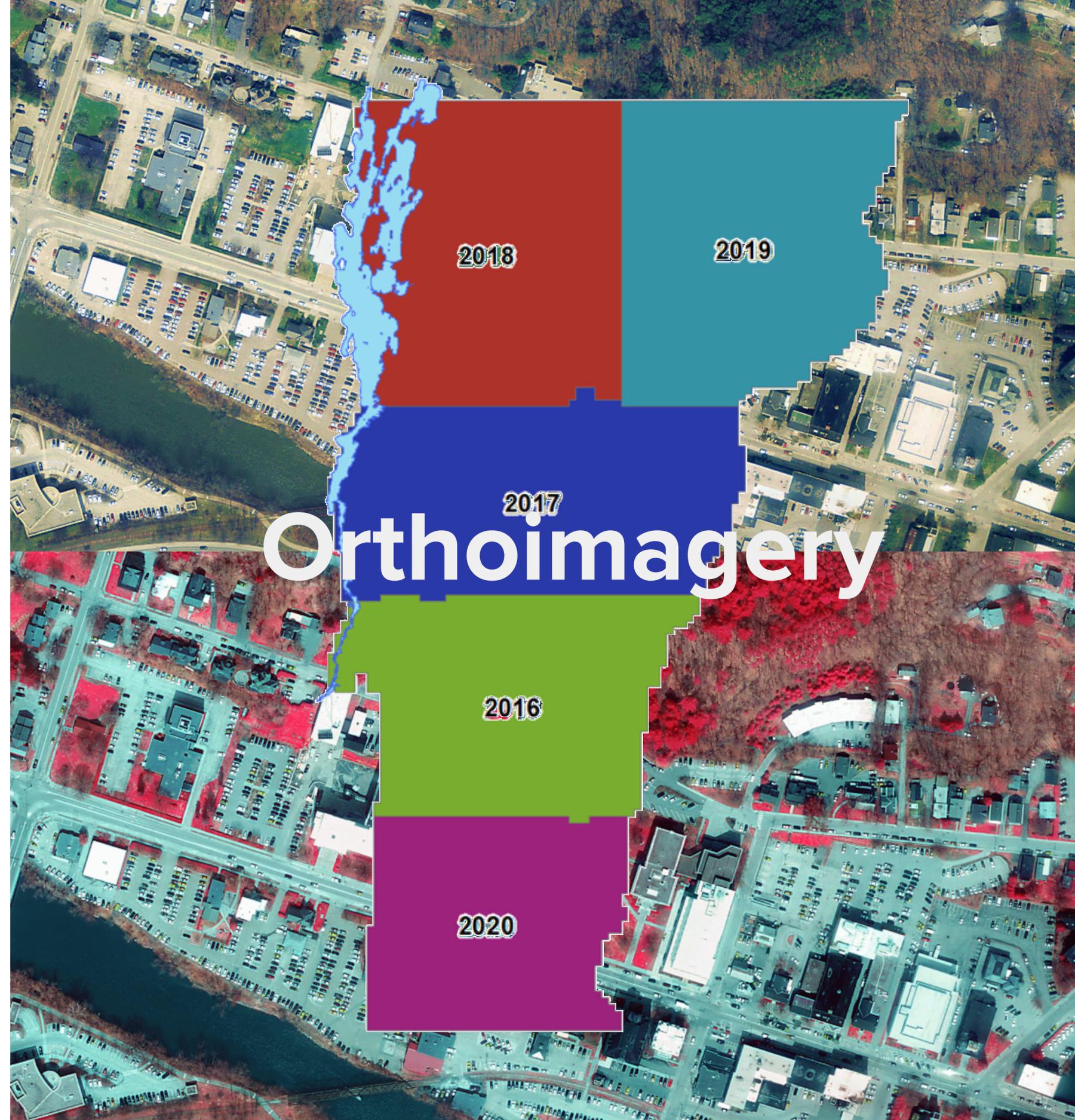
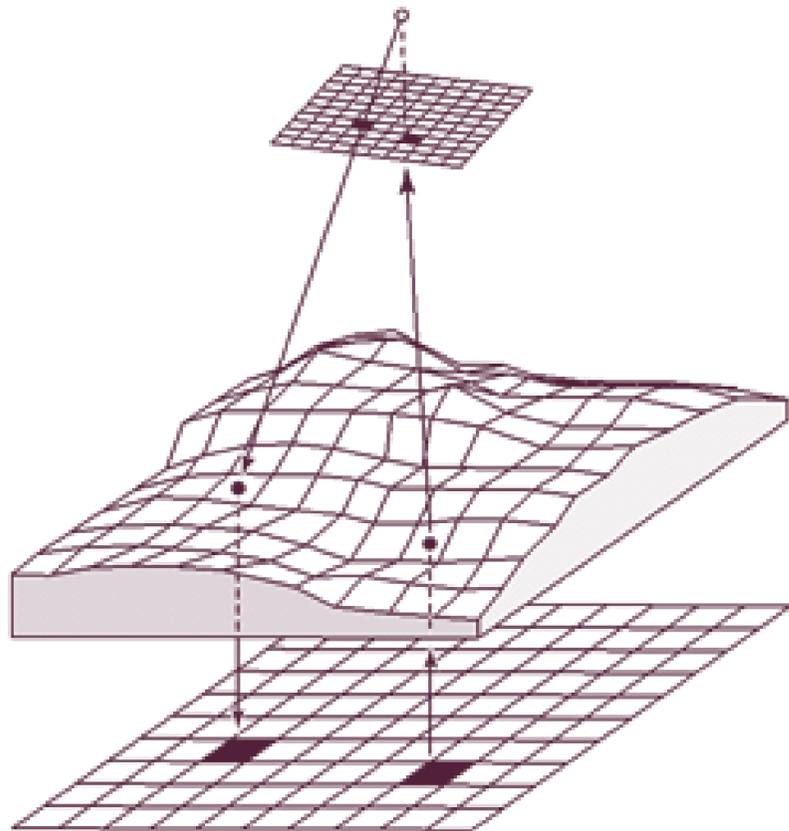


## OVERVIEW

- Collected in sections with 5 year cycle
- Leaf-Off, No Snow, No Clouds, Infrared

## 2016-2020 ACQUISITION PLAN

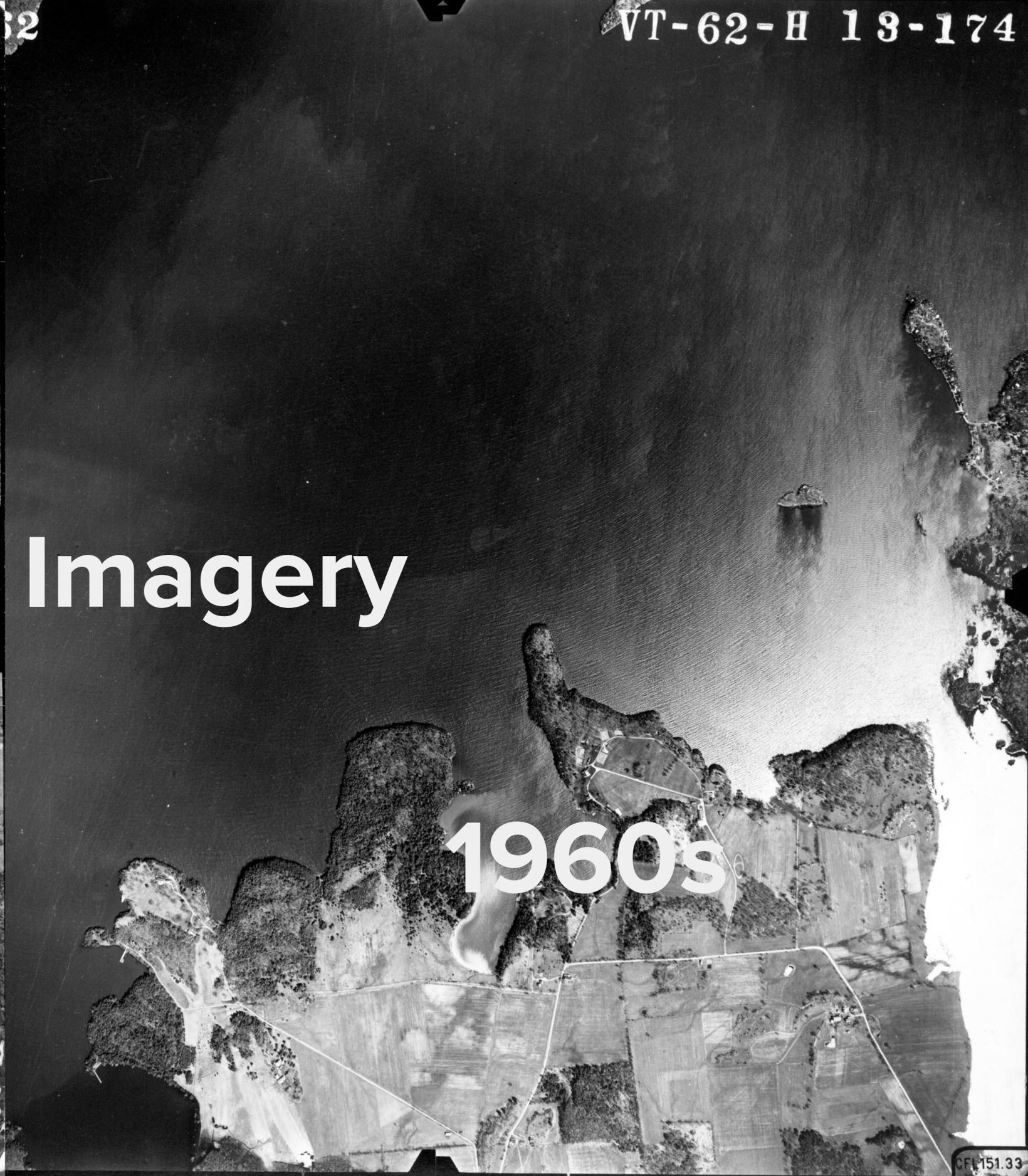
- Minimum 30cm resolution
- Accuracy within 73.4cm meeting NSSDA accuracy





1940s

# Historic Imagery



1960s

FEA 24-1447

9-22-41

VT-62-H 13-174

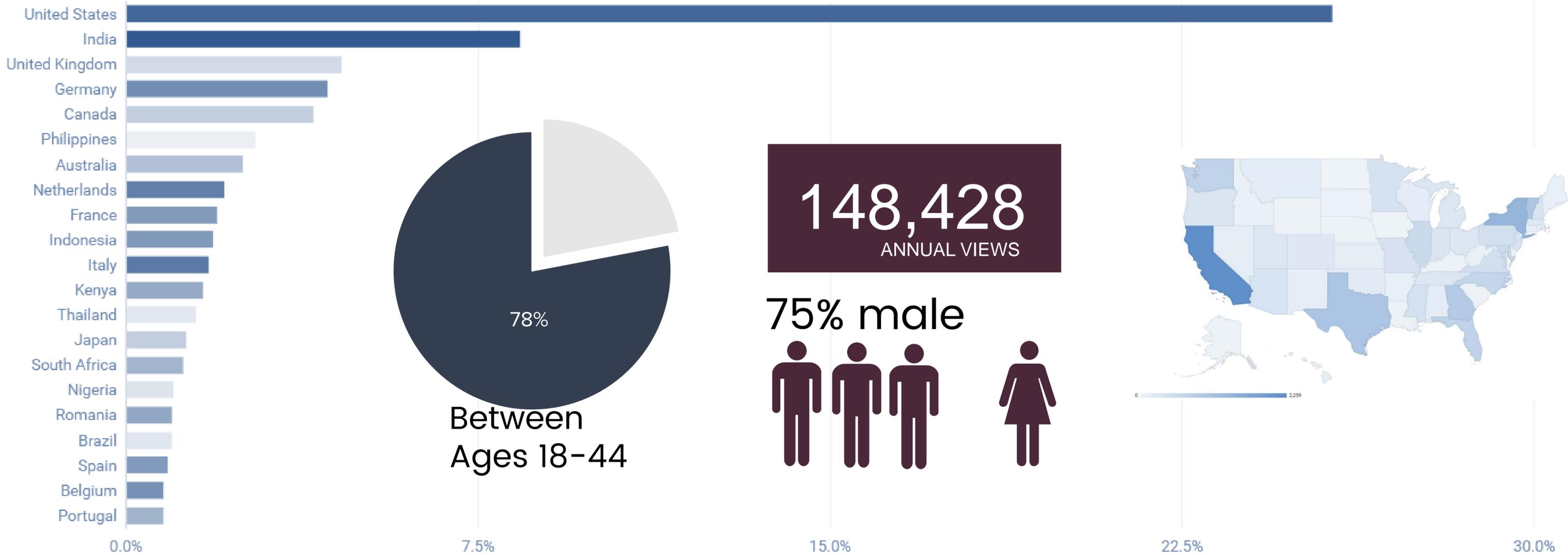
CFI 151.33



# Training Program Overhaul



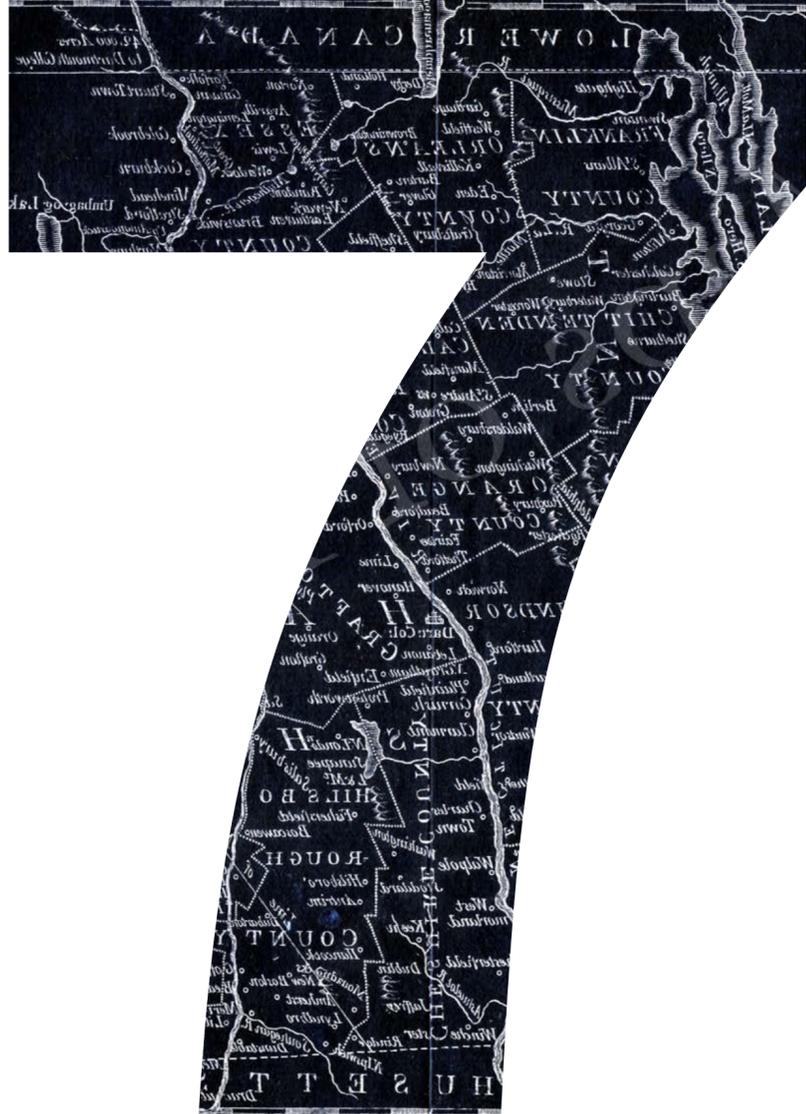
# Webinar Series





# Geographic Information Technology Infrastructure Evaluation and Reconfiguration





# Map Viewers



**VERMONT INTERACTIVE MAP VIEWER**  
VERMONT CENTER FOR GEOGRAPHIC INFORMATION

Home | Navigation | Data | Draw | Query | Measure

Pan | Zoom In | Zoom Out | Zoom to Town | Full Extent | Previous Extent | Bookmarks | Google Street View

Layers | Quick Tools

- Base Maps
- Operational Layers
- Planning Atlas
- Agriculture
- Biological Resources
- Cultural Resources
- Climate Change
- Development
- Economic Development
- Energy
- Environmental
- Facilities

**PLANNING ATLAS**  
Department of Housing and Community Development

Home | External Links

Initial View | Identify | Print | Export | Share | Layer List | Filter | Google Street View | Query | Point | Distance | ACCD Disclaimer

Layers | I want to...

Planning Resource Atlas

- Designations, Town Plans & Bylaws
  - Designated Downtown
  - 0.5 mile downtown planning buffer
  - Village Centers
  - 0.25 mile village planning buffer
  - Growth Center
  - New Town Centers
  - Neighborhoods
  - Town Plan & Bylaws
  - Municipal Planning Grant Project
  - TIF District Boundaries
- Boundaries

**Natural Resources Atlas**  
Vermont Agency of Natural Resources

vermont.gov

Quick Tools... | Search...

Sign in

semaps

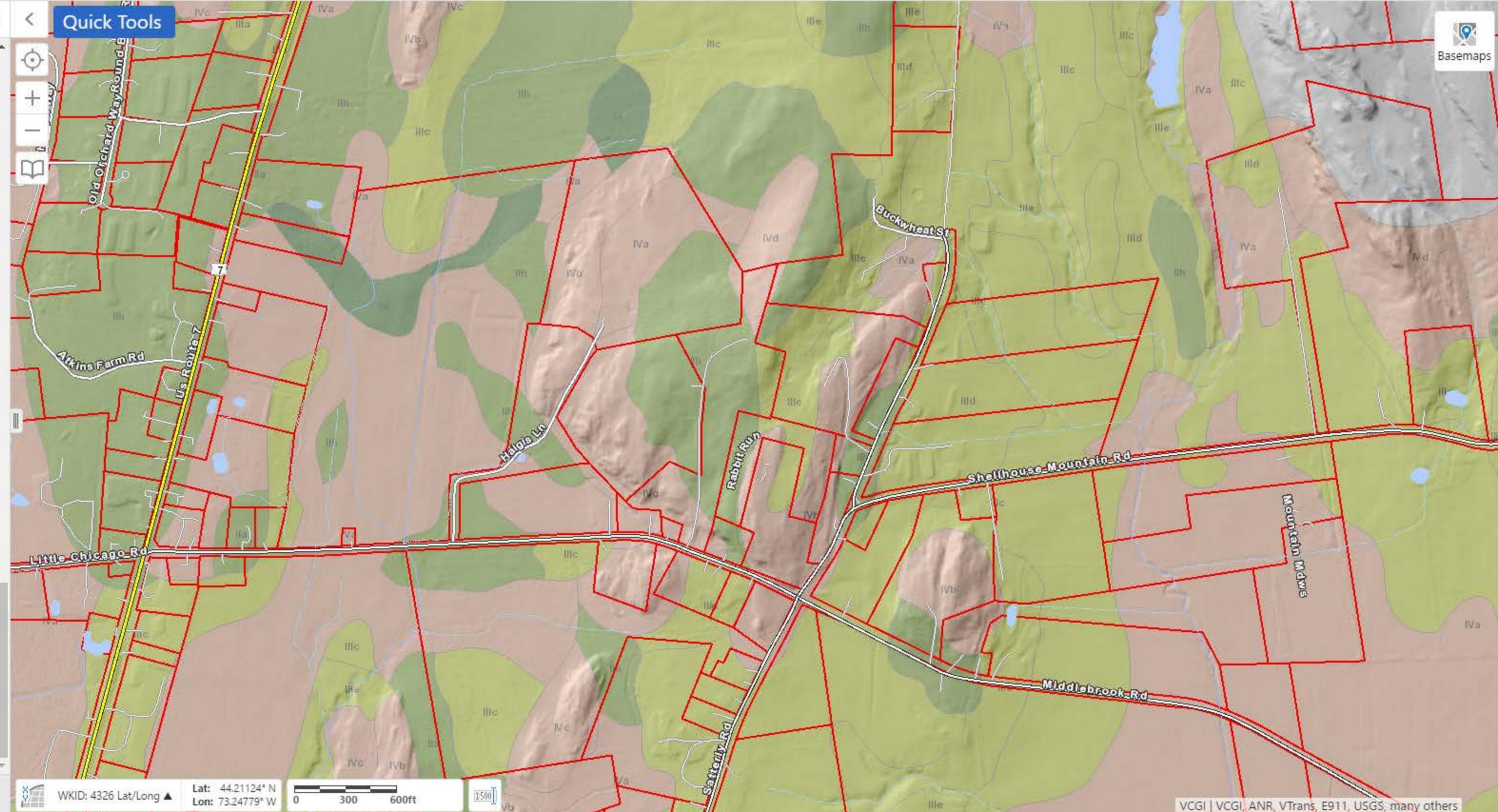
Image courtesy of NASA Earthstar Geographics SIO, © 2017 Microsoft Corporation

VCGI | VCGI, ANR, VTrans, E911, USGS, many others

<http://maps.vermont.gov/vcgi/html5viewer/?viewer=vtmapviewer>

Layers

- Buildings and Facilities
- College Campus Buildings
- Hospitals
- Public Libraries
- Schools
- Geologic
  - Aggregate sand, gravel and ston...
  - Surficial Geology
  - Mineral resources
  - Soils
    - Soils - NRCS soil survey
    - Soils - Prime Agriculture
    - Soils - Onsite sewage disp...
- Land Cover/Use
- Landmarks
- Recreation
- Transportation
- Utilities
- Water Resources
- All Imagery





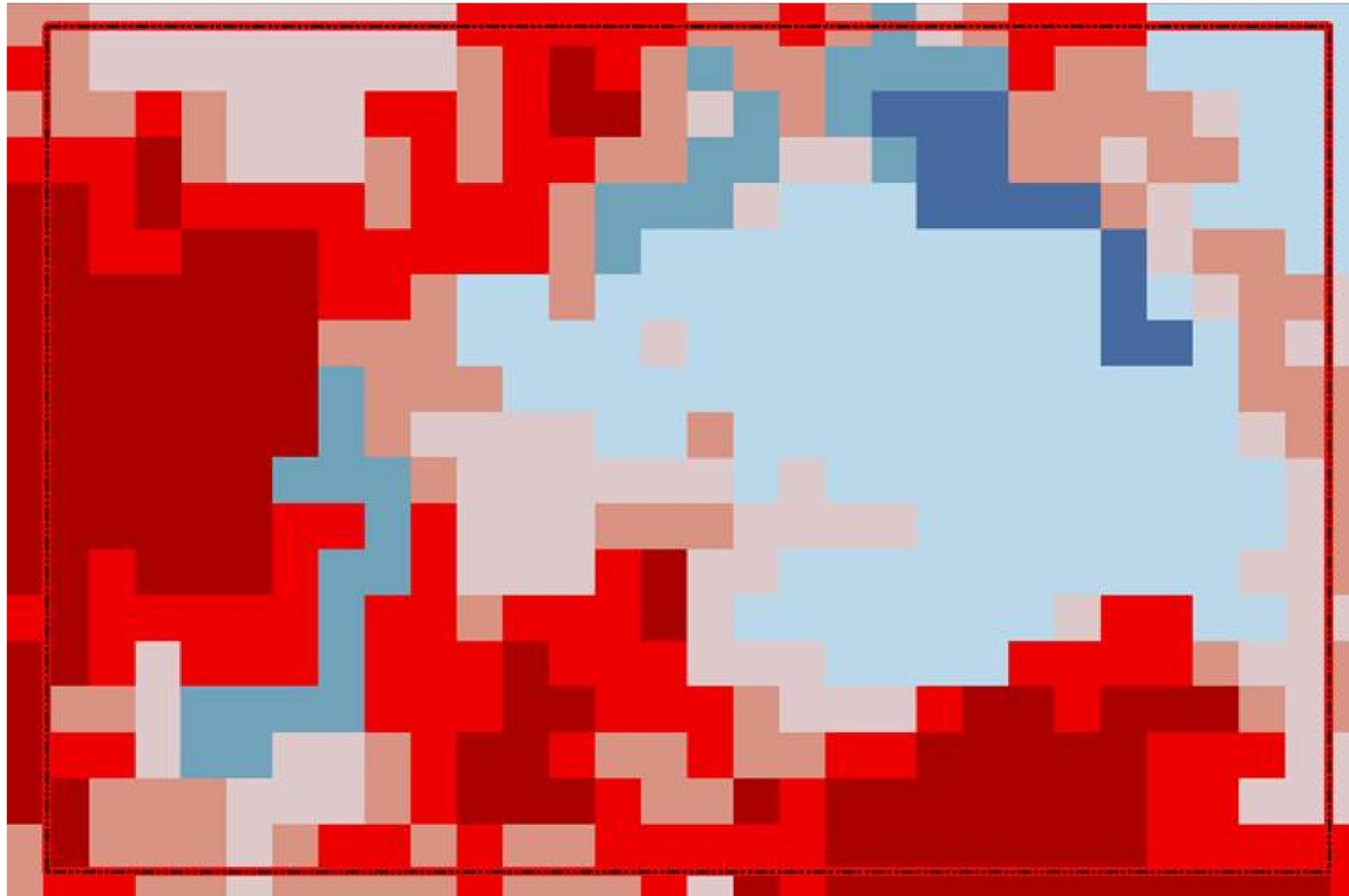
# High Resolution Land Cover / Impervious Mapping



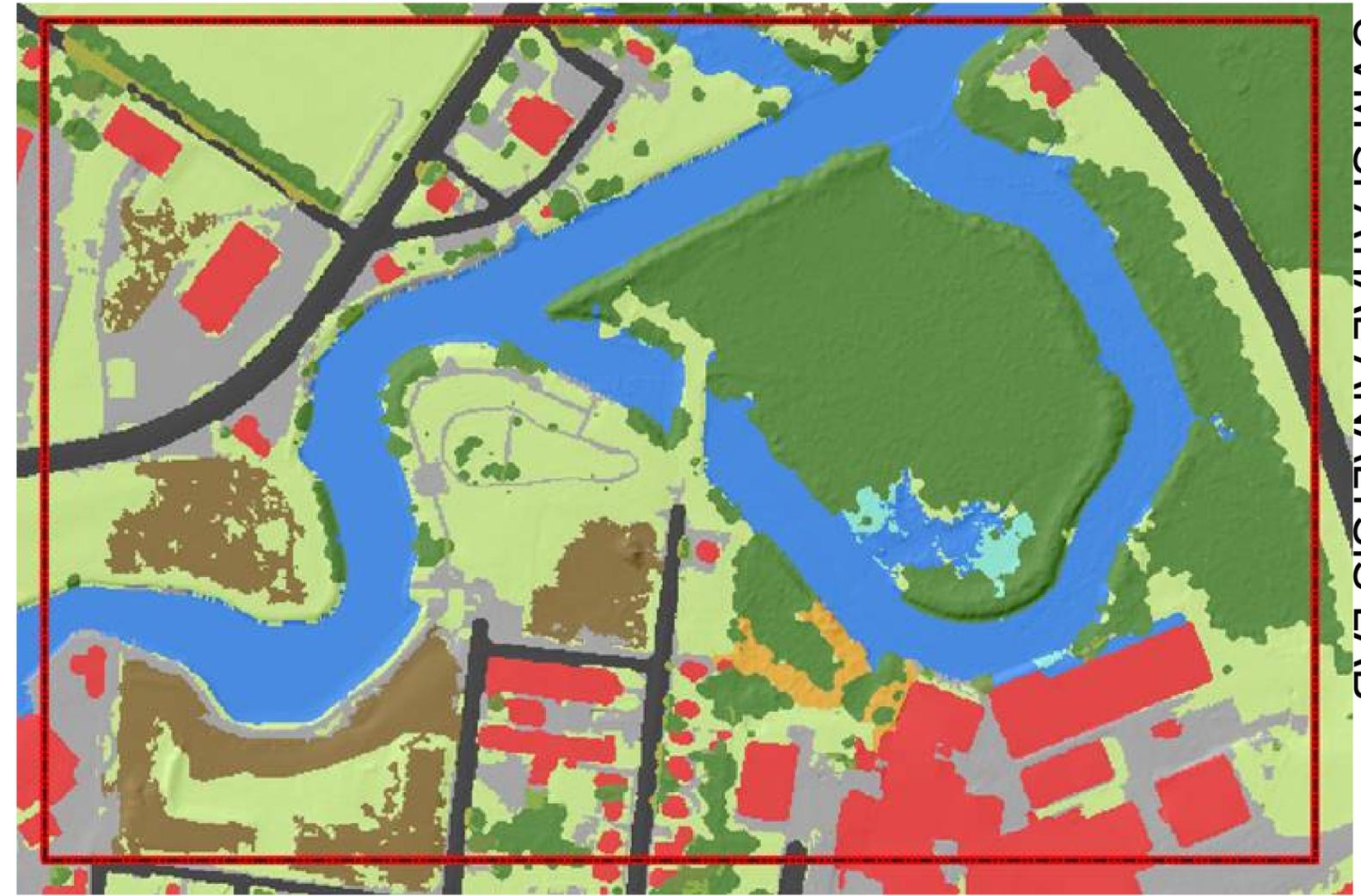
# High Resolution Land Cover

---

30M Resolution Land Cover

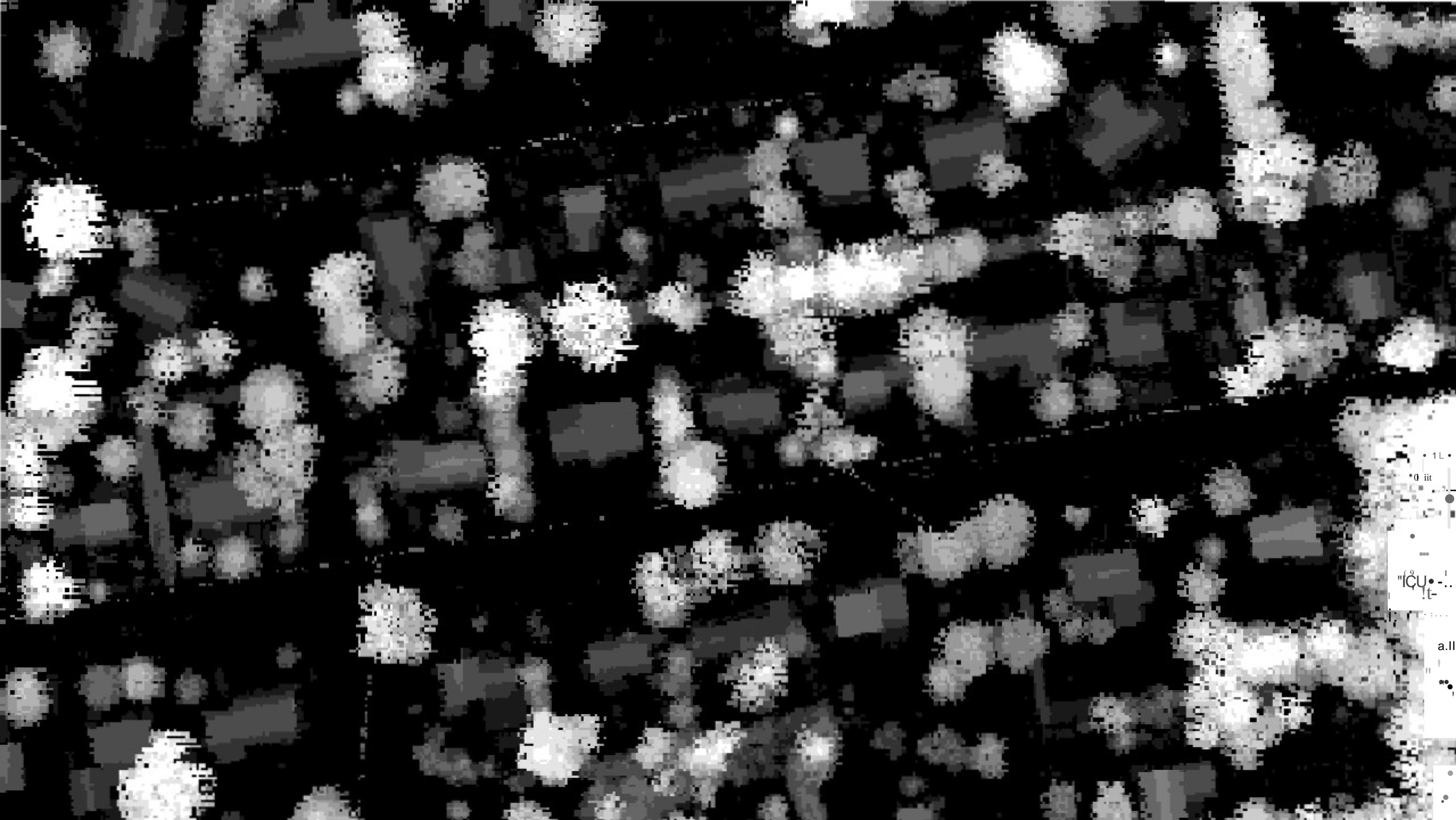


1M Resolution Land Cover

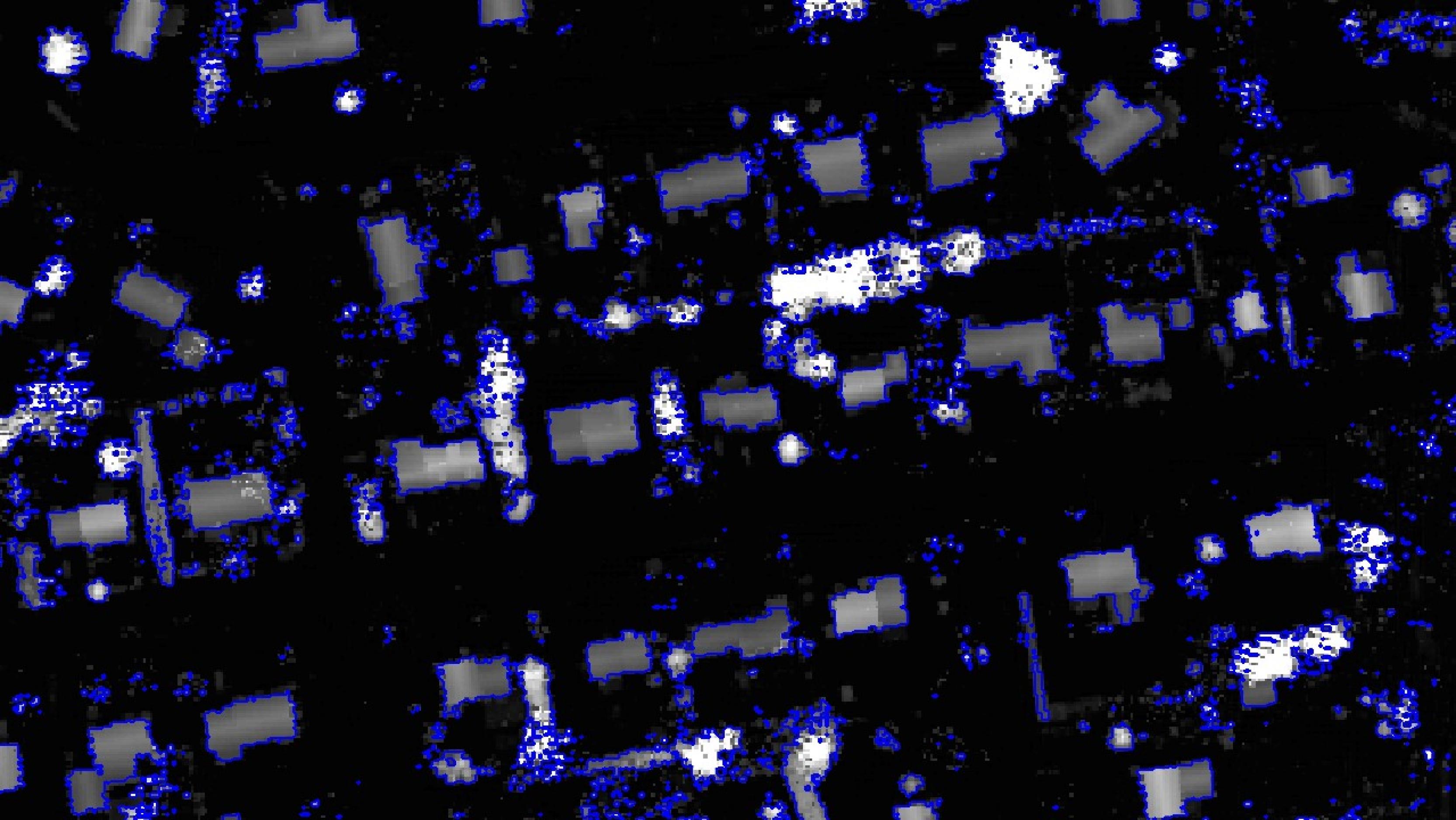


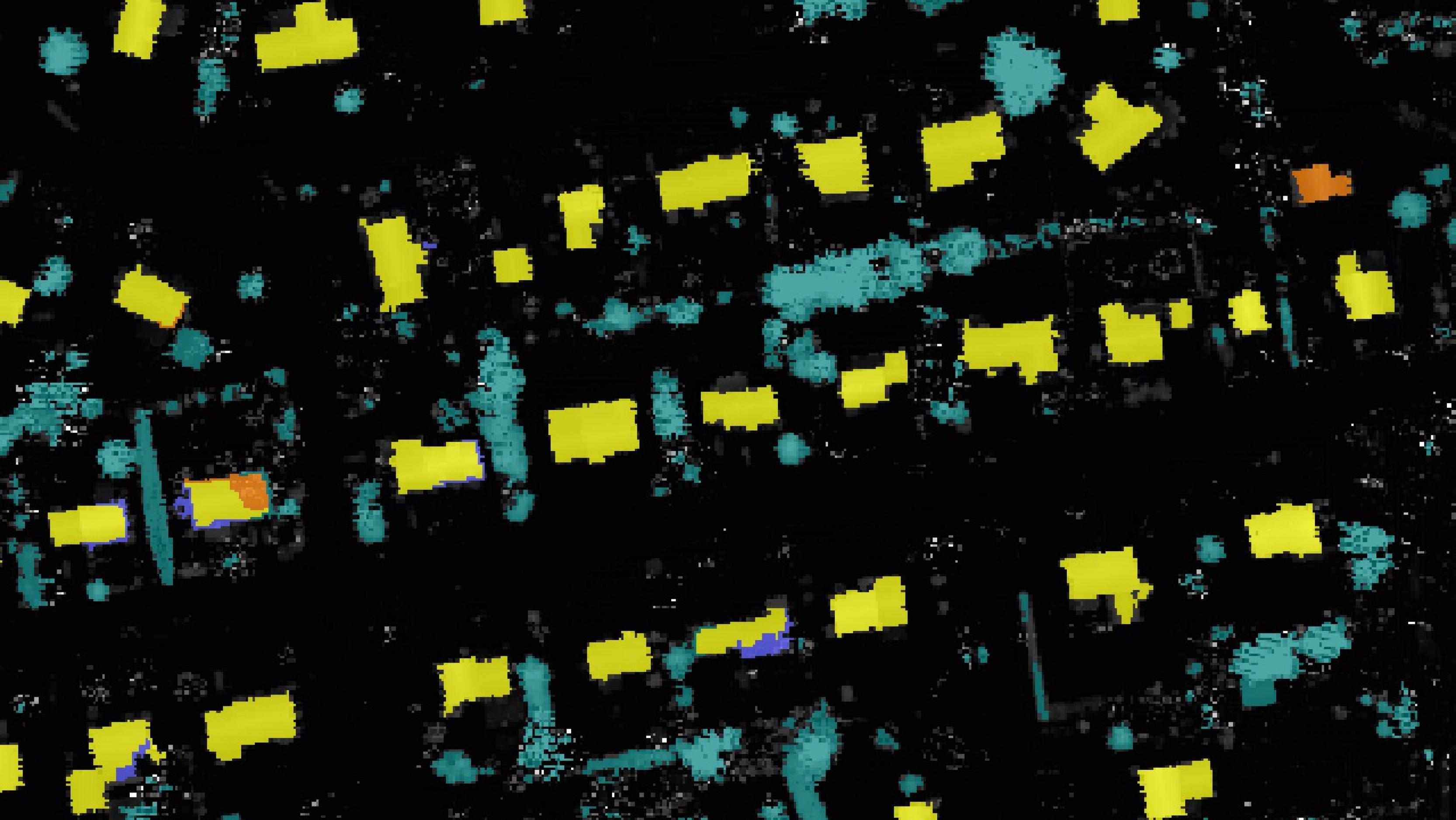
JVM SPATIAL ANALYSIS LAB

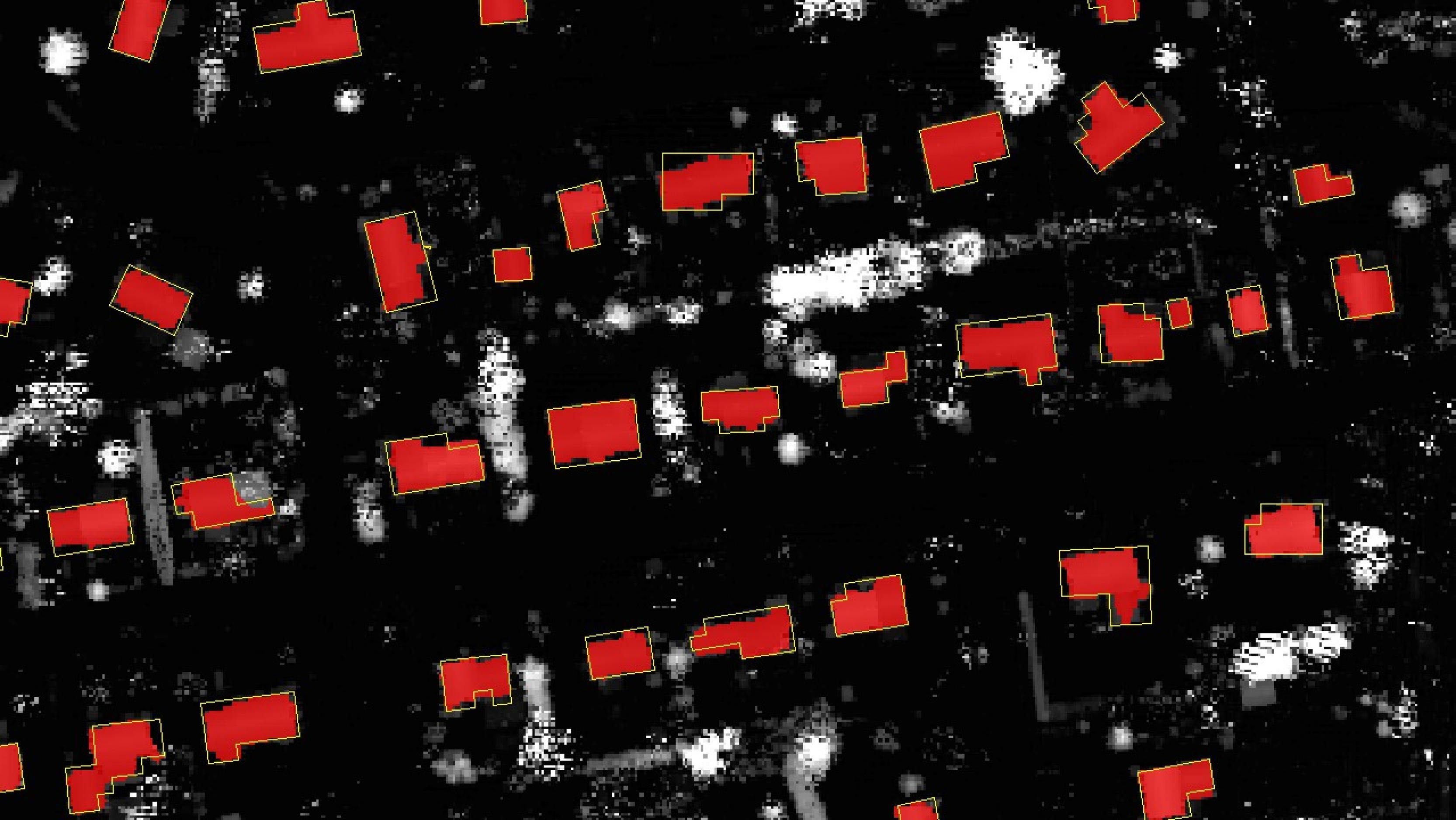




• 1L •  
0 lit  
"fçy • - !  
!t  
a.ll  
"









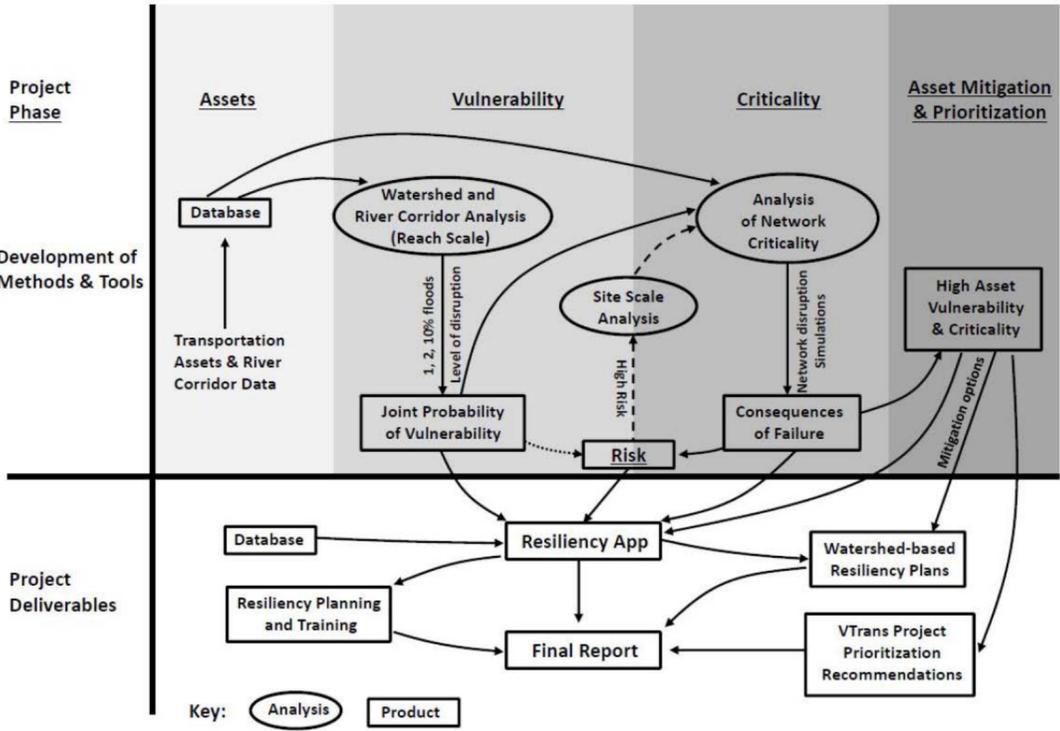
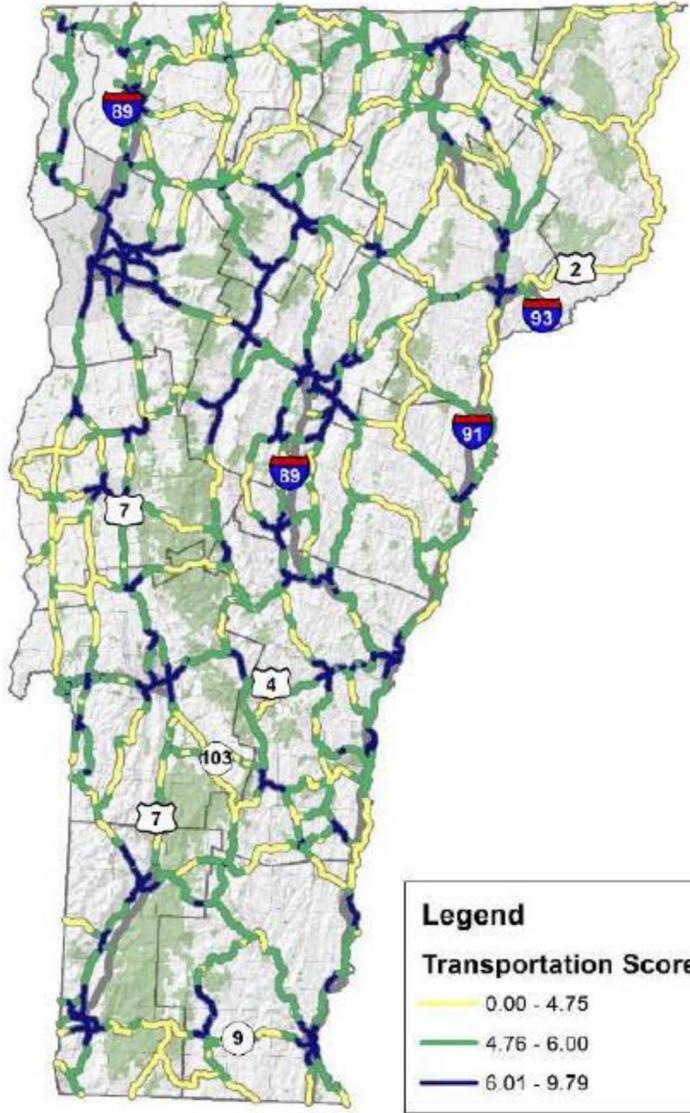


# DATA DRIVEN DECISIONS



# Transportation Score

# Recreation Score

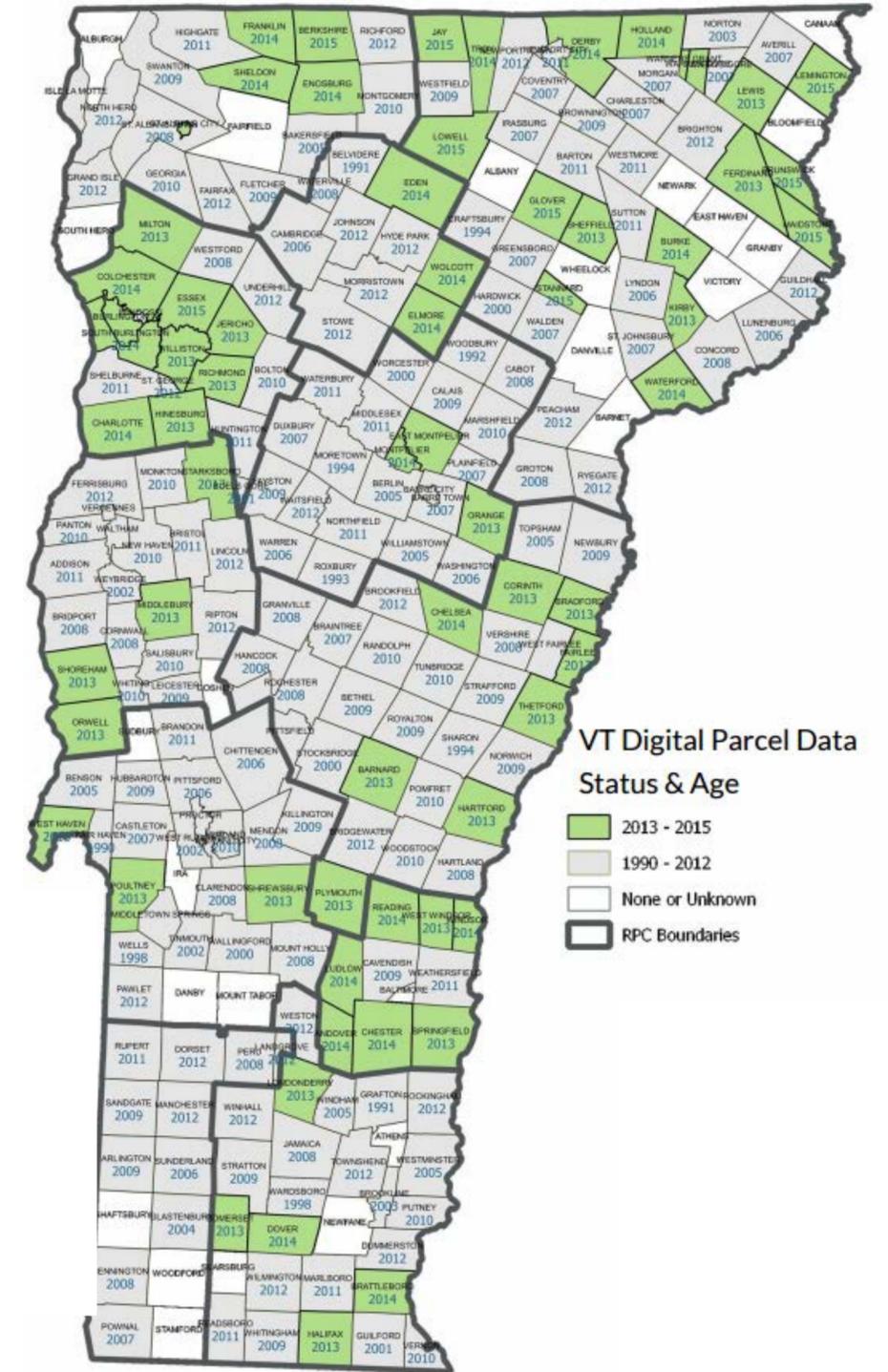
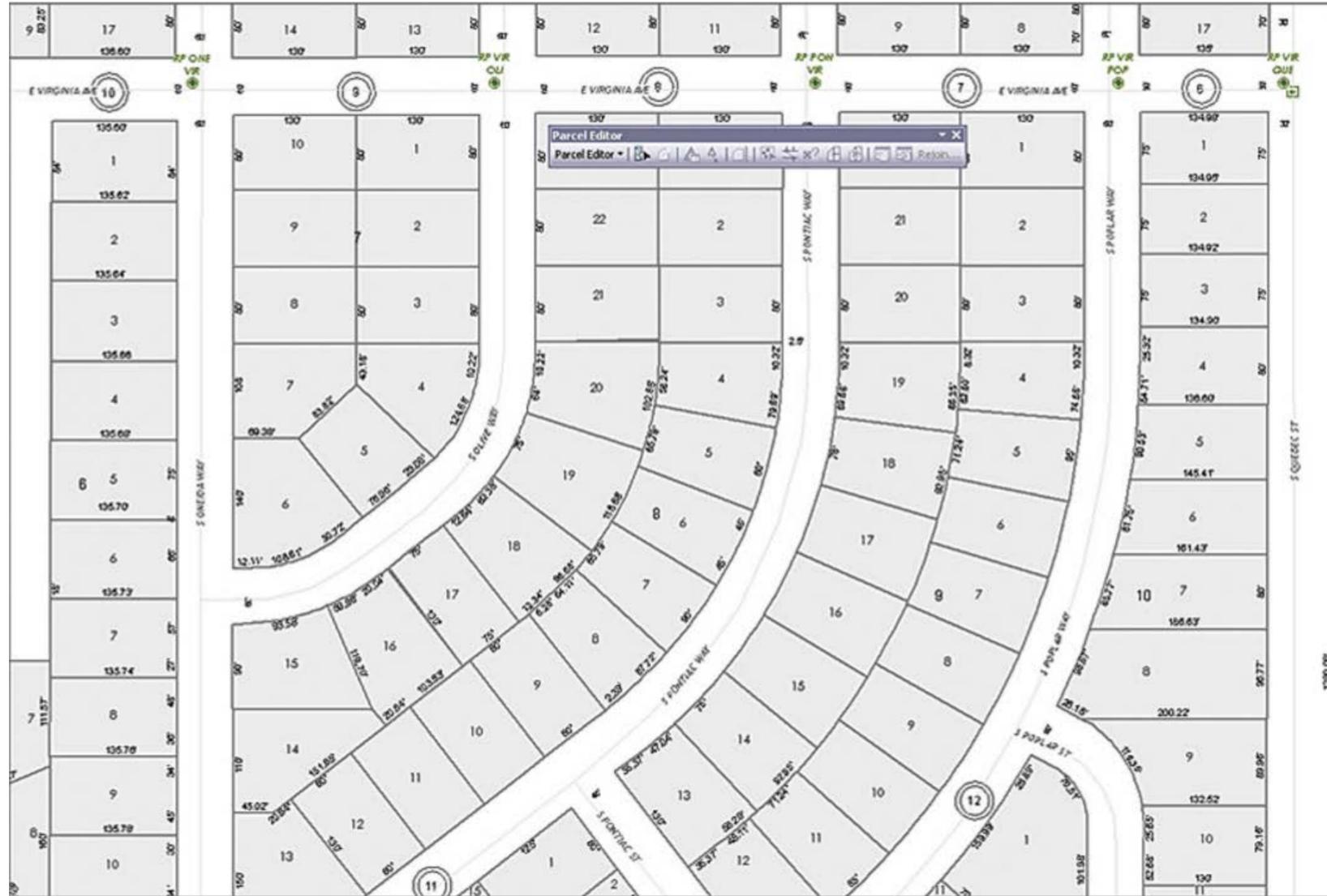


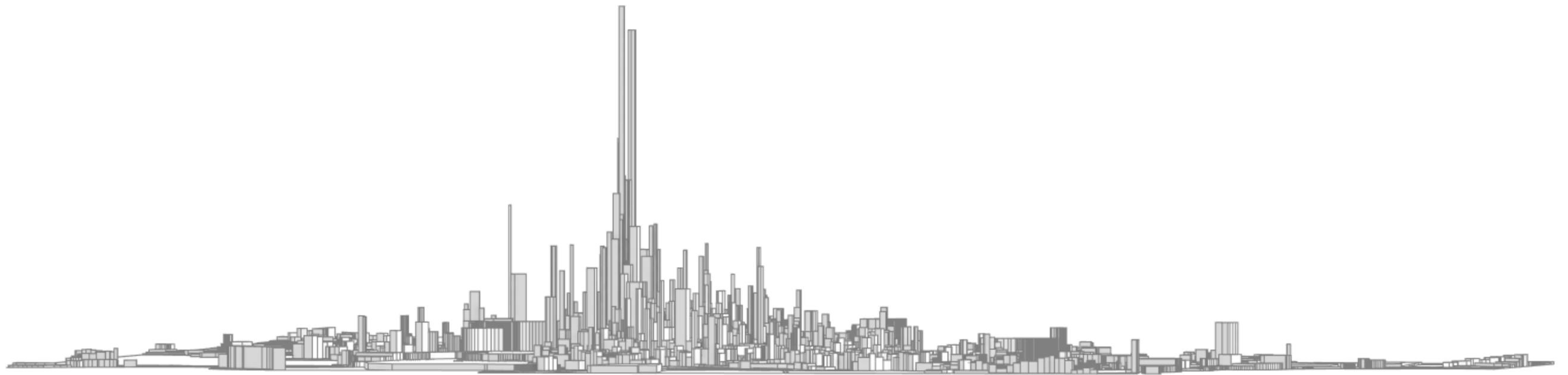


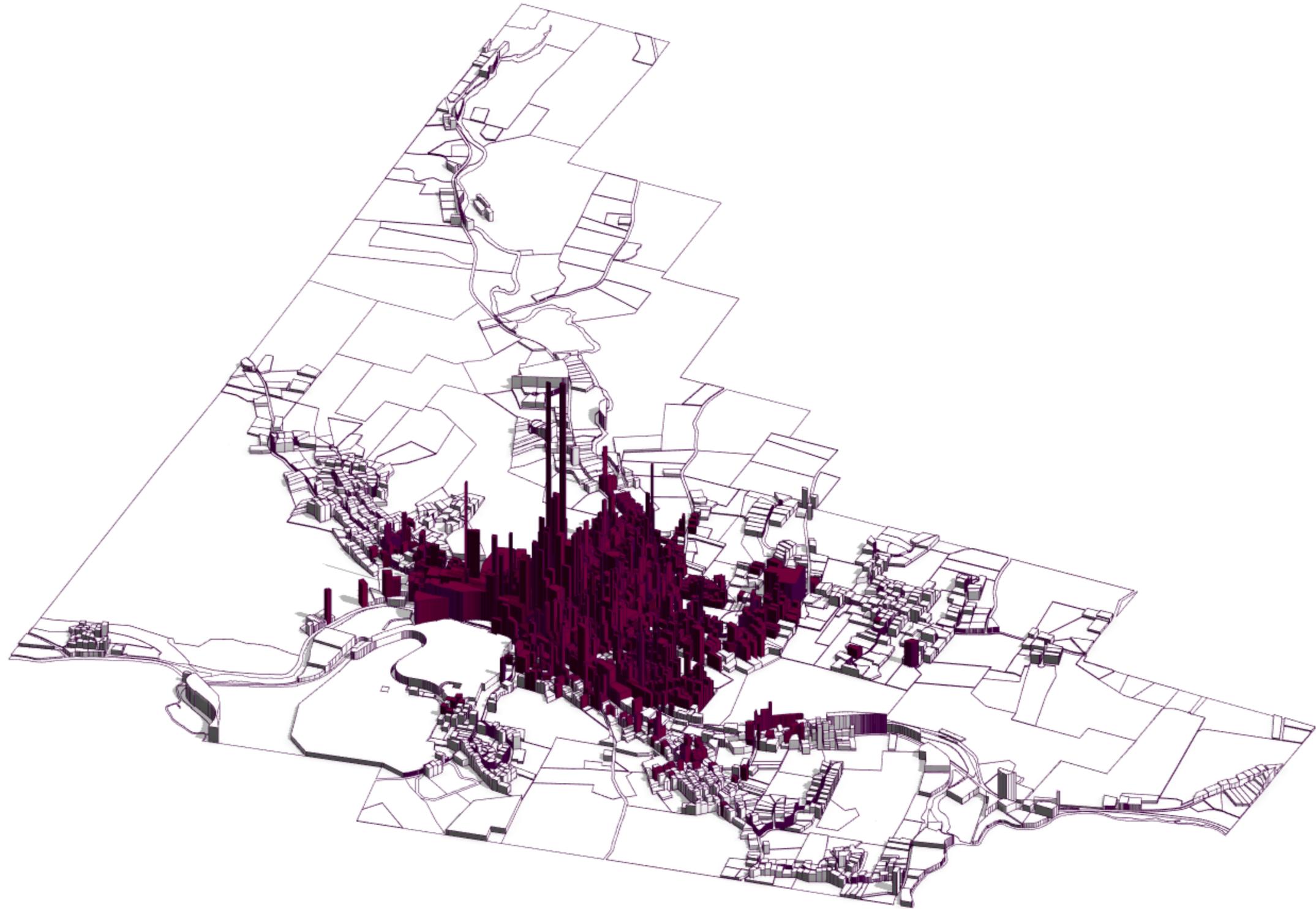
# Statewide Parcel Data



# Statewide Parcel Data

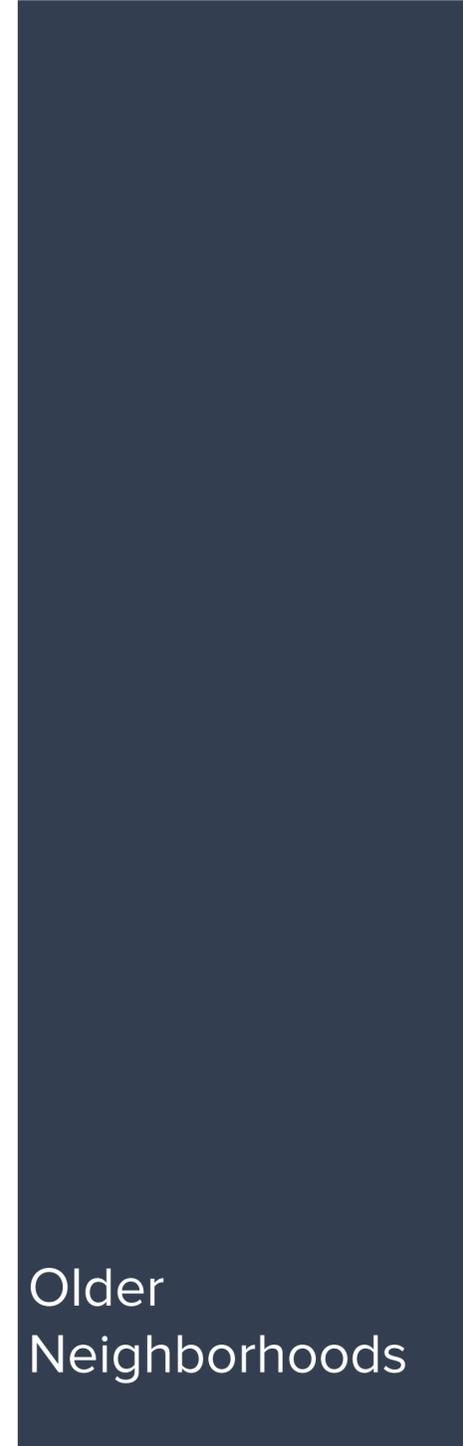






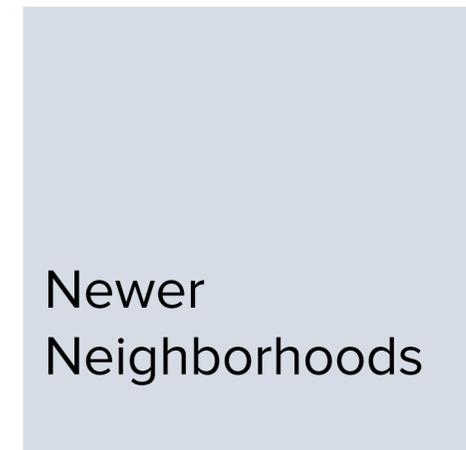
# Property Value per Mile of Road for Older (Pre-1960) and Newer Neighborhoods in Montpelier

\$31 Million per Mile



Older  
Neighborhoods

\$9.5 Million per Mile



Newer  
Neighborhoods

# Statewide Parcel Data

---

**24 V.S.A. § 4464. Hearing and notice requirements**

...

**(B) Written notification to the owners of all properties adjoining the property subject to development....**



# Municipal Tax Parcel Viewer

The screenshot displays a web-based interface for viewing municipal tax parcels. A map shows several parcels outlined in pink, with one parcel at 10 1/2 Valley Terr highlighted in yellow. A pop-up window is open over this parcel, displaying the following information:

- 10 1/2 Valley Terr** [Clear](#)
- Printkey/TaxID:** 135.67-2-18
- Parcel SBL:** 13506700020180000000
- Owner Name:** Santoro, Robert
- Property Class:** 210
- Other Maps:** [Google](#) | [Bing](#) | [Mapping WC](#)
- Mailing Labels Using:** Property Address ▼
- Enter Buffer Distance:** 250 Feet (Max.1000), **OR**
- Query adjacent parcels only [Create Labels](#)
- [Print Labels \(PDF\)](#) [Export to CSV File](#)

The background map shows various other parcels with addresses and tax IDs, such as 14 Valley Terr (135.67-2-20), 12 Valley Terr (135.67-2-19), 11 Valley Terr (135.67-2-35), 14 Tamarack Rd (135.67-2-44), 9 Valley Terr (135.67-2-36), 10 Tamarack Rd (135.67-2-43), 6 Tamarack Rd (135.67-2-42), and 2 Tamarack Rd (135.67-2-41). Other streets visible include N Ridge St, Neutron Ave, and Valley Terr.



# Open Data Portal



STATE OF VERMONT

# Vermont Open Geodata Portal

[DATA](#)

[WEB SERVICES](#)

[APPLICATIONS](#)

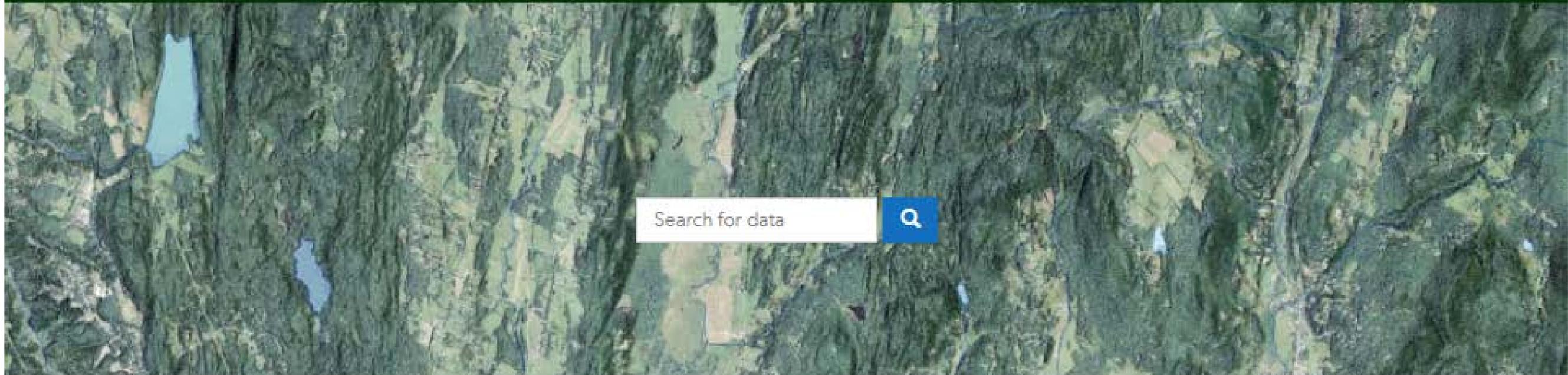
[DEVELOPERS](#)

[CONTACT US](#)

[HELP](#)

My Data

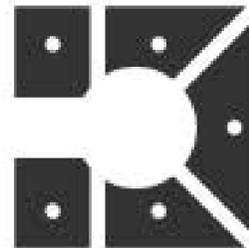
 Publisher\_VCGI ▾



Agriculture



Basemap



Boundaries

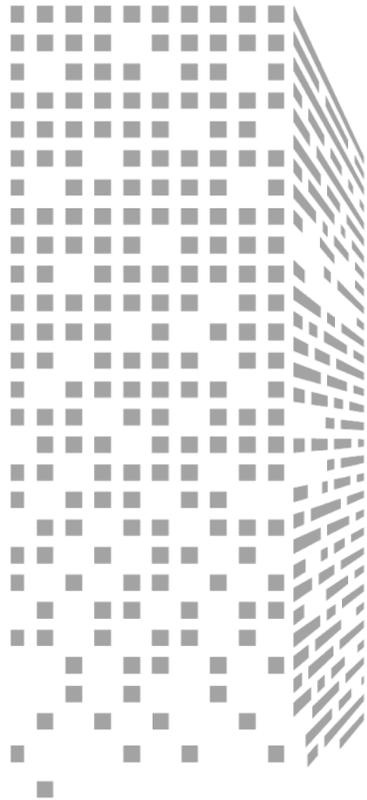


Climate



Demographic +  
Economic

Monthly Users  
5,844



VCGI  
Web & Portal

# Data Portal

01 Data  
Contributors



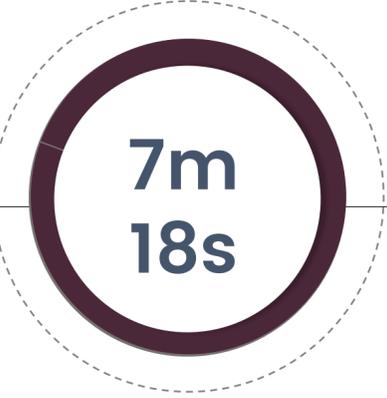
02 Datasets

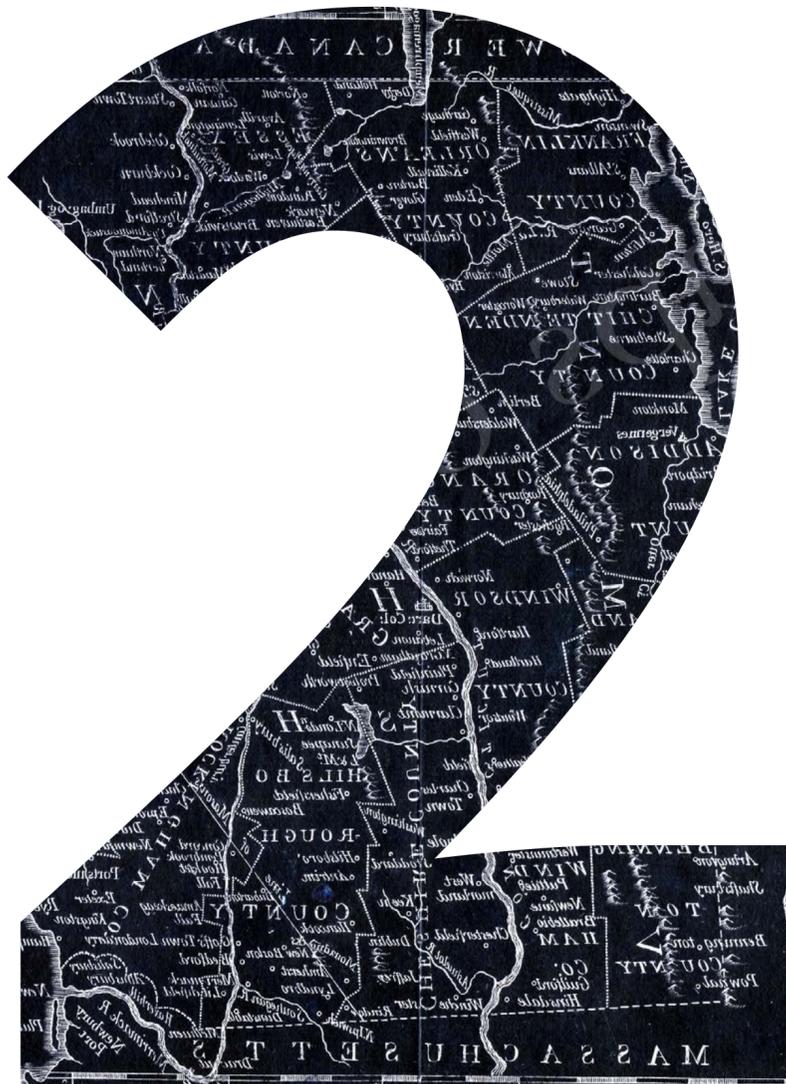


03 Bounce Rate



04 Average Time



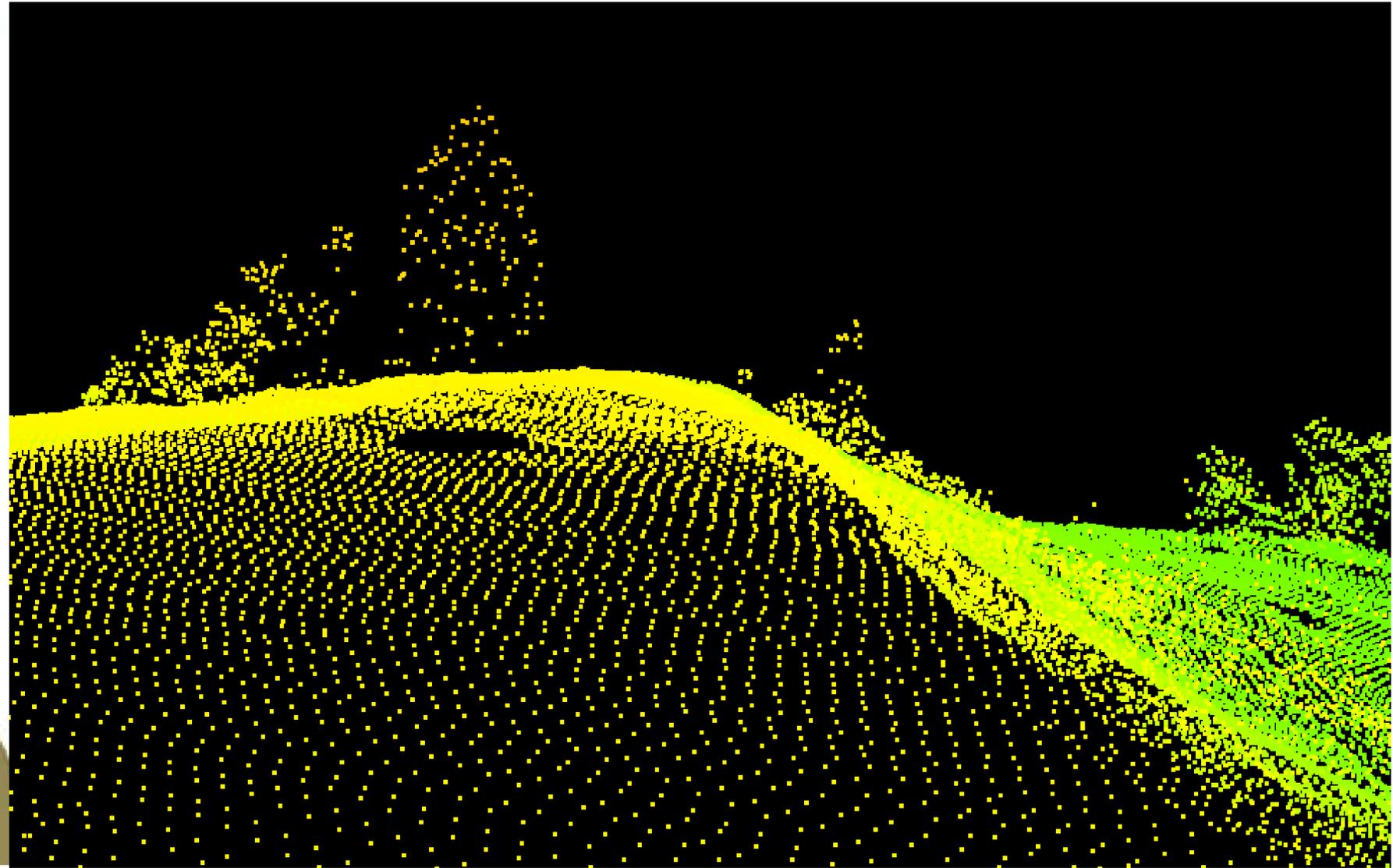
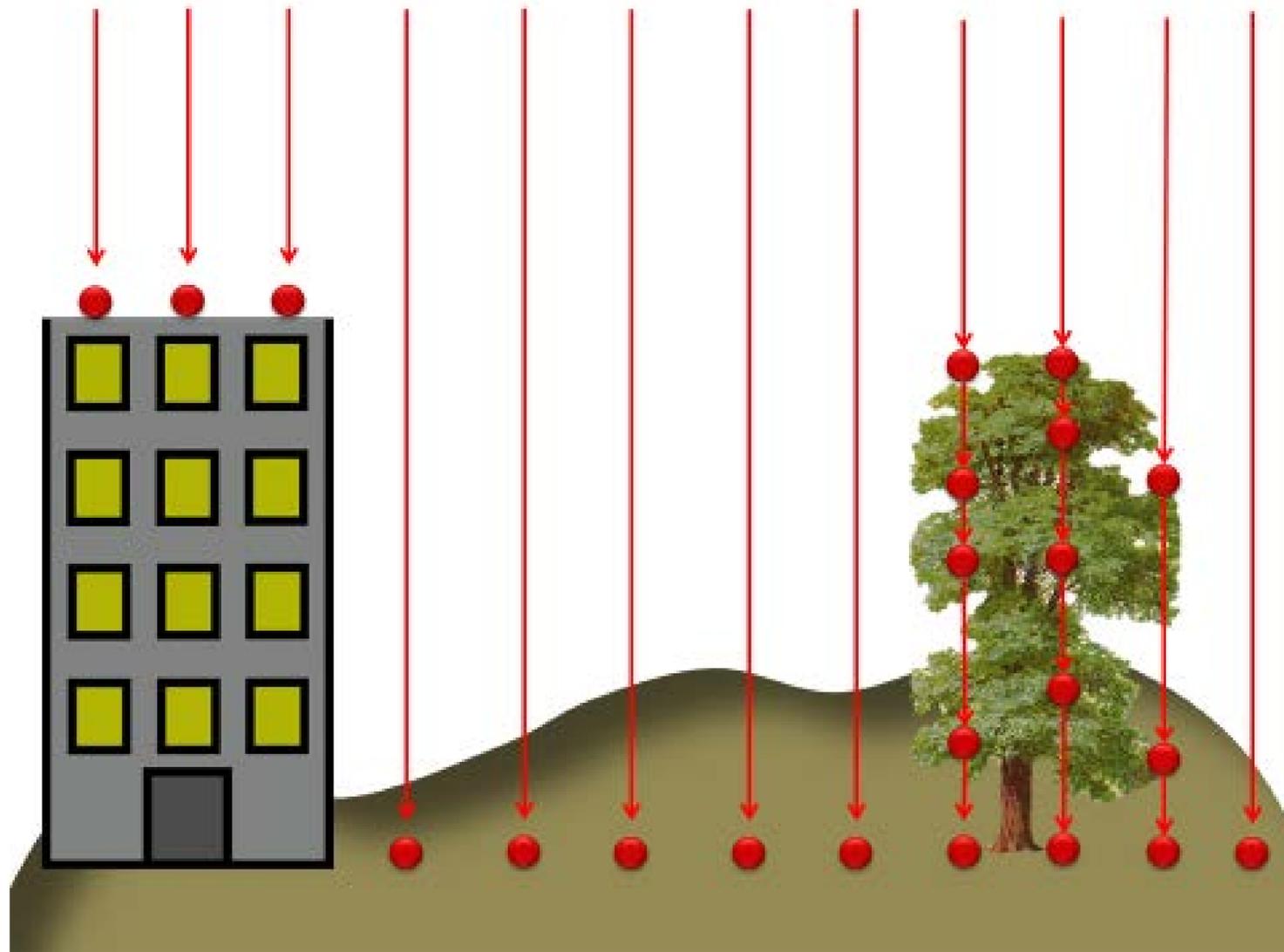


# Lidar

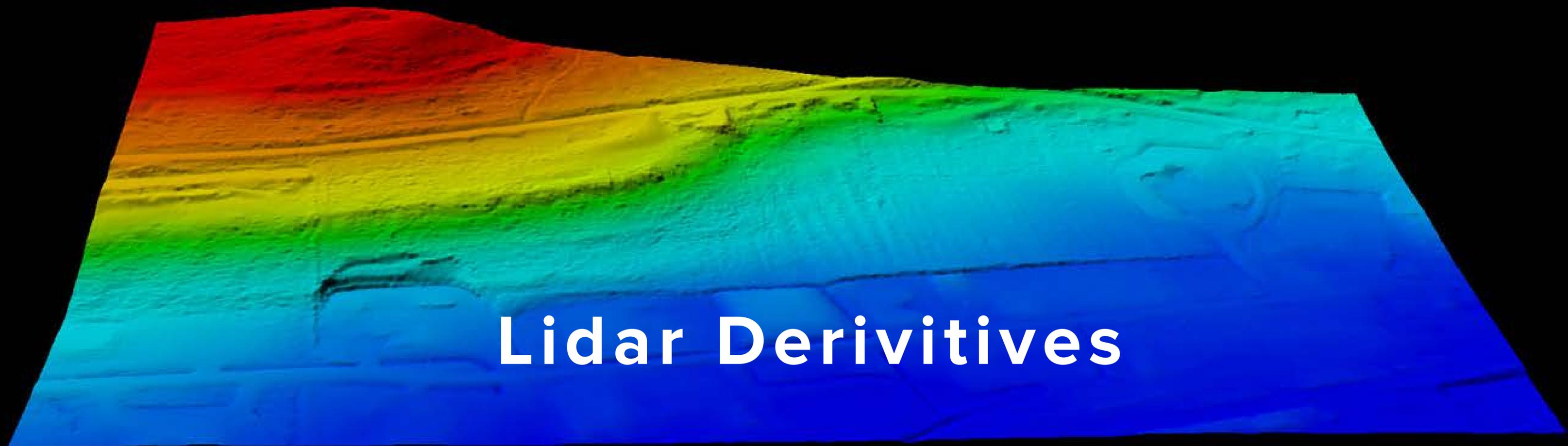
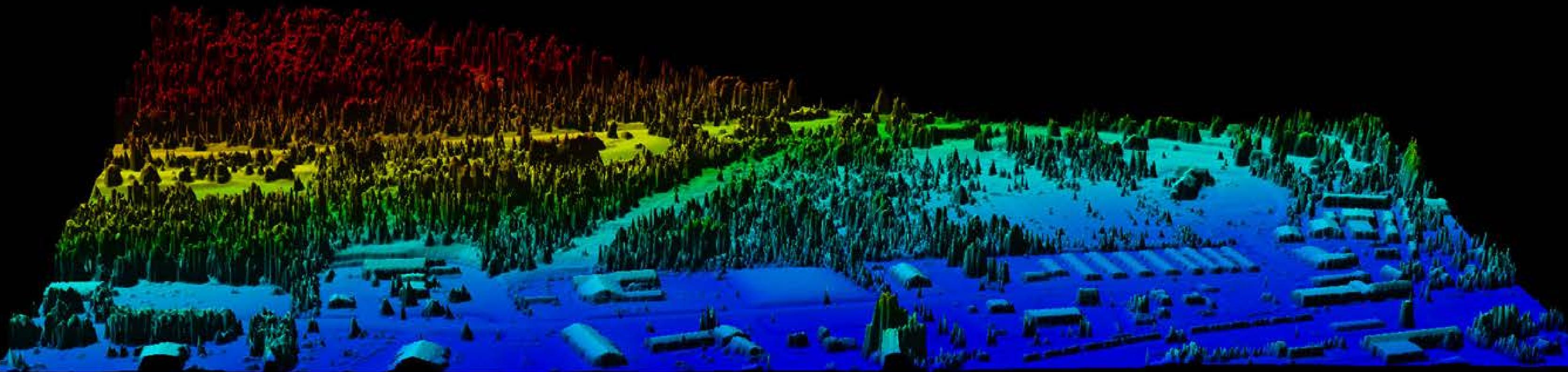
.



# Lidar







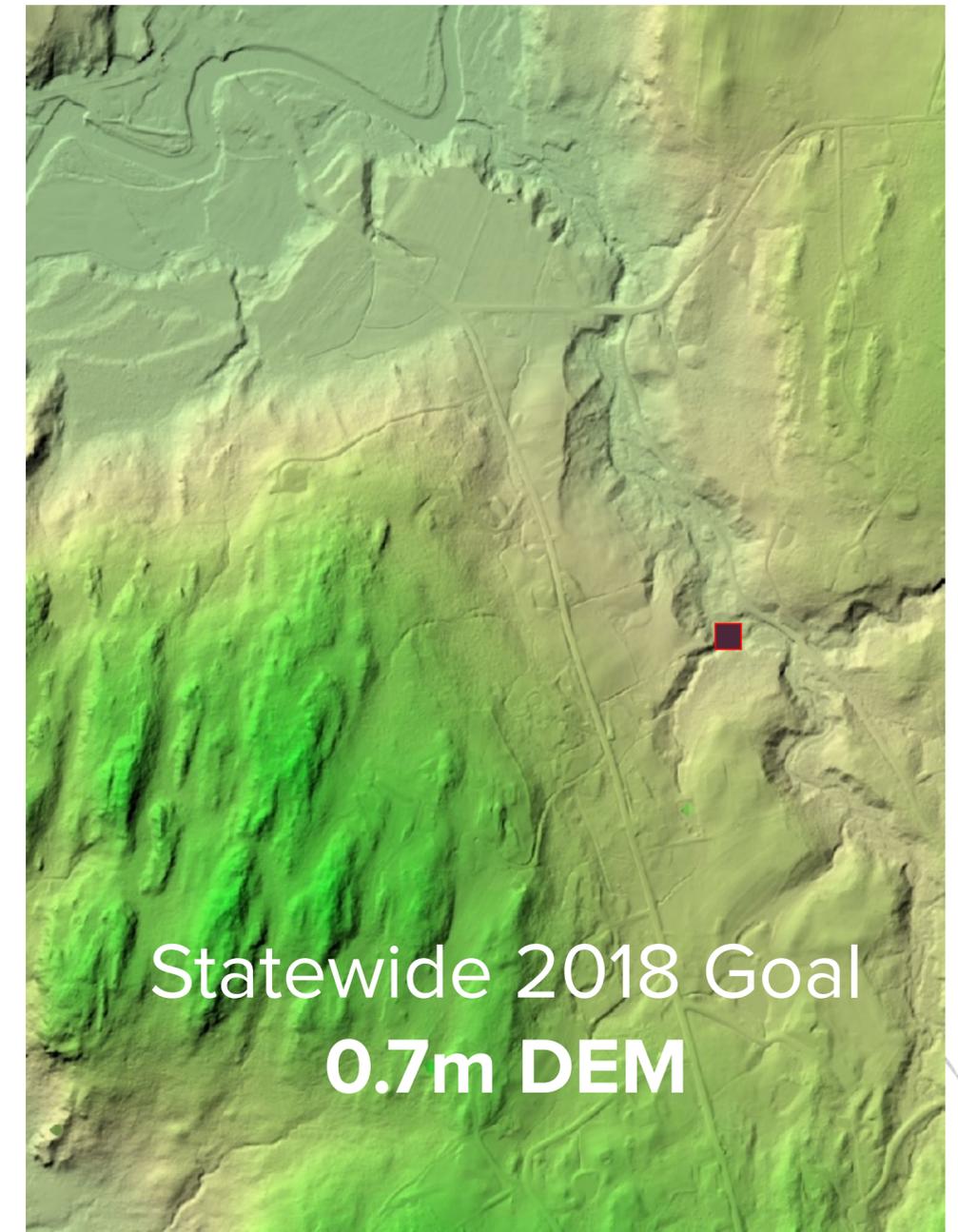
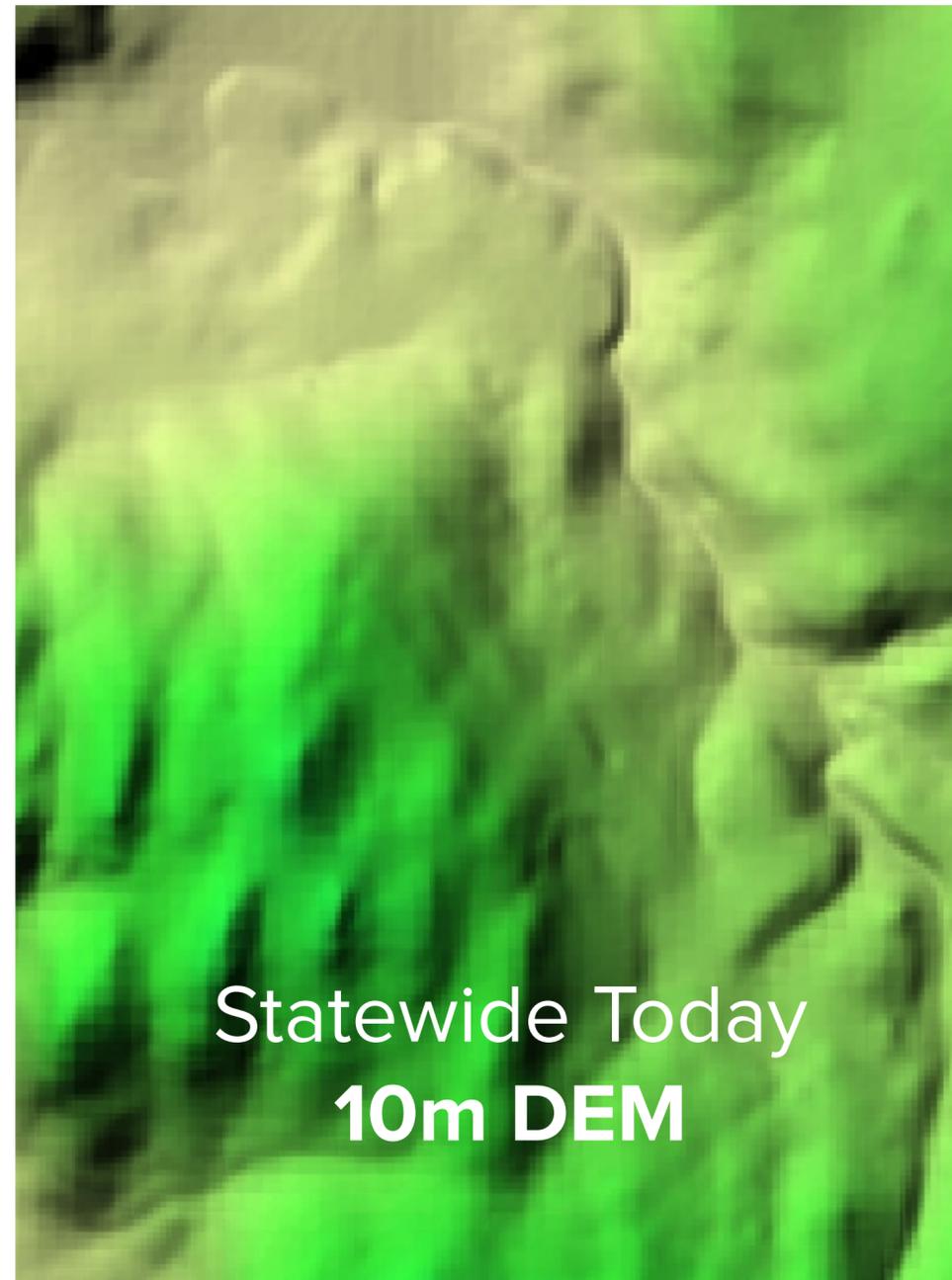
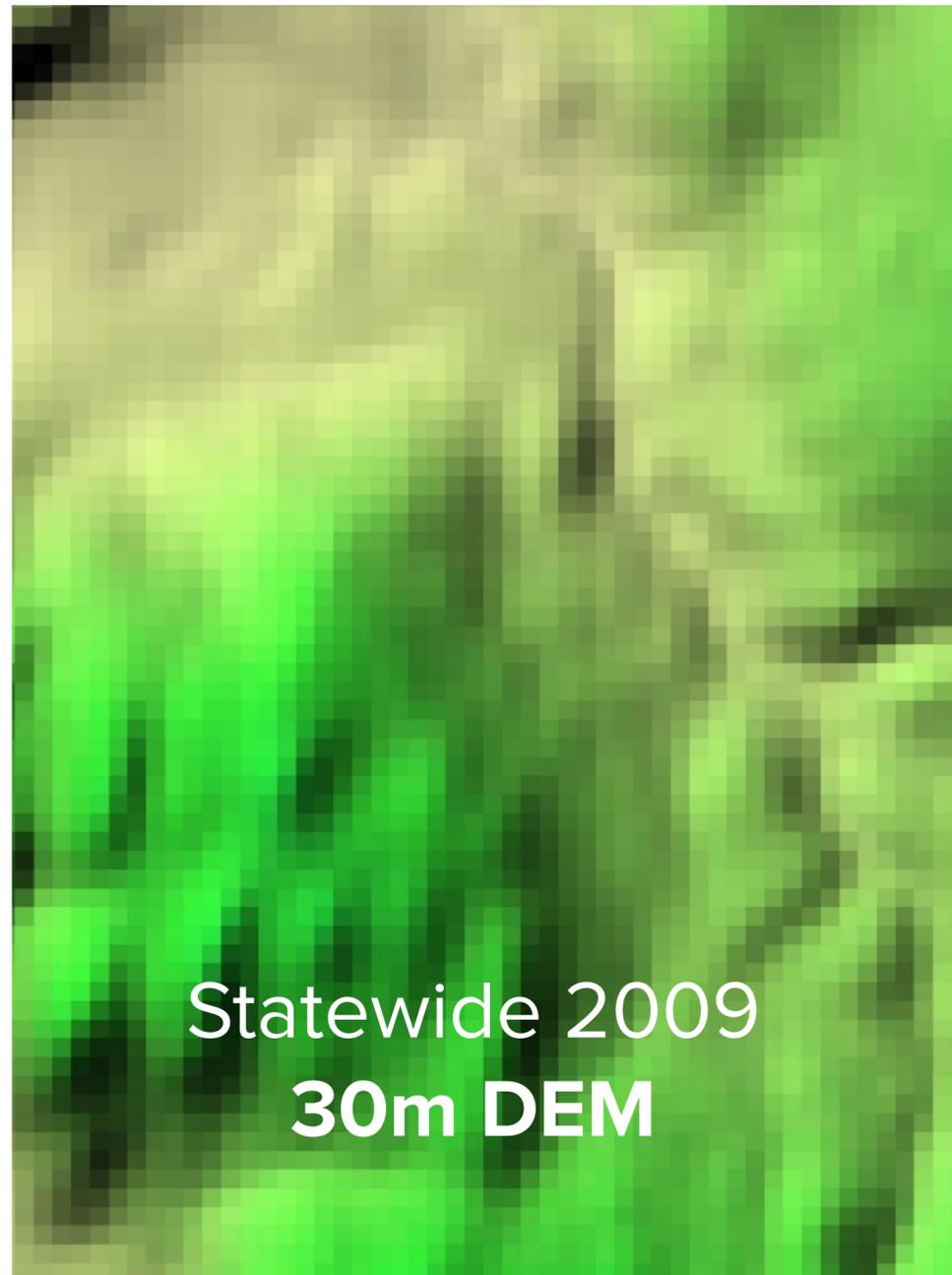
**Lidar Derivatives**

# Lidar Resolution

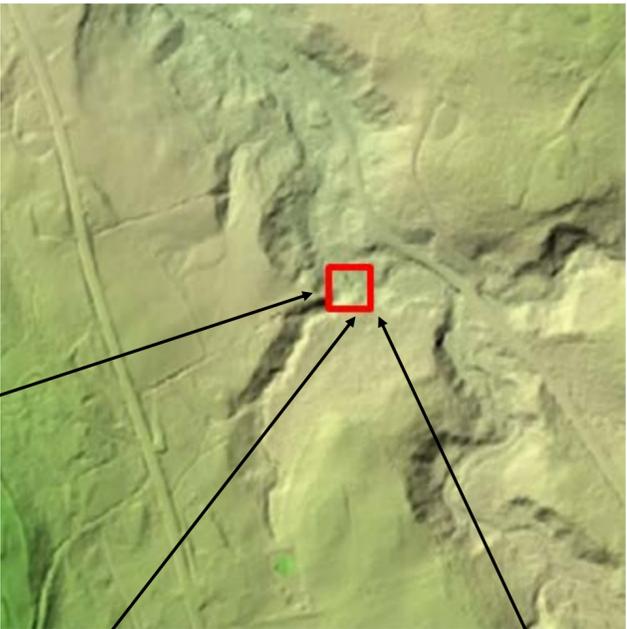
---

**National Elevation Dataset:** Reported vertical accuracy= 8 ft.

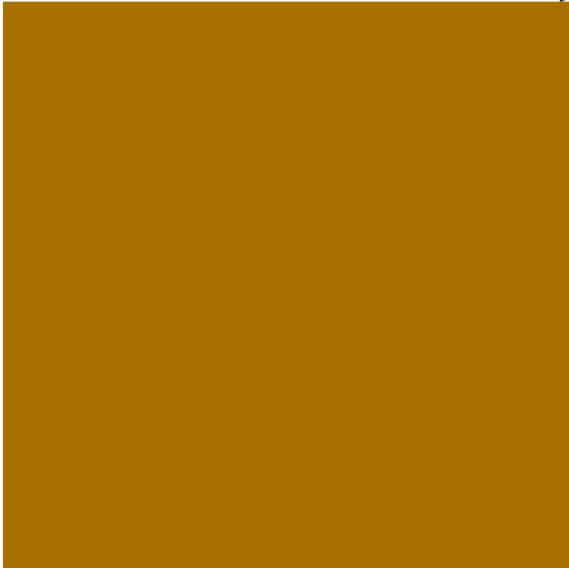
**LIDAR:** Vertical accuracy= 3.6 in.



# Lidar Resolution

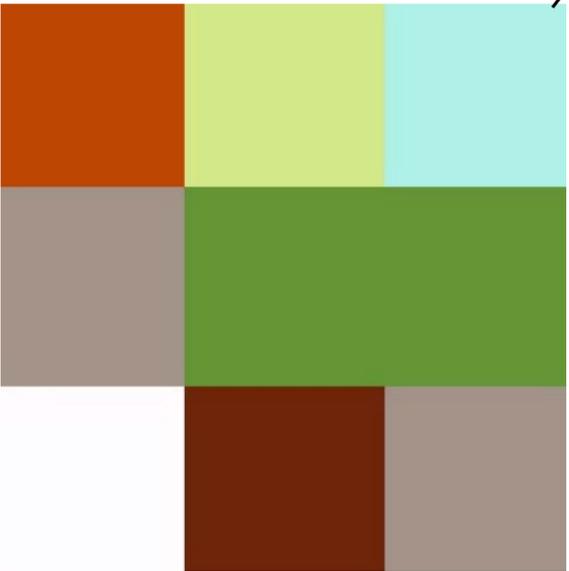


Cell size: 9688 sq ft



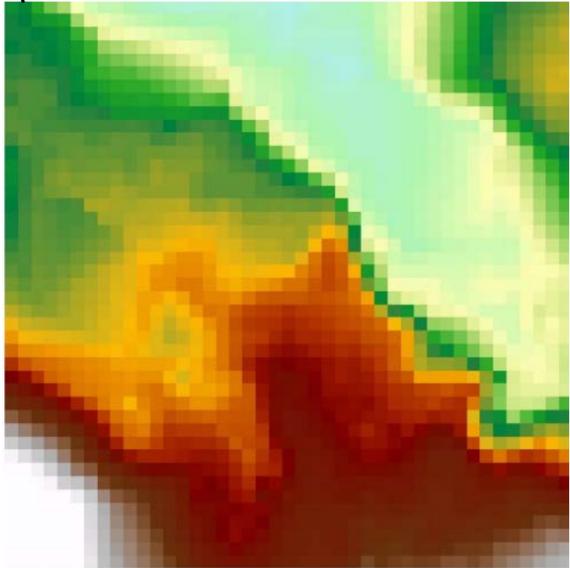
2009  
**30m DEM**

Cell size 1078 sq ft



Statewide Today  
**10m DEM**

Cell size 5.27 sq ft



2018 Goal  
**0.7m DEM**

1836x more detail

Like 340

Tweet

Pin it

Email

Print

Favorite

Share



news+opinion

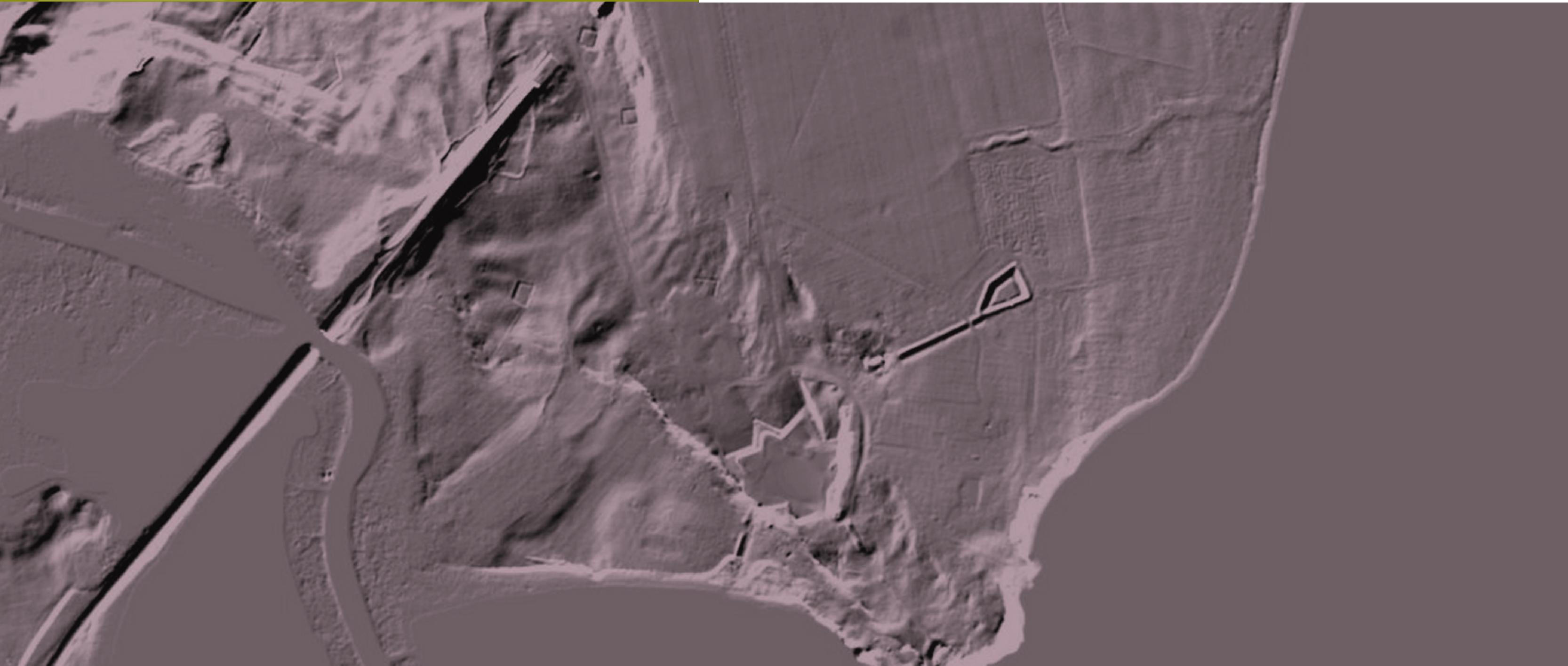
arts+life

home+design

food

music

## For Archaeologists, New Tech for Old Sites



# Solar Potential

Your Configuration ?

4.0kW

.27 || .75 || .85

63.0 Trees Planted

2.72 T Carbon Offset

0.6 Homes Powered

**\$11.4k** Cost

**\$1.42k** Revenue

7 - year payback

## Financials

Building Type **Commercial**

System Size 4.03kW × Cost per Watt \$ 5.35 = Total Cost \$ 21,560

- Federal Tax Credit \$ (6,468)
- Federal MACRS \$ (3,205)
- Other Deductions \$ 0

Cost to Owner \$ 11,427

- Generation Value \$ 72
- SRECs \$ 46

Average Monthly Revenue \$ 118

Average Yearly Revenue \$ 1,417

Payback Period 6 years, 9 months

Net Present Value (20y / 5%) \$ 7,537

Mock up from Mapdwell LLC

# Flood Mapping



Special Flood Hazard Area delineated with new study using topography from LiDAR

Special Flood Hazard Area on study from 1986



# Enterprise GIS Consortium (EGC)





2017-  
2020

STRATEGIC PLAN DRAFT 1.3



# Enterprise GIS Consortium (EGC)

## 01 PARTNERSHIPS

Engage partners and lead a culture of information sharing that supports responsible decision making based on accurate data.

## 02 DATA

Lead efforts to create and maintain high quality geospatial data necessary to meet the State's Goals.



## 03 TECHNOLOGY

Coordinate investment & application of GIS technologies to support effective information sharing, collaboration, and cost savings.

## 04 PEOPLE

Empower people to make, use, analyze, and share maps and geographic information.