



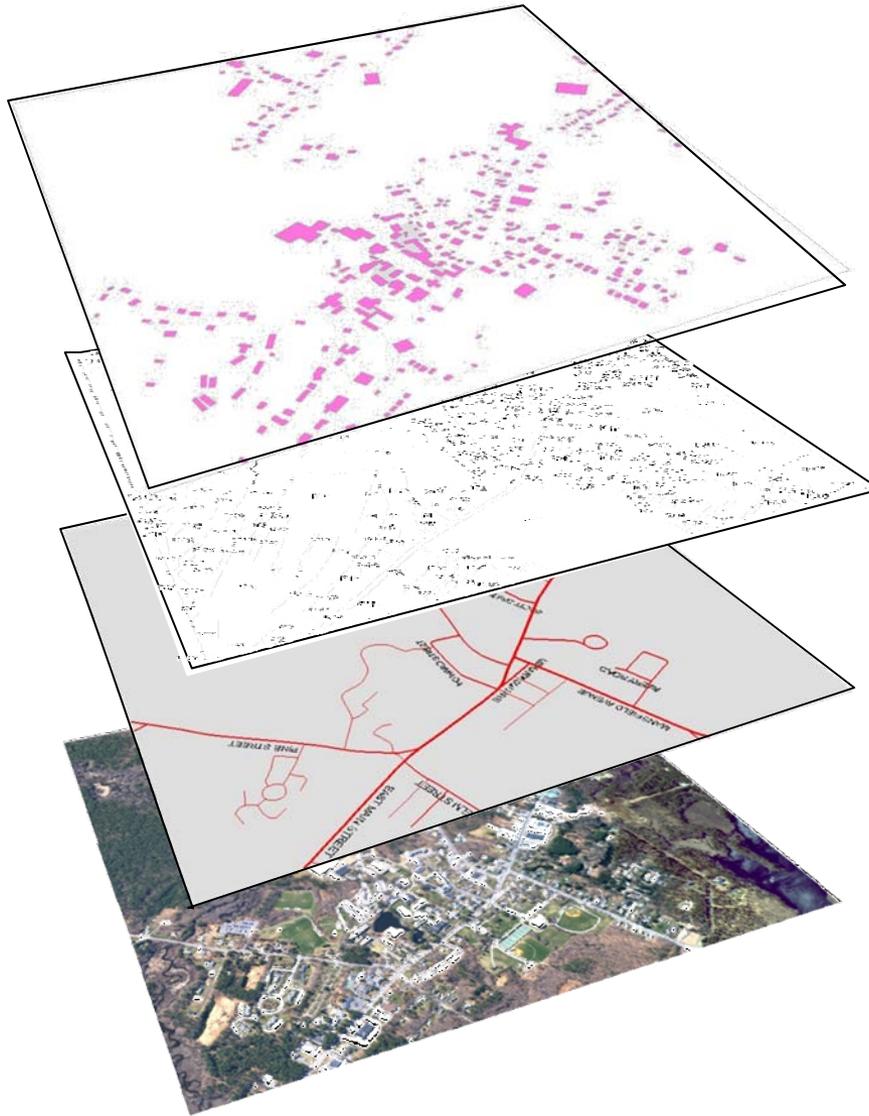
# Category 7 CAP grant - Massachusetts

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- **project objectives**
  - create structures data layer for 7 towns (~100 sq.mi.)
  - prototype maintenance procedures
  - report on successes, challenges, unresolved issues, feedback
- **partners**
  - GIS staff in three Regional Planning Agencies
  - GIS staff in towns
  - other local officials esp. building and public safety
- **key technologies**
  - image classification using 4-band ortho and LiDAR
  - address parsing software
  - mobile data collection
- **key standards**
  - structures data model
  - FGDC draft address standard (URISA/NENA)



# Based on Strategic Plan (previous CAP grant)



## Four Key Data Layers:

### **Buildings and Address Points**

Accurately mapped using imagery and parcel owner/address info  
other statewide and local info

### **Parcels**

Provide land use, ownership boundaries  
Created on ortho and road base

### **Streets and Geocoding**

Created on ortho base  
"Linear" or estimated geocoding  
Extensively used by private sector as well as govt entities

### **Orthophoto**

Accurate, intuitive base for all other GIS development  
Large-scale permits site-specific use



# What is a structure?

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- Any building that -
  - is photo-identifiable
  - meets minimum criteria for size and use
  - has an address and/or name
  - is accessible
- Key attributes of structures
  - plan was to assign categories/subtypes from Dept of Revenue land-use codes
  - additional photo-interpretation / fieldwork will be required
  - address - use FGDC draft address standard
    - number
      - add\_number\_prefix, add\_number, add\_number\_suffix
    - roadname
      - pre\_mod, pre\_dir, pre\_type, base\_name, post\_type, post\_dir, post\_mod
    - building name
      - key = "building"
      - value = *building\_name*
  - in addition to the USGS data model, "primary/secondary" on tax parcel

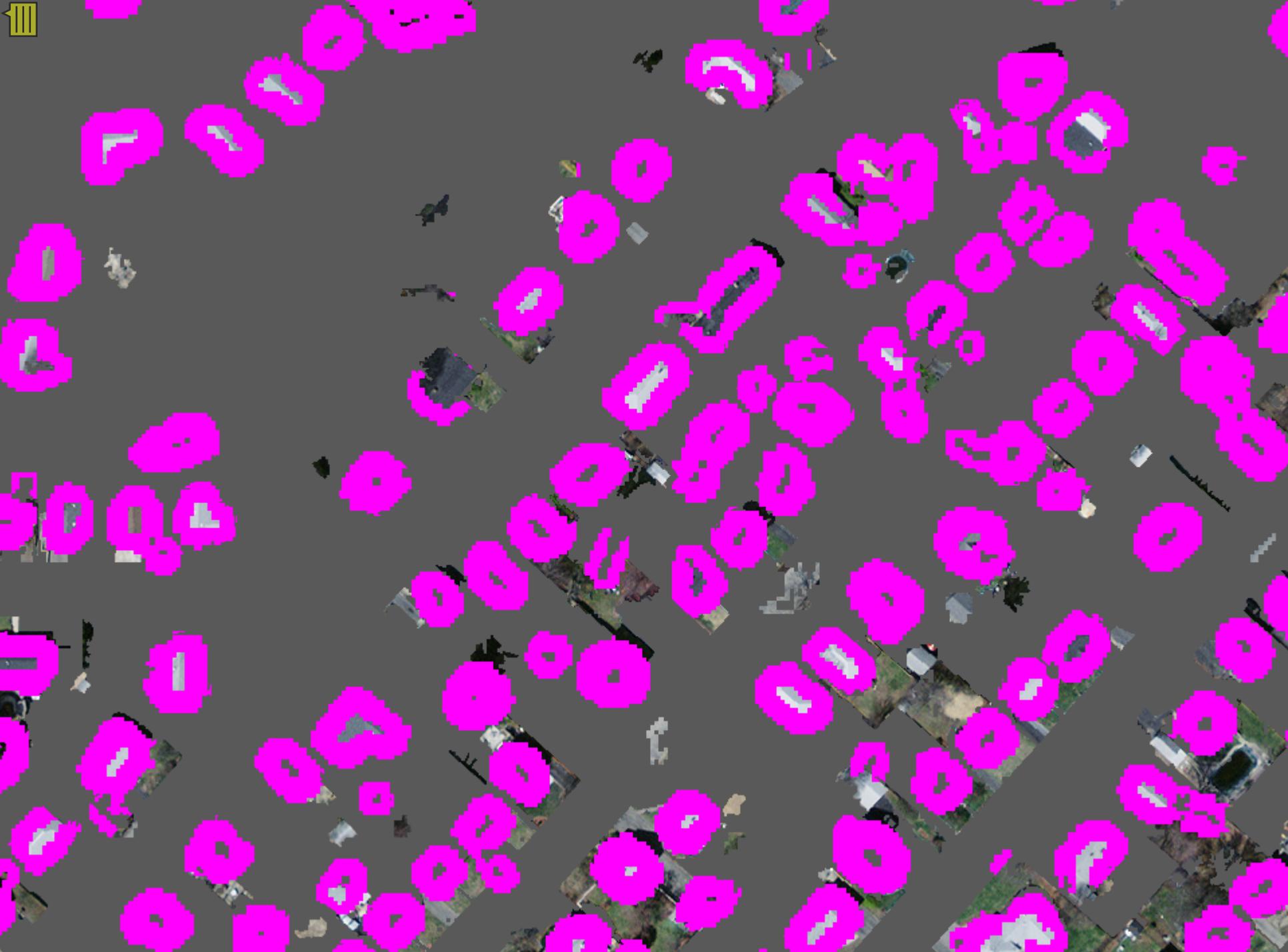


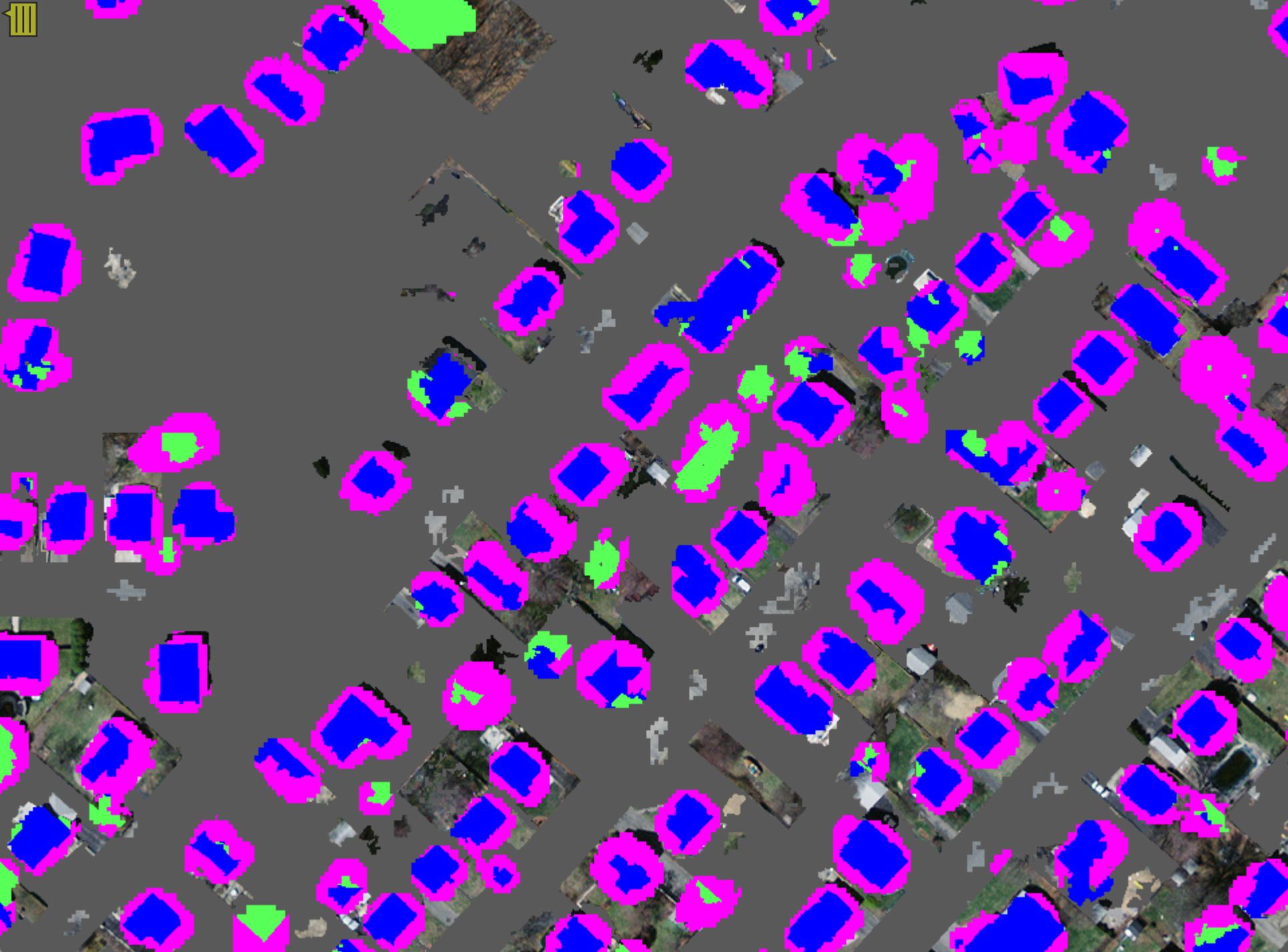
# General strategy

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- **map buildings from photo and LiDAR**
  - point locations
- **create a master address file**
  - use FGDC draft standard (URISA/NENA)
- **match up buildings and addresses**
  - use street map and tax parcel site addressing
  - plus site specific source maps
- **field work**
  - work with regional partners and local officials
- **maintenance**
  - leverage local work flow – building inspections, address assignment
  - address validation – consistency to master street address guide
- **communities differ (just like counties, only more so)**
  - information gathering – who assigns addresses, who is notified
  - no single workflow will be right for each community











**Layers**

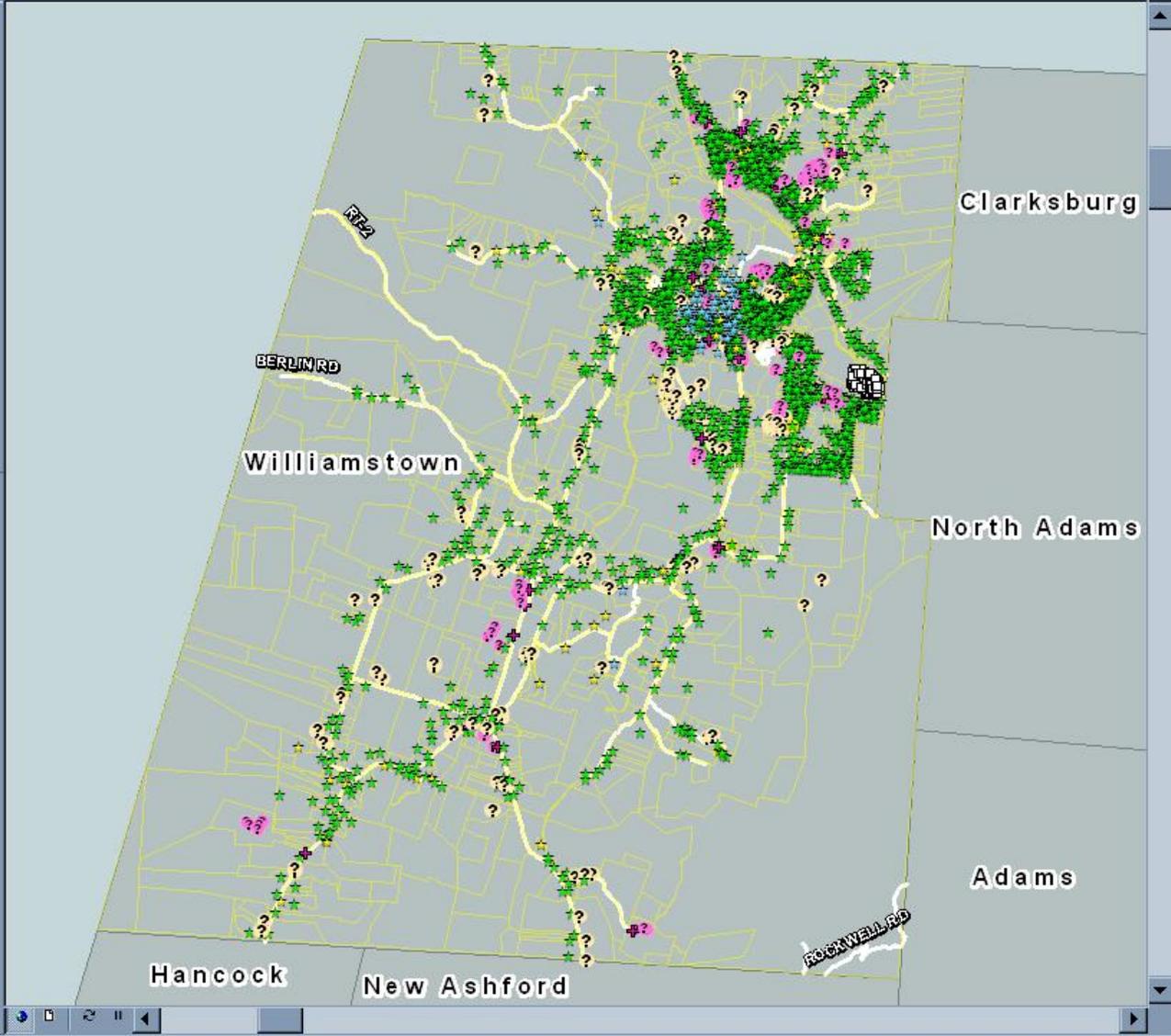
- SETB.M341\_BLDG\_PT\_DM\_idntpar  
VAL\_SOURCE
  - <Null>
  - Entry Point
  - Entry Point Replacement
  - Full Single Parcel Match
  - Parcel match (code failure)
  - Partial Single Parcel Match
  - Requires Fieldwork
  - Trailer Park Map
  - WILLIAMS COLLEGE
- SETB.M341\_BLDG\_PT\_2\_AEB
- SETB.M341\_BLDG\_PT\_DM
- SETB.M341\_PAR\_POLY

Display Source Selection

**ArcToolbox**

- 3D Analyst Tools
- Analysis Tools
- Cartography Tools
- Conversion Tools
- Coverage Tools
- Data Interoperability Tools
- Data Management Tools
- Geocoding Tools
- Geostatistical Analyst Tools
- Linear Referencing Tools
- Multidimension Tools
- Network Analyst Tools
- Samples
- Server Tools
- Spatial Analyst Tools
- Spatial Statistics Tools
- Tracking Analyst Tools

Favorites Index Search Results





# Assign parcel site addresses to points



Check that street frontage matches.  
If not, is it a vanity address or an absentee owner mailing address?

Check sequence along street

If more than one structure, then field work may be required



# College Campus – typical ancillary sources

Campus Map - Mozilla Firefox

http://www.williams.edu/home/campusmap/

Williams College

## Williams

Williams Home Academics Admission News & Events About Williams Especially for Directories Search Williams...

### Campus Map

Accessibility · Building Addresses · Download PDF map (5.2 MB) · Download JPG map (7.2 MB)

Building List & Map Map Only

**Building Types:**

- Academic & Administrative
- Athletic & Public Spaces
- Student Dining Halls
- Student Residences
- View All

**Find It:**

- Admission (Bascom House)
- Alumni Relations (Mears House)
- Campus Life (Paresky Center)
- Conference Office (Brooks House)
- '62 Center for Theatre & Dance
- 1914 Library (off map)
- Administration (Hopkins Hall)
- Agard
- Alumni Center /Faculty House
- Armstrong (Mission Park)
- Art Faculty Studio
- B & L Building (Human Resources)
- Bascom House (Admission)
- Bernhard Music Center
- Black Student Union (Rice)

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Williams College Facilities Department - Mozilla Firefox

http://facilities.williams.edu/property-information/property-addresses/

PROPERTY POLICIES COLLEGE VEHICLES OUR PEOPLE SERVICES CONFERENCES

### Property Addresses

#### CAMPUS PROPERTY LISTING

Property	Location	Square Footage
Adams Block	36-42 Spring Street	10,180
Adams Memorial Theatre	1000 Main Street	26,891
Agard House	96 South Street	16,420
Agway Barns (3)	30ABC Denison Park Drive	8,736
B&G North (College Garage)	54 Heating Plant Drive	6,369
B&L Building Commercial	100 Spring Street	5,377
B&L Building/HR	100 Spring Street	5,515
B&L Building Residential	100 Spring Street	5,081
Bascom House	33 Stetson Court	11,400
Beals House	51 Jerome Drive	1,506
Bernhard Music Center	54 Chapin Hall Drive	22,520
Brinsmade House	71 Stetson Court	2,304
Bronfman Science Center	18 Hoxsey Street	90,698
Bronte House	735 Pine Cobble Road	2,000
Brooks House	983 Main Street	10,306
Brooks House/Conference Office	983 Main Street	1,094
Brown House East	33 Latham Street	2,516
Brown House West	35 Latham Street	
Fielding Brown House I-II	179 Park Street	1,513
Bryant House	1020 Main Street	22,117
Burnett House	19 Walden Street	2,265
Calf Barn	1587 Green River Road	
Caretaker's House	60 Elm Tree Loop	2,720
Carlton House	51 Stetson Court	1,632
Carter House	36 North Street	24,950
Chadbourne House	42 Stetson Court	5,190
Chaffee Tennis House	Stetson Road/Lyne Lane	1,200
Chandler Athletic Center	34 Spring Street	87,001
Chandler Commercial	28-34 Spring Street	9,137
Chandler House	26 Walden Street	2,448
Chapin Hall	62 Chapin Hall Drive	22,244
Clark Hall	947 Main Street	13,680
Clark House I-II	79 Southworth Street	2,822
Class of '37 House	51 Park Street	5,863
Class of '62 Center for Theatre and Dance	1000 Main Street	106,000
Cole Field House	85 Stetson Road	16,099



☆ WILLIAMS COLLEGE -- Address information assigned from campus map and property list.



? Requires Fieldwork -- Impossible to determine building addresses without ancillary data.



# Level of Effort – Williamstown Pilot

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## Desktop

- Single point inside parcel (assign parcel address) -- 2,119
- Addresses assigned to trailers from trailer park map -- 230
- Points identified on Williams College campus -- 130
- Multiple building points in a single parcel assigned a new "entry point" with range – 223

## Fieldwork

- Building points with no part of address known -- 219
- Building points assigned street name from parcels, but missing street number – 77
- 39 entry points added to represent 223 buildings