AGENDA

Why do this?
Budgeting
Getting imagery and selecting tiles
Extracting features (at night, when you’re sleeping)
Clean up
Discussion/Questions
WHY DO THIS?

- Leverage information in public domain imagery
- Need to rapidly assess large area / # features
- Not enough time and/or budget to digitize manually
- Ok with ~ 80% accuracy
- Change detection
- Sanity of GIS professionals
ASSESS PV POTENTIAL ON A PARCEL BY PARCEL BASIS

- Rooftops
- Parking Lots
- Vegetation
- Swimming Pools
- Bare ground
IMAGE PROCESSING TO IDENTIFY ROOFS AND LARGE PARKING LOTS
IMAGE PROCESSING TO IDENTIFY ROOFS AND LARGE PARKING LOTS
IDENTIFIED LARGE ROOFS AND PARKING LOTS

Technical Potential Capacity, MWdc

- < 0.25
- > 3
WHAT YOU NEED FOR THIS RECIPE

• Imagery
• ArcGIS for Desktop
• Feature Analyst extension by Overwatch Geospatial
• Zippy workstation or other heavy duty processing capability
• Some ancillary GIS datasets are very helpful: parcels, land use, zoning, general plans, etc.
BUDGETING

- Software
- 12 hours of Feature Analyst setup
- 15 minutes per square mile
  - Image download
  - Extraction
  - Clean up
- “Break even” point ~ 10 square miles vs. digitizing
ACQUIRING IMAGERY
1m NAIP
0.3m High-Res Orthophoto
USGS EARTHEXPLORER: HIGH-RES ORTHOS
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<th>Attribute Value</th>
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<td>NW Corner Long</td>
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USGS EARTHEXPLORER: BULK DOWNLOAD

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State: CA

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Acquisition Date: 28-MAR-10
State: CA

Entity ID: 1627102_11SMT140290
Acquisition Date: 28-MAR-10
State: CA
4. Search Results
If you selected more than one data set to search, use the dropdown to see the search results for each specific data set.

- Show All Footprints From Current Page
- Show All Browse From Current Page
- Add All Results From Current Page to Bulk Download

Compare Browse: Map Overlay ▼ All Scenes ▼

Browse Opacity: 100%

Data Set

High Resolution Orthoimagery
EXTRACTING FEATURES
SEVERAL TYPES OF EXTRATIONS IN FEATURE ANALYST EXTENSION

- Unsupervised (input is # of classes) – useful for determining classes
- Supervised, single class
- Supervised, multi-class
- Wall-to-wall on or off (Supervised)
MULTI-CLASS, SUPERVISED, WALL-TO-WALL
TRAINING SETS
SUPERVISED EXTRACTION SETTINGS
SUPERVISED EXTRACTION SETTINGS
SUPERVISED EXTRACTION SETTINGS
RAW RESULTS, SPLIT BY CLASS
AGGREGATED, 300M
FEATURE MODELER, BATCH PROCESSING
CLEAN UP
INSIDE FEATURE ANALYST

- Hierarchical learning
- Feature simplification
- Smoothing
- Aggregating
- Squaring features
- Converting polygons to points
- Converting polygons to lines
MANUAL CLEAN UP

• Clip to selected parcels, if needed
• Visual QC
• Removal of egregious errors
• Etc
RESOURCES

• Feature Analyst Demo free trial version: http://www.vls-inc.com/login/software.htm

• Includes tutorial MXD and 158 page tutorial guide

• Feature Analyst Resource Guide

• LiDAR Analyst 5.1 for ArcGIS by Overwatch Geospatial (v5.2 if on ArcGIS 10.2)
Building a world of difference.

Together

BLACK & VEATCH