LAR-IAC3

Welcome to the LAR-IAC 3 Kickoff Meeting

July 29, 2010

LOS ANGELES REGION
LAR|IAC
imagery acquisition consortium

LAR-IAC3

Agenda

- **Welcome & Introduction – LA County**
- **LAR-IAC3 – LA County**
- **LAR-IAC3 – Vendor Presentations**
  - Presentation – **Pictometry** (Oblique imagery)
  - Presentation – **Sanborn** (Ortho imagery)
  - Presentation – **Dewberry** (Independent QA/QC)
- **Discussion / Other Items / Closing – LA County**

LAR-IAC3

County Agenda

- LAR-IAC background
  - What is LAR-IAC?
  - LAR-IAC structure
  - Why LAR-IAC?
  - How do I join?
- LAR-IAC 3
  - Purpose
  - Geographic Scope
  - LAR-IAC 3 products
- After the vendor presentation
  - LAR-IAC 3 delivery mechanisms
  - Demonstrations of solutions
    - How LA County uses LAR-IAC data
  - Brief LAR-IAC 3 Schedule

LAR-IAC3

What is LAR-IAC?

- Los Angeles Regional Imagery Acquisition Consortium (LAR-IAC)

  "LAR-IAC is multi-jurisdictional purchasing arrangement that enables participating local governments and agencies to benefit from combined economies of scale to efficiently and cost-effectively acquire high definition aerial data."

- Established in 2003 by LA County DRP and CIO.

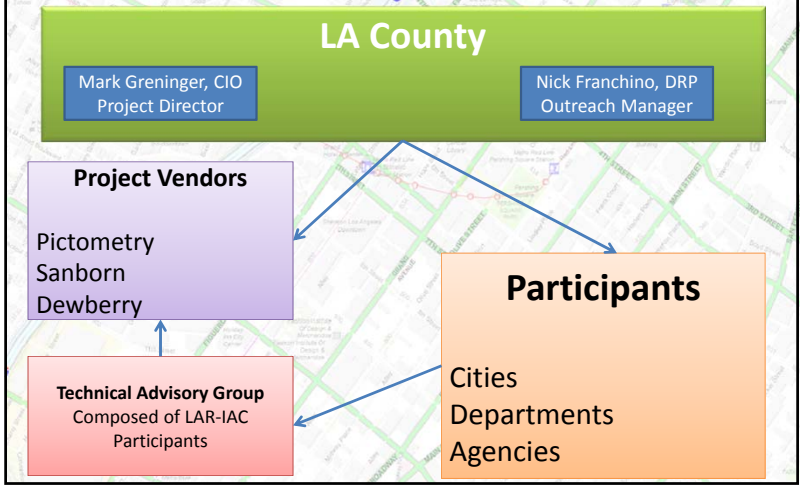
LAR-IAC Flights

Product	LAR-IAC 1 (2006)	LAR-IAC 2 (2008)	LAR-IAC 3 (2011)
Orthophoto	Yes	Yes	Yes
Pictometry oblique imagery	Yes	Yes	Yes
Elevation Data: Digital Surface Model Digital Terrain Model Digital Elevation Model Contours (2' interval)	Yes	Spot Updates	Spot Updates
Building Outlines	No	Yes	No
Total Cost	$5.8 million	$4.5 million	~$3 million

LAR-IAC Structure

- LA County
  - Executes and manages contracts.
  - Organizes meetings and provides support.
  - The single point of contact for LAR-IAC.
- Participants (including LA County)
  - Provide funding to support the project
  - Provide members for the Technical Advisory Group (TAG) to review details.
- Project Vendors
  - Provide expertise and capabilities to get the job done.

LAR-IAC Team Structure



36 Cities

#	Cities	LAR-IAC 1	LAR-IAC 2
1	City of Agoura Hills	x	
2	City of Azusa	x	x
3	City of Beverly Hills	x	x
4	City of Burbank	x	x
5	City of Carson	x	x
6	City of Cerritos	x	x
7	City of Claremont		x
8	City of Covina	x	x
9	City of Culver City	x	x
10	City of Diamond Bar	x	x
11	City of Downey	x	
12	City of El Segundo	x	x
13	City of Glendale	x	x
14	City of Hermosa Beach	x	x
15	City of Industry	x	x
16	City of Inglewood	x	x
17	City of Irwindale	x	x
18	City of La Canada Flintridge	x	x
19	City of La Habra Heights	x	x
20	City of Lakewood	x	x
21	City of Lancaster	x	
22	City of Long Beach	x	
23	City of Los Angeles	x	x
24	City of Manhattan Beach	x	x
25	City of Monrovia	x	
26	City of Monterey Park	x	x
27	City of Palmdale	x	
28	City of Pasadena	x	x
29	City of Redondo Beach	x	x
30	City of Santa Clarita	x	x
31	City of Santa Fe Springs	x	
32	City of Santa Monica	x	x
33	City of South El Monte	x	x
34	City of Torrance	x	x
35	City of Westlake Village	x	
36	City of Whittier	x	x

LAR-IAC3

22 Departments and Agencies

#	Agencies	LAR-IAC 1	LAR-IAC 2
37	County Agricultural Commission/Weights and Measures	x	x
38	County Chief Executive Office	x	x
39	County Department of Beaches & Harbors	x	x
40	County Department of Health Services	x	x
41	County Department of Parks & Recreation	x	x
42	County Department of Public Health	x	x
43	County Department of Public Works	x	x
44	County Department of Regional Planning		x
45	County Fire Department		x
46	County Internal Services Department	x	x
47	County Office of the Assessor	x	x
48	County Public Library		x
49	County Registrar-Recorder/County Clerk	x	x
50	County Sheriff's Department		x
51	Alameda Corridor Transportation Authority		x
52	Cal State Los Angeles		x
52	Caltrans	x	
54	LA County Sanitation Districts	x	
55	LARGIN (LA Region Gang Information Network)	x	x
56	Port of Los Angeles	x	
57	Santa Catalina Island Conservancy	x	x
58	US Geological Survey		x

LAR-IAC3

LAR-IAC is data

- LAR-IAC provides geographic data that forms the foundation of geo-spatial decision making and analysis.
- All Digital Aerial data
  - Orthogonal imagery
  - Oblique imagery
  - Elevation data
  - Building Outlines

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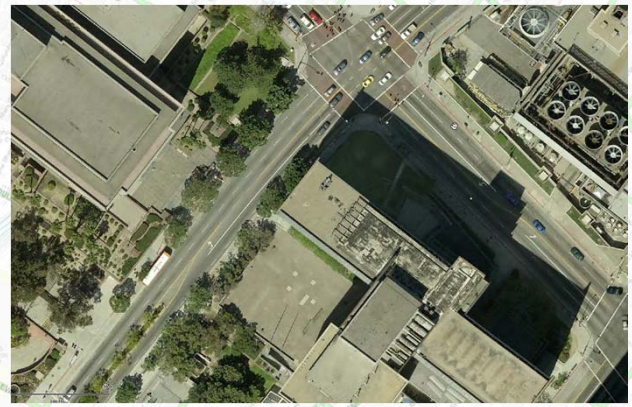
Orthogonal Imagery

- Also known as "Satellite View"



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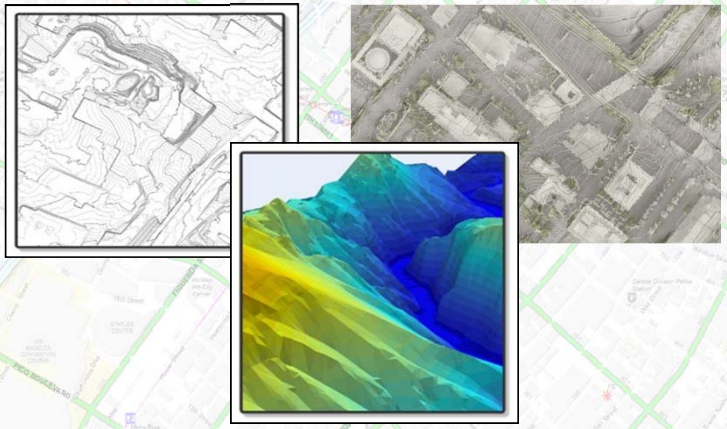
Oblique Imagery

- Also known as "birds eye"

Elevation Data

- Contours, buildings, surfaces



Building Outlines

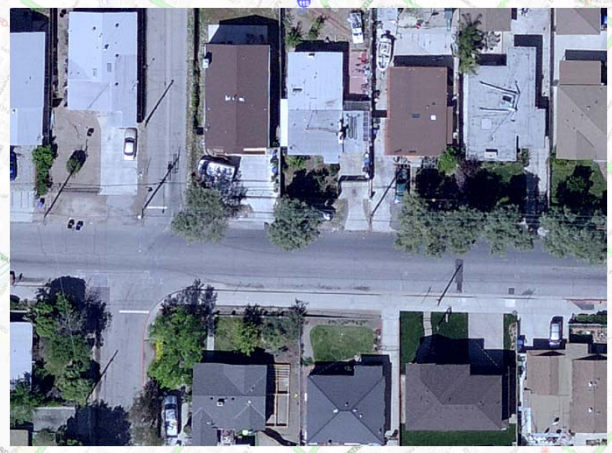
Why LAR-IAC?

- Highest Resolution
- Unparalleled accuracy
- More data
- More tools
- Data Control
- Lower cost
- Shared base information

Highest Resolution

- 4-inch pixel size for urban areas
  - More detail than off the shelf 1 foot data
- See more details
  - Less trips to the field
  - Better management of assets
  - Code enforcement
  - Better support for emergency responders
  - Better support for planning and development
  - Enhanced communication with the public.

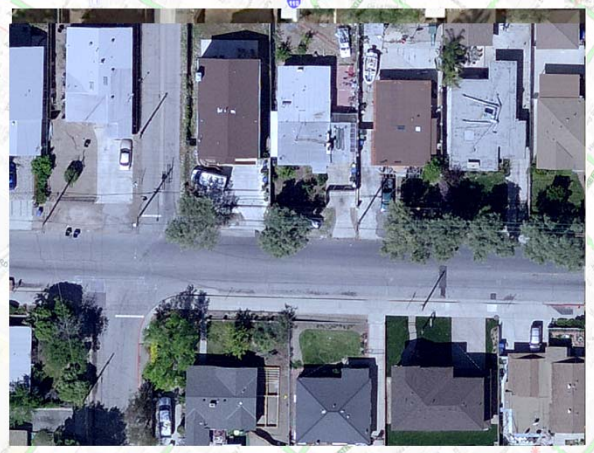
Example



Accuracy

- LAR-IAC ensures accuracy
  - American Society for Photogrammetry and Remote Sensing (ASPRS)
    - Class 1 = +/- 1 foot accuracy (Urban Areas)
    - Class 2 = +/- 2 foot accuracy (National Forest)
  - Separate contract with Dewberry to provide Quality Control
- This isn't a pretty picture.
  - Pre-engineering grade.
  - You can be sure of your measurements.
  - Reduce your project & development costs.
- This isn't a picture from the internet.
  - Sorry Google …

Example



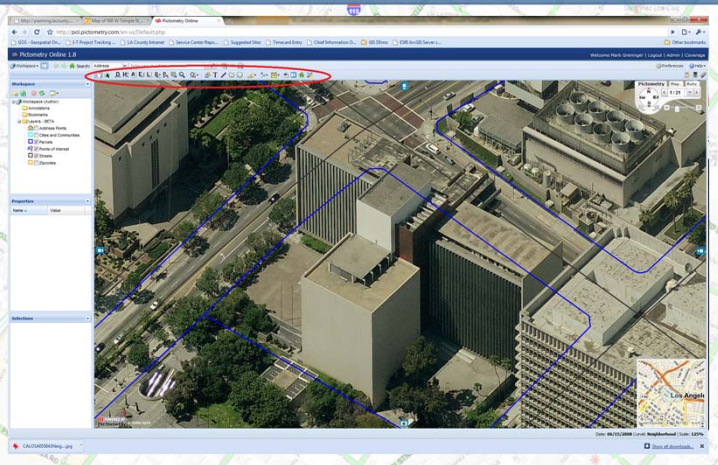
More Data

- LAR-IAC contains the widest range of digital aerial data.
- It forms the basis for most geographic systems.
  - Orthogonal imagery
  - Oblique imagery
  - Elevation data
  - Building Outlines
- All in formats you can actually use (not pictures).

More Tools

- Orthophotography
  - Image analysis, automated change detection.
- Oblique Imagery
  - Measure heights, distances, pitch, etc.
  - GIS Overlays
- Elevation
  - Flood models, slopes, water flow, etc.
- Building Outlines
  - Area, height, density, etc.

Pictometry Online



Control of Data

- You have the data and control it.
  - Unlimited deployment (no per-seat license)
    - Use in Police and Fire vehicles for emergency response.
    - Put in dispatch centers.
    - Provide to planning department
    - Use in Public Works
    - Provide to contractor(s)
  - License for internet viewing.
    - Add to your websites.

Note – the data is under license – it is NOT public domain – this was done deliberately.

Lower Cost

- Costs are shared among all participants.
  - The more participants, the lower the cost.
- Only one flight to acquire data.
- One set of contracts.
- Cost savings for LAR-IAC1 and LAR-IAC2 estimated at over $10 million.

Shared Basemap

- A standard map for the County
- You are on the same map as your neighbor.
  - Mutual aid benefits
  - Regional development benefits
- All data that is created meets accuracy standards (only do it once).
- Long-term benefits through data sharing.
- A starting point for further integration.
  - Addresses, parcels, etc.

How do I Join?

- Letter of Intent
  - Informs the County that your agency intends to budget for LAR-IAC participation.
  - Non-binding
- Participant Agreement
  - Commits your agency to pay your share of LAR-IAC and "join the team"
  - Can make two payments over two fiscal years (one this year, one next)

Participant Agreement

- Three important areas:
  - Pages 1-5 are the agreement
    - Agreement between agency and County about costs.
    - Countersignatures on Page 5.
  - Attachment A lists the data products
  - Attachment A.1 allows you to contract for additional services
    - County allows "Optional Items" for participants.
    - 3D buildings, curb lines, etc.
    - A sub-contract between you and the vendor
  - Attachment B is between you and your contractor.
    - It protects you in case they use the information improperly.

Simplified Schedule

- September – TAG finalizes specifications
- September – set up bridge funding (CIO and CEO)
- November - complete contracts (all firms)
- December - start flying
- March 2011 - flying completed…start processing
- April – August - QC underway
- September – December 2011 delivery underway

LAR-IAC3 Overview

Purpose and Objectives

Purpose: Update natural color ortho and color oblique imagery

- **Objective 1:** Obtain updated highly accurate digital aerial imagery
- **Objective 2:** Continue collaboration efforts from previous LAR-IAC effort

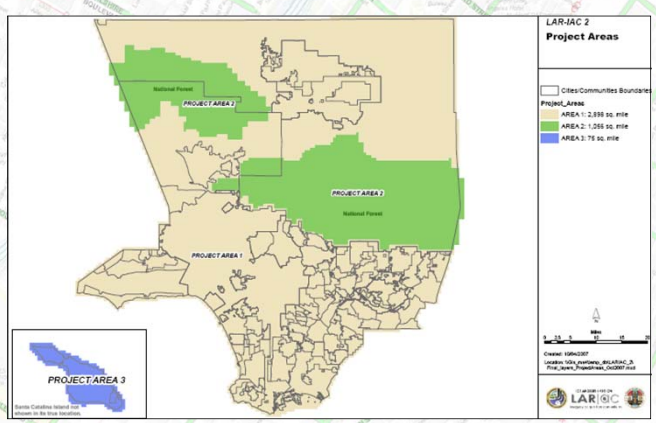
Purpose and Objectives

- **Objective 3:** Use lessons learned to improve project
  - Faster delivery
  - More Internet distribution
  - Keep successful coloration and accuracy!

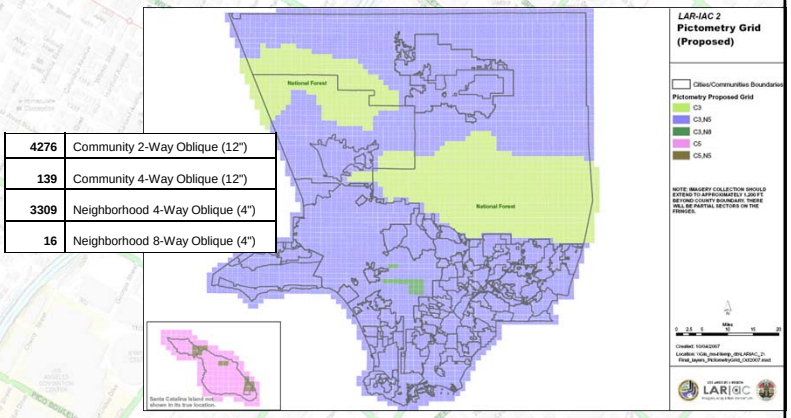
Geographic Scope

- Los Angeles County
  - 4,083 sq. miles plus small buffer area
- Split into regions (similar to LAR-IAC)
  - Area #1 (Urban)
    - Project area covers approx 2,900 sq. miles
  - Area #2 (National Forest)
    - Project area covers approx 1,050 sq. miles
  - Area #3 (Santa Catalina Island)
    - Project area covers approx 75 sq. miles
- No overlap, no seams, no gaps – full, complete tiles only!

Project Areas - Ortho Imagery



Project Areas – Oblique Imagery



4276	Community 2-Way Oblique (12")
139	Community 4-Way Oblique (12")
3309	Neighborhood 4-Way Oblique (4")
16	Neighborhood 8-Way Oblique (4")

LAR-IAC 3 Deliverables

- Color Orthogonal Imagery (RGB)
  - 4" resolution (urban areas)
  - 1' resolution (national forests)
- Color Oblique Aerial Digital Imagery
  - Includes viewer application.
  - Includes web-based access (Pictometry Online).
- Spot Updates for Elevation Data in areas of significant change
- Accurate Quality Control Report for all data products (independent QA/QC vendor)

Vendor Presentations

LOS ANGELES REGION
LAR|IAC
imagery acquisition consortium

- Presentation – **Pictometry** (Oblique imagery)
- Presentation – **Sanborn** (Ortho imagery)
- Presentation – **Dewberry** (Independent QA/QC)

Delivery Mechanisms

LAR-IAC3

- External hard disk with aerial imagery files.
  - Includes software to view oblique data (Electronic Field Study, EFS)
- Hosted solution(s) for Oblique Imagery
  - **Pictometry Online** for oblique imagery
  - Pictometry Image Navigator for integration into your existing mapping sites.

Physical Delivery Formats

LAR-IAC3

- Loaded on the external hard disk will be:
  - Ortho imagery in various formats
    - GeoTIFF (raw) tiles and ESRI image mosaic dataset
    - JPEG2000 (compressed)
    - MrSID compressed (mosaics)
    - ECW compressed (mosaics)
  - Oblique imagery
    - Proprietary JPEG format (medium compression)
  - Updates to Elevation Data
    - GIS Shapefiles, AutoCAD files, Microstation files

Data Delivery Formats

LAR-IAC3

Delivery Product	Format 1	Format 2	Format 3
Digital Terrain Model (Spot Updates)	ArcGIS shapefile - points, 3D lines	AutoCAD (dwg) – points , lines	Microstation (dgn) – points , lines
Orthophoto (color) (4" and 1')	GeoTIFF & JPG2000 ESRI image mosaic.	Mr. Sid & ECW (mosaics)	
Pictometry oblique imagery (4" and 1')	Proprietary JPG format	Medium Compressed JPG format	

Distribution and Sub-licensing

LAR-IAC3

- Distribution
  - 4-inch orthos can be displayed on the Internet
  - Oblique imagery can be shown on the Internet
    - Note: measurement tools for internal use only
  - 1 foot orthos can be distributed to the Public
- Licensing
  - Participant Agreement
  - Sub-licensing
    - One simplified form to cover all data products for sub-contractors

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Demonstrations

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Oblique Hosted Delivery Solutions

- Web-based viewer for Pictometry Data
  - Pictometry Online (http://pol.pictometry.com)
  - Access to all earlier oblique imagery.
  - Includes standard GIS data overlays
    - Parcels
    - Streets
    - Addresses
- Integration to existing sites via Image Navigator

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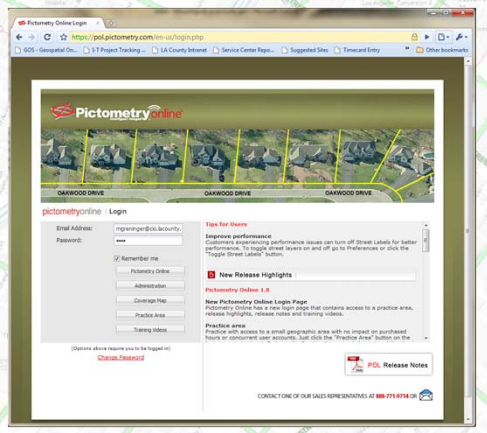
Demonstration of Pictometry Online



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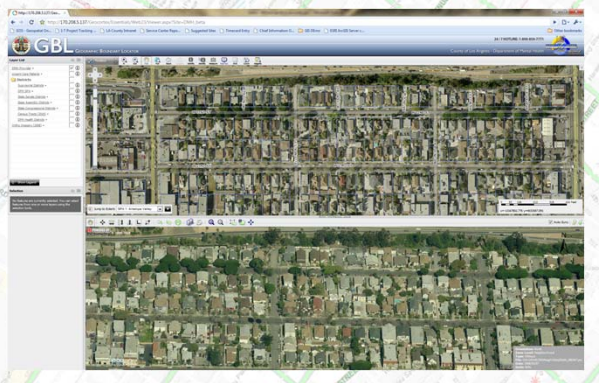
Demo of Image Navigator

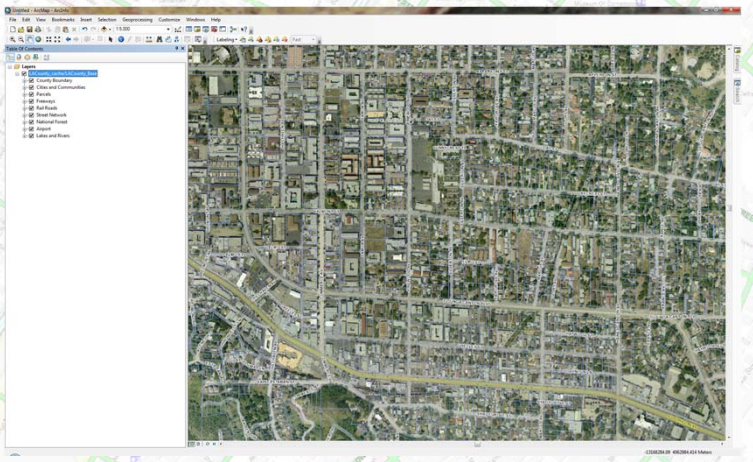
- Geocortex Integration



Ortho Hosted Solutions

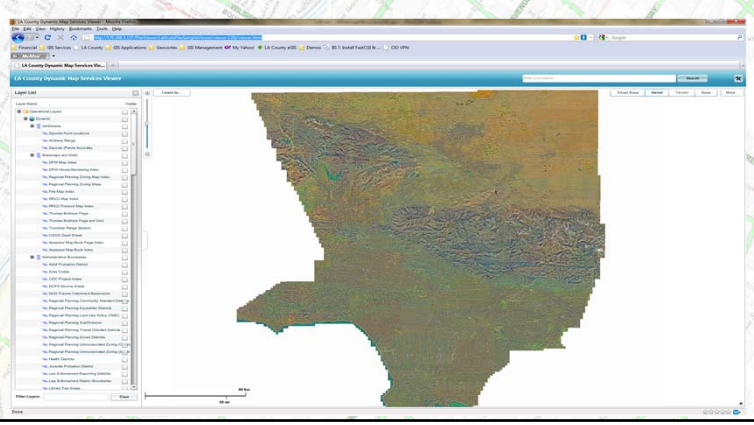
- Web Services from the County
- Using ESRI ArcGIS Server technology to provide maps as a service
  - Use directly in ArcMap
  - Use in your applications
  - Use in Google Earth
  - Use with Bing Maps
  - Use with Google Maps

ArcMap

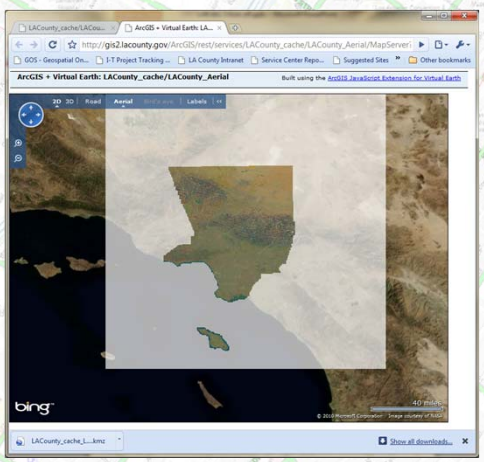


GIS Applications

- Geocortex Flex Viewer



Bing/Google Maps



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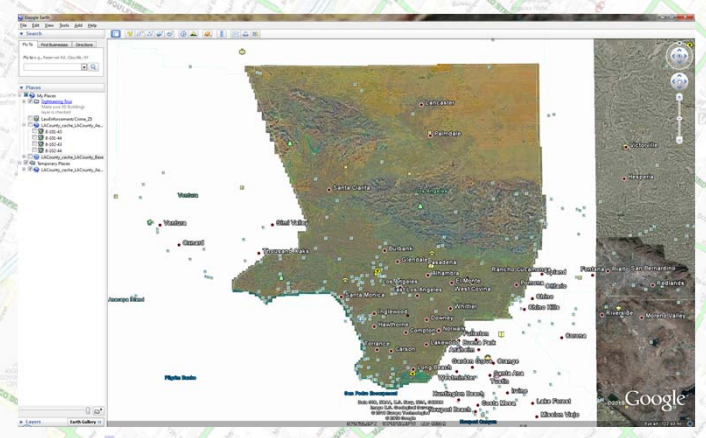
Google Earth



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Staying Up-To-Date With Project

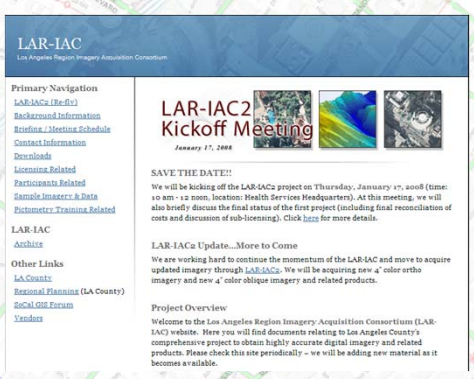
- Meetings
  - Briefing Meetings (every other month)
  - Technical Advisory Group (as necessary)
  - User Group Meetings (quarterly)
- Documents
  - Participant Agreement
  - Status Reports

Contact Information

- **Project Director**
  Mark Greninger, County GIO
  mgreninger@cio.lacounty.gov (213) 253-5624
- **Outreach Manager**
  Nick Franchino, GIS Manager, Regional Planning Dept.
  nfranchino@planning.lacounty.gov (213) 893-0881
- **Project Web Site**
  http://planning.lacounty.gov/lariac

LAR-IAC Project Web Site

http://planning.lacounty.gov/lariac



Participants Follow-Up

- Get us information for large grading projects since March 2006 – notice will be sent out
- External hard drives will be provided
- Provide us updated contact information
- Follow (adhere to) participant and licensing agreements
- Attend ongoing LAR-IAC3 Briefing Meetings, LAR-IAC User Group and Pictometry training sessions
- Continue to spread the word (more participants equals less costs for all involved)

Other Items / Closing

- Lessons Learned
  - Winter flying, color and radiometry
  - Distribution dates
  - Uses of the imagery/expectations
- Thanks to Project Team!
  - CIO
  - DRP Staff
  - County Counsel
  - Technical Advisory Group (TAG)

Future Items

- Expand scope of LAR-IAC to other counties

Need a new name

Southern California Area Region

Imagery Acquisition Consortium

SCAR-IAC!!!

Thanks David Peck (Pictometry)!

Los Angeles Region – Imagery Acquisition Consortium (LAR-IAC3)

Questions/Comments?

(time permitting)

Prepared by:
Los Angeles County