IN THIS ISSUE:

- LOGGING URBAN TREES IN SAN FRANCISCO (ONLINE, THAT IS) .............................................................. 2
  Karin Tuxen-Bettman

- DEVELOPING A MASTER ADDRESS DATABASE AND MASHING IT UP USING PICTOMETRY OBLIQUES AND MS VIRTUAL EARTH ............ 3
  Patrick Crevelt

- 2007 GEOSPATIAL CONFERENCE ROUND UP: THE BAY AREA AND BEYOND! ........... 7
  Karin Tuxen-Bettman & Stella Wotherspoon

- GIS EDUCATION AROUND THE BAY AREA: SAN JOSE STATE UNIVERSITY ......................... 13
  Stella Wotherspoon

- BAAMA’S VOLUNTEER INITIATIVE....................... 12

- WHERE IN THE BAY AREA? ................................. 15
LOOKING AHEAD

A MESSAGE FROM THE PRESIDENT

Over the years, BAAMA has hosted educational, topical, and entertaining meetings devoted to exploring the myriad uses of GIS technology. And, while it’s been challenging to cover the landscape of geospatial data and technology, these meetings have provided our Bay Area GIS community with a valuable opportunity to network with colleagues and share ideas and insight on the nature of GIS. Believe me, it’s been a fun ride.

But, about 24 months ago, Google unleashed a couple of web-based technologies known as Google Earth and Google Maps on an unsuspecting world. And, I believe its fair to say that the fallout has rocked our little GIS fraternity. After seeing Google Earth’s interactive and three-dimensional globe, my family, friends, neighbors, and co-workers finally understood what I mean when I say that “I do GIS.”

Perhaps more importantly, our co-workers are beginning to understand the magic and intelligence inherent in maps and spatial analyses. “Mash-ups” of business data with maps are quickly becoming an expected element of effective decision support systems. More and more, government, business, academic, and not-for-profit workers expect fast, interactive, easy-to-use, and cartographically pleasing web maps as tools that can better support their daily tasks.

At a technical level, the rate of adoption of geospatial data and analysis capabilities has been astonishing. Server technologies, relational databases, and the Open Source Software movement are all incorporating geospatial capabilities to extend GIS well beyond our traditional user community.

For GIS people, and BAAMA in particular, I believe this represents a unique opportunity. We have been presented with the chance to help our co-workers and organizations understand and reap the benefits of both traditional and innovative geospatial technologies and data.

Your voice and support allow BAAMA to fulfill our educational mission. As BAAMA’s President, I invite you join our efforts in connecting people who need GIS with those who know it.

Cheers,
Dennis Wuthrich
2007-08 BAAMA President

IN OUR NEXT ISSUE:

IS GIS A DEAD-END FIELD?

READ ABOUT HOW A BAY AREA CEMETERY AT THE FOREFRONT OF THE NATURAL BURIAL MOVEMENT IS:

• INTEGRATING GEOSPATIAL TECHNOLOGIES INTO ITS OPERATIONS
• RADICALLY ADAPTING THE VISITOR EXPERIENCE TO MEET THE 21ST CENTURY

UPCOMING BAAMA EVENTS

See www.BAAIMA.org for up-to-date details.

NOVEMBER 14, 2007
GIS DAY
Location: Mulford Hall, UC Berkeley

DECEMBER 6, 2007
BAAMA Holiday Party
Location: Beckett’s Irish Pub Berkeley, CA

JANUARY 24, 2008
Educational Session: GIS Program Funding Strategies
Location: tbd

MARCH 27, 2008
Educational Session: Integration of Remote Sensing and GIS (including image analysis)
Location: Metropolitan Transportation Commission Oakland, CA

APRIL 2, 2008
Board Meeting and Member Networking Event
Location: tbd
San Francisco, CA

MAY 22, 2008
Educational Session: Using the Web to Improve Access to GIS Data
Location: Metropolitan Transportation Commission Oakland, CA

JUNE 3, 2008
Board Meeting and Member Networking Event
Location: tbd
San Jose, CA

JULY 24, 2008
Educational Session: Integrating GIS Workflows into your Enterprise
Location: Metropolitan Transportation Commission Oakland, CA

SEPTEMBER 25, 2008
Educational Session: Spatial Analysis
Location: Metropolitan Transportation Commission Oakland, CA
LOGGING URBAN TREES IN SAN FRANCISCO (ONLINE, THAT IS...)

BY KARIN TUXEN-BETTMAN

There are about 668,000 trees in San Francisco, and a group of Bay Area tree advocates—biologists and GIS scientists—are trying to map them all. And, they want you to help them.

The San Francisco Department of Public Works Bureau of Urban Forestry (BFU) and the Friends of the Urban Forest (FUF) have been tracking and mapping San Francisco trees for years. Both organizations have a vested interest in knowing the location and condition of every tree in San Francisco. The BFU is responsible for proper planting and removal of all city-owned trees by individuals and groups; FUF is a non-profit group that advocates for urban forests, advises individuals on planting urban trees, and manages group planting efforts in San Francisco. Between these two organizations, a lot of new trees have been planted: FUF has planted over 40,000 trees in San Francisco since 1981, and the BFU has planted about 50,000 trees. Both groups have been tracking the trees they have planted but using different database systems and data recording procedures; data sharing and management has been very difficult, and the need for a real-time, up-to-date, single database continued to grow.

Since early 2007, the two organizations have been working together on the San Francisco Urban Forest Mapping Project (http://www.urbanforestmap.org/), an online mapping application that allows the BFU and FUF to manage and maintain their databases online, share information between agencies, and better involve the public in urban forest management. The two groups worked closely with Autodesk and Online Mapping Solutions, LLC to build an Internet-enabled map (or “webGIS”) that allows users to view, submit, and search the 140,000 public trees already in the database.

Advancements in web programming over the past years have increased interest in using webGIS as an effective tool for displaying geographic data online. WebGIS sites allow users to browse, search, query, and explore spatial data about houses for sale, places to visit, and restaurants to eat in, to name a few applications. Some sites allow users to submit data, as aspect of webGIS that is becoming more commonplace as the Web 2.0 paradigm of dynamic web-user interactivity is adopted by more and more organizations. As a result, webGIS is increasing public participation in areas such as environmental data collection, resource management, and public policy.

With the advent of open-source and free webGIS development environments like Autodesk’s MapGuide Open Source and the University of Minnesota’s Mapserver, non-profit and governmental agencies are able to develop the tools without expensive software licenses. Two years ago, Autodesk released the source code of its webGIS development environment, making it “open source,” or available to the public to manipulate and customize for their particular usage.

The SF Urban Forest Mapping website allows the public to zoom around the city and view where trees are located (Figure 1). Several layers are available as backdrop data, including soils, parcels, and satellite photos. Users can search for trees by their address or neighborhood location, or by tree species or planting date, whether they are in front of their house or apartment building, on their weekend stroll in the park, or a tree they just planted during a FUF tree-planting event. If a user wants to add a tree to the database, she simply clicks “Add a Tree” and a form appears, allowing her to locate the tree by clicking on the map (which automatically populates the X,Y coordinates), as the Web 2.0 paradigm of dynamic web-user interactivity is adopted by more and more organizations. As a result, webGIS is increasing public participation in areas such as environmental data collection, resource management, and public policy.
Accessibility to geodata has exploded over the past couple of years. Never has it been easier to display geodata for a variety of purposes, from aerial and street imagery for real estate property review to robust decision-making applications accessed over the internet and via intranets. At the closing session of the 2007 CalGIS conference, Google, Microsoft, and NASA touted their efforts to create 3D globe search and display image engines that bring geo-searches and display to everyone’s fingertips. These display engines, with their KML and XML APIs, are extremely cost-effective tools for deploying geodata sets and creating workflows for geodata maintenance. This article will describe the development of a workflow tool for managing a vital municipal data set, a master address database (mAD), using Microsoft Virtual Earth. The article will address (forgive the pun) building a master address file, synthesis of numerous data sources for building tenant and business suite units, QA/QC efforts, and conclude with a discussion of mashing up the MAD using a globe viewer.

WHY A MAD?

The development of data silos in any organization is not a new phenomenon. Address maintenance is hardly a glamorous operation and unless it has been championed and embraced by a particular department, it will run the course of being inaccurate, incomplete, and stored in myriad formats. Public Safety departments have the highest interest in an accurate geocoded address file, but often prefer a format not easily shared by other business systems: not point-driven but rather block- or range-driven. At the City of San Mateo, the IT/GIS program embraced the task of building a MAD over the past two years for several reasons. First, a comprehensive address file did not exist. Second, the Community Development department wanted to include tenants and business suites in project notification mailings, thereby improving public outreach. Third, the Community Development and Public Works departments wanted to track projects at the address level and not solely at the parcel level. Last, business systems developed for tracking and managing permits, business licenses, fire suppression events, recreation activity registration, and asset tracking could access the MAD as a standard, quality control which would provide ease of entry for their respective activities. APIs would be developed with each business system to access the MAD and populate or verify an address.

Representatives of City departments on the GIS Steering Committee helped define the requirements for the MAD. The MAD was deemed a high priority given that the data was key to many City business processes. Figure 1 summarizes the findings of the Committee and shows the importance of the MAD within the master list of shared data layers required for key business applications.

An immediate return on the cost of developing a MAD was projected because at least four departments independently maintained address data for their applications.

Business / Service Applications
- Business licenses – Finance
- Crime dispatch and analysis – Police
- Emergency management, EOC and Fire Suppression – Fire
- Development Review
- Building permits
- Planning permits
- Code enforcement
- Work Order, asset management – Public Works
- Recreation activities registration – Parks and Recreation

Shared Data Layers:
- Parcel fabric
- Street centerlines / ROW lines
- Addresses
- City boundary
- Waterways – creeks, sloughs, bay
- Parks
- Schools
- Aerials
- Special districts
- Planning areas
- Census tracts

Figure 1. Priority of Shared Data Layers for Business/Service Applications.
DEVELOPING A DATA SCHEMA

Developing a database schema for the MAD proved to have many facets. A hierarchical approach to addresses demonstrated they could be linked to these features:

- parcel/lot
- building footprint
- sub-building – apartment or business suite unit

The task of determining and verifying addresses from the parcel level to the sub-building level was complex. Thus, three project phases were created:

PHASE 1 Identify all parcel and tenant addresses and associate a parcel number
- create a point feature class or coverage for each address
- create a display tool for viewing MAD on the intranet (mashup)
- create the workflow for updating and maintaining the MAD

PHASE 2 Move and adjust the address point features to reflect actual location of unit
- create z-values for addresses on multi-floor buildings

PHASE 3 Identify multi-building lots and associate address to specific building where appropriate

To date, the City is in the final stages of implementing Phase 1.

The MAD schema was designed for flexibility and expansion so that various business systems could readily access the database and choose an address format suitable for their needs. (See Figure 2 below)

DEFINING THE PROCESS

The City already had an internal permit file of owner addresses that was based upon historical assessor information that had never been verified. In Phase 1, the team approached the task with two goals: improving the owner/site address provided by the county tax office and adding addresses for tenants and business suites. A comprehensive process for accomplishing these goals was developed.

STEPS FOR ASSEMBLING THE MAD DURING PHASE 1:

1. Assemble site address with parcel number from existing land use system/assessor data – master list
2. Purchase postal addresses (multi-tenant and business suites) from 3rd party mailing vendor (e.g. Melissa data, Accurate mailing)
3. Append 3rd party data to master list, sort by address, identify addresses without a parcel number
4. Coordinate with Fire to perform QA/QC on address text layer in GIS that is part of fire run book program. Receive field checked address map layer – text only Update GIS with text layer
5. Rectify unassociated addresses without parcel number with GIS base map by viewing map and address label view using the fire run book address text layer
6. Field check unassociated addresses (mostly multi-tenants, commercial suites)
7. Field check sample of MAD, check sample set against USPS ZIP+4 website
8. Create address point feature class using parcel centroid function in GIS
9. Mashup addresses on MS Virtual earth
10. Create application for viewing and managing addresses using mashup

A key step in the process as indicated in step 8 was using the “generate geometry centroid” function in the GIS; a MAD feature class/coverage of point features resulted from this function. Multi-tenant, multi-building parcels would have overlapping centroids and these would be moved to their respective locations in Phase 2.

MASHUP DEVELOPED

From Google Earth to MS Virtual Earth to NASA’s World Wind, these new technologies have made it easy and inexpensive to display geodata. Mashups, the result of overlaying data from one server or service on an entirely independent and separate service resulting in an inexpensive multi-hosting environment, are now commonplace. In the summer of 2006, the City purchased Pictometry’s aerial oblique data set and deployed it City-wide. The birds-eye view imagery became a sensation overnight, particularly with the Fire and Police departments. The subsequent release of MS Virtual Earth thus became a likely platform in which to overlay the address points and create an easy-to-use search engine for finding and displaying the location. The City contracted with Farallon Geographics Inc., a San Francisco GIS consulting company, to design the MAD, to develop the mashup of the MAD with MS Virtual Earth, and to create a search engine for accessing the MAD (See Figure 3, page 6).
enter the tree species, leave comments, and upload a photo. The database and map are then automatically updated immediately in real-time. Also, at any time, users can click “Export to Google Earth,” and download the data in .KML format for viewing in Google Earth.

The BUF and FUF are interested in mapping trees for many reasons. First, they can quantify the benefits of urban trees. It is estimated that trees result in millions of dollars in environmental and economic benefits each year. The environmental benefits of urban trees and forests are well-known. City trees reduce rainwater runoff during storms by diverting rainwater into soil, which percolates and is broken down by microorganisms which reduce the amount of pollutants in the groundwater. The economic benefits are also beginning to be understood and quantified. Trees provide shade to nearby buildings and reduce urban heat by both increasing cooling due to evaporation through their leaves and by decreasing the albedo, or reflectance, of the city. Additionally, trees increase property values and provide habitat for city wildlife. They improve aesthetics and neighborhood interaction, and have been associated with decreased crime, aggression, and violence. Finally, trees help fight global warming by removing carbon dioxide, the primary greenhouse gas, and producing oxygen.

Second, the BUF and FUF can share information between the City and County of SF, Friends of the Urban Forest, and general public, which is crucial for long-term maintenance and planting efforts.

The website allows data interaction which educates residents about the value of urban tree care and maintenance. The volunteer- and public-generated data collection method harnesses the manpower of the general public to help collect data on a more frequent basis than the BUF and FUF alone.

Any website that accepts public input data is prone to occasional inaccuracies (e.g., some trees were placed in the Bay). However, with most webGIS sites, the good far outweighs the bad, and in the end, the San Francisco Urban Forest Map gives the BUF and FUF the data they need for long-term urban forest maintenance.

Since the SF Urban Forest Map tracks species information for every tree, measures of tree species diversity can be calculated. Today, more than 100 native and nonnative tree species make up the city’s diverse urban forest, a level of diversity needed in an urban environment to withstand frequent tree pests and disease. The SF Urban Forest Map also maps where trees are not. It allows FUF and city officials to understand the areas that need tree plantings, and to prioritize those areas, providing a greener future for communities that need it most. In addition to creating an application that allows for inter-agency communication and resource management of San Francisco’s urban forests, another goal of the project is to provide a template application with sample code and database schema that other urban forest communities around the world can adopt for their own urban forest management programs. Mapguide is a free and open-source product available to non-profit and community groups in developing countries. In this way, the SF Urban Forest Mapping Project gives lobbyists and activists in San Francisco and around the world the critical data they need to engage decision-makers. Citizens and advocates can use this data to better quantify the economic and environmental value of urban trees, and to affect urban forest policy changes. In this way, webGIS is changing the way communities (and possibly you) interact with neighborhoods.

winner of last issue’s where in the bay area? contest

Using her keen aerial imagery interpretation skills, Michelle Lam correctly identified this photo as Coyote Hills Regional Park in Fremont, CA. Michelle was chosen from among the correct entries to the contest!

This picture of Coyote Hills was taken by UC Berkeley Professor of Architecture Charles C. Benton in Spring 1997 from a Canon 15-mm lens camera rigged on a kite flying 250 feet high. This lens sees such a large area that the kite is visible in the image.
MANAGING AND MAINTAINING THE DATA

A key component of this project was to develop a process for performing on-going maintenance of the MAD. The end-user has the ability to notify the IT/GIS program when an address is incorrect or not found (see Figure 4).

BENEFITS

A comprehensive and accurate address file has many benefits. Public Works has a database and an updated workflow for assigning and managing addresses. The City can now track assets, work orders, and permits down to the address/building level rather than the parcel. Public noticing of pending projects and development now includes tenants, which allows for greater input into the development process. Ultimately, public safety benefits as more accurate addresses improve response times.

As the project progressed, it became apparent that the address point feature class was evolving into an important feature for a variety of geoprocessing functions. For example, searching by an address could now be performed directly on the point feature class and not through a join or view of an address table to a feature class. This resulted in faster search results. Also, addresses could now be moved to their ground location which improved public safety response times. In Phase 2 of this project, the address features will be updated to directly reflect their ground/entrance location, either by adding a Z value attribute for multi-floor buildings or by moving the overlapping points manually.

NEXT STEPS

Now that this more accurate address database is approximately 95% complete, the City looks to expand the use of the MAD and create APIs so that existing business systems can reference complete and standardized addresses. Select systems can currently validate an address and populate an address field from a MAD record. For example, the on-line recreation activity registration service can verify residency when a user logs in and store the address for future data mining and analysis such as evaluating the home to class distances of registrants. Currently business licenses are not checked to see if a business operates at a particular address, but in the future the MAD will provide quality checking and a standard for address verification. Another benefit is that permits will be assigned to an address/building instead of the parcel which will provide more accurate identification of where projects occur.

With Phase 1 reaching completion and the implementation of the MAD mashup on the City’s intranet there is much to look forward to in using this vital data set. The current plan is to have referential lookup APIs in place for the various business systems by early 2008.
2007 GEOSPATIAL CONFERENCE ROUND UP: THE BAY AREA AND BEYOND!

BY KARIN TUXEN-BETTMAN AND STELLA WOTHERSPOON

The Bay Area was an active place for geospatial conferences between April and June 2007. Over seven geospatial conferences took place and their combined themes are an indicator of where GIS and related industries currently stand and where they are heading. Here are our thoughts on conferences we attended this spring, both in the Bay Area and beyond.

CALGIS

BAAMA hosted this year’s CalGIS 2007 conference at the Oakland Convention Center, April 4-6, 2007. The three-day conference brought together numerous attendees, speakers, posters, and exhibitors. Friday’s brunch drew the most attention, as Google Earth Chief Technology Officer Michael T. Jones, Microsoft Virtual Earth Director of Marketing Aric Weiker, and NASA World Wind’s Patrick Hogan highlighted how their respective “earth browser” is changing the GIS industry. Guest speakers also included Directions Magazine Contributing Editor Dave Sonnen, who discussed his thoughts on how public awareness of geospatial technologies has increased in the past year and how spatial capabilities are increasingly infiltrating mainstream IT. Governor Schwarzenegger Senior Advisor Sean Walsh delivered an address in which he acknowledged the contributions of GIS to state operations.

Newer topics for CalGIS this year were open-source GIS and web mapping software. Several presentations addressed open-source GIS tools including uDig and PostGIS, and implementations of these technologies. Autodesk presented MapGuide Open Source as component in a technology stack, and San Francisco Department of Public Works presented an implementation of this software: the Urban Street Tree Mapping Project which is the subject of an article in this issue. Caltrans’ Oscar Jarquin’s presentation explained what Caltrans are doing with open-source GIS and web services.

John Huie, GIS Manager at Contra Costa County and Bay Area Regional GIS Council Chair, agreed. “The two topics that seemed to keep resurfacing were Open-Source and Web Services,” he said in his BARGC blog, http://www.bargc.org/. “Interesting since both are decidedly non-GIS specific issues. But it shows how current trends in Information Technology are driving the direction of the GIS industry.”

Another popular topic was data, or more specifically the acquisition and organization of highly detailed, fine-scale, and complete datasets. Imagery, both street-level photography and airplane and satellite imagery, were discussed in detail in many presentations. Another popular presentation highlighted the complete California state-wide parcel layer that has been put together by AT&T (not yet available for public consumption).

And, of course, the BAAMA Journal debuted at the conference with Volume 1, Number 1. About 250 lucky attendees received a printed copy and all BAAMA members were emailed a link to download a .pdf version. BAAMA intends to continue limited distribution at key events such as GIS Day and CalGIS. All the more reason to attend!

CalGIS 2008 will be hosted by the Central Valley URISA chapter April 23-25, 2008, and will take place in Modesto. For more information and to sign up at the early-bird registration rates, see http://www.calgis.org.

AAG

The Association of American Geographers (AAG) held their annual conference in San Francisco, April 17-21, 2007. The national conference highlighted over 3,000 paper and poster presentations about the latest geographic research, from all areas of the field of geography: from GIS to women’s issues, from remote sensing to tourism, from global climate change to immigration, and from philosophy to wine (complete with a wine tasting!). The keynote speaker was evolutionary biologist, geographer, and author of Collapse: How Societies Choose to Fail or Succeed and Guns, Germs, and Steel, Jared Diamond, and his popularity brought a standing-room-only crowd.

WHERECAMP

The weekend following Where 2.0, a O’Reilly geospatial and location technology conference held in San Jose, a
group of diehards gathered for the first WhereCamp. The event was held June 2-3, 2007 on the Yahoo campus in Sunnyvale and was free and open to any interested parties (roughly defined as “geohackers, geowhackers, geoslackers, geoenthusiasts, web 2.0 and mobile developers, social place hackers, artists, grad students, geographers, earth scientists, and anybody else who wants to ‘know their place’

As an “unconference,” there was no planned program for WhereCamp. Rather, the attendees gathered at a morning organizing session, presented their interests to the group, and if there were other like-minded folks, a session was named and scheduled by pinning a sheet of paper to a grid.

The program ultimately ran the gamut from philosophical discussions of global food production networks, to demonstrations of applications and projects, to real-time hacking labs. Open Street Map http://www.openstreetmap.org/, a wiki-style street centerline data collection project, was presented which led to a repeat presentation of that project at BAAAMA’s May Educational Session.

Another session was Hacking Google StreetView. This involved one geohacker presenting another’s insights on the then-unpublished StreetView API, the group then building on that knowledge base over the next 24 continuous hours, and ultimately writing hacks and processes such as scraping the panorama tile imagery from Google Maps. Useless, possibly straying from Terms and Conditions of Use, and fun? Absolutely! See http://wherecamp.pbwiki.com/Hacking+Google+Street+View for further details on these hijinks.

There were very few BAAAMA members in attendance, so this unconference provided an opportunity to meet some of the beyond-the-traditional-GIS-boundaries neogeographers of the world who have contributed many geospatial applications to the Internet in recent years and who are fervently working on tomorrow’s new thing.

GOOGLE DEVELOPER DAY 2007

Google hosted a Developer Day on May 31, 2007 that took place in 10 cities around the world. With free registration, meals, snacks, foosball, pool, a sea of beanbags in which to lounge, and informative presentations, spots quickly filled up. To accommodate the high demand in the Bay Area, Google moved the venue from its Mountain View headquarters to the San Jose Convention Center.

The program consisted of keynote addresses by Sergey Brin, Co-Founder, and Jeff Huber, VP of Engineering, who explained Google’s motivation for creating APIs and developer tools: to foster new and dynamic content for the Internet which will, in turn, attract eyeballs that will benefit Google’s core advertising and search businesses. While this motive benefits Google’s bottom line, there is an upside for organizations that take advantage of the Company’s many tools to enhance their web applications.

The remainder of the day consisted of hour-long presentation sessions organized in three tracks: Developing with Geo, Mashups and More, and Tools for Better Web Development. The Developing with Geo track was comprised of eight unique sessions, almost as many as the other tracks, which revealed the prominence of Google Maps and Google Earth among Google APIs and products.
Several new products were announced and demonstrated at the event such as Mapplets, Google Gears, and a Mashup Editor. (Google Maps StreetView almost debuted at this event, but was really unveiled a day prior at the Where 2.0 conference.)

Mapplets are the most interesting new development for the geo-community and are a type of Google Gadget that allows developers to embed small applications within Google Maps. Examples of Mapplets are a crows-fly distance measuring tool and a tool that calculates and plots the antipode of a user-selected point. Mapplets can also be used to render multiple data feeds on one Google Map. Developers can expose their Mapplets with the Google Maps directory and users can then add the Mapplets to their My Maps tab on Google Maps.

In all, the event was a convenient and enjoyable crash course in the many Google offerings and provided a nice opportunity to meet other Google API users in person. All of the presentations are available on YouTube (of course!) http://code.google.com/events/developerday/mv-sessions.html so you, too, can participate.

LOCATION INTELLIGENCE

The tenor of the Location Intelligence 2007 conference was decidedly more business-oriented than many of the conferences discussed here. Sponsored by Directions Media, the publishers of Directions Magazine, this was the third year of this relatively new geospatial conference which was held April 16-18, 2007 in San Francisco.

The first day was dedicated to three-hour workshops on enterprise GIS, open-source geospatial tools, and mashup technologies such as Google Maps, Microsoft Virtual Earth, and Mapquest Advantage API. The remaining days were filled with sessions organized into tracks focused on enterprise GIS, dynamic content, and location based services/mobility (LBS).

The theme of the conference, “convergence,” was spot-on as, after years of talk about LBS starting during the dot-com era, many necessary infrastructure components have come to fruition. These include a new generation of GPS and WiFi-enabled mobile devices, software development platforms for mobile application development,
improved mobile device screen resolution that can render more data and legible maps, greater experience with and understanding of user interface best practices for mobile devices, GPS chips that geolocate with greater precision, the possibility of geolocation through WiFi triangulation, RFID chips whose location and identity is readily detectable, improved telecommunications network bandwidth, and most importantly, greater consumer use of mobile devices and widespread familiarity with web mapping applications thanks to mashup technologies.

Many of the LBS companies presented their efforts in advancing local search, the optimization of search engines to include locational search terms, and in exploring advertising models to take advantage of a new marketing channel. It will be interesting to see how we, the consumers, react to these efforts. While the idea of mobile device advertising may seem invasive, it is possible that future generations will become accustomed to and welcome the information.

OBIA SYMPOSIUM

The Northern California ASPRS chapter co-sponsored the Object-based Image Analysis (OBIA) Symposium in Berkeley, June 6-8, 2007, which was hosted by the Geospatial Imaging & Informatics Facility (GIIF) in the College of Natural Resources at UC Berkeley. The symposium featured technical hands-on workshops using OBIA software, including Definiens Professional (“eCognition”), Visual Learning Systems’ Feature Analyst, and Spring, as well numerous presentations by leading researchers in the field of OBIA, who highlighted real-world and research applications for OBIA. OBIA, a remote sensing and image analysis technique which first partitions imagery into segments, or objects, before classification of the objects into a land cover class, is one of the burgeoning fields in GIS, as it effectively bridges remote sensing and GIS so that highly-detailed, fine-scaled imagery can be used efficiently with GIS.

INTERNATIONAL SYMPOSIUM ON DIGITAL EARTH

The UC Berkeley campus was the site for the 5th International Symposium on Digital Earth, which was held June 5-9, 2007. Many speakers focused on how they are using digital globes to enhance their information expression and distribution. Presenters demonstrated the use of a variety of tools and applications. For example, John Amos from Skytruth (http://www.skytruth.org/) showed how Google Earth was increasing public involvement in environmental issues by demonstrating how it is mapping the growing gas and oil fields in Wyoming. Another example was Peter Webley’s presentation of PUFF (http://puff.images.alaska.edu/index.shtml), a volcanic ash tracking model with a Google Maps interface to the data to show predictions for volcano eruptions.

ASPRS

Farthest from home, but worth the trip, was The American Society of Photogrammetry and Remote Sensing (ASPRS) Annual Conference in Tampa, Florida from May 7-11, 2007. Several Bay Area folks were in attendance. In particular, Alan Mikuni, long-time BAA mA and NorCal ASPRS member, was awarded as a 2007 ASPRS Fellow for his contributions to both ASPRS and to the field of photogrammetry, field survey, photogrammetry, and geography. He currently works at USGS in Menlo Park.

In addition, the ASPRS Annual Conference highlighted keynote speeches by Google Earth CTO Michael T. Jones and Microsoft Boulder General Manager John C. Curlander. Each highlighted the strengths of their respective “Earth browser.” Of particular interest was Jones’ focus on the seamless integration of millions of postings by millions of people into one digital earth. Curlander, on the other hand, focused his presentation more on the development and management of multiple layers of seamless data and imagery to be rectified, catalogued, and integrated in a way that is less about giving neogeographers a forum and more about creating a repository for seamless and up-to-date imagery.

ESRI

The ESRI International User Conference
was held June 18-22, 2007 in San Diego. The ESRI User Conference is the largest conference in the GIS industry, and they spared no expense this year! The conference was rumored to consist of over 15,000 attendees, many of which heard the conference keynote speech made by Wangari Maathai, 2004 Nobel Peace Prize winner, environmentalist, and founder of the Green Belt Movement, http://greenbeltmovement.org. ArcGIS 9.3 was highlighted, including its support for advanced statistical analysis (like geospatial regression modeling) and geographic visualization. More of the plenary session seemed geared toward enterprise and corporate GIS than in past User Conferences. “This year, I see more suits and a lot less khakis,” said Brian Quinn of the City of Berkeley, “which may reflect how our industry is transitioning away from being a desktop-user-based industry towards a more organization-wide or enterprise focus.” Conference attendees were treated to presentations, technical workshops, and the enormous map gallery and exhibitions.

SUMMING IT UP

In the end, one of the best things about conferences is the networking and the professional relationship building. It is these activities that allow the Bay Area GIS community to grow tighter while it increases in number. Said Huie about the CalGIS conference, “I got to network with the people in the GIS industry who are some of the smartest, friendliest and hardest working people I know.” ☺

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- E-mail announcements & reminders for Bay Area GIS activities

BAAMA SPONSOR BENEFITS ($150 ANNUAL FEE)

- Up to 10 individuals from the organization receive all individual membership benefits listed above
- Listing as sponsor on BAAMA web site and in the BAAMA Journal
- Link to organization web site from BAAMA web site
- Once/year opportunity to send an informational or advertising announcement to all BAAMA members
- Opportunities to conduct Technical Tours

Download an application form from www.baama.org/application.pdf

BAAMA is the vital organization of GIS professionals in the San Francisco Bay Region that promotes partnerships and teamwork with users of GIS technology to improve our environment and community.

The mission of BAAMA is to be the primary forum of the San Francisco Bay Region geospatial community that provides education for professional development, networking opportunities, leadership, coordination, and representation - and have fun doing it!

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Many thanks to our former Webmaster, Anne Anderson, for maintaining BAAMA.org for over two years and to Bill Clement, Chair of CalGIS 2007, and his team of BAAMA volunteers for organizing a fabulous conference in Oakland this year.

Bay Area Automated Mapping Association
P.O. Box 71073, Oakland, CA 94612
BAY AREA AUTOMATED MAPPING ASSOCIATION

BAAMA’S VOLUNTEER INITIATIVE

Are you a BAAMA member who’d like to get a little more involved? Maybe you know some web programming and would like to improve our website. Or maybe you know Microsoft Access, and would like to design a membership database. Don’t be shy! BAAMA welcomes members to take volunteer roles in the organization’s activities. If you would like to get involved, please contact Bruce Joffe, GIS. Consultants@joffes.com, 510-238-9771.

There are many reasons to be a BAAMA volunteer. First, you can learn something new. Perhaps you’ve never written an article before, but would like the chance to do so and to see your name in print. Now is the time to do it! Second, volunteering for BAAMA will increase your professional toolbox and enhance your resume. Third, if you volunteer, you will get to better know your fellow BAAMA members and board members. Your next business partnership, project, or job might be the result of BAAMA networking.

There are several different tasks that need volunteers, including our bimonthly educational sessions, our semi-annual journal, and our communication and outreach via email and the web.

EDUCATIONAL SESSIONS

- See Upcoming Events (page 1) for a list of upcoming educational sessions. Are you interested in volunteer- ing for one of them?
- You can lead or help to coordinate a bi-monthly educational session.
- You can help at the registration desk, or arrange food and beverage for the continental breakfasts.

BAAMA JOURNAL

- BAAMA semi-annual publication needs writers, copy editors, and layout editors for the next issue.
- You can write an article, or assist a writer by interviewing a subject for an article.
- You can copy edit articles others have written.
- You can desktop publish the Journal using Adobe InDesign.
- You can manage advertisement artwork content.

BAAMA COMMUNICATIONS

- Currently, we have several excellent volunteers who maintain all regular BAAMA communications, and these folks need back-ups for those busier times!
- You can help create email pushes and get experience using Constant Contact software, by backing-up our excellent email manager Michael Loconte.
- You can help update and improve the BAAMA website, as backup-up to our wonderful webmaster Pascal Akl.
- You can help maintain BAAMA’s membership database and possibly create a database with Microsoft Access. All BAAMA members are welcome to attend board meetings. As a board meeting attendee and BAAMA volunteer, you will become a member of BAAMA’s Advisory Board. After consistently attending several board meetings and volunteering some time (e.g. helping with an educational session, writing a Journal article, etc.), you can become a full Board Member. As a Board Member, you can influence the directions and initiatives of BAAMA, easily network with numerous BAAMA members, and have a lot of fun doing it.

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GIS EDUCATION AROUND THE BAY AREA: SAN JOSE STATE UNIVERSITY

BY STELLA WOTHERSPOON

San Jose State University offers Bachelor’s and Masters degrees in Geography and certificates in GIS. The Bachelor’s program includes general education requirements and course work in thematic and regional geography with a focus on urban analysis, as well as geographic analysis and GIS. The Masters program is focused solely on geographic information science.

The Masters program started in the late 1960’s with a focus on general geography. By 1991, when Professor Richard Taketa, the current department chair, joined the faculty, only about 5% of students completed the degree. The program was soon put on probation. Fortunately, Dr. Taketa, in addition to being an academic geographer, was also a former software development executive and was well aware of the value and potential of GIS software tools for geographic analysis. Dr. Taketa encouraged the administration to allow the department to shift the focus of the program to geographic information science as a means to improve the completion rate. In the decade after this change, the completion rate increased almost eight-fold and the strong GISci focus of San Jose State University remains unique among Bay Area geography Masters programs.

Students in the Masters program focus their studies on geographic information systems development (including design of databases, algorithms, and application software), cartographic visualization (including design of dynamic and interactive mapping systems), or applications of geographic information technology to geographic analysis and geographic education.

Master’s program degree requirements include three graduate seminars and a Masters thesis. The remaining degree credit requirements are fulfilled by taking undergraduate level technical GIS classes or graduate classes outside the department. Seminars are offered in the following areas: GIS applications, GIS technology, GIS project management and advanced geographic techniques; the specific topic of these seminars varies from year to year, but generally track industry trends.

For example, in early 2004 the GIS technology seminar explored the evolving nature of internet mapping with the emergence of web services standards such as WMS and WFS (Google Maps was not quite out of the gate at that point...) In 2007, the advanced geographic techniques seminar dove deeply into the world of ArcObjects and students helped develop a custom geoprocessing tool. The beneficiary of this development effort was the USGS Research section in Menlo Park where Dr. Taketa also holds a faculty appointment.

Faculty members often incorporate their experiences outside the classroom into their curricula. Professor Kate Davis has conducted research in Guatemala and has also worked there with Habitat for Humanity. After tropical storm Stan caused widespread damage and destroyed many homes, some of which were Habitat-built, Dr. Davis identified ways geospatial technologies could assist in the rebuilding effort. Some students in her classes became involved in field data collection efforts including resident interviews and GPS recording of home locations. Back in San Jose more students performed susceptibility and future homesite location analyses, and built a web-based GIS application that is accessible in Guatemala.

The undergraduate technical GIS classes are rigorous and include lectures and lengthy labs. Except for the first weeks of the semester, lab assignments present students with a geographic problem to explore and expect them to identify problem-solving methods from within the vast universe of ArcGIS. Because the classes are small, however, there is usually a professor available to provide clues and guidance. These classes also evolve with ever-changing technology. The Dynamic and Interactive Cartography class added the Google Maps API to an existing curriculum that included ESRI ArcIMS, HTML, and JavaScript. The GIS project development class began using Python and the ESRI Geoprocessor object model shortly after it was released in ArcGIS 9.0.

Graduates of the undergraduate and graduate programs can be found throughout the Bay Area in various sectors, from municipal, county, and state government to private software development companies, and from non-profits to doctoral programs. With the solid foundation in geospatial technologies and theory of geographic analysis that the San Jose State University program provides, graduates find themselves well prepared. To find out more about the program see www.sjsu.edu/depts/geography.
LETTERS TO THE EDITOR
The Editorial Board was thrilled to receive the following letters from readers. We welcome your thoughts, suggestions, praise, or criticism about what you see in these pages. Please feel free to send your input to editor@baama.org.

A NOTE FROM THE EDITOR
We received some feedback on Issue 1 that spanned the spectrum. These letters constitute a new Letters to the Editor feature for BAAMA Journal that debuts in this issue. This feedback prompted the Editorial Board to revisit our guiding principles and we’d like to share these with you:

BAAMA Journal Guiding Principles
1. To highlight innovative Bay Area-centric geospatial projects and practitioners;
2. To serve the professional GIS community of the greater San Francisco Bay Area;
3. To provide timely, informative and relevant content of a moderately-technical nature; and
4. To engage and entertain the readership with lively, well-written and well-edited content.

We welcome your feedback on this or past issues and on what topics you would like to see in these pages. If you are interested in authoring an article you can find our submission guidelines online at http://baama.org/journal/index.html. We welcome your participation!

Stella Wotherspoon
Content Editor
editor@baama.org

WASHINGTON STATE CHA...
WHERE IN THE BAY AREA?

This is a clip of United States Geological Survey (USGS) high-resolution orthoimagery acquired in February 2004. An orthoimage is remotely-sensed image data in which displacement of features in the image caused by terrain relief and sensor orientation have been mathematically removed. Orthoimagery combines the image characteristics of a photograph with the geometric qualities of a map. The resolution of this natural color orthoimage is 0.3-meters (approximately 1-foot). These data can be downloaded for free from seamless.usgs.gov/website/seamless/products/listofortho.asp.

Identify this location and win a prize! Send your answers to editor@baama.org. One lucky winner will be randomly selected from all correct entries received by February 15, 2008. The winner will be announced in the next issue. See page 5 for the winner of our first contest.

BAAMA EXTENDS SPECIAL APPRECIATION TO ITS CORPORATE SPONSORS

- Alameda County Community Development Agency (www.acgov.org/cda)
- Alameda County Public Works Agency (www.acgov.org/pwa)
- Association of Bay Area Governments (www.abag.ca.gov)
- Autodesk, Inc. (usa.autodesk.com)
- Boundary Solutions (www.boundarysolutions.com)
- Caltrans (www.dot.ca.gov/dist4)
- Central Contra Costa Sanitary District (www.centralsan.org)
- City of Fremont (www.ci.fremont.ca.us/default.htm)
- City of Oakland (www.oaklandnet.com)
- City of Palo Alto (www.city.palo-alto.ca.us)
- City of Pleasanton (www.ci.pleasanton.ca.us)
- Contra Costa Water District (www.ccwater.com)
- County of Marin, Community Development Dept (www.co.marin.ca.us/default1024.asp)
- City of San Jose, GIS/Infrastructure Public Works (www.sanjoseca.gov/publicWorks)
- County of Santa Clara, ISD (www.sccgov.org)
- EarthData International (www.earthdata.com)
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- Metropolis New Media, Inc. (www.metropolisnewmedia.com)
- Michael Baker Jr., Inc. (www.mbakercorp.com/gis)
- MoosePoint Technology (www.moosepoint.com)
- Munsys, Inc. (www.munsys.com)
- San Francisco Estuary Institute (www.sfei.org)
- San Jose Water Company (www.sjwater.com)
- San Ramon Valley Fire Protection District (www.srvfpd.dst.ca.us)
- Santa Clara Valley Water District (www.valleywater.org)
- Spatial Systems Group Prevention Research Center, Pacific Institute for Research and Evaluation (www.pire.org/PRC/SSG)
- Stamen Design (stamen.com)
- Stanford University (www.stanford.edu)
- University of California, Berkeley (www.berkeley.edu)
- ValueCAD (www.valuecad.com)