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Technology Division
Making Great Communities Happen

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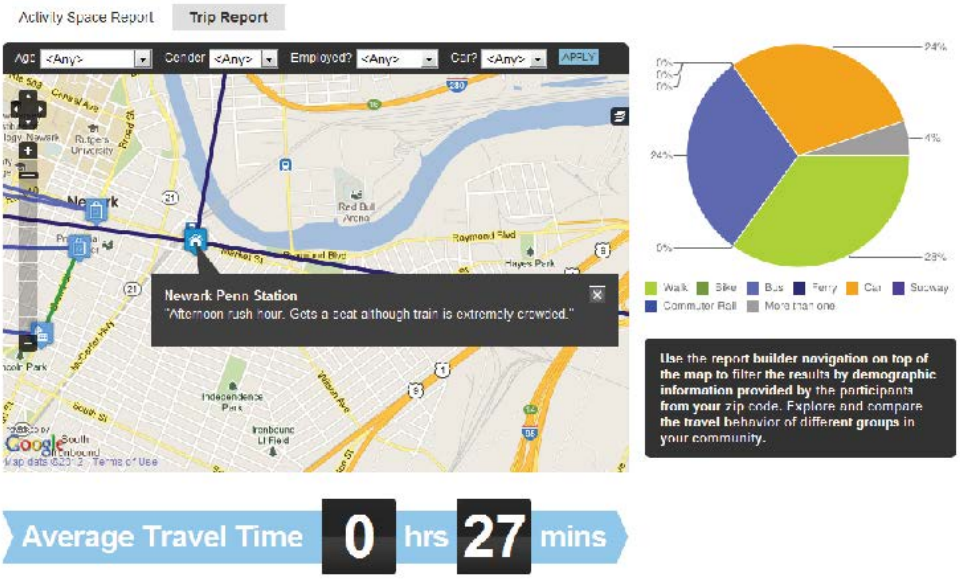
2012 National Conference Issue

Using Volunteered Geography Information to Improve Transportation Services for Low-Income Communities

Laxmi Ramasubramanian, Hunter College Department of Urban Affairs and Planning

How can we understand the travel behaviors and mobility barriers experienced by low-income populations? The answer is both simple and complex at the same time, since it requires considering the entirety of individuals' lives, not only their travel to and from their workplace. My research team and I gathered data from a relatively small sample of low income individuals through focus group interviews. We augmented the focus group data using additional detailed information provided by key individuals who participated in the preliminary discussions.

Expanding our inquiry to include non-work trips immediately revealed the difficult travel choices made by low-income households with limited commuting alternatives. Since low wage workers often engaged in shift-work, accommodating the 24-7 workday required accessing transportation services at non-peak hours including late night and early morning hours. Likewise, for those individuals juggling multiple responsibilities, including caregiving for elders and children whilst maintaining a rigid work schedule, life without access to a can be next to impossible. In some neighborhoods, nonprofit organizations and charity groups picked up the slack of providing practical transportation assistance. Many individuals relied on the kindness of friends and family to access essential services such as grocery shopping and visits to health care providers. These vivid spatio-temporal stories, from a small sample of participants, were very powerful and moving because they brought home the challenge of navigating a seemingly simple trip chain of routine activities – such as taking kids to school; go to work; pick up groceries on the way home – something professional planners often take for granted. When work is not flexible or set by regular business hours, travel barriers for low-income communities are often insurmountable.



The Activity Space can illustrate mode choice and real-time information, including trip length or transit crowding

My research team, working with the Urban Interactive Studio has developed a web-based application (available for beta testing at http://expandingactivityspace.org) to help transform user-provided data into a communicative visualization tool that can describe the activity spaces of individuals and groups. We

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Letter From The Chair

Harsh Prakash
Senior GIS Manager
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Chair, APA Technology Division

As the division gets ready for the APA conference in Los Angeles later this month, I want to introduce the new membership to our Leadership Committee, and highlight their voluntary contributions of time and talent:

First up, meet a new Section Chair - Corey Proctor (@DrkNow00). Corey is our GIS Chair, and responsible for spreading awareness about the application of GIS and mashups by highlighting the spatial components of say, the division roster. He works as a Senior Planner for Forrest County, MS, where he is responsible for managing the county's GIS system, administering grants and enforcing land development ordinances. He is also our acting Secretary/Treasurer and part of our Executive Committee.

Ayanthi Gunawardana is also a new Section Chair (@HoneyBadger88). Ayanthi takes on the role of our Social Networking & New Technology Chair, spreading awareness about the application of participatory and handheld technologies by administering our social media channels. She works as an Attorney Emeritus Program Coordinator with the Feerick Center for Social Justice, NY.

Crystal Wilson is our Vice-Chair and part of our Executive Committee (@PlaceVision). Crystal assists me in coordinating committee activities, and has helped customize WordPress on the division website. She is the President of PlaceVision Inc., FL, and helps planners and architects communicate more effectively.

Stephen Chiaramonte is our Newsletter (PDF) Editor. Steve's contributions include the painstaking layouts of our newsletter PDFs. He has been a transportation planner with Parsons Brinckerhoff, for more than ten years, specializing in highway-corridor, and bicycle and pedestrian studies.

Robert Goodspeed serves the role of our Newsletter (group) Blog Chair (@RGoodspeed). Rob collects the bulk of the content for the newsletter and updates the division website and our APA-hosted webpages. He is a PhD student at the MIT Department of Urban Studies and Planning, and a part time research consultant for the Metropolitan Area Planning Council, MA.

Finally, meet Jennifer Cowley, Professor, OSU (@EvansCowley). Jennifer is our Immediate Past-Chair. I also want to thank Amiy Varma, Associate Professor, NDSU, for his contributions as our past Secretary/Treasurer.

I look forward to meeting with the rest of you in Los Angeles, and brainstorming on new initiatives. As always, you can contact me directly at harsh@gisblog.org (@GISBlog).

Social Media for Planners

Ayanthi Gunawardana, Social Networking & New Technology Chair

Now more than ever, technology is transforming the way urban planning is perceived by the public and manipulated by practitioners. Grassroots movements to improve the state of cities no longer begin in the streets like the age-old example of Jane Jacobs; they begin with ideas circulated through cyberspace. For example, Mark Gorton of OpenPlans and Streetfilms has been a strong advocate of open-source planning and advocacy, but his events are not mass public demonstrations or boycotts; they began with online films like "Rethinking the Automobile" and speaking engagements advertised on Facebook and Twitter. We find out about relevant events through listserves, newsletters, and tweets instead of newspapers and magazines. Revenues for print forms of media are down while people would rather watch relevant Twitter feeds, check their Facebook fan pages of interest, or simply browse the Internet. Even more importantly, people are given a voice for their ideas. Without fear of humiliation of face-to-face criticism, people can post their opinions online, creating an honest and thought-provoking exchange of ideas. The leaders of these movements are no longer the lone controllers of these ideas; many people across the world can comment on and collaborate on projects in various realms without ever having to travel.

I myself found this opportunity through social media. As someone with parents who have only a vague idea of what urban planning is, social media has given me access to a variety of contacts, articles, and information about the field and sparked my passion for the subject. I hope to do the same for others through my responsibilities as the social media chair of our division.

Upcoming Conferences

American Planning Association National Conference
April 14-17, 2012
Los Angeles, California
www.planning.org/conference/

Where Conference
April 2-4, 2012
San Francisco, California
whereconf.com/where2012

Real CORP 2012
May 14-16, 2012
Schwechat, Austria
www.corp.at

American Institute of Architects 2012
Nat'l Convention & Design Exposition
May 17-19, 2012
Washington, D.C.
convention.aia.org

ESRI User Conference
July 23-27, 2012
San Diego, California
www.esri.com/events/user-conference/

Land Trust Alliance Rally
Sept. 29 – Oct. 2
Salt Lake City, Utah
www.landtrustalliance.org/learning/rally

Strata Conference: Making Data Work
Oct. 23-25, 2012
New York, NY
strataconf.com/stratany2012

See Page 6 for more information about the Technology Dvision's Activities at the 2012 National Conference!

The articles below describe two recent projects by OpenPlans, a non-profit technology organization dedicated to advancing open government and improving transportation systems. All the authors are OpenPlans employees.

Beautiful Streets: An Experiment in Place Evaluation

Aaron Ogle, Mjumbe Poe and Frank Hebbert

What's a beautiful street? Sometimes it's hard to define what makes a place great. Planners can track a neighborhood through census data, population density, crime statistics, and so on. But it's harder to establish the softer feeling - is this a place I like?

Beautiful Streets (beautiful.st) is an experiment in place evaluation. Users are invited to compare 200 randomly-selected streets in Philadelphia. Using pairwise surveys and Google Street View, OpenPlans built a tool that asks a simple question: which street in each pair is more beautiful?

The website isn't just a fun, one-off survey. The pairwise comparison of Google Street View images offers a new set of tools for planners. Everyone is an expert when it comes to gut feelings, but the results of a systematic survey results can be useful in establishing a basic

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A high-level "Beautiful Street"

A mid-level "Beautiful Street"

A low-level "Beautiful Street"

Shareabouts: Open Source Maps for Crowdsourcing

Frank Hebbert and Julia West

Successful planning projects make the community an equal partner. But it's not easy - maximizing public participation in the planning process remains one of the biggest challenges for planners. During the initial phases of a new project, how can we learn what matters most to the community? As a project moves forward, how can we prioritize issues, based on public feedback?

Combined with traditional outreach methods, online crowdsourcing maps provide planners with new tools to tackle these challenges. By enabling the people who know the city best to voice their opinion and knowledge on a map, crowdsourcing allows the community to engage in a planning process in a meaningful way. For example, the New York City Department of Transportation asked for public input on the locations of bike share stations, using an open source tool from OpenPlans. Using nyc.gov/bikeshare, New Yorkers made thousands of suggestions citywide.

Authentic participation through online tools is one of the problems we're tackling at OpenPlans. We've taken the functionality of the NYC bike share map and turned it into an easy to customize tool for public input, called Shareabouts. You can find out more about the project at shareabouts.org.

Intended for use by planning agencies or community groups, Shareabouts complements and extends the reach of an existing or future planning process. The platform is a Ruby on Rails application that runs on a spatial database, making it easy to carry out geographic operations on the map, such as limiting input to particular districts, or getting input on areas rather than individual points. All text can be

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Perceived Usefulness of Scenario and Visualization Tools for Planning, Design, and Impact Analysis of Development around Transit Stations

Todd Graham, Metropolitan Council
Michael D. Greco, University of Minnesota Center for Urban and Regional Affairs
David G. Pitt, University of Minnesota Department of Landscape Architecture

"Corridors of Opportunity" is an initiative to promote sustainable, vibrant, and healthy communities framed around a transit network in the Twin Cities, Minnesota, metropolitan region. The initiative is funded by a Sustainable Communities Regional Planning Grant from the U.S. Department of Housing and Urban Development, with additional funding from Living Cities, a collaboration of foundations and financial institutions. The original Corridors of Opportunity work plan included evaluation of scenario and visualization tools to equip and prepare transit corridor initiatives and planners in the use of planning support technologies for planning, design, and analysis of neighborhood-scale development around future and existing transit stations. The objectives of this work included:

- Successful adoption and implementation of scenario and visualization tools by planners, community leaders, and others.
- Improved public understanding of design and plan alternatives.
- Improved community participation experiences in targeted corridors.
- Improved comparability and replication of planning processes among corridors.

The Twin Cities Metropolitan Council, along with researchers from the University of Minnesota, studied three current-generation planning support solutions: CityCAD, CommunityViz, and Envision Tomorrow (paired with Google SketchUp for visualization). The study included use-testing, identification of criteria for technology evaluation, and focus groups to demonstrate and discuss applicability of the systems for local station-area planning.

Four focus groups were conducted with land-use and transportation planners (14 participants) and community organizers and representatives (11 participants). Participants were shown 20-minute demonstrations of each software system. They were then asked to evaluate the utility of each system for early-stage, neighborhood-scale planning in a public-participation context relative to (1) conceptual development of neighborhood plans, (2) visualizations of experiential conditions resulting from plan design, and (3) evaluation of development impacts on a range of measures.

Several findings emerged from thematic analysis of focus group responses. First, although participants identified specific strengths and weakness of each software program, there was not one clearly preferred system. In general, CityCAD was recognized for its capacity to generate crude, but quick, two- and three-dimensional representations of alternative site designs. Participants appreciated but were not entirely satisfied with the visualization capabilities built into CommunityViz, as well as its set of metrics for evaluating impacts of development. Envision Tomorrow was recognized for its capacity to more comprehensively evaluate development impacts and provide such measures in spreadsheets. However, Envision Tomorrow did not have 3-D visualization as a built-in feature, a significant inconvenience for technician users of the system.

Community representatives and planners saw potential for plan scenario and visualization technology to focus discussion and create shared understanding of design and plan alternatives. However, both groups were skeptical that design exploration could (or should) be undertaken in public meetings, workshops, or other participatory settings.

The Metropolitan Council's initial objective was to equip community groups to adopt and use planning or urban design tools. In the focus groups, however, few community representatives expressed interest in being direct, hands-on

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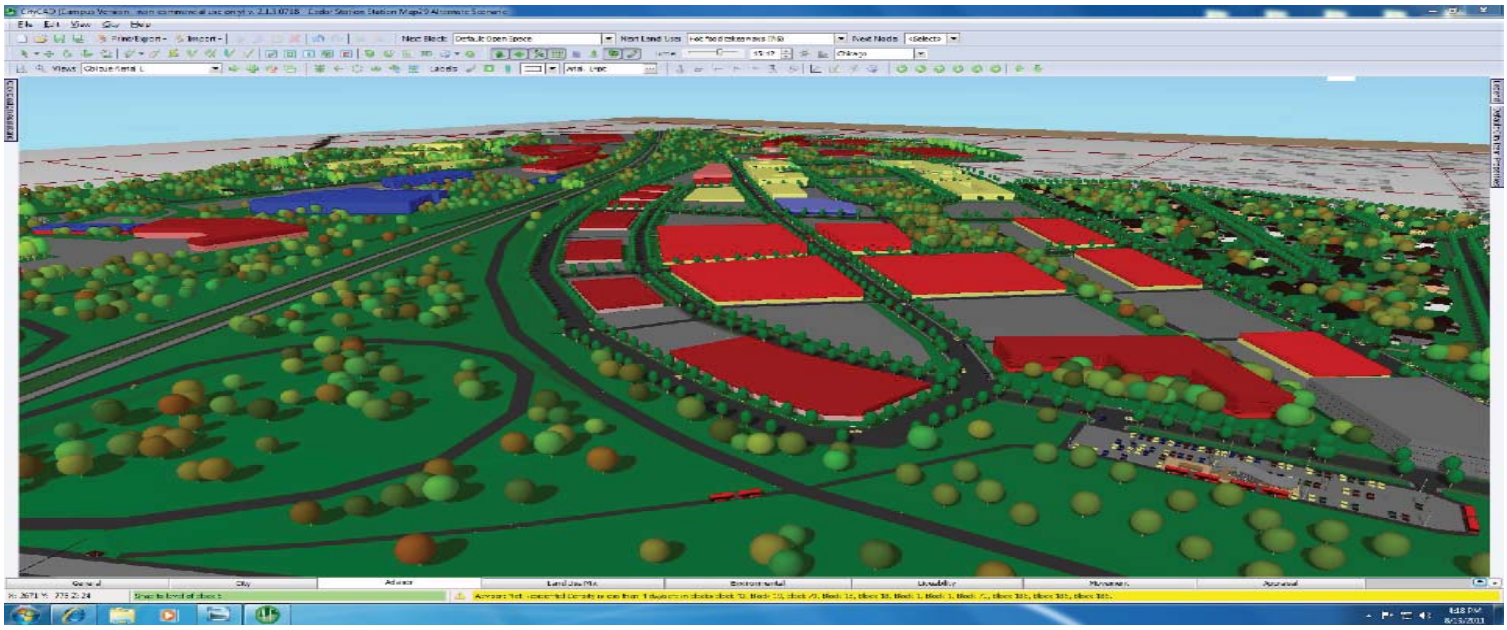


Figure 1. An example of a station-area plan created with CityCADD

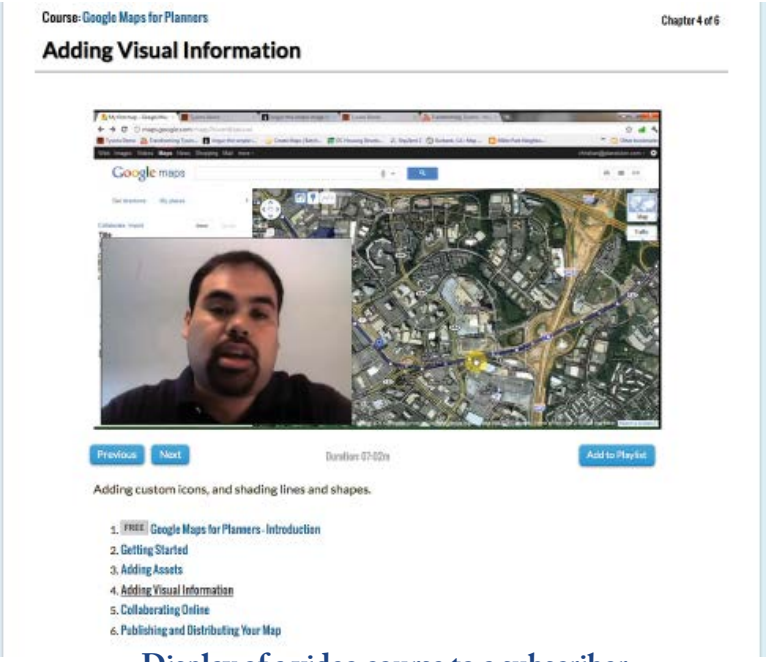
Case Study: Planetizen Video Courses

Chris Steins, Urban Insight and former Chair of the APA Technology Division

We know that planning professionals are increasingly being asked to get up to speed on new technologies and take on more responsibilities. The goal of Planetizen Courses (courses.planetizen.com) is to provide affordable, focused video courses that can be viewed on a computer, tablet or smartphone so that a subscriber can quickly gain the specific skills needed to accomplish a task. Each course offers a free 3-5 minute introduction so visitors can get a feel for the instructor and course topic. This brief case study of how Planetizen Courses was developed reports some of the lessons useful for any planner seeking to use the web and video to communicate with broad audiences.

Since 2005, Planetizen has been delivering online courses on a range of topics - from AICP Exam Preparation to Historic Preservation. These self-study courses were a mix of primarily text and images with some video. While popular, the courses required students to be highly motivated to read through the course content. In survey after survey of learners who took Planetizen Courses, we heard the same resounding advice: "MORE VIDEO, LESS TEXT!"

Planetizen embarked on a major upgrade to its courses system in mid-2011 with a goal of delivering courses in a video format. Our four primary goals were: (1) to create video-based courses, (2) offer courses as affordably as possible, (3) deliver courses on web browsers, tablets, and smartphones, and (4) focus course content on hands-on, practical skills. Planetizen courses are taught exclusively by planning professionals who have hands-on experience with the topics. As part of this effort, we wanted to create a system to enable a broad range of planning professionals -- who are expert in a specific topic -- to be able to affordably create courses for others on that topic. And so we added a fifth goal: (5) Enable planning professionals to create high-quality courses from the instructor's home or office.



Display of a video course to a subscriber

With these goals in mind, we set off to create Planetizen Courses 2.0. Because the primary Planetizen website (www.planetizen.com) runs on Drupal, the Planetizen development team has a lot of development experience with this popular open source web content management system. However, we wanted to be sure this

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Technology Division at the 2012 National Conference

Division Meeting
Technology Division Awards Ceremony and Business Meeting
April 16th, Time: 9-10a
Location: JW Marriott, Georgia II

Join Us at the Technology Division By-Right Session in Los Angeles!

Mobile, Open-Source Technology for Planners (S488)
Sunday, 1:00 – 2:15 PM
Dominick J. Ard'is

Other Sessions of Interest
This list is a selection of sessions concerning topics of interest to Technology Division members. A full searchable listing is available online at www.planning.org/conference/program/

Better Graphics, Better Plans (S402)
Saturday, 9:00 – 10:15 AM
John Houseal, Devin J. Lavigne

Transportation Vulnerability Analyses (S200)
Saturday, 9:00 – 10:00 AM
William Swiatek, Tamika Graham

Planning with Geographic Information Systems (S201)
Saturday, 10:30 – 11:30 AM
Timothy Stillings, Francine Ramaglia, Tom Amburgey, Jr.

Caltrans Performance Measurement System (S203)
Saturday, 2:30 – 3:30 PM
Ellison Alegre, Jane E. Berner

Citizen Engagement, Outreach, and Technology (S803)
Saturday, 4:00 – 5:15 PM
William H. Herbig, Christian Madera

Smarter Cities Through Data Literacy (S441)
Saturday, 4:00 – 5:15 PM
Jason Lally, John Reinhardt, Frank Hebbert

Community Engagement in Intelligent Cities (S464)
Sunday, 10:30 – 11:45 AM
Jennifer Evans-Cowley, Jacob Smith, Nick Grossman, Robin Willner

Using Supercomputers to Implement Comprehensive Plans (S553)
Monday, 10:30 – 11:45 AM
L. Kevin Johns, Scott Polikov, Greg D. Kiloh, John Boisseau

Advanced Scenario Planning Tools (S555)
Monday, 2:30 – 3:45 PM
Jim Holway, Jason Lally, Robert S. Matthews, Frank Hebbert, Ted Cochin

Next Generation Web-Based Planning Tools (S577)
Monday, 4:00 – 5:15 PM
Uri Avin, Doug Walker

Improving Participation with Web 2.0 Tools (S622)
Tuesday, 10:30 – 11:45 AM
Della G. Rucker, Nicholas Bowden

New Tool Invites the Public to Balance Transit Agency Budget in Boston

Jessica Robertson, Metropolitan Area Planning Council

Planners in Boston are inviting the public to try their hand at balancing the budget of the regional transportation agency through an innovative new website aimed at educating the public on the sometimes-esoteric topic of transportation finance.

After a decade of chronic underfunding, the Massachusetts Bay Transportation Authority (MBTA or just "The T") is facing a $161 million gap in its budget for fiscal year 2013, which begins on July 1st. In order to produce a state-mandated balanced budget, The T has proposed two different packages of fare increases and service cuts, both of which have generated strong public opposition. As the public comment period has proceeded, various stakeholders have weighed in with alternative options for raising revenue and cutting costs, while avoiding draconian fare increases and service cuts

The Metropolitan Area Planning Council (MAPC), the regional planning agency for the greater Boston region of 101 cities and towns, has created an interactive online tool called the MBTA Budget Calculator, accessible at FixTheT.mapc.org.

MAPC created the online budget calculator to collect these ideas in one place and give the public an opportunity to compare the options side by side and come up with their own plan. Many of these alternative options would require action from the Legislature or the Patrick Administration, so MAPC added to the MBTA Budget Calculator a link that allows users to share their ideas with their legislators.

In the first 5 days that the site was live, more than 1,200 users have created budget plans that, not only fixed the deficit but created budget surpluses of $277 million on average. The most popular group of options shift costs from the MBTA to the fiscally-sound MassPort (which operates Boston's Logan Airport as well as port facilities), recommending that MassPort take over the MBTA's ferry service and pay more of the operations for the Logan Airport-bound Silver Line. Another popular cost-shifting option is transferring the Transit Police to the State Police, a strategy initially proposed by the MBTA Advisory Board. Two thirds of users have elected to raise the gas tax either by one cent or two cents per gallon. Conversely, none of the proposed options for service cuts have been chosen by more than 7% of respondents.

MAPC's goal for the MBTA Budget Calculator is to educate the public on the variety of measures that could be taken to solve the MBTA's budget crisis and demonstrate that there are many alternative solutions that can balance the budget while maintaining the current level of service and avoiding drastic fare increases. Additionally, MAPC hopes that the public response to the website will put pressure on the Legislature and Massachusetts Governor Deval Patrick to implement some of these alternative strategies.

The tool has shown great potential for engaging the public in prioritization-discussions within the context of budget constraints. It will likely be adapted and re-used for other planning scenarios by the agency in the near future.

The website was produced in-house, using the Django web framework on the server, and jQuery and Bootstrap from Twitter for the user interface. The project is, like all other MAPC web products, open source and available on GitHub (https://github.com/mapc/mbta). If you re-use the code-base and make improvements to it, MAPC would love to hear back from you.

The author can be reached at jrobertson@mapc.org

The Democratization of Big Data

By Robert Goodspeed, MIT Department of Urban Studies and Planning and Planning & Technology Today Co-Editor

Already a major technology trend, 2012 promises to be a watershed for "big data." A shorthand term for the proliferation of large datasets, big data also refers to the expansion of analytic techniques for teasing meaning from the vast archives of information produced by the digital world. The New York Times' Steve Lohr declared we have entered the "age of big data" in a recent article that compared it with another revolutionary research tool -- the microscope.

As I observed last year, big data is beginning to filter into the urban planning world. Here are a few examples of the intersection of cities and big data:

- A visualization of people's paths through the city created by researcher Eric Fischer using geotagged tweets
- Explorations of social ties and commuting patterns gleaned from AT&T's telephone network data by researchers at MIT's Senseable City Lab
- Research on New York City's taxicab system using GPS data collected by meters by Columbia's David King
- Analyses of the color and location of Flickr photographs
- The collection and analysis of data lies at the core of "smarter cities" initiatives by IBM, Cisco, and Siemens.

What do all these exciting examples of big data have in common? If you have modest technical skills and work for a local government or community-based organization, you probably do not have access to the data and skills necessary to replicate the projects.

Inequalities of data access are not new in planning. Sixteen years ago David Sawicki and William Craig argued in a Journal of the American Planning Association article titled "The Democratization of Data" that the most important ingredients to expanded access to the first generation of data wasn't advances of computing power or analysis skills, but the rise of data intermediaries that worked with community groups in low-income communities to ensure they had access to quality data and skills. Whether nonprofits, local governments, or university-led projects, these intermediaries helped equalize access to data in the public sphere.

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Creating Mashup Maps using Web-Based Tools

Corey Proctor, Technology Division GIS Chair

Any member of the general populous can create a map - The myth has been refuted as to whether an individual needs a degree or advanced coursework in Geography. Maps can now be created by novices with Internet access. This access provides users with limitless sources of mapping resources and conversion tools. The method of creating maps using various sources is known as the mashup method. Mashups are maps created by using various sources. The maps created can be used through the use of Google Earth, Microsoft Excel to Geocoding websites. Listed below are the steps with a brief description of each involved with creating a general mashup based upon address-based data:

1. Obtaining Source Data: Source data is the integral information needed to create a mashup map. The preferred data format is latitude and longitude point (GPS points). If the aforementioned points are unavailable, there are websites available that will convert addresses to GPS points (see links in the resource section and in Step 3). It is important to note that the addresses should be a physical form. If a post office box address is given—the geocoding software will place a point in the central part of a city/town. In some instances, the post office box addresses will be omitted from the map.

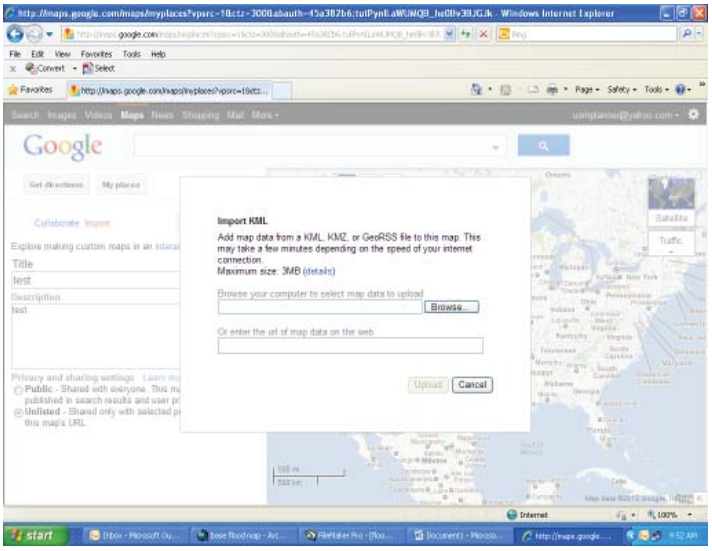
2. Data Clean Up: Make sure your data is divided by defined columns in Microsoft Excel or a similar product. The columns should be separated. (Avoid combining different categories).

3. Geocode Data: Cut and paste or upload information from a spreadsheet program into the geocoding tool. There are various programs available for users – Selecting a specific program is based upon your preference or style of source data. As stated in Step 1—GPS coordinates are preferred. However, there are some geocoding products that convert physical addresses into latitude and longitude. Listed below are some of the free products available online.

Using Earthpoint to convert an Excel file to .KML

Geocoding Sources:
http://www.batchgeo.com
http://www.gpsvisualizer.com/geocoding.html
http://www.findlatitudeandlongitude.com/batch-geocode/

4. Select Map Source/Import Data: There are many platforms that can be used to display data. The most popular are Google and Yahoo. Google Maps was used to display the location of the APA Technology Members. Prior to using this software, users are encouraged to create a user account to access, edit and share the map results. The web address for Google Maps is http://maps.google.com/maps. Once you sign in, select Create Map to begin the process. You will then be asked to create a description and select a privacy setting. To import data to display, users must select,"Import" from the options.



Importing a KML file in Google

The import file must be in the form of KML, KMZ or GeoRSS or through an URL on the Web. The data used for APA Technology Division was converted to KML using another geocode source: http://www.earthpoint.us/ExcelToKml.aspx, which converts Microsoft Excel data into KML format. The user will upload the file and have the option of either viewing in Google Earth or on the webpage. If you chose the latter, you can view errors. This option will allow you to make edits to the data. If the former is selected, it gives the option to view or save file.

5. Display Data: After the KML file has been created, it can now be imported into Google Maps. If you are still signed in, select "Import" and in the dialogue box click browse to locate the KML file. The system will then process and display the results on the map. The data is displayed with a default marker. The maker can be edited by double clicking it and selecting "Edit" in the pop-up menu. For customized markers, you must upload the desired one by browsing for it. After inputting address location into the appropriate geocoding software, the information is now displayed. Each marker represents the GPS location of the respective address. The marker displayed is usually a defaulted selection. If you want a specific icon to be displayed refer back to your spreadsheet. There you can add an Icon column and specify a URL or file name. This will display your preferred image. You will then re-import the file as stated in the previous step. The image used in this example was the logo for the APA Technology Division.

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Beautiful Streets (continued)

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understanding of local perceptions. The initial question can be changed - for example, you might ask people about safety, or whether the street is somewhere they'd like to live. Rather than choosing random locations, the tool can be used to compare different neighborhood types, or compare streets with different parking patterns, street trees, or sidewalks.

The underlying code is available as an open source project. You can find it on github at github.com/openplans/streetscore. We're keen to try it out as part of a planning process. Let us know if you have ideas. Some technical details: Beautiful Streets was built with Python and Django. It uses the PostGIS spatial database; and OpenStreetMap data to randomly select the points.

Since the Philadelphia demo launched on Valentine's Day, over 90,000 comparisons have been recorded. We're excited to dig through this data and see what insights we might find. Stay tuned for more news from Beautiful Street.

The authors can be reached at civicworks@openplans.org.

Shareabouts (continued)

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customized, making translations easy. Social network integration is baked in - you can add comments to locations when submitting, or have your say on other locations. And the website runs nicely as a mobile web site, so people can make suggestions on the go.

OpenPlans will be using Shareabouts to help with another bike share roll out soon. You can also check out Portland's map, which uses Shareabouts, at pdxbikeshare.com. It's an open source project, so we welcome your reports of problems and suggestions for future features.

The authors can be reached at civicworks@openplans.org.

Call For Submissions: Planning and Technology Today

The Technology Division newsletter includes feature length articles, as well as shorter "spotlights" on various technologies and tools of interest. Our regular one page spotlights will cover Public Participation, GIS, Online Tools, Visualization, and Scenario Planning.

We are always accepting submissions for our feature length articles on a rolling basis. For these articles, we are looking for case studies that demonstrate how planners and/or communities have used technology in planning. What are the innovative tools and techniques applied; what worked well and what did not?

In particular we are soliciting articles and sidebars that focus on: Case studies directly from communities; Lessons learned (both positive and negative) regarding the use technology in public participation.

Please submit your ideas to: Rob Goodspeed at: rob.goodspeed@gmail.com.

Democratization of Big Data (continued)

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However, as the size of datasets has increased, so have the skills necessary to manage and analyze the data. No longer is mastery of a few desktop applications sufficient for analysis, since wrangling today's large datasets requires database servers and analysts skilled at statistical and algorithmic data mining techniques. Although government datasets may have been the original big data, many of the new datasets are provided by corporations, introducing a morass of ethical and practical challenges. Frequently collected at the individual level, negotiating access requires navigating privacy and security concerns. Even when companies provide public access, extracting and using their data requires programming skills to tap application programming interfaces (APIs) or manipulate unusual data formats.

Finally, lurking beneath the big data hype are problematic unstated assumptions about the nature of truth. In the 1980s, the so-called quantitative-qualitative debate raged across several social science fields among scholars arguing the merits of various research methods. Some researchers stressed the need to collect empirical evidence and rely solely on quantitative analysis for research. Others argued social science required qualitative analysis such as interviews and observation to understand society. Although the debate is different today, important differences of opinion remain.

We should be cautious about claims that big data will necessarily answer important or relevant research or policy questions. Are cell phone traces sufficient to intuit travel behavior, or are surveys or interviews required to understand how people make choices? Can postings to social networking websites provide as much insight as a windshield survey, or an in-depth interview of community residents? The big data hype also runs counter to important developments in social science that stress the role of experiments and counterfactual reasoning, instead of relying on ever-more-complicated statistical models to explain the world.

What are some practical steps that big data could take to expand access by community-based organizations? A start might be to provide data in formats and sizes (perhaps through summary versions) that they can be analyzed in common software packages, such as ArcMap, Excel, and Google Earth. Data providers should provide documentation about the source, variables, and assumptions used to collect and process the data. Existing data intermediaries should explore the new datasets, and strategically expand their expertise where it seems appropriate. Although the proliferation of broadband and Internet-connected smartphones has reduced the prominence of the "digital divide," we must take steps now to reduce the emergence of a new "data divide" between sophisticated analysts and communities seeking to plan for their futures.

This article was originally published on Planetizen. The author can be reached at rob.goodspeed@gmail.com

Using Volunteered Geography Information (continued)

Continued From Page 1

have developed a customized short survey that the user can take after registering on the site. The registration addresses privacy and ethical concerns because the individual controls the data they enter. The individual is invited to describe their activities on a typical day and the system transfers location information and geo-codes their data points on a map. We are able to visualize the travel paths (lines) and the activity spaces (polygons) that embed traversed locations over a period of time.

The individual can visualize their own data in two ways, first as a map that can show characteristics of destination locations (home, work, shopping etc.), paths (now represented as the crow flies, but potentially as routes along roads or transit networks), and modes of transport (represented by differently colored lines), and second as a graphical representation of their day, demonstrating the punctuation of different activities that fill up a typical day.

More importantly, the tool allows for advocacy groups to review data about their neighborhood or community at the zip code level, overlaying multiple trips and events to understand the neighborhood's activity space at different times of the day. Further, the same data can also be represented in the form of charts to understand the travel behavior and activity spaces of different socio-demographic groups, e.g., seniors without access to a car versus seniors with access to a car. For community organizing and advocacy, such tools provide valuable insights and knowledge sharing about setting planning priorities. Since much planning is at the local level, this micro-level analysis and planning effort provides opportunities for individual and community empowerment.

Our research is a work in progress. It has been funded by a grant from the Federal Transit Administration's Public Transportation Participation program and feedback, suggestions, and comments are welcomed.

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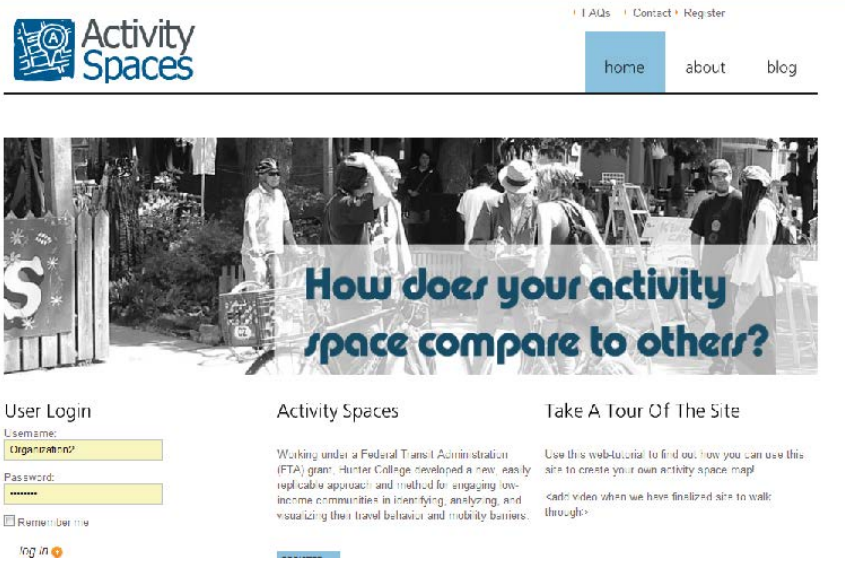
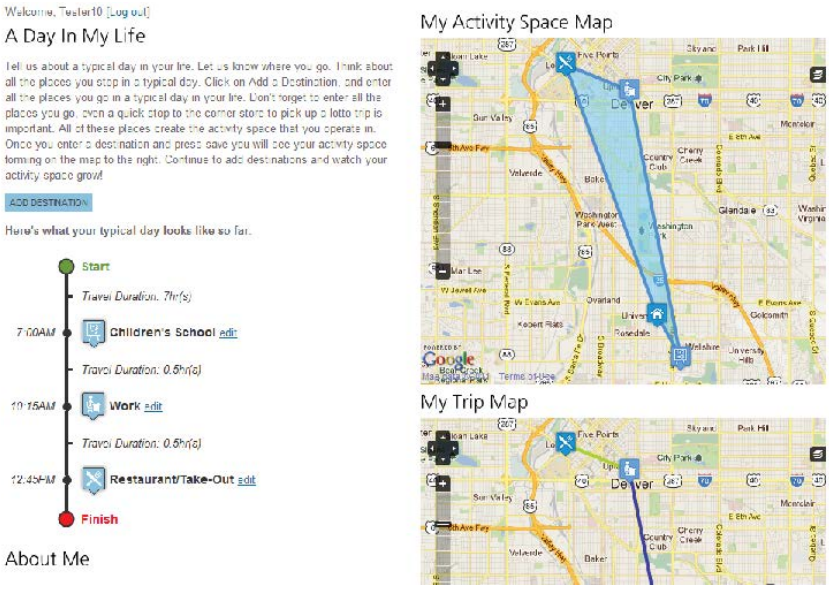


Activity Spaces aims to bridge the gap between high-quality interactive transit data and underserved communities whose residents would most benefit from this information



By showing a user their daily travel patterns, their "activity space" becomes better defined

Lincoln Policy Focus Report Explores Opening Access to Scenario Tools and Approaches

Jason Lally, PlaceMatters

Opening Access to Scenario Planning Tools is the most recent policy focus report to come from the Lincoln Institute of Land Policy. The policy focus reports attempt to bridge theory and practice by providing case studies, research, and other contributions from a mix of practitioners and scholars in a variety of disciplines. This report examines the current state of scenario planning, the promise of scenario planning tools, the challenges to expanding their use, and their potential to open access to the planning process. It makes specific recommendations to advance the use of scenarios and scenario planning tools, including development of an online platform to facilitate collaboration, capacity building, and open source activities among scenario tool developers, urban planners, and other tools users. The report is the result of a collaboration amongst many organizations and individuals led by the Lincoln Institute and the Sonoran Institute. It is available in hardcopy and digital formats. Drop by Lincoln's booth at the APA conference to pick up your copy and find out more at http://www.ScenarioPlanningTools.org or http://www.sonoraninstitute.org/scenario-planning-tool-development.html

Scenario and Visualization Tools (continued)

Continued From Page 4

users of such tools. Both groups preferred that preliminary planning, design, and impact analysis be led by project sponsors or planning agencies before engaging the public. Planners, for their part, found the proposed tools to be limited in functionality. They were more interested in using scenario and visualization tools for impact analysis and data management of detailed planimetric data and infrastructure plans, ideally with digital output that would be useable by civil engineers, architects, and other technical professionals involved over the life-cycle of a station-area plan.

Community representatives (and, to a lesser degree, planners) emphasized that the value of visualization tools is highly context-dependent, and will vary depending on public participants' knowledge of planning and design concepts, language barriers, and expectations about the realism of computer visualizations. Some planners and community representatives noted that the crude or "cartoonish" nature of the visualizations risked underwhelming or insulting the capacity of the public. Participants of both groups preferred that technology solutions deliver finished, near-virtual visualizations and clearly represent measurement of plan performance and outcomes. Some planners also expressed concern that public audiences might be distracted by the technology or focus disproportionately on minor design details.

Planners and community representatives expressed interest in and concern about the sources and types of data required to use the demonstrated planning solutions. Planners were concerned about the data demands of the programs, as well as about the potential for inaccurate or unreliable data to skew outcomes. For community representatives, the data issue revolved more around trust; some were wary about the sources of and hidden assumptions inherent in the data used to populate the models.

Current-generation planning support systems are increasingly capable of drafting and presenting alternative plans, and of tracking the attributes of allowable land uses, potential buildings, and infrastructure. The Metropolitan Council and University of Minnesota research team found that current technologies can aid public understanding of urban design and station-area planning, and thus improve the quality of public discussion and deliberation. Still, the technologies are not a panacea. The construction and presentation of plan scenarios and visualizations involves a complex balancing act. Some of the trade-offs are technical: public audiences may expect more extensive measurement and representation of plan outcomes, and more realistic—even photo-realistic—visualization. Such deliverables require more extensive and complex tools, and higher skill levels, than may be available to planners. Other issues are identical with those faced by planners for decades. Community values drive the creation of optimal small-area plans. It is often difficult to approximate community preferences through a process that must simultaneously address and balance competing technical, policy, fiscal, and regulatory demands.

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Figure 2. An oblique aerial perspective of a proposed station area plan represented with CommunityViz

Figure 3. An oblique aerial perspective of an alternative station area plan created with Google Sketch-Up and evaluated in Envision Tomorrow.

Planetizen Video Courses (continued)

Continued From Page 5

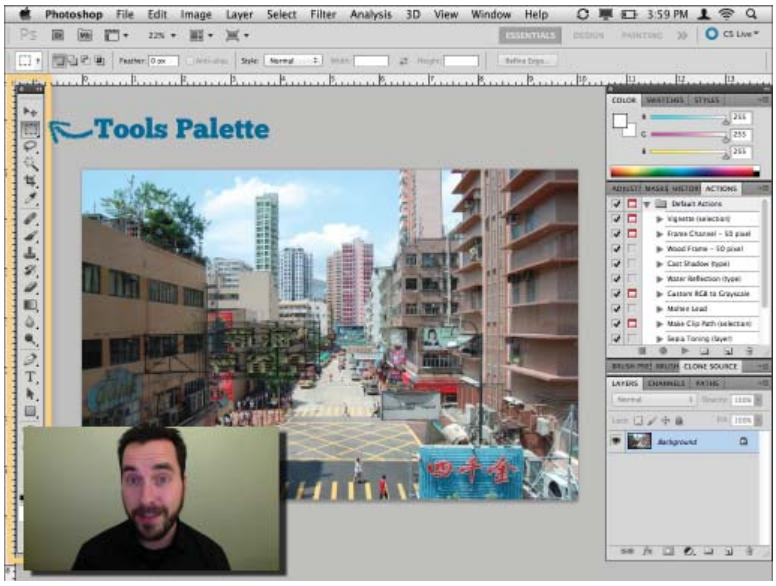
was the right fit for video delivery, so we looked at several other content management systems in addition to Drupal -- including several that are built around video, such as Videola, Vimeo Pro, WordPress+VideoPress, 23Video, and several others. Each of these platforms offered some hugely compelling features. However, in our final evaluation, we selected Drupal 7 as our platform.

Although Drupal required more initial development effort, we felt assured that we would be able to control additional features we wanted to add that were not yet part of other hosted video content management systems. Additionally, we were concerned about the ability to enable single sign-on with the Planetizen website and the Planetizen store. Use of Drupal has turned out well, and has allowed us to easily modify features as our understanding of our users has evolved.

A key goal for us is the ability to deliver videos across multiple devices so subscribers can view courses on a tablet or smartphone, as well as on a notebook or desktop computer. We evaluated Kaltura, Brightcove, Ooyala, Vimeo Pro and Blip.tv for video delivery. In our final evaluation, Brightcove offered the right mix of highly-usable features and tiered pricing for us. The tiered pricing model enabled us to get started at a lower price point, and scale up features and pricing as we grow.

Using Brightcove, we are able to upload a single chapter of a video course in a high-quality format, and Brightcove will create multiple versions that can be played back in a web browser using Flash, or on a mobile device using HTML5, a new standard for video playback. The Brightcove media player automatically detects the type of device being used to view the video, and delivers the rendition of the video best-suited for that device. This way, a visitor on a smartphone doesn't have to download the same size video as someone using a web browser. We also enjoy using the web-based Brightcove Studio interface, which makes uploading and managing videos effortless.

Developing Planetizen Courses was not without it's share of challenges. Initially, we had trouble ensuring consistently high-quality video to the visitor. It turned out that we needed to review our entire process of video creation to ensure that the video we captured, edited, encoded, and delivered remained as high-quality as possible. For example, we were able to determine that recording video from instructors on certain types of computer platforms resulted in lower-quality video. We learned to embrace the default settings for streaming video recommended by Brightcove, and work backwards from these specifications to change how we were capturing video.



Screenshot from the Photoshop for Planners course

We want visitors to Planetizen to have a single account that can be used to interact on Planetizen, purchase goods and services, and view online courses. We ultimately standardized on using Drupal for this single sign-on, and we're still working toward full integration.

Our first effort to create Planetizen courses, while functional, was not easy to use. Browsing courses was complicated, and moving from video to video was not intuitive. Usability expert Abhijeet Chavan, Planetizen's co-editor and Urban Insight's CTO, lead the effort to redesign the user interface to make the process of browsing and watching videos what it is today.

Our biggest lessons came in effectively engaging and working with the planning professionals who are our course instructors. We went through an initial course development process with ten different instructors. Through this process we tried to understand what types of instructors, courses, technologies and techniques would be most effective for future courses. For example, we found that courses recorded on an instructor's Windows PC would often require significant effort in post-production to make them usable. However, courses recorded on a modern Mac computer were a joy to edit. In this process, we created a highly replicable process for instructors to be able to easily create courses that the Planetizen team can edit and produce with a minimum of additional work.

We launched Planetizen Courses for beta testing in December, 2011, and to the public in January, 2012. We've been hugely gratified by the rate of subscriptions and recommendations from students for additional courses. Our courses range from those with very broad appeal, such as Introduction to SketchUp for Planners, Photoshop for Planners, Google Maps for Planners or Twitter for Planning, to more specialized courses, such as Planning Ethics, Pedestrian Planning and Using CommunityViz.

We've met each of our initial five goals for Planetizen Courses, with individual courses priced at $25, and an optional annual subscription to gain access to all courses. Our iPad and iPhone apps have turned out to be very popular, with one-third of subscribers viewing courses through our iPad or iPhone apps. Our next major efforts will be to identify experienced professionals and instructors to expand our inventory of courses, and to develop an Android version of our popular iPad app. Although I wrote this brief article, the heavy lifting in developing Planetizen Courses was completed by a diverse team from Planetizen and Urban Insight: Minnur Yunusov, Tim Halbur, Abhijeet Chavan, Oleksandr Grygorash, Mindy Oliver, and Cate Miller.

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Creating Mashup Maps (continued)

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6. Share Results: To share the results, click the hyperlink icon and distribute via link or imbed in website. If the link appears to be long, select short URL.

Sharing a link in Google Earth

Users can also share the current view through Google Earth by clicking on File, then selecting Email.

The tasks listed above indicate the numerous steps involved in creating a mashup. Technology has not only advanced the visual results of computer generated mapping but also increased awareness/use among those that would otherwise shy away from it. Welcome to the 21st Century where the term, "Location, Location, Location" is still used but by more than the traditional users and practitioners.

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Resources

Batch GEO
http://www.batchgeo.com

Earth Point
http://www.earthpoint.us/ExcelToKml.aspx

GPS Visualizer
http://www.gpsvisualizer.com/geocoding.html

Find Latitude and Longitude
http://www.findlatitudeandlongitude.com/batch-geocode/

Google Maps
http://maps.google.com/maps

The Technology Division is charting the use of new technologies for the American Planning Association.

Planners everywhere need to understand the use and planning implications of new systems: computer simulation, GIS, telecommunications, and computer-based information resources.

Planning & Technology Today is the Division's newsletter, bringing you current information that is useful for making decisions on how to use the new technologies.

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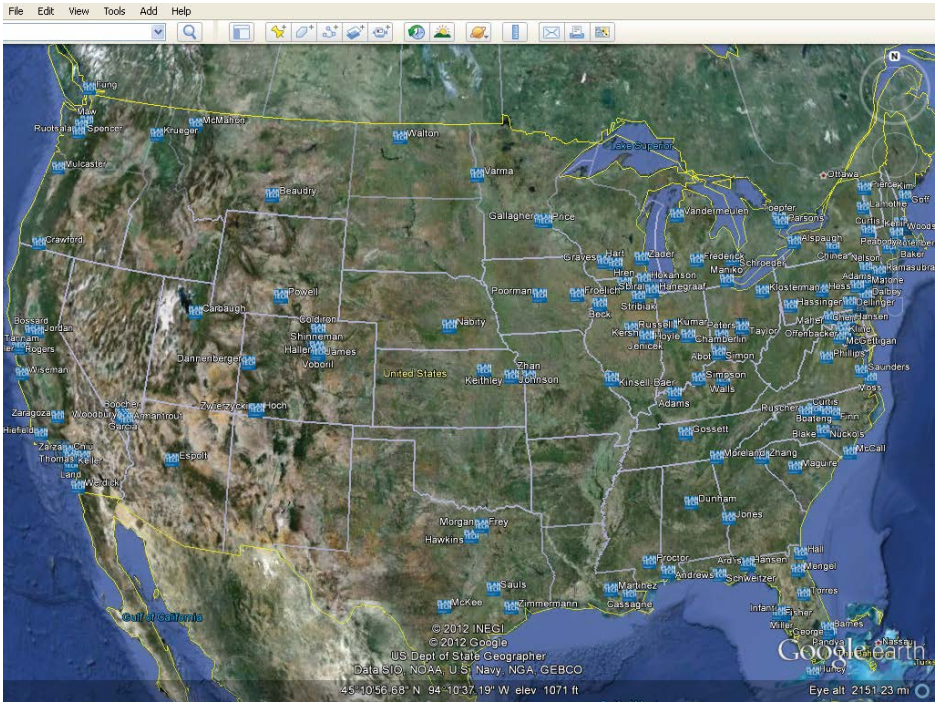

Map illustrating APA Technology Division Members

Division Leadership

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VACANT

CONFERENCE CHAIR
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MEMBERSHIP CHAIR
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