

ArcGIS Platform Manages Mosquitos in Coastal California

By Bryan Kriete and Matt Price, Santa Cruz County

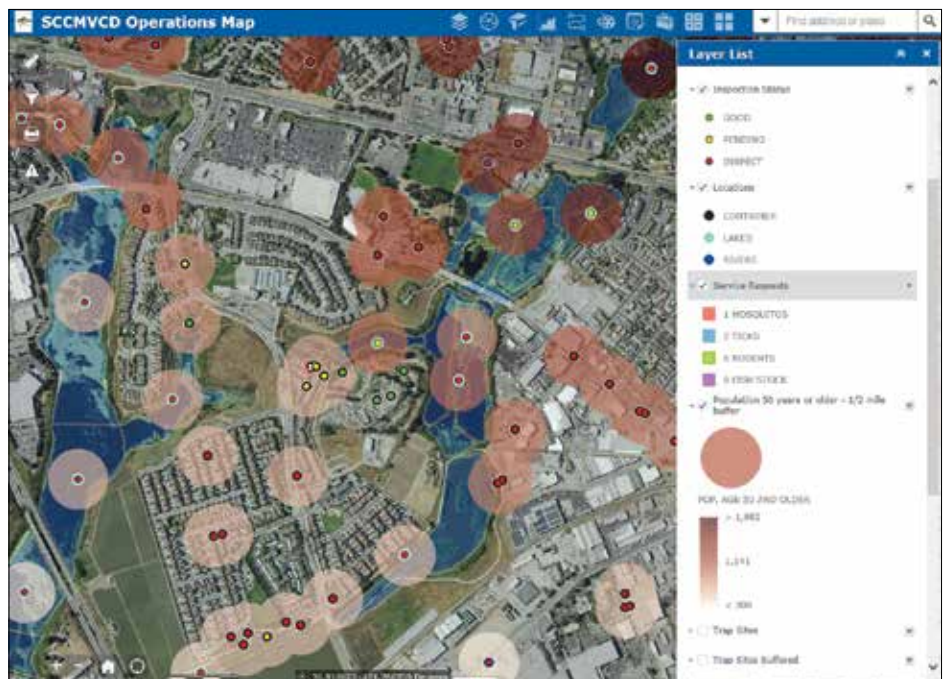
Mosquitoes are one of the deadliest creatures in the world. They kill several million people each year, according to the World Health Organization. As vectors of parasites, bacteria, and viruses, they transmit hundreds of millions of cases of malaria, dengue, yellow fever, West Nile virus, Zika virus, and other diseases from one human or animal host to another.

Across the United States, vector control districts employ skilled and dedicated staff members to help reduce the mosquito population. They conduct site inspections; place traps; treat breeding sites with mosquitocide; and, if necessary, fog adult populations, spraying pesticides throughout an area.

Santa Cruz County's Mosquito Abatement and Vector Control (MAVC) started using GIS in 1998 to identify potential breeding sites. Since then, MAVC has progressively implemented the ArcGIS platform to keep operations effective and innovative. Now, staff members are continually informed of the status of population control projects and can better focus their mosquito abatement work.

Reining In Mosquito Populations

A mosquito undergoes four life cycle stages: egg, larva, pupa, and adult. Females deposit their eggs in moist soil or places with standing water, such as ponds, septic systems, wetlands, ditches, storm water catch basins, and various containers. Once they reach adulthood, mosquitoes can fly three or more miles—depending on the species—making it difficult to get a handle on them. Controlling mosquitoes when they are larvae is the most effective way to reduce populations before they disperse.



↑ Santa Cruz County's Mosquito Abatement and Vector Control district now distributes site inspection status information via its Operations Map app

California began employing mosquito controls in the early twentieth century to restrict salt marsh mosquitoes around San Francisco Bay and combat malaria in the state's Central Valley. By the 1990s, almost every county in California had formed a vector control district.

Santa Cruz County, located approximately 60 miles south of San Francisco, is composed of pristine beaches and wetlands, lush redwood forests, and rich farmland. More than 14 species of mosquitoes call Santa Cruz County home, and the resources required to control the populations are significant.

In 1998—five years after it was formed—MAVC started using GIS to identify potential mosquito breeding sites based on ground conditions and proximity to bodies of water. The district developed GIS layers to show where standing water was

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located to help identify the breeding sites. The size of each breeding area was either calculated using aerial imagery or estimated at the time of treatment. This helped determine how much mosquitocide to administer and where.

The field data—which included the type and amount of mosquitocide applied, the application date, the area treated, and the current condition of the site—was entered into a Microsoft Access treatment database. To date, more than 2,500 potential breeding sites have been mapped and are inspected every other week or each month.

Automating Inspection Statuses

In 2004, to stay ahead of mosquitoes emerging into adulthood, MAVC had the Santa Cruz County GIS team develop the Mosquito Button, a geoprocessing script for ArcMap that was used to automatically determine the inspection status of potential breeding sites.

Pressing the button initiated a query of the treatment database to find the last treatment date and the effective life of the mosquitocide that was used. The inspection sites then appeared color-coded in ArcGIS for Desktop, with red meaning a site needed inspection or treatment, yellow indicating that a site was coming up for inspection within 10 days, and green meaning no action was required.

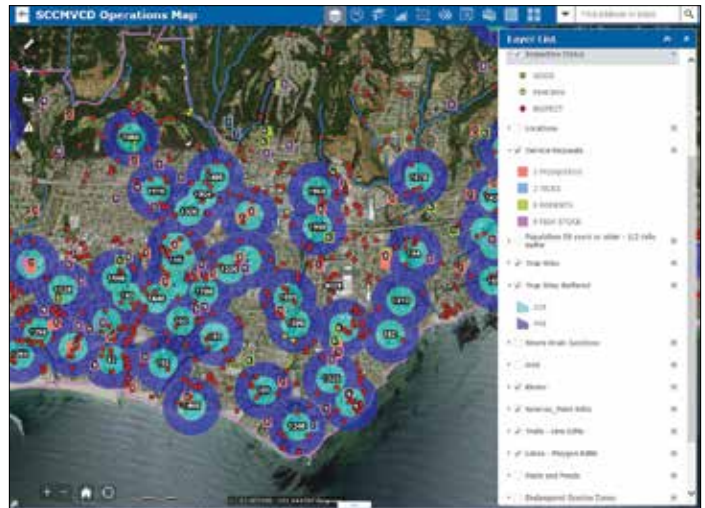
The quick, visual reference provided by the Mosquito Button helped staff members plan their daily work activities by letting them easily see where inspections and treatments needed to take place within their assigned areas. But because the department had minimal resources and integrating the Microsoft Access-based treatment database with ArcMap was challenging, staff members saved copies of the GIS data locally, on their computers. This led to fragmented GIS datasets and made it difficult to get a countywide picture of mosquito populations.

Consolidating Breeding Site Information

In 2014, MAVC staff moved the treatment data to Microsoft's SQL Server, which allowed the GIS data to be taken off people's desktops and put into ArcGIS Online. MAVC also replaced the Mosquito Button with a SQL-stored procedure that runs nightly to calculate site inspection statuses. This data is published as a REST service in ArcGIS for Server and shared with a vector control group in ArcGIS Online. It is distributed via the MAVC Operations Map app, which was developed with Web AppBuilder for ArcGIS.

The status data for every mosquito-breeding site in Santa Clara County is now available to all users anywhere, anytime—on their desktops and their mobile devices. The MAVC Operations Map app also contains tools that allow users to edit data, conduct spatial analysis, and measure distances and areas.

Beyond basic mapping functions, the ArcGIS Online platform



↑ Staff use ArcGIS Online to view demographic information together with mosquito treatment and trapping locations so that they can prioritize their resources.

provides MAVC with tools to identify and protect segments of the population that are most vulnerable to disease, such as children and the elderly. MAVC field staff use ArcGIS Online to create buffers around treatment and trapping locations. They then assign demographic information, such as total population and median age, to the buffers.

Seeing all this information together allows staff members to prioritize their time and resources by giving them a better understanding of where vulnerable segments of the population are located. The buffers also help them identify potential breeding sites. For example, if high numbers of a target mosquito species are found in a trap, there's a chance that a potential breeding site has been missed or that the treatment has failed. From there, staff could create a quarter-mile buffer around the trap and select the sites within the buffer that may need to be revisited for inspection or treated again.

Additionally, MAVC began leveraging Collector for ArcGIS toward the end of 2015 to map new breeding sites and trapping locations, as well as update known breeding sites with exact measurements. Now, instead of recording data in the office after they conduct site visits, staff members capture information in real time. They use Collector to measure the area of a site during inspection or at the time of treatment so a precise amount of mosquitocide can be applied. Field staff also use Collector to map the trails that lead to particular breeding sites so that, on return visits, they can take the best route and avoid nettlesome conditions such as poison oak.

MAVC is also in the process of implementing Navigator for ArcGIS to develop safe and efficient routes for getting to residential mosquito breeding sites. The district treats more than 1,600 storm water catch basins in the county several

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5 Initiatives Making Charlotte a Smarter Community

By Cory Fleming, Senior Technical Specialist, ICMA

In 2013, Charlotte, North Carolina, City Manager and ICMA member Ron Carlee had an idea that educating and making citizens “smarter” about their community would increase citizen engagement and make Charlotte a community of choice for living and working. Numerous initiatives evolved from this vision.

1. OPEN DATA PORTAL

This project kicked off in 2014 when an internal team of staff members from the city’s GIS team and the business intelligence community began to implement a pilot portal based on Esri’s ArcGIS Open Data Technology. With the technical assistance of Esri, this portal was quickly up and running. The Open Data Portal, called Open Charlotte, is the home to all the city’s spatial and non-spatial data. Citizens can view and download information on demographics, the environment, transportation, and more.

2. OPEN DATA POLICY

On January 1, 2015, Carlee signed the city’s Open Data Policy to achieve a number of objectives for transparency, civic engagement, and economic development. The policy outlines responsibilities city departments have to provide access to non-private, non-restricted data. The policy also addresses privacy and sensitive information.

3. CITYGRAM APPLICATION

Citygram translates complex data from the open data portal into an easily understandable format. This application allows residents to sign up for notifications, via e-mail and/or text, that

alert them when something is happening in their designated geographic area of interest. For example, residents can subscribe to rezoning notifications within a ½-mile of their home address.

4. CODE OF CHARLOTTE BRIGADE

The Code of Charlotte Brigade is a local group of 600+ individuals dedicated to establishing a more open government for residents. The city works closely with this group in the development of all open data initiatives. For example, the brigade helped develop the Citygram application.

5. SMART CITY CABINET

In early 2015 the city also developed a Smart City Cabinet, sponsored by the city manager’s office, to achieve the benefits of using technology and data to deliver services and advance engagement with residents. The cabinet’s mission entails “pro-actively applying innovation, technology, and data to enhance, transform, and improve citizen services.”

Download the Smart Communities Case Study “Growing An Open, Smart City Ecosystem” to learn more about how the City of Charlotte is building a Smart Community through open data.
go.esri.com/SmartCharlotte

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times a year, and planning the best routes to get to all of them can be time consuming—especially when a staff member has to visit 70–80 in one day. In some cases, MAVC employs seasonal workers to treat the catch basins, which can add to the complexity if they are not familiar with the area. Using Navigator will reduce everyone’s travel times, resulting in savings on gas and decreased vehicle wear and tear.

Capitalizing on ArcGIS Online

“This is just the beginning,” said MAVC vector control specialist Ray Travers. The department is looking to implement

Operations Dashboard for ArcGIS, Esri Story Map apps, time-enabled layers, and ArcGIS for Open Data as well.

“We intend to capitalize on all the features of ArcGIS Online . . . allowing us to be most effective at our jobs while keeping the public and our colleagues abreast of our actions and the actions of the mosquito,” he concluded.

For more information, email Bryan Kriete, vector control technician for Santa Cruz County, at Bryan.Kriete@santacruzcounty.us.



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GIS and Telematics Are the Foundation of Florida Keys Mosquito Control Technology

For over a century, Florida has been battling infestations of disease-carrying insects. The Florida Keys Mosquito Control District, which has offices in Key Largo, Key West, and Marathon, is one of dozens established to control the mosquito populations in the state. The district is working to ensure the public health and welfare of residents and visitors in the Florida Keys archipelago, stretching more than 100 miles off the state's southern coast.

The district deploys a fleet of land vehicles, boats, helicopters, and airplanes to apply insecticides on the numerous islands comprising the Keys. The main targets are the handful of species, including *Aedes aegypti*, known for spreading disease such as the Zika and West Nile viruses, dengue fever, and chikungunya.

As spray applications became more complicated due to the protection of environmentally sensitive areas, the district turned to CompassCom Mobile Resource Management (MRM) as one solution to assist in ensuring that adulticides and larvicides are applied correctly.

Faster Response to Citizen Inquiries

More than 61 land vehicles with GPS-enabled modems are involved in



inspection and chemical application activities. The trucks, driven by inspectors who are responsible for finding mosquito hot spots on private properties as well as deep in the wooded marshlands, are tracked for speed, location, heading, and status. The 15 spray trucks are additionally equipped with sensors keeping track of the status when and where each chemical pump-and-spray mechanism (a "Grizzly") is activated.

The operations desk at the Central Command Center in Key West can monitor the movement of all vehicles on dedicated CompassTrac map displays. Spray vehicles typically follow preassigned routes, but the supervisor may relay special dispatch instructions to a driver responding to a resident request or changes in mosquito hot spots.

CompassTrac enables supervisors to find the spray truck closest to the hot spot, saving time and money to reach the scene.

CompassCom MRM empowers dispatchers to provide responses to citizen calls regarding whether specific properties have been sprayed. While callers are on the line, dispatchers can view real-time spraying status and data about past spray activities to see whether the Grizzly was activated in the area.

If an inquiry comes a day or two after the caller's neighborhood was sprayed, the supervisor simply taps into the Replay mode to pull historical data from the CompassCom solution to see if and when the property received the chemical



application. Mapping empowered by Esri ArcGIS is tightly integrated with CompassTrac to provide background maps tailored to the Florida Keys Mosquito Control District workflow, supporting improved citizen service.

Improved Lone Worker Safety

Improved driver safety is also an important benefit of CompassCom MRM. "If there is an emergency, we can find the vehicle," said Josh Clemente, network IT specialist, Florida Keys Mosquito Control District, explaining that Central Command has had to dispatch public safety personnel more than once to rescue inspectors in the backcountry after they failed to check in at their assigned times.

Protecting Sensitive Habitats

Even during the off-season, the CompassCom solutions are used by personnel in Replay mode to show past application schedules. After-action plans modify routes to ensure that hot spots are visited regularly and efficiently to enhance the next season's response. District personnel constantly review the optimized routes to eradicate more mosquitoes while saving potentially thousands of dollars in fuel and chemicals.

But the MRM solution may provide its biggest return on investment by helping the district plan where not to apply chemicals, according to Clemente. "[Our personnel] meet at least twice a year with government regulatory personnel to reinforce which environmentally protected areas should not be sprayed."

In addition, some environmentally sensitive areas can be sprayed but only with certain green-certified chemicals. Homeowners also have the right to flag their properties as no-spray zones. Using ArcGIS, the district creates geofences of these restricted areas and plans routes that enable CompassTrac to provide immediate feedback of driver performance in proximity to these sensitive areas. Upon inquiry from either a concerned citizen or a state regulatory agent, the district must provide proof that an off-limits property or area was not treated.

Through the use of MRM technology provided by CompassCom along with Esri ArcGIS Software, the Florida Keys Mosquito Control District is able to better serve its community.

For more information contact
Brittney Clark, CompassCom Marketing
Manager bclark@compasscom.com or
1-800-787-0651.



MRM Benefits

- Spray routes are optimized for maximum fuel and insecticide efficiency.
- The district can provide proof to government regulators that ecologically sensitive zones were not sprayed, thereby protecting the environment.
- Call takers can provide quick feedback to citizens regarding spraying at a particular address, giving homeowners the opportunity to leave the property or stay inside to reduce exposure.
- Call takers can manage complaints by responding quickly to residents inquiring about the status of treatment applications in their neighborhood.
- Vehicles can be located instantly in the event of a driver emergency, thereby improving safety.
- The district can utilize its investment in Esri ArcGIS to ensure that the best possible map data is available to meet mission requirements.

Web GIS Helps Small City Deploy Maps Faster

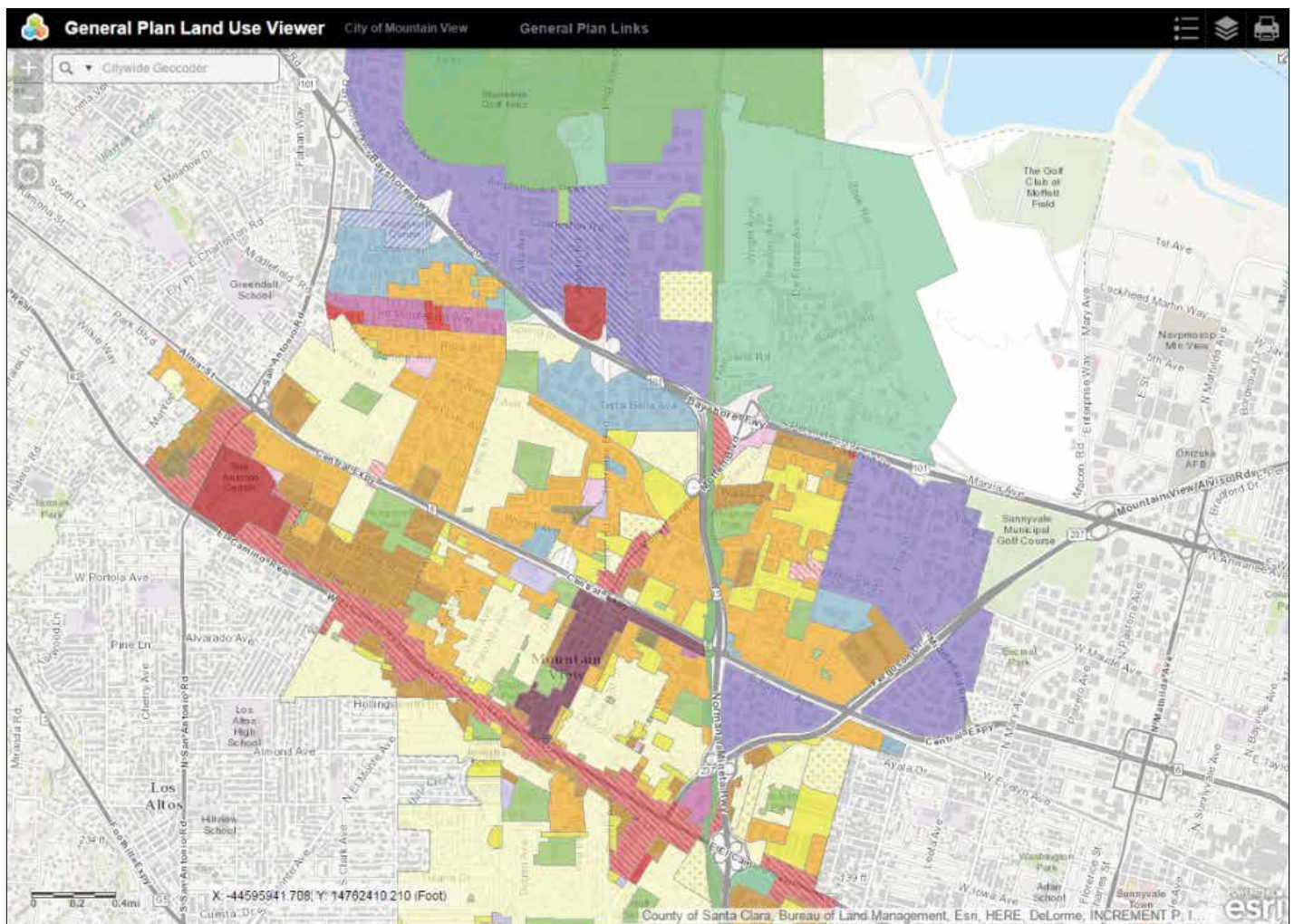
Concept-to-Prototype Reduced to Less Than a Day

By Matthew DeMeritt, Esri Writer

It's a steep climb, implementing an enterprise GIS—especially with a staff of one lone soul. Sometimes a city needs professional guidance to future proof its map services. To ensure a lasting solution that grows with its needs, Mountain View, California, collaborated with Esri Professional Services and geospatial firm VESTRA Resources, Inc. (VESTRA), to transition from a limited desktop mapping system to a full enterprise GIS (EGIS). That partnership connected all of Mountain View's business systems and laid a solid foundation for rapid web map deployment at the city.

To the Limit

Up until 2010, Mountain View's GIS was primarily used by the public works department to track a small subset of the assets and little more. With mapping being a vital visual reference in all government, GIS needed to be incorporated throughout the enterprise to provide a common view and open data access. Even in its limited use in asset management, digital mapping suffered from bad data, poor maintenance, and lack of integration with other systems. The fragmentation would only get worse as other department systems were being upgraded that required geospatial data support to work properly.



After serving as the city's IT manager for five years, Steve Rodriguez was chosen to develop a true EGIS capable of supporting all of the organization's mapping and spatial analysis needs. Although Rodriguez knew nothing of GIS, his technical background and IT leadership skills were sufficient to begin tackling the problem. He first spoke with several large municipal GIS users while taking night classes at the local community college to obtain his GIS certificate. It soon became clear he'd need to collaborate with an experienced Esri partner to ensure the new system was designed properly from the ground up. He eventually chose VESTRA to draft a plan that would lay the foundation for the city's EGIS.

Stop the Bleeding

The team started by assessing the city's GIS infrastructure and identifying areas that needed the most attention—what Rodriguez calls the "Triage Phase." The team interviewed all public works division managers and supervisors who had operated the GIS in some capacity and knew where their departments were hemorrhaging money and time. Meanwhile, Rodriguez provided his vision for the GIS: a centralized

solution that leveraged the city's existing Esri investments to create a solid web map portfolio. Based on that vision, VESTRA drafted "A GIS Strategic Plan for the City."

A key component of that plan was Esri's ArcGIS platform and Local Government Information Model (LGIM) data standard.

"I'm new to the field and needed a solid foundation to start with," said Rodriguez. "For us to be fast and productive, Esri and VESTRA recommended all development be based on LGIM data structures and easy-to-configure templates."

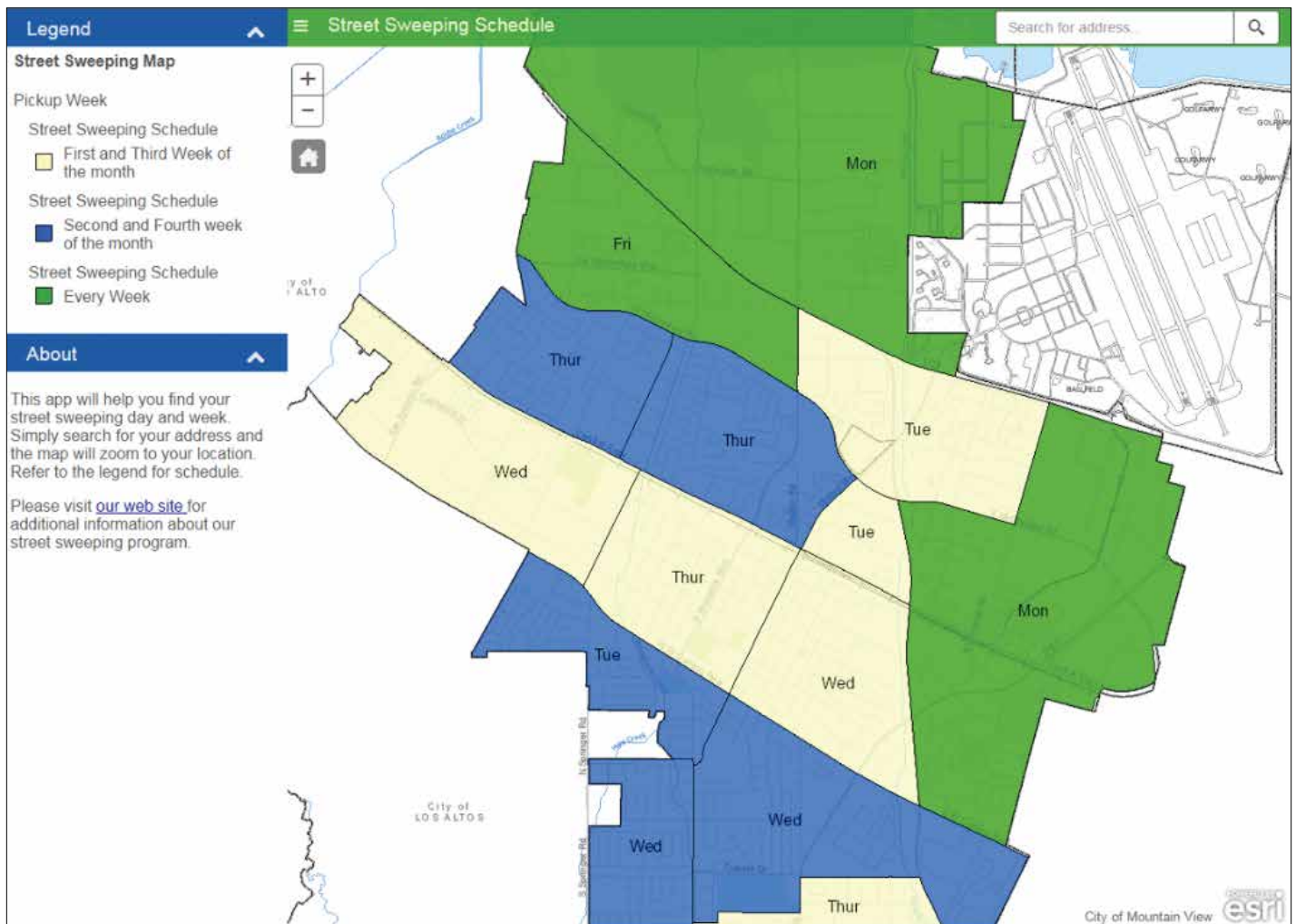
By combining data standardization with configurable maps and apps, the city eliminated the need to build solutions from scratch.

Rodriguez had set three main goals for his project: centralize all GIS data assets and technical resources, develop workflows to maintain the data, and build new confidence in GIS throughout the city. By 2011, Mountain View was following a solid road map to change the face of its GIS.

Attack of the Clones

Over the next three years, Rodriguez worked with nearly every department in the city to understand what datasets they used and how they used them. He and his team pored over hundreds

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of gigabytes of old files and maps, looking for any critical data that might be orphaned in project folders. They reviewed every layer in the old GIS database and began migrating all digital assets into the LGIM. Predictably, many duplicate datasets were found.

"To give you an example of the data redundancy that existed, we started with five databases of street and address data," said Rodriguez. "Public safety, public works, finance, IT, and planning all had different versions of the same data, and none were complete."

After all its consolidation efforts, the team ended up with one clean database. That reduction was an important milestone for the city, as it was the first time it had a single address database that all departments could use. It also allowed the team to change the city's perception of GIS from a mapping system to more of a data analysis tool for everything from elections to land administration.

"A great example of analysis is when we needed to develop a tool that could determine the size of buffer needed to encompass 25 percent of the parcels in our city around a given project area," said Rodriguez. "This tool automatically runs multiple analyses to see if a council member lives in a conflicted area and ultimately determines [whether] they can participate in a vote or not."

Quickened Development Cycle

By 2013, the department launched the first general-purpose map viewers. Within days, department-specific apps began flowing from the team—all of them based on Esri templates. Confidence in the system swelled, leading to more departments and divisions providing their data and asking to be included in the app creation process.

"Being in the unique position of both IT and GIS manager, I was able to effect change on both sides of the house very quickly," said Rodriguez. "It was like an engine; once we got it started and running, it just picked up speed."

As the team wraps up the initial GIS master plan, Mountain View's GIS has reached a point at which application development cycles can quickly move from concept to prototype in less than a day. That process used to take weeks, as the group struggled with a lack of standards and broken maintenance workflows.

"With all our data organized and formatted in a simple model, we don't waste time deciding how to store the data or express data anymore," said Rodriguez. "That frees us up to continue to look for other ways to add value to the organization with GIS."

Mountain View GIS staff can concentrate on production now, configuring their products to meet the needs of the city.

The screenshot shows the City of Mountain View public mapping portal. At the top is the city logo with a stylized mountain and sun. Below the logo is a section titled "City Maps and Apps" featuring four interactive tiles: "Historic Map Viewer" (with a map thumbnail and text "Historic Mountain View, CA 1961"), "Street Sweeping" (with a white street sweeper truck thumbnail and text "Street Sweeping Schedule Viewer"), "Public Art Show" (with a circular art display thumbnail and text "Public Art - Mountain View"), and "Parking Locator" (with a white car thumbnail and text "Parking Space Locator App"). Below this is a "Welcome to the City of Mountain View public mapping portal" section. The welcome text describes the city's location in the Silicon Valley and its population. Below that is a section titled "Mountain View prides itself on providing excellent public services..." and another titled "What can you do here?" which mentions links to popular web-based mapping applications.

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Why Don't More People Vote?

by Chris Thomas

I can remember turning eighteen and being so anxious to vote for the first time in the presidential election. It never occurred to me that others did not feel the same way.

It wasn't until I was an employee of a southern California city, heading up a GIS team that the notion that people did not vote came to light. In a meeting with the City Clerk, she explained that many times, people simply did not know where to go vote. She told me that on election night, city staff would field hundreds of phone calls asking where to vote. I later learned people even contacted the local library to find an answer to this question.

As a city employee, I felt the need to do something about this. My team and I developed a polling place look-up tool and proudly placed it in the hands of the city clerk, elections volunteers, and library staff. The tool allowed themselves and the public to search for polling stations on maps, on a computer. Using this tool, they were able to handle hundreds of calls at lightning speed, getting voters to their polling place.

This all took place a while ago. But even with the advancements in web applications and smart devices, the problem of not knowing where to go vote still persists nationwide.

What's Your Excuse?

It seems there are a lot of excuses people give for not voting.

- I don't know where to vote.
- The process is not convenient.
- I'm too busy.
- I don't think my vote counts.
- I don't understand how the issues affect me personally.

Esri has taken steps to solve these problems. Working side by side with our peers in government, we have developed a series of apps that can be used by any municipality, county, state, or private group wishing to help people engage in one of the greatest civic opportunities of our time.

Tackling the first group of reasons not to vote (don't know where to vote, it isn't convenient, and people are just too busy) was fairly straight forward. A series of free elections apps were developed under the ArcGIS for State and Local Government solutions. These apps include polling place locator, polling place



wait times, and an early voting app.

Collin County, Texas used the Polling Place Finder to engage with their citizens and make it easier for people to vote when they had time, no matter where they were in the County. The applications can be combined, modified, or enhanced taking into account what's important to your community. You can even provide driving directions. Every application can be used from any device ranging from a personal computer to smart phone.

With any application the real question is, "will anyone use it?" Collin County, Texas staff used these smart elections tools as a warm up with great results:

- They received 174,242 total page views
- 19,020 visits to the Election Polling Places Finder App
- 26,842 routes generated from Mobile App

Not bad for such a focused application!

Vanderburgh County, Indiana developed a similar app consolidating voting locations, resulting in a cost savings of \$85,000 per election.

Your Vote Counts

Turning the tide of the disenfranchised voter may be more of a challenge. The approach requires a system of engagement between the voter and data. Simple mapping applications put complex ballot initiatives into context of where the voter works, lives, and plays.

Who would ever think that a real time elections results app could change a citizen's perception? On the one hand, we watch our favorite programs on election night with a scrolling screen that provides elections results. No context. The map based elections reporting solution shows elections results in real time by precinct. What's unique with this app is that a voter can see how their precincts voted or did not vote. A bit of a "what the Joneses are doing approach." People can see where votes are coming in and how they could have made a difference in the outcome precinct by precinct. If only they had voted! Fairfax County kept their constituents up-to-date and helped them feel engaged in the electoral process.

Does anyone care about such an app? Staff in Fairfax County, Virginia used the real time elections results viewer combined with social media feeds to continuously educate the public. The county pushed out refreshed data every 10 minutes. The county averaged 800 unique visitors to their site per hour. With metrics like these – why would any municipality, county, or state agency not feel this was a civic engagement priority?

Story maps, a series of free tools that can be used as a voter education vehicle, rounds out the plan to get people to vote. Tailored to answer questions such as 'why is a ballot, proposition, bond, or any other election item important to me?' Story maps can move people to vote.

You don't have to be a government official to use technology to help get out the vote. A successful commercial real estate firm, David Hicks Company, created this Story Map to help their community understand the importance of a new school bond. They used their expertise in commercial development to help people understand where the development site was located and what the new campus would look like, once complete.

Recently staff at Allen Independent School District, a Dallas suburb of Texas, used story maps to spur the passage of a \$272 million school bond measure. This ballot initiative may have been overlooked or even blown off by the average voter. The story map made the measure engaging and personal.

So no more excuses – download, configure, and support the voter.

E380 Snapshot

Have you checked out E380 lately? E380 is Esri's media channel, created to share how your peers are using GIS. On this channel, you will find stories about the benefits others have realized through their use of GIS, conversations with industry experts, and technology presentations. You can browse E380's full library at esri.com/E380. Check out some of our newest videos:

The California Governor's Office of Emergency Services (Cal OES) details how it is using GIS throughout the department to improve the way it shares relevant information within the organization and with other jurisdictions throughout the state to save lives.



Watch this video at go.esri.com/CalOES.

Hear how California's Bay Area Rapid Transit (BART) uses ArcGIS to move over 450,000 commuters in the San Francisco area each day. For every dollar they spent, they saved \$3.11 using enterprise GIS across the organization.



Watch this video at go.esri.com/BART.

Esri Announcements

Esri is committed to supporting lifelong learning to help keep you informed of the latest trends and how the ArcGIS platform supports these trends. Be sure to check out these webinars, events, and reports, which will help keep your organization on top of the latest trends and technology:

2016 Economic Development Webinar Series

How will you make your community stand out? Register for our series showcasing tools for business attraction, destination branding, citizen engagement, and more.

go.esri.com/EDwebinars16



Environment and Natural Resources Webinar Series

Join Esri's Environment and Natural Resources webinar series and learn how your agency can leverage GIS in its workflows. In this series, you will learn about industry trends and the technology and tools that will help your organization get the most out of your GIS investment.

go.esri.com/ENR-webinars



Maps and Apps for Election Day Wednesday, July 27

Learn about the applications and tools created for Election Day support. Find out how your peers have benefited from using these applications to increase productivity, efficiency, transparency, and collaboration on Election Day.

go.esri.com/ElectionWebinar2016

Four Economic Development Trends to Lead You into the Future

Explore four trends that will help you distinguish your community and make it stand out in a competitive environment. Visit go.esri.com/econdevtrends to download this paper to see how you can use GIS to attract business, brand your community, increase communication, and develop a sustainable strategy for more data-driven economic development.

go.esri.com/econdevtrends

Five Tips for Efficient Snow and Ice Management, Other than Snowplows

GIS is a unifying force that will make your winter maintenance more efficient and effective. Visit go.esri.com/snowpaper to download this paper to see five tips on how your organization can leverage weather feeds, analytics, routing tools, real-time capabilities, and more, to become a modern snow fighter in the digital age.

go.esri.com/snowpaper

Esri's 4th Annual Public Sector CIO Summit March 29–30, 2017

Mark your calendars for the 2017 Esri Public Sector CIO Summit to learn about the value of GIS in your organization's IT strategy. Esri experts, along with leaders from the public and private sectors, will also explain how ArcGIS supports major technology trends, including the following:

- Data-driven decision making
- Innovating government
- Open data
- Pervasive and predictive analytics

Visit esri.com/cio-summit to learn more and stay up to date on the lead-up to the 2017 event!

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