

Esri News

for State & Local Government

Summer 2019

Yolo County Provides a Trailblazing Election to Its Citizens

Introduction

In Yolo County, California, recently elected elections official Jesse Salinas approached the Information Technology (IT) division of the county's General Services Department, interested in how he could significantly streamline the elections process. More specifically, he planned to use geographic information system (GIS) technology to rethink the elections experience for the constituents and his staff. The goal was to provide the public with a modern feel on Election Day by the 2018 midterm election.

Challenge

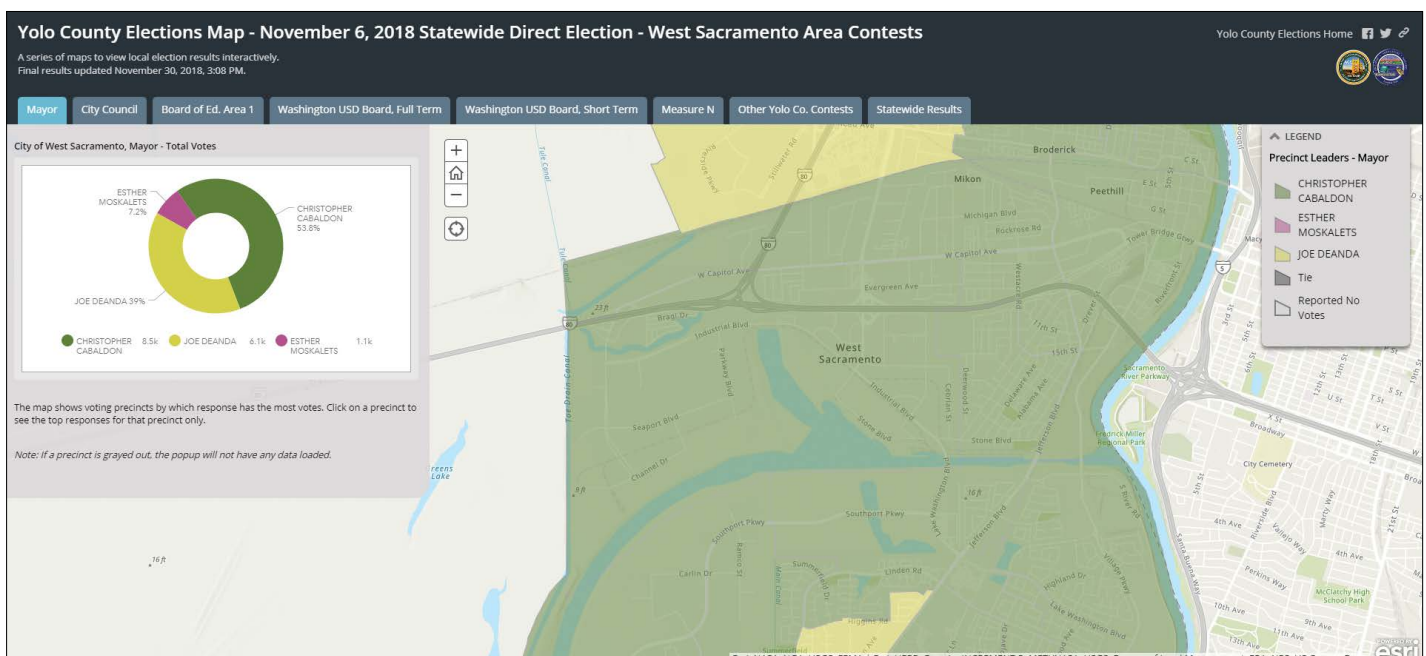
The county had four challenges: improve resource allocation, reduce response time through efficient routing to polling stations, strengthen communication to citizens on election results, and increase future turnout through targeted outreach and education.

The Solution

Improving communication between the field and election headquarters required a mobile solution to automate requests for services, resolve supply shortages, and address problems at polling stations. The county developed an app using Esri's Survey123 for ArcGIS to empower poll workers to input work order requests on their mobile devices. Once entered, the information is pushed to the elections base for prioritization and handling. The workflow was enhanced by feeding the collected requests data to Workforce for ArcGIS, an app that helped assign tasks, route and track field personnel, and provide work status updates back to the office on a digital dashboard.

Strengthening communication with citizens meant delivering timely and accessible election results through a public-facing web app. Using Elections Results, a configurable solution

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↑ A Story Map of the Postelection Results on Yolo County's Public-Facing Website

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Yolo County Provides a Trailblazing Election to Its Citizens

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template, the county moved from a static representation of election results to a dynamic visualization and interactive tool.

Salinas now has 2018 voting data and plans to collect future data to monitor historic voting patterns and use analytical tools to improve elections outreach and education. This location-based information will help pinpoint neighborhoods that have a low voter turnout and will target voter education for groups that need a greater understanding of the voting process and voter options.

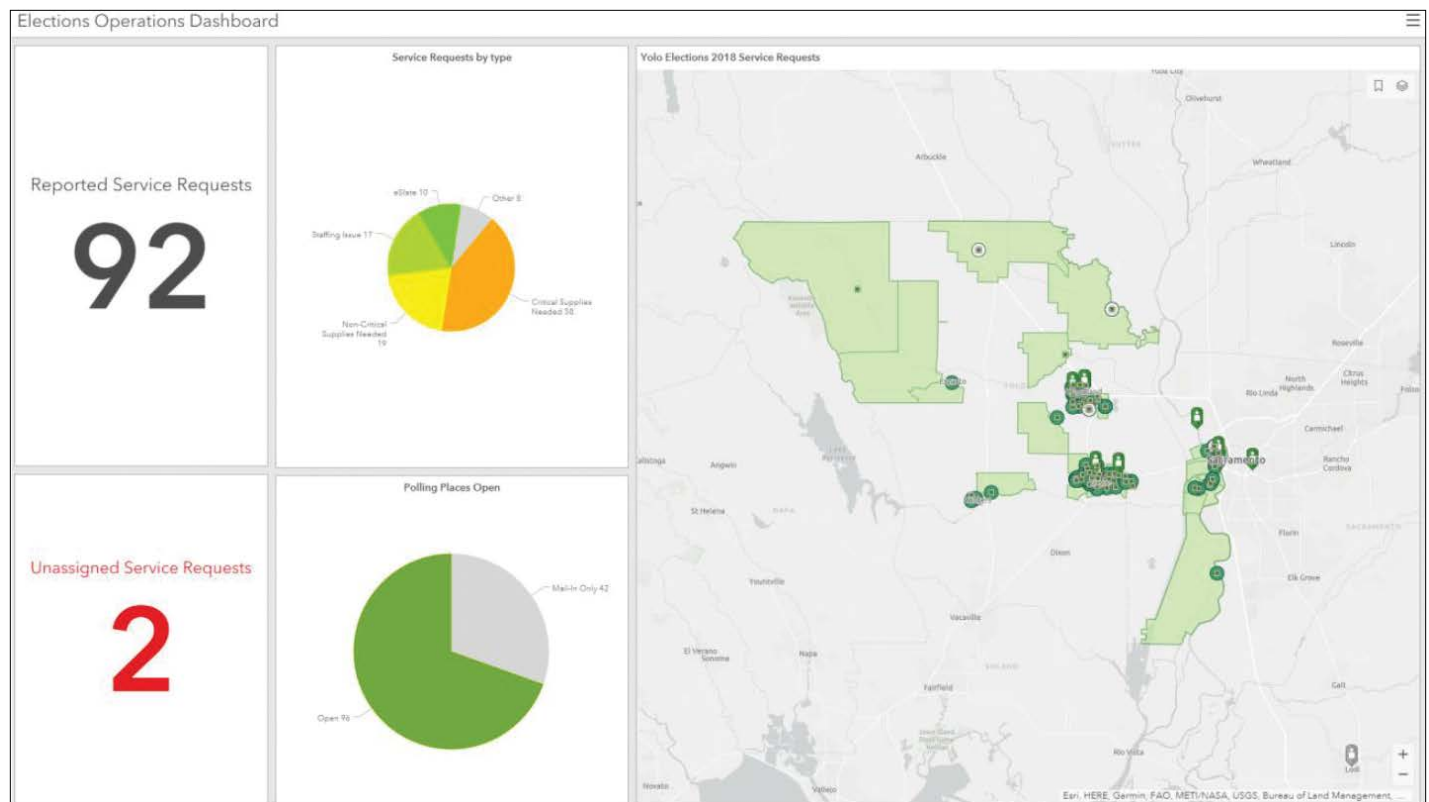
The Results

Yolo County's election headquarters had its quietest early morning Election Day in comparison to previous years. The Election department had significantly fewer incoming calls from polling stations asking for additional resources and support. The integration of Survey123 for ArcGIS with Workforce for ArcGIS ensured that the back-office staff were instantly notified and able to route the nearest available field personnel to assist polling places.

This new process allowed Salinas's team more time to focus on other aspects of the election, such as increasing efforts to engage the community and provide timely election results throughout the night. "The GIS data we've collected is now in a format to begin conversations with our community about neighborhood voter participation," said Salinas. "We can now begin to look at patterns of low participation in the various neighborhoods and start to develop strategies to change the less engaged election patterns of the past toward greater participation in the future."

Yolo County discovered that GIS not only allowed it to effortlessly collect data but also dive deeper into what that information means. By partnering with the IT and GIS teams, the Election department was able to modernize its election management workflows, enable the county to enhance communication, increase government dependability and trust, and provide essential outreach to its citizens.

For more information on modernizing Election Day operations, visit go.esri.com/Elections-Yolo.



↑ An operations dashboard of all service requests on Election Day allows the Election department to monitor updates in real time.

Seeing the Forest and the Trees in the City of Arborly Love

By Peter Godfrey and Chris Kulchak, POWER Engineers

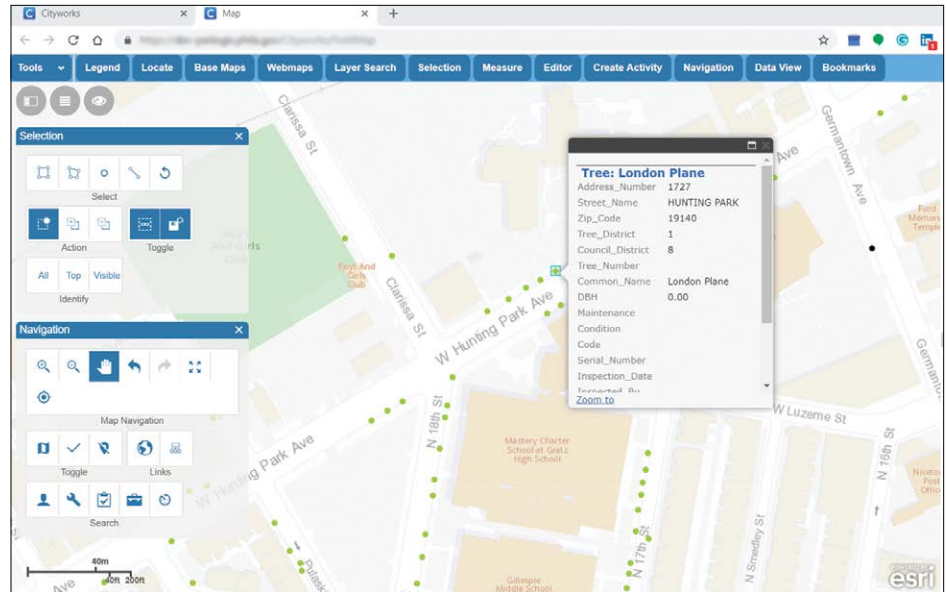
There may be no city in America that loves trees more than Philadelphia. More than 10 percent of Philadelphia's land area—16 square miles—is home to the largest managed urban park system in the world. With more than 1.63 million park and street trees, Philadelphia's living assets outnumber people.

Under the care of the Philadelphia Department of Parks and Recreation (PP&R), the city's trees thrive and grow not only in size but also in number. The city and its residents have planted more than 300,000 trees since 2010 when a corporate-sponsored program called TreePhilly set a goal of establishing a 30 percent urban tree canopy by 2025.

About the same time TreePhilly kicked off, PP&R partnered with POWER Engineers and EBA Engineering on a three-phase implementation of Esri ArcGIS solutions and the Cityworks asset management platform. The initial phase of the project established multiple requirements for this vast number of highly dynamic assets that, unlike pipes and poles, appreciate in value and consistently change as they grow and age.

On the operational side, PP&R needed a GIS-centric asset registry for risk management of disease- or storm-damaged trees, plus data for capital planning. On the ecological side, PP&R needed to store information to support proactive management of tree diversity and environmental impact modeling for storm-water management, canopy cooling, and carbon dioxide sequestration.

In terms of technology performance, PP&R required reliable remote data capture to record the dynamic information about each tree—including diameter, condition, height, and changing canopy coverage. Staff needed to easily document customer requests as



Whether in the back office or the field, PP&R staff can quickly and easily access valuable tree information.

well as individual tree and planting site conditions. They also needed to be able to efficiently assign work to contracted vendors and to field crews using iPads who respond to about 22,000 public service requests per year.

ArcGIS provided the dynamic and authoritative database the city needed to track and analyze tree data. The compatibility of Esri's ArcGIS Online, applications, and add-ons, as well as the foundation of Cityworks' asset management technology and mobile native apps, allowed the configuration of a "right fit" solution for office, field, and mobile applications.

To capture visual asset data to be stored in the GIS, the team also leveraged CycloMedia's cycloramas to record and extract spatial features with street view photography for reference in the field. PP&R interns gathered accurate tree condition information from cycloramas and added standardized height measurements from field inspections to fully populate existing tree and planting site data fields.

As the comprehensive discovery, pilot, and testing phases near completion, deployment of the full right fit pilot is scheduled for later this year. John Piller, PP&R project manager, is already eager to go live.

"We look forward to managing our street and park trees as true assets and leveraging the Esri and Cityworks platforms to enhance our business processes with the goal of greater efficiency and customer service to the citizens of the City of Philadelphia," said Piller.

This emerging coordination between departments and other stakeholders, made possible by technology, will enable the City of Philadelphia to take a holistic and data-driven approach to managing these living assets. In turn, the city's dynamic urban canopy will continue to enrich environmental health and quality of life for generations to come.

For more information, visit go.esri.com/cw-philly.

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Technology—Solving the Conflict between Humans and Nature

Utah Department of Natural Resources (DNR) uses Esri GIS technology to manage conflict between humans and nature as the state's population continues to grow rapidly. See how staff use ArcGIS maps to provide real-time tracking and analysis capabilities, enabling the department to reduce the risk of dangerous pelican strikes at Salt Lake City International Airport and prevent vehicle collisions with moose and deer on major roads and highways.



Watch the full video at go.esri.com/UtahDNRvideo.

Imagine Oshkosh: A Success Story in Redevelopment

Seeing industrial businesses leave their community, staff at the City of Oshkosh, Wisconsin, decided to use technology to develop a plan, called Imagine Oshkosh, that would secure economic and investment opportunities for the future. Kelly Nieforth, economic development services manager for the City of Oshkosh, discusses how ArcGIS and Esri partner Houseal Lavigne Associates helped promote the community to investors and businesses.



Watch the full video at go.esri.com/Oshkosh-Redev.

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- Communicate with and engage stakeholders.



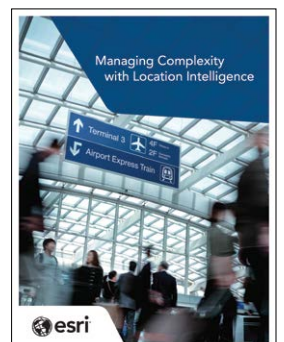
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Citywide Health Initiative Improves Lives in Rancho Cucamonga

Introduction

In 2008, the City of Rancho Cucamonga, California, faced the sad fact that the health of its citizens was declining. Obesity and diabetes were on the rise, a phenomenon that is occurring in many cities and towns across the United States. In response, the city decided to develop the Healthy RC initiative. It started out as a special project in which staff reviewed local health rates and compared that information with county data. The findings indicated that half the city's adult population was overweight or obese.

City staff knew that success for the initiative would require collaboration across all departments, community-based organizations, businesses, cultures, and public institutions. They started by getting the departments together and asking what each was currently doing to

improve community health and how their processes and workflows could change to support the Healthy RC initiative.

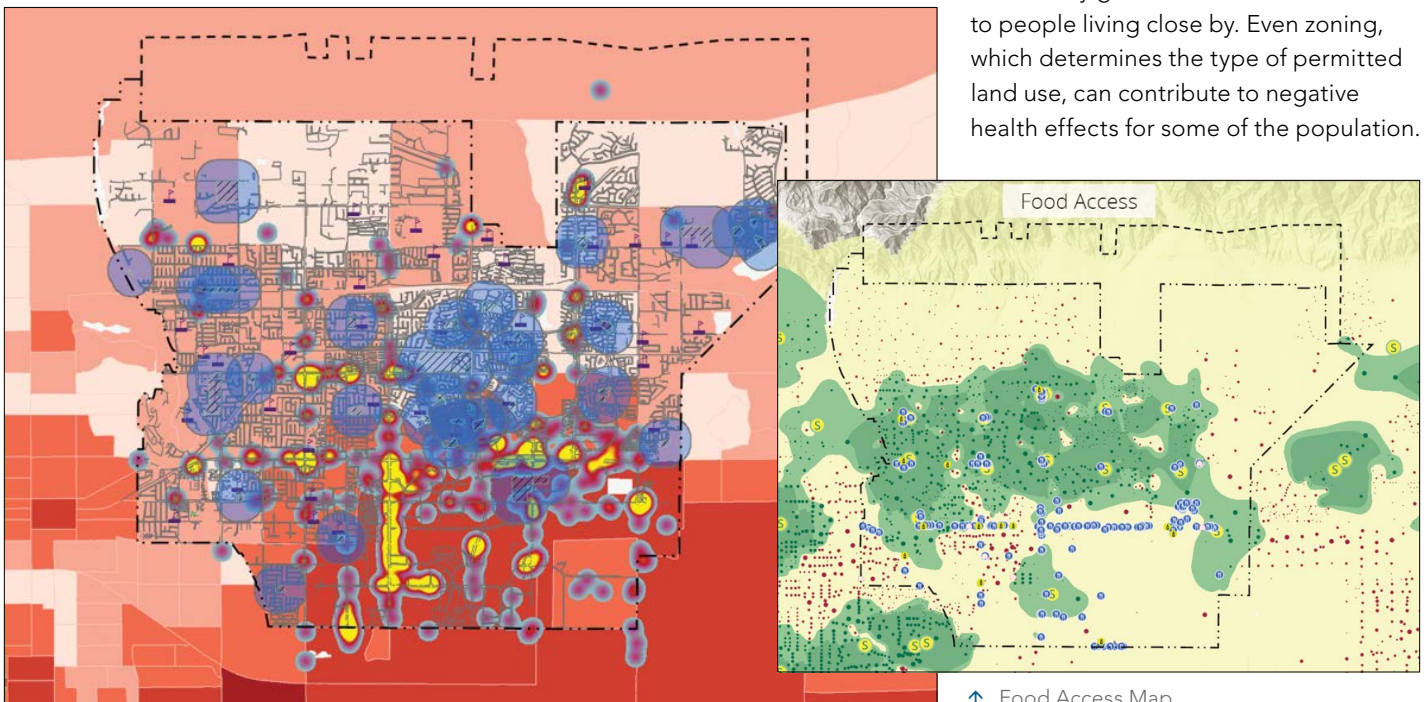
Through interdepartmental collaboration and comprehensive community engagement, staff developed a strategy for Healthy RC—asking residents, businesses, schools, faith communities, and other stakeholders how to improve the health of individuals, families, and neighborhoods. The strategic plan included eight health priorities: healthy eating and active living, community connections and safety, education and family support, mental health, economic development, clean environment, healthy aging, and disaster resiliency.

Staff recognized that location intelligence was essential to understanding the health of their community and finding solutions that improved the lives of citizens.

The Challenge

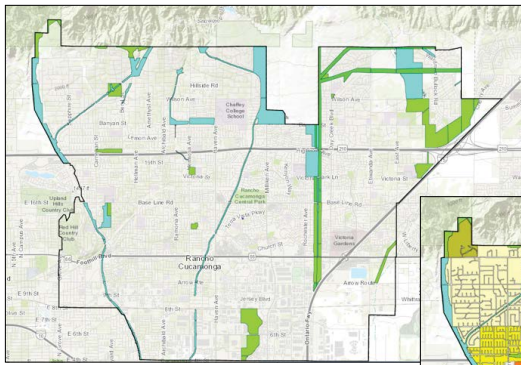
The primary goal of Healthy RC was to make a positive difference in the lives of Rancho Cucamonga's citizens. While the city knew that health problems were on the rise, staff needed more specific information—more data—to help them make good decisions and take appropriate action.

In most cities, the location and composition of neighborhoods can represent significant disparities between incomes and access to nutritious food and health care. Citizens living in one neighborhood may have limited or no access to amenities such as parks, farmers markets, and grocery stores, while nearby, other people have opportunities for healthy lifestyles. Whereas one area could be seen as dangerous or unsafe for children to walk to school, another may have community gardens that are not available to people living close by. Even zoning, which determines the type of permitted land use, can contribute to negative health effects for some of the population.

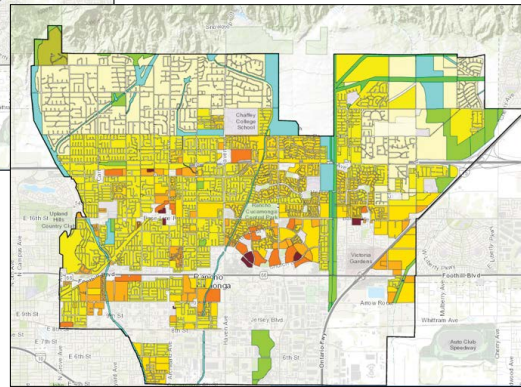


↑ Crime Layer/Traffic Collision Data Heat Map/School Locations/Park Walkability Radius Analysis Layer (helps staff understand some of the reasons people may or may not walk to parks; in particular, was used to assess the area around Los Amigos Park in Southwest Rancho Cucamonga)

↑ Food Access Map



↑ Policy in Action—Community Garden Zoning Policy Before



↑ Policy in Action—Community Garden Zoning After

For the City of Rancho Cucamonga, perhaps the biggest hurdle to getting the data it needed was in reaching out and engaging the citizens themselves. To achieve the granularity of localized data, staff needed to do the in-person health surveys necessary for understanding the lives of citizens in different parts of the city. The data would serve as a baseline for verifying their assumptions about the neighborhood characteristics and, ultimately, help them develop targeted strategies to improve health outcomes.

To meet the goals and objectives of Healthy RC, the city had to consider all these factors. The Healthy RC team needed a way to bring the data together in one place so it could be analyzed and the findings presented to decision-makers and the public.

Solution

Using ArcGIS, a mapping and analytics platform, the Healthy RC team members

first analyzed neighborhood-level data and identified the most disadvantaged areas, where health issues were greatest and healthy options were most scarce. Next, they compared those areas with Rancho Cucamonga's overall poverty and median income data to better understand the disparities between different parts of the city.

To establish a baseline, the team members created a paper-based survey that they could take into the field as they went door to door to interview people. They also held community events, went to city parks and trails, and deployed an online survey. This way, the team could connect with people wherever they were.

With this initial set of new information entered in ArcGIS, staff were able to quickly determine food deserts—areas where it is difficult to purchase affordable, healthy food. Using maps, the team members could see where sidewalks, grocery stores, and parks already existed

or were needed. To learn which areas were considered unsafe, they connected the data with the survey information, crime statistics, and community stories.

Through collaboration, citizens were able to use maps to identify places that were unsafe for their children to walk or play in. Residents also communicated where they would most like to see a community garden or a farmer's market.

Bringing all this information together in ArcGIS allowed the city to investigate how current zoning was impacting neighborhood health and how changes to the zoning could benefit different neighborhoods.

The more information the team gathered, the faster the city could make informed decisions and take meaningful action. Additionally, the Healthy RC team began using smart technology to speed data collection. Fieldworkers used Survey123 for ArcGIS on smart tablets to collect data more accurately, which allowed them to identify issues at the census tract level. By going digital, the team was able to expedite companion projects, such as the Safe Route to School initiative, which was designed to work with kids to show where safer crosswalks and lower speed limits were needed.

Results

Ten years later, the Healthy RC team surveyed the community again, hoping to see improvements from the implemented programs. The positive results of Healthy RC are staggering.

In the first couple years, many issues were identified and policies changed. With community input, the city changed zoning so that the farmers markets and community gardens were made more accessible to all neighborhoods. The \$1,500 conditional use permit fee for those amenities was waived. These were just two policy changes among many, including completing streets, setting nutrition and beverage standards, and designating smoke-free areas. Additionally, there were several infrastructure

"We used location intelligence to engage the public in a new and powerful way. It improved the quality of the relationship between the city government and its citizens, which resulted in a healthier community."

Erika Lewis-Huntley,

Management Analyst, City of Rancho Cucamonga

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If you understood who was most at risk
where you could make the biggest impact
would you make the same decision?

Composite Index

Unemployment

Asthma

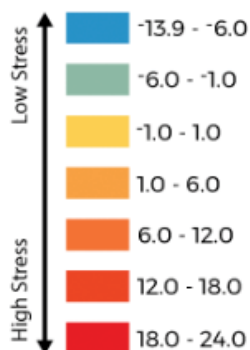
Heat Stress

Poverty

Drug Crimes

and More

Composite Index
of Stress Indicators





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The Stress Index application, from the City of Philadelphia, forces us to ask ourselves that very question. Using the key measurements of poverty, health, education, employment, and quality of life, the city's Stress Index helps identify Philadelphia neighborhoods that are experiencing the most stress. Explore this map, along with other variables, on the Esri Maps for Public Policy site, a complimentary resource to help you make data-driven decisions.

Gain inspiration from forward-thinking organizations that are tackling today's community challenges.

Visit go.esri.com/philly-stress-index.

Virginia's Historic Steeplechase Horse Race Gets Real-Time GIS for Safety

By Ryan Lanclos, Esri



Each spring, on the first Saturday in May, equestrians and fans gather for the Virginia Gold Cup steeplechase horse race. This event sits atop the social

calendar in Virginia's horse country—the epicenter of the nation's horse and hunt community.

Competitions for tailgating, wide-brimmed hats, and wagers on the winners—along with a steady flow of the event's mint julep signature cocktail—can prove to be a volatile mix.

The event attracts close to 70,000 participants, turning a rural corner of the county into a density of revelers the size of a small city. To help contend with the event's complex security demands, organizers recently started using real-GIS.

"Everybody's been cooped up for the winter, and they come out dressed in their best clothes to let their hair down a little bit," said Ray Acors, division commander of the Fauquier County Sheriff's Office. "When you get a lot of people drinking alcohol, some tend to make bad choices.

"We want people to have a good time, so we're being discreet but still enforcing

the laws and making people feel comfortable and safe," Acors said.

The use of a drone eliminated the labor-intensive mapping of the grounds and provided dispatchers and officers with a near real-time overhead view of the facility.

Trial Event for Real-Time Technology

The origin of this type of horse race traces to colonial times when races would begin at one church steeple and end at another, with stone walls and stream crossings adding danger and spectacle.

While horse racing in the region has been popular for a long time, the Gold Cup was formalized in the 1980s with the donation of a 380-acre property and the formation of the Great Meadow Foundation. Pari-mutuel betting was added in 2013, and attendance at the event has steadily grown ever since.

In addition to the spring Gold Cup race, an International Gold Cup event takes place every year in October, drawing a smaller, more sedate crowd of fewer than 35,000 spectators. The most recent fall event provided a good testing ground to roll out real-time technology.



↑ The use of a drone eliminated the labor-intensive mapping of the grounds and provided dispatchers and officers with a near real-time overhead view.

Visibility on a Complex Course

The race plays out across a broad field. Around the edges of the field, large, white sponsor tents host guests for catered sit-down meals, rail spots allow spectators to watch the race behind temporary fencing, and parking areas fill up with tailgating revelers. The complexity and expansive geography of the event make it difficult for law enforcement personnel, who need to ensure complete coverage and the ability to respond quickly should an incident occur.

"There aren't many permanent structures, so our standard aerial imagery doesn't reflect the infrastructure of the day," said Dan Stell, GIS analyst with the Fauquier County GIS department. "We used a drone to capture up-to-date imagery of the course."

This imagery provides the backdrop for map-based apps distributed on 64 smartphones provided by Verizon to emergency medical services personnel,



↑ This aerial shot of the course provides perspective.

the Virginia State Police, and Fauquier County Sheriff deputies. The phones allowed each person to be tracked on a large dashboard in the command center bus parked at the event. Each person with a phone could record and share incidents in the apps and see the location of others on the map—all using a current map showing where the temporary structures are located around the field.

“Adding this capability as part of our Incident Action Plan helped us to have an integrated response between local and state agencies,” said Stacie Neal, deputy director and critical infrastructure program manager with the Virginia Fusion Center, who was integral in bringing together people and technology for this test. “Using a common and current map, combined with real-time first responder and incident locations, provided great situational awareness for all the partner agencies.”

Speeding Up Response Times

The race runs for an intense eight or nine minutes, with video feeds broadcasting on big-screen televisions spread throughout the course, and a race announcer giving a lively account of the show. After this short burst of activity, everyone goes back to partying.

“There were a couple of jockeys that fell off horses, which is expected; however, no injuries were reported, which is phenomenal for an event like this, and no real violations of the law,” Acors said.

Throughout the event, dispatchers kept close tabs on the locations of first responders. This gave officials the ability to send the closest officer to an area of concern rather than use the traditional approach of dispatching the officer assigned to the area who might be farther away from the incident. The same view of real-time first responders’ locations and incidents were duplicated at the main communications center at the sheriff’s office seven miles away in case a large incident occurred and more resources were needed.

Police officers, firefighters, and rescue personnel took to the technology quickly.

“We worked really hard to make sure that the apps were easy to use,” said Drew Fioranelli, GIS director for Fauquier County. “We were very direct and concise about how to use the applications, and all the officers had to do was to have the device on their person for the real-time capability to work.”

This is one of the first times that all the technology has come together in a rural area for such a large event. The lessons learned and the successes will go a long way in managing the more hectic Virginia Gold Cup steeplechase horse race in spring 2019.

“The radio traffic was cut in half, and communication was quicker because we could see our assets in the field in real time,” Acors said.

The Parts of the Solution

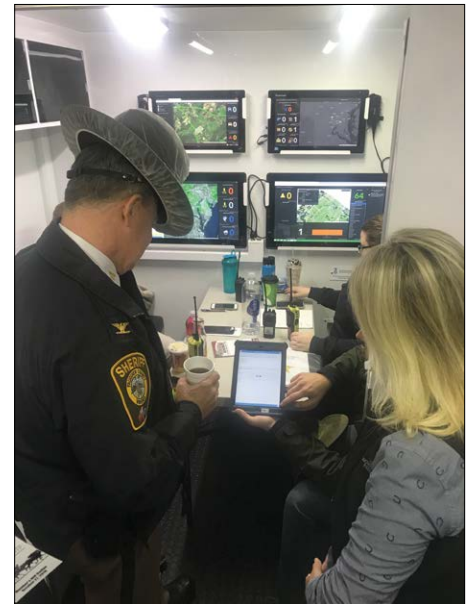
For incident response at the Virginia Gold Cup, planners have long created maps.

“In previous years, we’ve just relied on static paper maps that we would produce for law enforcement,” said Stell. “Every year we would have to digitize the locations of tents and map access points and staging areas. Using a drone really changed the view and made it much easier to deliver an up-to-date map.”

The drone imagery was processed using Drone2Map for ArcGIS, adding labels to the imagery rather than mapping each feature, to greatly reduce the time it takes to capture course details.

The Fauquier County Sheriff’s Office deployed Survey123 for ArcGIS for incident mapping. This application provides a survey function with menus and built-in location capturing so that field personnel can log and share incidents as they happen.

The security team members used Workforce for ArcGIS to track assets in the field in real time. Operations Dashboard for ArcGIS allowed them to display and share different views of live information at the command center



↑ Fauquier County Sheriff Robert Mosier receives an update on event-driven, real-time data feeds and reviews a mobile application to support field reporting and resource tracking during the event while in the dispatcher’s station aboard the Fauquier County Sheriff’s communications mobile command center.

and share that same live view with the state fusion center, which is a collaborative hub of state, federal, and local law enforcement working together to prevent and respond to terrorist and criminal activity.

The dashboards incorporated live traffic, weather feeds from WeatherOps and AccuWeather, mentions of the event on social media provided by DataCapable, and news feeds of events in the surrounding area provided by NC4. Any incidents logged by officers were displayed by location and aggregated by type.

“My vision is to incorporate this capability into daily operations,” said Acors. “We can track vehicles, but we can’t track people deployed outside of their vehicles. We have a lot of wooded and mountainous terrain, and I hope we can keep better track of our folks and deploy them directly to any issue within my lifetime.”

To get started with real-time capabilities, visit go.esri.com/realtimenow.

Anchorage Pinpoints Assets with High-Accuracy ArcGIS Enterprise

On the edge of the Alaska wilderness, Anchorage residents enjoy some of the world's purest water, treated and delivered by the municipal-owned Anchorage Water and Wastewater Utility (AWWU).

AWWU is a forward-thinking organization whose mission statement champions "Reliable Infrastructure." Last year, the leadership team commissioned a best practices road map for AWWU's GIS—its primary system of record for water and sewer assets.

"Our goal is to make the best use of the GIS," AWWU GIS manager Ed Sorenson said.

California-based consultancy NorthSouth GIS (NSGIS) provided AWWU with a GIS Master Plan, designed to keep AWWU on the cutting edge of asset management. Two of NSGIS's recommendations targeted GPS improvements:

1. Better, easier, faster, and more reliable and rugged GPS data capture
2. Capable of collecting data in real time

With improved field GPS—delivered reliably and in real time—AWWU could reduce costs, cut manual labor, improve data quality, and more.

The GPS workflow also seemed like a natural place to start, because AWWU had already been targeting improvements to a legacy workflow.

Challenges with Legacy GPS

AWWU's legacy GPS units could take from thirty seconds to a few minutes to record a location. That time added up, as field crews validate an average of a couple of hundred points per month.

The utility's legacy GPS units did not record in real time, so data would be captured in the field and have to be taken back to the office for postprocessing. Afterward, the GPS points would be entered in the GIS and validated against imagery aggregated from a variety of sources, including

municipality-provided imagery.

"We would get all the data on the map, but some points were lost," senior GIS analyst Dave Boulrier said. "We would have to go out and get the GPS points again."

In addition, when validating the points against municipal imagery in the GIS, it was clear these were not always within the six-foot range of error.

"The legacy GPS units said they were submeter, but we were not always getting that," Boulrier said.

A Real-Time, Reliable Solution

Previously, the AWWU GIS team had already tested five new GPS receivers, across iOS and Android, and determined that the Arrow 100 GNSS receiver from Esri Silver partner Eos Positioning Systems would replace its legacy GPS units.

"The Arrow 100 was the clear winner," Boulrier said. "Once you get a signal and it locks on, it's almost instant collection. We're getting submeter locations, and a lot of the times, it's even better than half a meter."

By eliminating postprocessing, AWWU eliminated repeat field trips at an estimated savings of 25 percent.

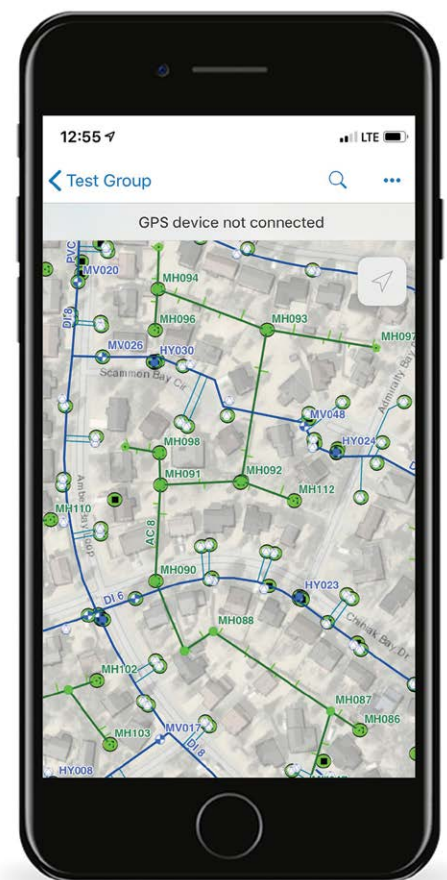
"It's big-time cost savings," Boulrier said.

Next, the GIS team members worked with the Technical Services team to set up Esri Portal for ArcGIS. This enabled secure, server-based, read-and-write access to the GIS in real time. They deployed Collector for ArcGIS to 50 iPhones.

"Our field crews are able to look directly at our local database, pull that data, and write directly to the database, without having to postprocess," Boulrier said.

Meanwhile, they also installed Explorer for ArcGIS so everyone could pull up live, reliable GIS data from the Esri Enterprise portal, whether they were in the field or office.

"As long as their screen is refreshed in the portal, someone in the office can see what's being done in the field instantly," Boulrier said.



↑ Approximately 50 field crew members share 18 Arrow 100 GNSS receivers when writing data to Collector for ArcGIS.

Last fall, AWWU rolled out the new workflow organization-wide.

"It has been a seamless rollout," Boulrier said. "A lot of times it can be challenging to ask your colleagues to adopt new technology. But with this, it seemed to click with everybody. The whole GPS program has really pushed the utility to move forward with using ArcGIS Online and Portal for ArcGIS."

For more information on how your organization can optimize field operations using EOS products, visit go.esri.com/Eos-gnss.



ARROW SERIES

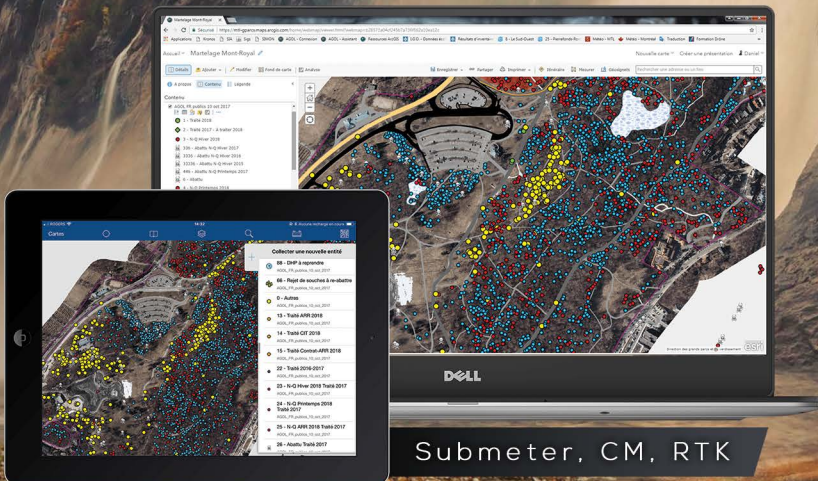
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Wisconsin Provides a Map-Based App to Guide Hunters

By Mike Bialousz, Esri



Not long ago, hunters in Wisconsin had to consult a Wisconsin Department of Natural Resources (DNR) map for key pieces of information. To see

where and at what times of the day they could hunt, for example, they searched for hunting zones, marked on the map along longitude lines. Now, hunters can use an app on their smartphones to get details about the exact location where they may be standing.

"I've been leaving the stand too early for 20 years," said Scott Karel, regulation policy specialist at Wisconsin DNR. Karel is both a hunter and one who administers regulations, and he appreciates a hunter's need for accuracy and simplicity. Every year, his group hunts deer in an area that's close to the border of another hunting zone." The app said we were in the other zone, and I was sure it was wrong," Karel said. I checked it against a more detailed map, and—sure enough—the app corrected our mistake."

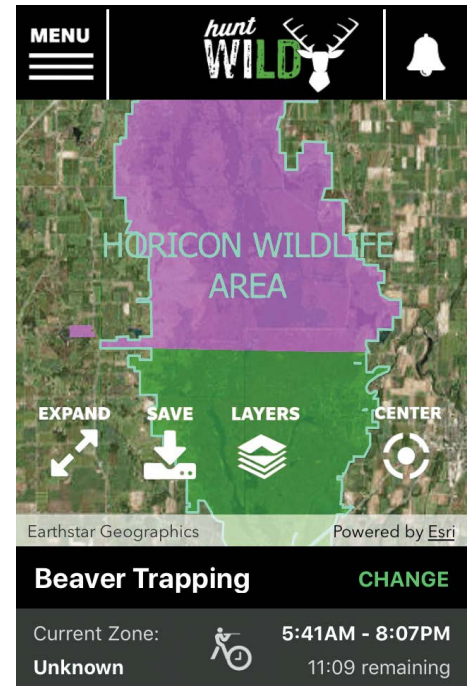
Karel's happy to have erred on the side of caution (leaving early rather than staying late), happy to have more

minutes of hunting, and happy that he and all Wisconsin hunters no longer need to take a hard-copy regulations book into the woods.

Accessing Location Information

The Hunt Wild Wisconsin app tailors the experience, based on the species that the hunter is pursuing. Both satellite and topographic maps can be customized to save a favorite hunting location. Maps can be downloaded to the phone for access and use in areas where there isn't a cell signal. Hunters can also use the app to track themselves, helping them remember their trail and get back to their vehicle.

The US Fish and Wildlife Service recently conducted a national survey about the popularity of hunting and found that hunting has declined 50 percent over the past 50 years. With this decline in mind, the app was designed to offer maps and information to anyone interested in exploring the state's public lands, even if the user is not a hunter. Knowing public land boundaries helps people in pursuits such as hiking, bird watching, and wildlife photography (all of which are on the rise) find new outdoor opportunities.



The content and functionality of the map may evolve and expand over time.

"We've already heard a number of suggestions from the public in terms of things that they would like to see," said Jeff Walters, project manager at Wisconsin DNR. "They'd like us to add trails to the map, other types of lands, access points, and parking lots. Where to park is always a huge issue for people."

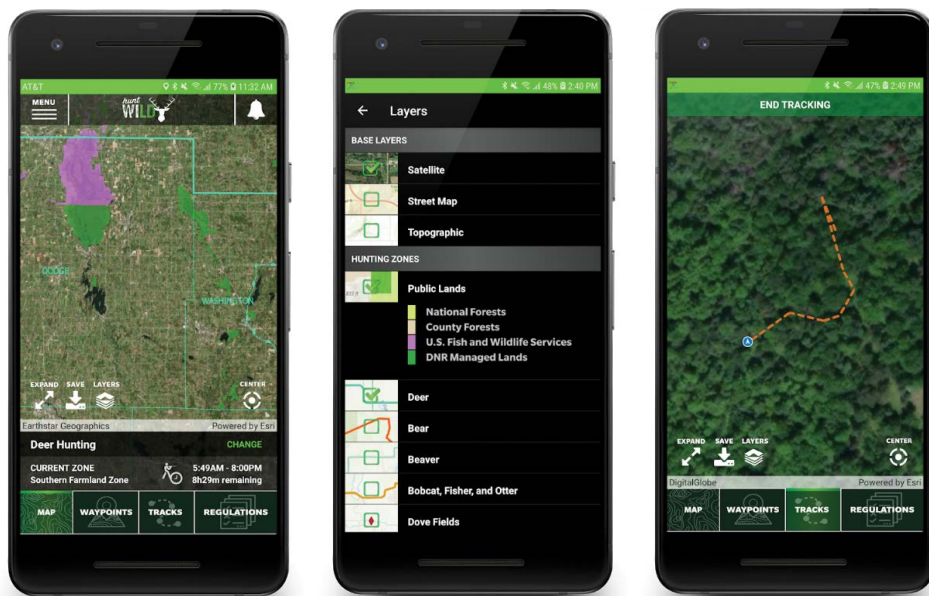
Getting a Mobile Advantage

Delivering maps and regulation information via the Hunt Wild Wisconsin app has helped streamline communication. It allows the Wisconsin DNR to send important push notifications to hunters, such as the message that the season is closed if a quota on a species has been reached. It also solves a paper-based problem.

"We would have 600,000 to 700,000 publications, printed and distributed across the state, in hard copy," Walters said. "If a last-minute change came in



↑ Wisconsin hopes to encourage a new generation of hunters.



↑ Maps are central to many of the Hunt Wild Wisconsin app features.

regarding some specifics, we could update our online version, but the printed version already in circulation would not reflect those changes. Now, we can make updates immediately in a transparent mobile app.”

“Two years in a row, we’ve had major changes come down during our open hunting seasons,” Karel added. “Both affected what we already had in print.”

The move away from paper is also a reflection of how Wisconsin hunters purchase their hunting licenses. “Almost 50 percent of licenses are now purchased online instead of [at] a physical location,” Walters remarked. The Hunt Wild Wisconsin app should accelerate that trend, as hunters can purchase a license, a tag, or a permit directly via the app.

Delivering an Experience

Wisconsin has started to think about the hunter more as a customer, and the mobile app offers one of the ways that the state reduces barriers to participation. The goal is to make outdoor experiences more enjoyable, and the hope is to attract a new generation of outdoor enthusiasts.

The app also allows the Wisconsin DNR to see how people use it and travel the land. Aggregated details about hunter behavior will help staff set policies

to fine-tune the hunting experience.

The app ties neatly into the recruitment, retention, and reactivation (R3) strategy that many state DNRs have adopted to reverse the decline in hunting.

The app has gained popularity with hunters. From its launch in September 2018, it has had more than 90,000 downloads. That’s at more than double the number of downloads of a previous Wisconsin DNR app. In addition to being more popular, the new app offers greater flexibility to meet the needs of Wisconsin hunters and is the means to collecting valuable information on their behavior. While the app has a ways to go to reach the majority of the 700,000 licensed hunters in Wisconsin, it’s picking up even greater pace and receiving good response from users.

“We put a mechanism in the app for people to email us directly,” Karel said. “We have gotten quite a few constructive suggestions for what people want to see in the app, and we were pleasantly surprised by how many people took the time just to say, ‘Hey, this is great!’”

To learn how state and local governments use GIS technology to create solutions to better manage natural resources, visit go.esri.com/transformENR.

Citywide Health Initiative Improves Lives

continued from page 9

enhancements. Sidewalks and bike lanes were put into place where the need was identified, and parks were added.

As stated in a recent report, the survey showed that childhood obesity had decreased by 13 percent; the number of overweight students had decreased by 7 percent; and the incidence of heart disease, diabetes, and cancer had decreased by 20, 14, and 21 percent respectively.

The city was able to use GIS technology not only to identify areas where government involvement was needed but also to make that intervention relevant and engaging to a community.

Staff used an ArcGIS Story Maps app to help people visualize and understand the policy changes. It included maps depicting areas before and after zoning changes. It also contained images showing how the addition of sidewalks and parks was changing the built environment.

Currently, one-quarter of Rancho Cucamonga’s population is actively engaged in the Healthy RC program. The city has plans for expanding it citywide through community engagement to also address health equity. The revised program will include strategies to ensure adequate representation of the city’s diverse population for shaping future policy, projects, and services.

To see the Healthy RC story map, go to go.esri.com/RCstorymap.

To see how GIS can be used in health and human services, go to esri.com/industries/health.

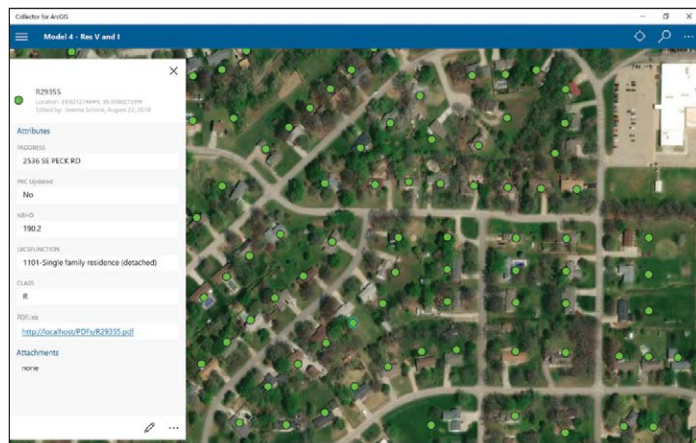
Appraising Property Using a GIS-Centric Workflow: Shawnee County, Kansas

Introduction

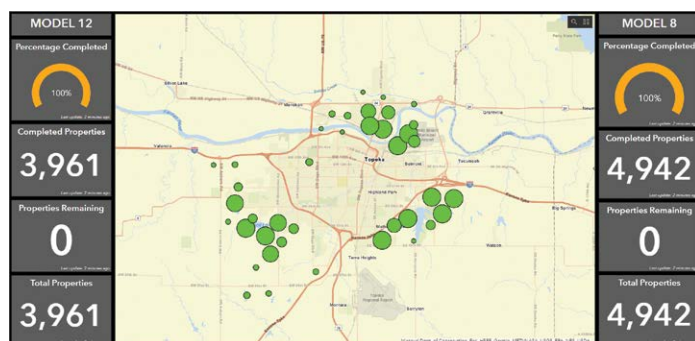
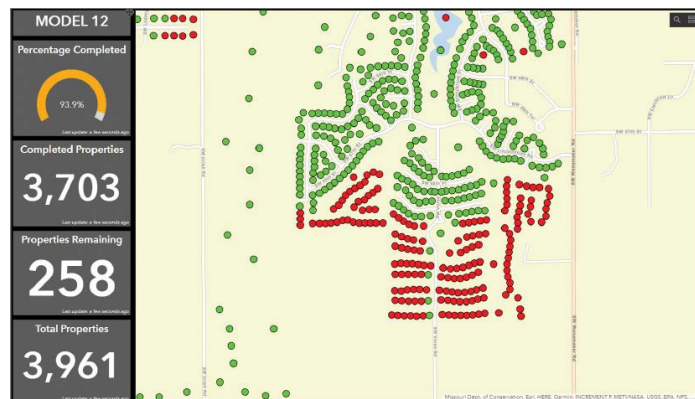
Like many counties in Kansas, Shawnee County property appraisers had used a paper-based workflow to collect information in the field for decades. They sought to replace this workflow for annual visual inspections of properties by implementing a GIS solution. This transformation would provide appraisers with more detailed information for each property, save time in the field and office, minimize data entry errors, save costs, and enable supervisors to easily track progress on a project that involves over 12,000 annual property inspections. Using Esri's technology and innovative GIS processes, Shawnee County can now evaluate hundreds of properties per day with greater accuracy and efficiency. In addition, citizens of the county access updated parcel information using the county's web app.

Challenge

With about 76,000 tax parcels within its jurisdiction and shrinking staff, workers in the Appraiser's Office were overwhelmed. Visual inspections of over 12,000 properties must be conducted each year by state statute. Their workflow consisted of hundreds of pages of printed material for each area assigned. The paper work included major appraised features of each property but no pictures. This paper work would have to be organized logistically to drive the areas and take pictures of each property. Photos were taken with a digital camera, and the photo number was written down to be later matched up by office staff. Maps were printed of each area assigned. All paper was then scanned, and data was entered into the appraisal software.



↑ Staff view of a selected parcel in Collector for ArcGIS with an attribute pop-up window, which has a link to an editable PDF where appraisers can edit any changes on the fly.



↑ An operations dashboard gives supervisors an interactive map that shows work status updates at a neighborhood and county level.

Solution

The Appraiser's Office looked to Esri's geospatial platform, easy-to-use apps, and innovative county GIS staff to replace its paper method. The county appraiser equipped field staff with Windows tablets, but they needed to be used in a disconnected environment. Using Collector for ArcGIS (a mobile data collection app), ArcGIS Online, and ArcGIS Pro, GIS staff were able to piece together a digital GIS-centric workflow.

Before, it was easy for an appraiser to drive past a hidden property and miss that inspection. To ensure every property was inspected and done so the first time around, each parcel was converted to a point feature in red on the map. Using Collector, when the appraiser visited each point, pop-up information provided an overview of the property. This pop-up also included a link to a detailed PDF document that contained all necessary appraisal information from years past, and a previous photo. This PDF was redlined with changes and saved. When a new photo was taken and the point marked as completed, the feature turned green. In addition to the point feature, a custom tiled basemap was also created in ArcGIS Pro, using imagery and property information such as IDs and addresses. This aided

the appraiser in knowing where they were at all times and at which properties the data had already been collected. Using editor tracking, the exact date of inspection is always collected and easily imported into the appraisal software.

When the appraiser comes in from the field, the attached photos are downloaded and processed to match a specific location, then renamed according to the corresponding parcel ID using the Python (ArcPy) coding language. This ensures that every photo is on the correct property, and clerical staff no longer have to manually match photos to properties.

After automated scripting updates the map layer in ArcGIS Enterprise, GIS manager Lee Allen can provide a comprehensive view to supervisors using Operations Dashboard for ArcGIS, a configurable all-in-one control panel. The dashboard provides a higher-level look at the entire data collection area, which consists of key performance indicators such as work status updates.

Not only did improving the workflow enhance the speed at which work was getting done but now the county can also push that information to citizens. All property data is available to residents through a mobile-friendly web map, where they can access property assessment and tax information. The GIS department used Web AppBuilder for ArcGIS, a platform that allows users to create easy-to-use web apps for their workflows and community. The web app is synced with enterprise GIS data including property data. The Appraiser's Office can publicly share authoritative data that citizens and businesses need.

Results

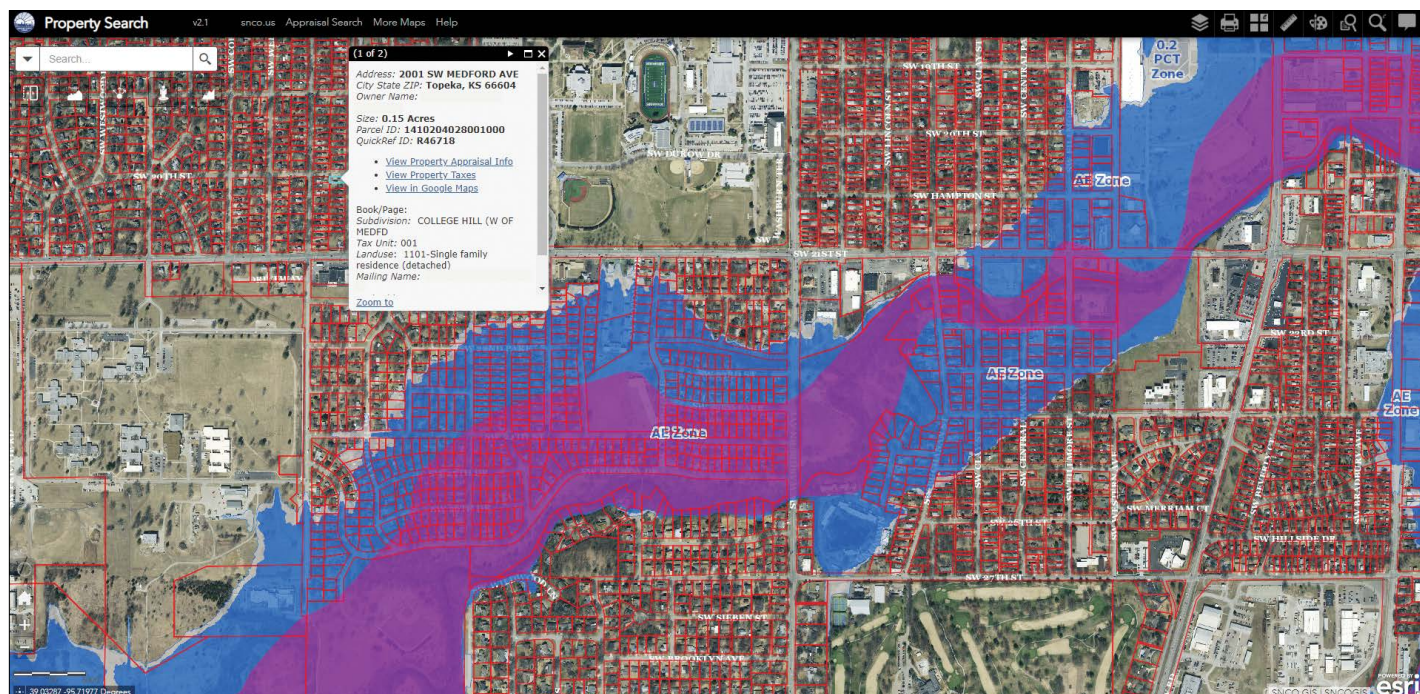
Now that the Appraiser's Office has digitally transformed its workflow, accurate data can be more easily captured and returned to the office. This has greatly reduced the amount of time spent updating each parcel. The process minimizes the amount of error that could take place, since workers are no longer handing over written notes, and the exact information that an appraiser inputs into Collector is the same data citizens see in the county's Property Search web app. This improves the dialog that local government ultimately has with its citizens and drives information to them at a much faster rate. The county also saves thousands of pieces of paper and ink, better utilizing taxpayer dollars.

Just over a year ago, the team was overwhelmed with an outdated workflow. Now with its new and improved digital method, it is planning to track and collect parcel information for roughly 2,000 mobile homes.

Not only has the local government been able to upgrade its field operations for appraisals, but it is also taking on more work and seeing that the workflow it built using Esri's technology can be used across the enterprise in other aspects of work.

Shawnee County uses Esri interactive mapping to help citizens learn about precincts for voting, commissioners, and crime mapping and to see where the flood zones are in the county. To see its gallery of maps, visit www.snco.us/ap/mapping.asp.

For more information on how you can improve field operations at the Appraiser's Office, visit go.esri.com/snco-field-ops.



↑ Shawnee County's Property Search web map delivers authoritative data—such as property tax and appraisal information and where the flood zone-prone areas are—to citizens.



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