Esri News
for State & Local Government
Summer 2020

Leon County Supports Local Businesses during COVID-19 Pandemic

The current coronavirus disease 2019 (COVID-19) pandemic, although considered a public health crisis, is putting economic strain on small businesses, which account for the bulk of US employment.

While many shops have had to close, others are staying open but facing new challenges. Customers searching for providers of essential services—grocery stores, pharmacies, or banks—don't always know which businesses are still open. In response, jurisdictions across the country are working on ways to help connect residents and businesses.

In Leon County, Florida, the Office of Economic Vitality (OEV) and the GIS department recognized the need early on to support the community as well as local businesses. They are using maps

continued on page 16

Featured Article

See the full list of ready-to-use solutions for COVID-19 response and recovery on pages 12–13.

↑ Local restaurant offering curbside pickup.

Contents

Summer 2020

***Esri News for State & Local Government* is a publication of the State and Local Government Solutions Group of Esri.**

Contact the Esri Order Center at 1-800-447-9778 or, from outside the United States, +1-909-793-2853.

Visit the Esri website at esri.com.

View *Esri News for State & Local Government* online at go.esri.com/gov-news.

Advertise with Us

Email statelocalads@esri.com.

Submit Content

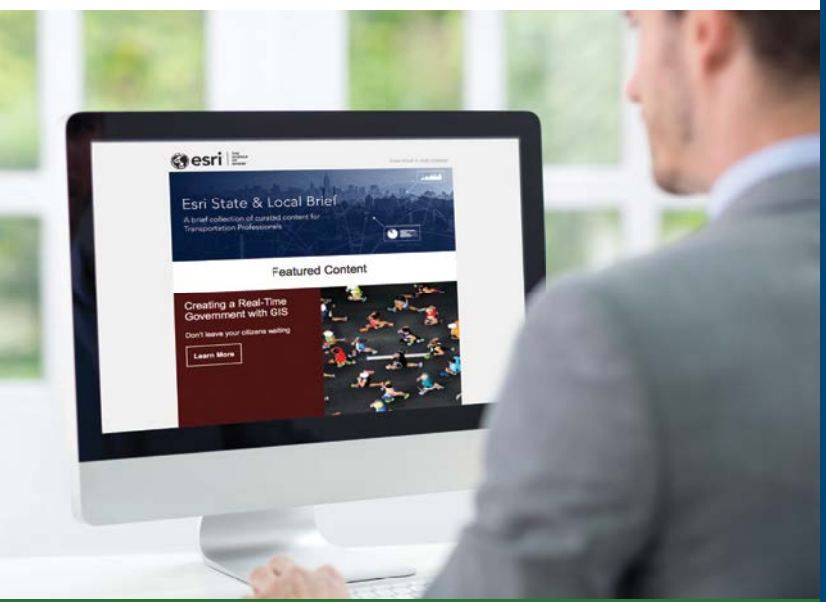
To submit articles for publication in *Esri News for State & Local Government*, email statelocalarticles@esri.com.

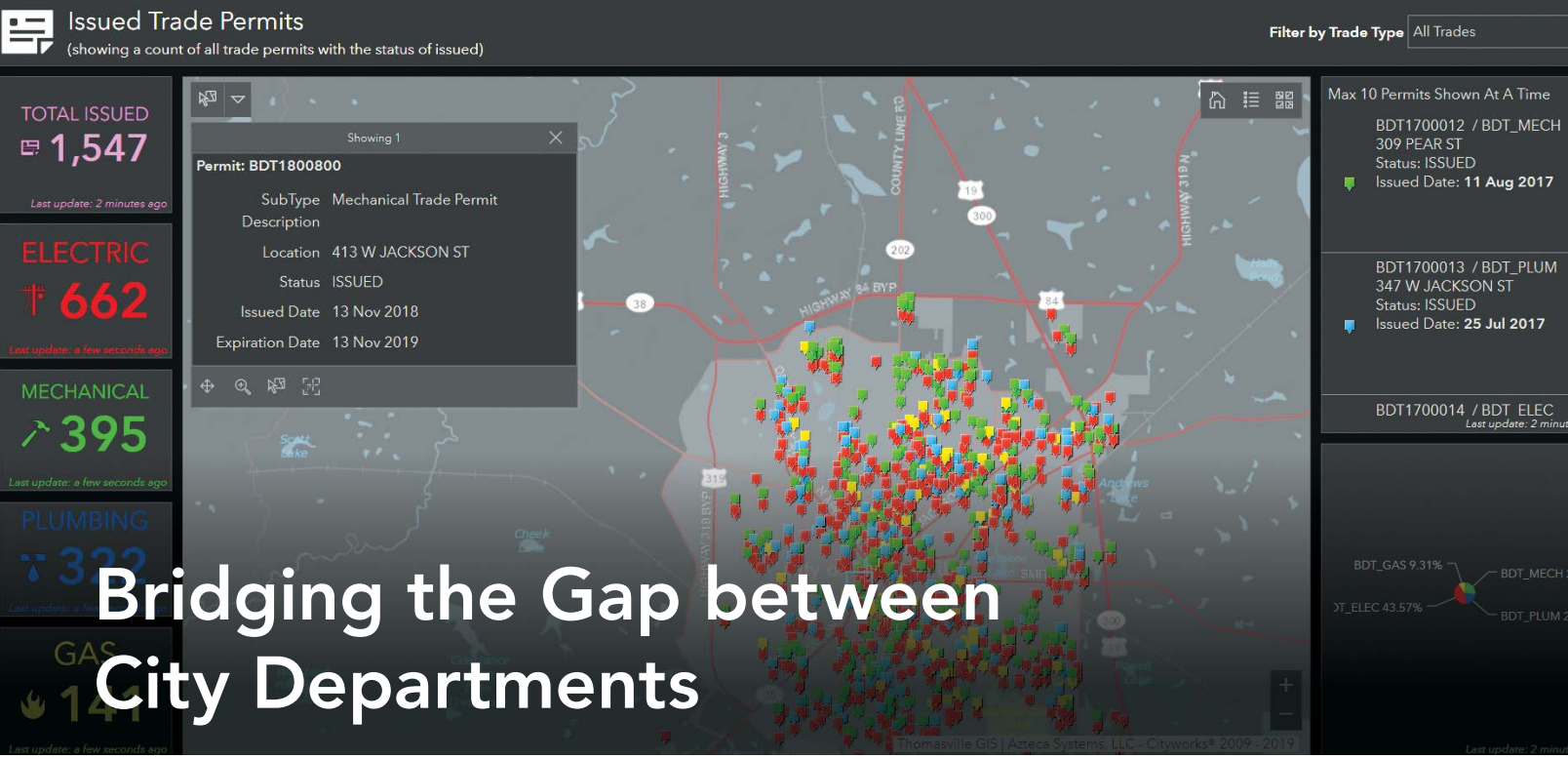
Manage Your Subscription

Subscribe or make changes to your Esri subscriptions at go.esri.com/gov-news. If outside the United States, please contact your international distributor; visit esri.com/distributors.

Circulation Services

For back issues, missed issues, and other circulation services, email infoupdates@esri.com or call 909-793-2853, ext. 2778.





Bridging the Gap between City Departments

How many times have you seen crews tear up a newly paved road for a water main replacement? This classic example of inefficient project planning is a common problem in communities across the globe. Employees at the City of Thomasville, Georgia, found a solution by building bridges.

These bridges are not made of steel cables and concrete. Rather, they are made of data. The architectural foundation for these bridges is Cityworks and ArcGIS, and together these technologies are closing the communications gap between city departments.

"City departments run independently in many ways, much like an island. We plan and work on our daily tasks and respond to the customer needs specific to that department," said Chris White, executive director of public utilities. "We needed a way to bridge departmental islands and improve project coordination."

Staff at the City of Thomasville have been implementing Cityworks PLL and AMS in small, manageable chunks since 2016. The first phase focused on the departments involved in the building permit process: building, engineering, and planning and zoning. The second phase expanded Cityworks to the gas, water, wastewater, and engineering departments. The third phase, which is ongoing, will include public works and engineering.

Permits and Inspections

Prior to implementing Cityworks PLL, the building department used a siloed software system to issue permits, conduct inspections, and enforce code.

"The building department was the only agency using this system, so our communication with engineering and planning and zoning consisted of checklists in a folder, phone calls, emails, and Excel spreadsheets," said Mark Harmon, chief building officer. "The process was cumbersome and unreliable."

During the first phase of implementation, the project team developed PLL cases that incorporated workflows from the building, engineering, and planning and zoning departments. It was a seamless process to translate current workflows into a digital platform. Each department added its own procedures—such as documenting significant conversations with applicants—so everyone could maintain situational awareness of the case.

The Cityworks PLL cases did more than just replace the old checklist folders. They significantly reduced redundant emails and phone calls between departments, and they empowered staff to easily run reports and access information at the click of a button.

Capital Improvement Projects

The city engineer also needed a solution to improve coordination and communication with utility providers on infrastructure projects. So city staff created a Cityworks PLL case for capital improvement projects (CIP).

continued on page 4

Bridging the Gap between City Departments continued from page 3

"The engineering department is responsible for maintenance activities within city rights-of-way and delivery of infrastructure improvement within those rights-of-way," explained Wayne Newsome, city engineer. "The city owns and maintains most of the utilities occupying our street rights-of-way, so it's vitally important that utility infrastructure work is properly coordinated and scheduled in advance of planned street improvements and resurfacing projects."

The CIP case captures major project milestones, from concept development to final infrastructure updates in the geographic information system (GIS). The workflow incorporates the utility review process into the plan design process to help the utility and engineering departments eliminate conflicts and plan associated work.

Now, both departments have one central location for CIP information, where they can easily access the status and associated work for any given project.

Accessible Data

Communicating a common operating view across an organization does not mean using only one interface to view the data. The GIS-centric nature of Cityworks makes it easy to externalize data to share outside of the platform.

The City of Thomasville uses Esri solutions, like ArcGIS Dashboards and ArcGIS WebApp Builder, to consume Cityworks data, map services, and shapefiles via an enterprise URL service (eURL). By using eURL and ArcGIS Dashboards, the city's code enforcement officer can view the number and location of active cases by type. Similarly, the chief building officer can easily view a dynamic summary of all active trade permits or residential and commercial permits. The eURL service expands the value of Cityworks data by allowing increased flexibility in sharing information across the organization and community.

Return on Investment

At the early stages of implementation, city staff developed benchmarks for measuring return on investment (ROI) over a 10-year period. These ROI categories include paper reduction, business process efficiency, work order efficiency, and the elimination of software platforms. So far, the City of Thomasville has eliminated the use of one legacy software platform and plans to discontinue support for another system.

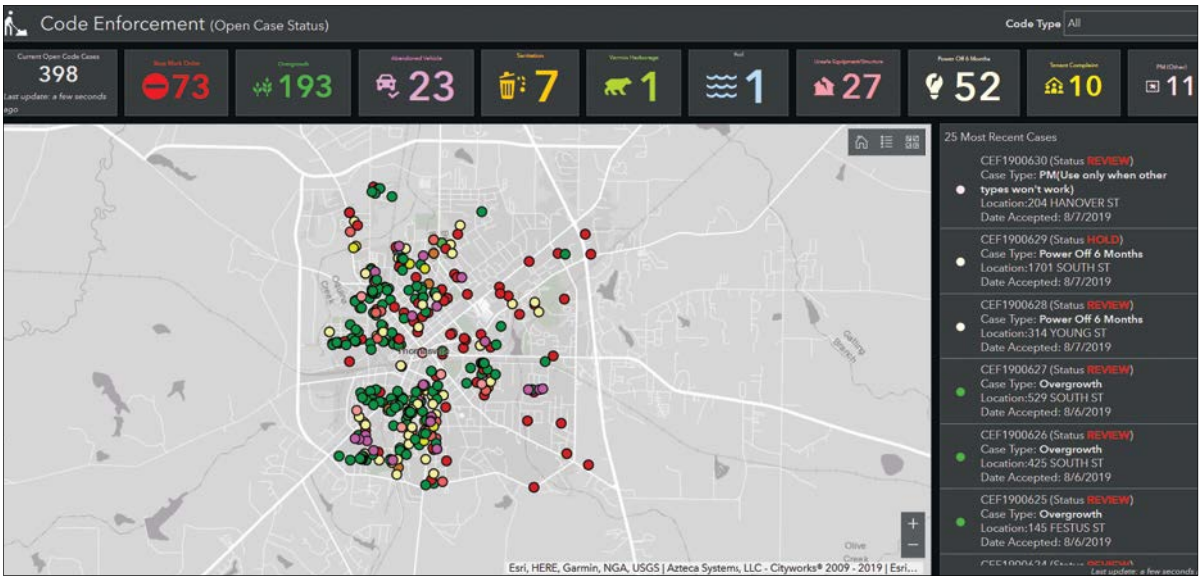
In terms of business process efficiency, the city knew that its employees were spending nearly $25,000 on 14 development projects using a siloed software platform and a paper folder to track staff input. By eliminating these inefficiencies, the city expects to see a 30 percent increase in employee productivity and a cost savings of approximately $7,500.

The city also calculated that the water, gas, and wastewater departments were spending 456 hours each year looking through paper work to find work history data. With the implementation of Cityworks, the city estimates a 25 percent efficiency gain with a cost savings just under $20,000.

Based on the current project schedule, the city expects to achieve ROI after just three to five years of using Cityworks.

The success of each of these implementation efforts ultimately lies in the hands of the end users. City employees who use the technologies every day play a critical role in customer service, process improvements, and operational success. The city's mission statement is to "create and deliver exceptional service to our community through a culture of safety, courtesy, professionalism, and efficiency," and the departments are staffed to do just that.

With the help of Cityworks and ArcGIS, the employees at the City of Thomasville will continue to improve communication and build bridges citywide.



← The code enforcement officer can look at this dashboard and, in seconds, get a clear understanding of the number of active cases across the city.

Power | Water | Wastewater | Streets | Buildings | Traffic | Safety | Emergency | Airports | Business Services

SMART RESPONSIVE RESILIENT SAFE

EMPOWERING GIS INTELLIGENCE

In an "always on" world, local municipalities and utilities are leading a digital transformation by implementing GIS as a smarter foundation to managing their infrastructure and business services.

Built exclusively on the Esri® ArcGIS® platform, the Cityworks enterprise asset management platform helps communities successfully improve management of their public assets and business services–improving civic engagement and economic development.

Cityworks + ArcGIS® Enables the Power of Where™ for public asset management.

Esri trademark provided under license from Esri.

Cityworks®
A TRIMBLE COMPANY

801-523-2751 | Cityworks.com

esri UC USER CONFERENCE 2020 | *PLATINUM* ***SPONSOR***

Learn more by visiting with us at Cityworks.com

esri Partner Network Platinum

City of Santa Barbara Fights Drought by Upgrading Mobile GIS Workflow

The City of Santa Barbara, located roughly 90 miles north of Los Angeles, supplies water to approximately 95,000 residents. With California's unique drought conditions, state water suppliers face challenges surrounding conservation, water-loss prevention, and system maintenance. The city wanted high-quality asset data for responding to fluctuating drought conditions.

In 2014, Santa Barbara decided to optimize its water system by establishing a goal to replace all 27,500 water meters within five years.

"Instead of just doing a regular meter replacement based on age, we decided to handle this task comprehensively to set ourselves up for the future," said Theresa Lancy, water distribution supervisor at the City of Santa Barbara.

A Slow Legacy Field Data Collection Workflow

While replacing water meters, the city wanted to collect the new meters' locations with high accuracy.

In the past, the legacy mobile app that staff were using without a GPS did not allow them to locate individual meters. Meters were instead correlated with a parcel.

"We used the parcel number for a general idea of location," Lancy said. "But in circumstances where multiple meters are located on a single parcel, knowing which meter was associated with a particular location was especially difficult."

Since meters often sat within one foot of each other, Lancy and her team wanted a higher level of accuracy. As a proof of concept, they borrowed a GPS receiver from a sister department.

This equipment used a mobile base station to provide differential corrections, but the station needed to be manually set up and broken down on every trip. This took an hour of fieldwork every day, slowing down the meter location collection. In 2018, the City of Santa Barbara looked for a faster data collection workflow.

Moving to a Faster Field Data Collection Workflow

Since the city was already using the Esri platform, Lancy and her team chose Collector for ArcGIS as their new mobile app. Collector established accuracy thresholds, while ArcGIS Online let multiple employees edit and utilize the updated web maps simultaneously.

The next step was to find a GPS receiver that was compatible with Collector. An employee suggested the Arrow Gold GNSS receiver from Esri partner Eos Positioning Systems. The Arrow Gold receiver provided centimeter accuracy and was also compatible with iOS devices the city already owned.

The only missing piece was the source of real-time kinematic (RTK) corrections.

continued on page 8

ARROW SERIES™ GNSS RECEIVERS

40-60cm accuracy with free SBAS
1cm real-time RTK accuracy
iOS/Android/Windows compatibility
GPS/GLONASS/BeiDou/Galileo/QZSS

EOS LOCATE™ FOR COLLECTOR FOR ARCGIS

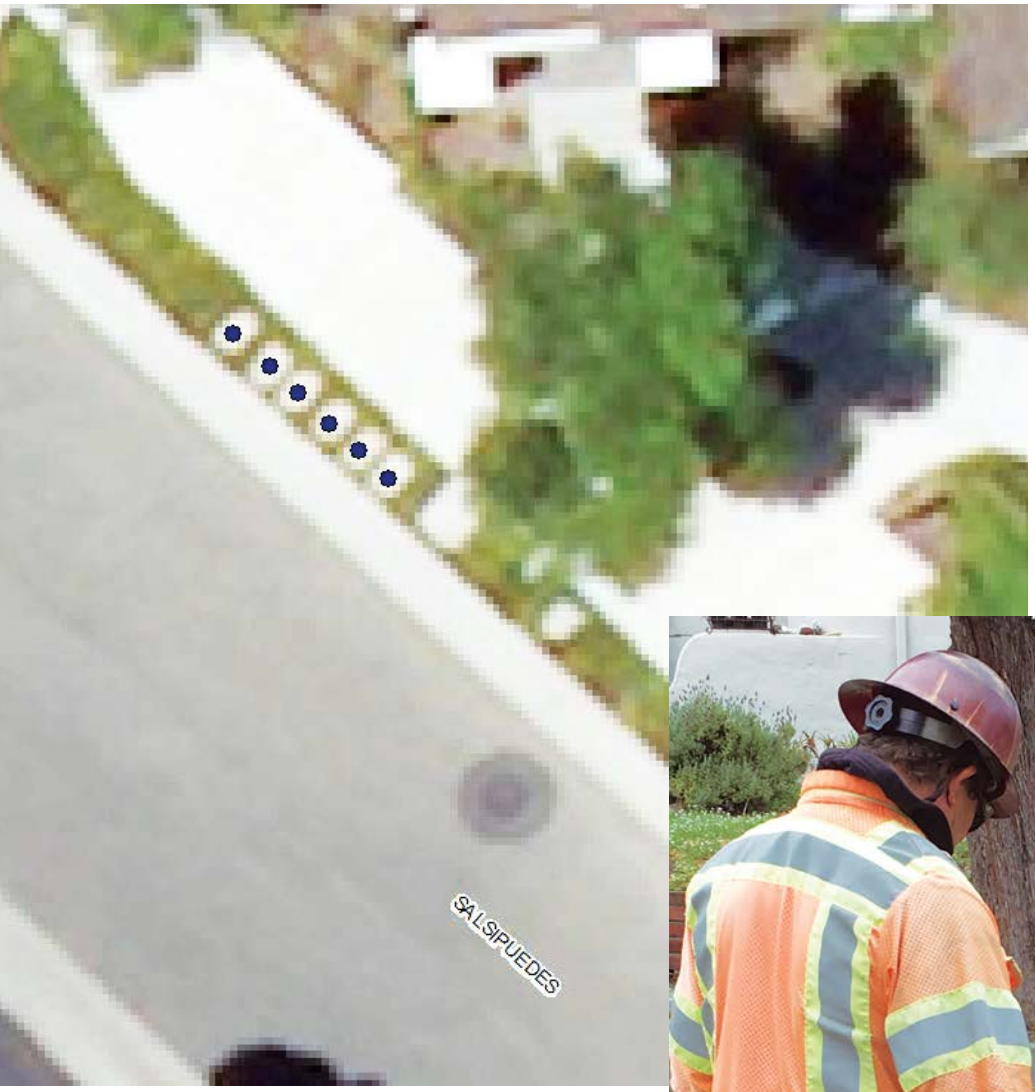
MAP BURIED ASSETS WITH SUBMETER OR CENTIMETER ACCURACY IN ARCGIS ONLINE

ARROW SERIES™

WWW.EOS-GNSS.COM

EOS POSITIONING SYSTEMS · Made in Canada
Tel: +1 (450) 824-3325 | e-mail: info@eos-gnss.com

City of Santa Barbara Fights Drought by Upgrading Mobile GIS Workflow continued from page 6

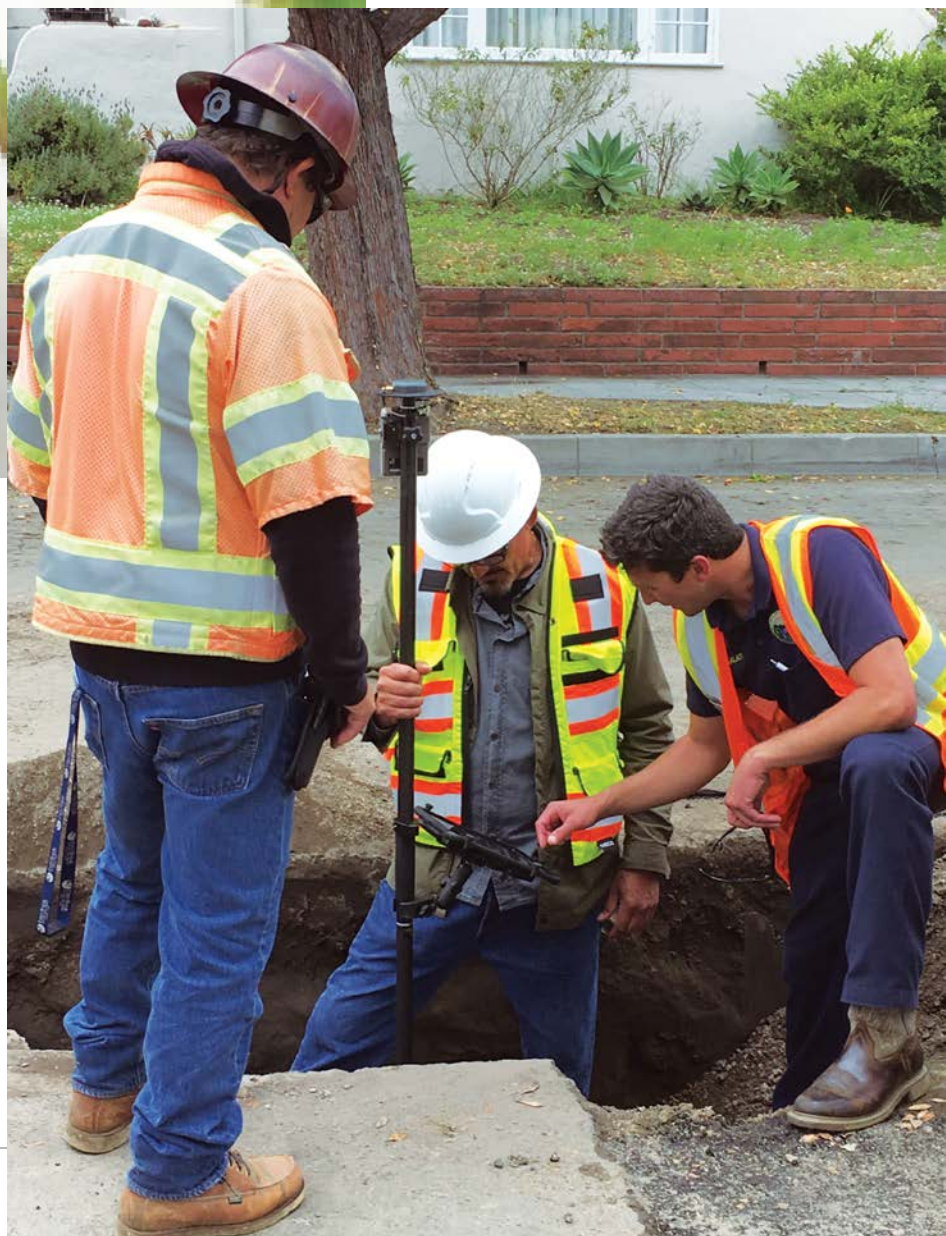


↑ Black points in ArcGIS Online represent meters. With Collector for ArcGIS and the Eos Arrow Gold GNSS receiver, meters that share a parcel can now be individually mapped down to the centimeter.

Initially, the team connected the Arrow Gold receiver to a base station 19 miles away. This base station was expected to provide centimeter-level accuracy, but it proved outdated and challenging to connect to.

Next, the team instead opted to install another Arrow Gold receiver as a permanent base station on the roof of the distribution building.

"Because the cost and effort involved was fairly minimal, it just made a lot more sense to go ahead and set up our own base station," Lancy said. "We also thought there could be other groups in the city that would use this system."



→ Santa Barbara fieldworkers use the Eos Arrow Gold receiver with Esri's Collector to map a water main.

Locating Meters Quickly and Efficiently

Since adopting the new solution, Santa Barbara doubled its rate of meter-location collection. Field crews no longer spend an hour per day setting up and dismantling the temporary base station. Now, they are ahead of schedule in meeting their initial goals.

Moreover, installed assets are recorded with centimeter accuracy, using the Arrow Gold receiver and Collector, meaning individual meters formerly sharing a parcel can now be uniquely identified. The city has mapped 75 percent of its water meters. This information will be vital to future efforts to implement automated metering.

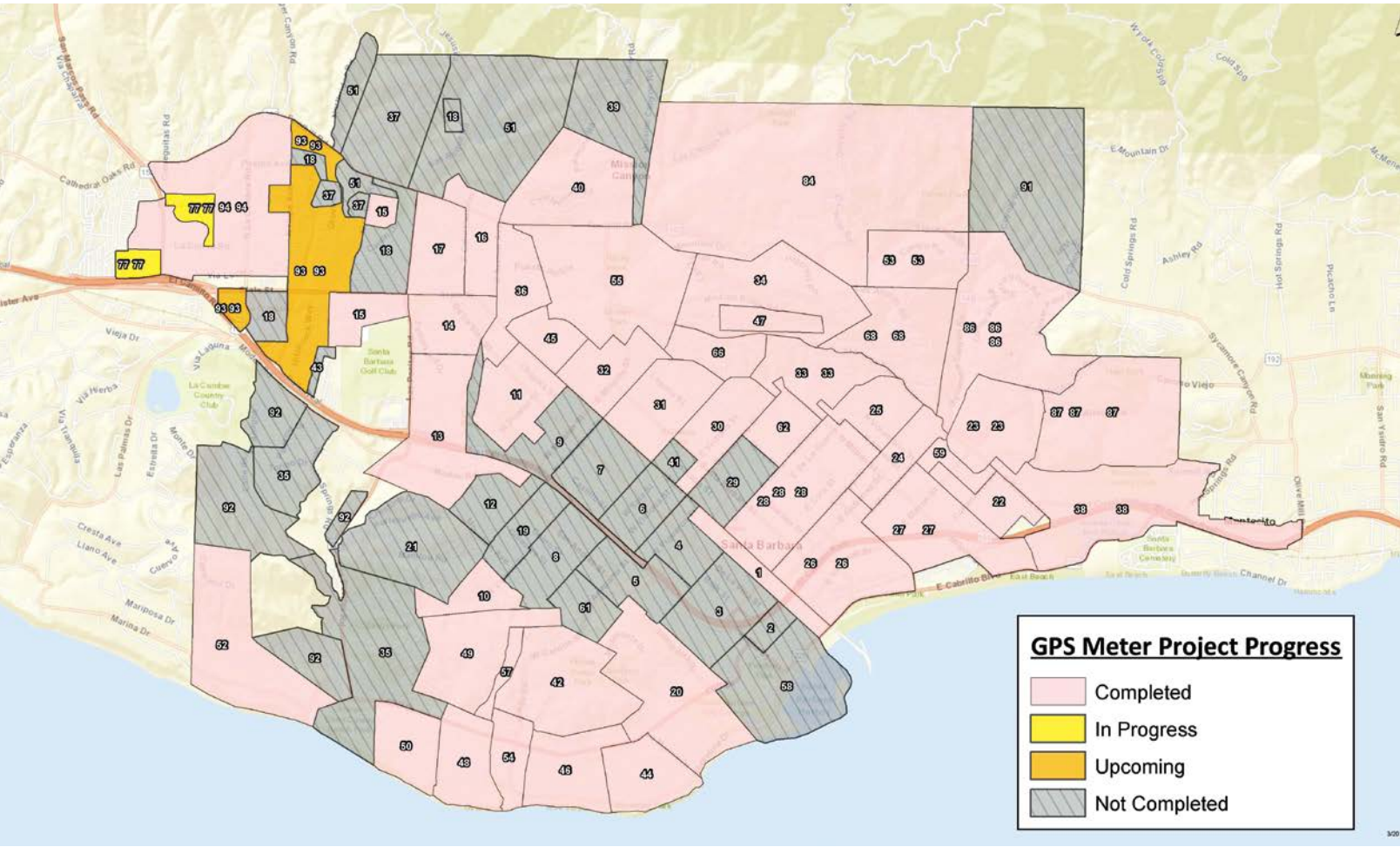
Customers have already benefited from faster repairs and increased water conservation.

Because the Collector/Arrow Gold setup is so user-friendly, field crews have been able to expand their project scope. For instance, crews now map new hydrant and valve installations.

"Once we got the product and started using it, we realized how to expand the use of the Arrow Gold [receiver] and Collector for other applications," Lancy said.

In 2018, the city established a new goal: to replace 2 percent of its 300 water-main miles per year. With all the upgrades, the city expects to be better prepared to fight drought.

"Drought conditions certainly challenge municipalities like ours," Lancy said. "Efficiently maintaining our system is vital. Leaks need to be located quickly and addressed promptly. Having the right tools to identify, locate, and document repairs means better customer service and reliability—which are very important to us."



↑ Pink polygons represent zones with all meters mapped. The gray areas represent unmapped zones.

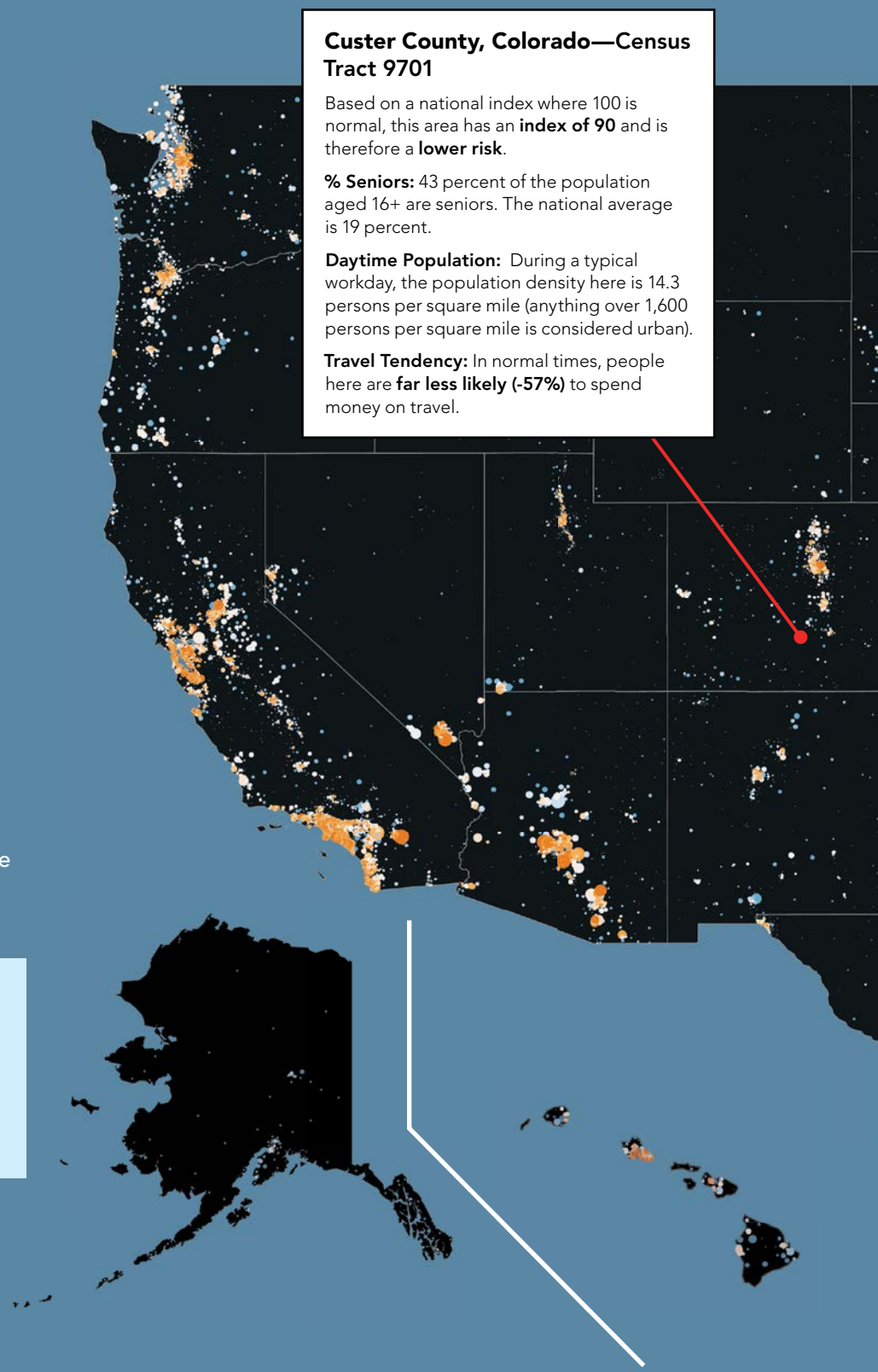
Identifying the Socially Vulnerable

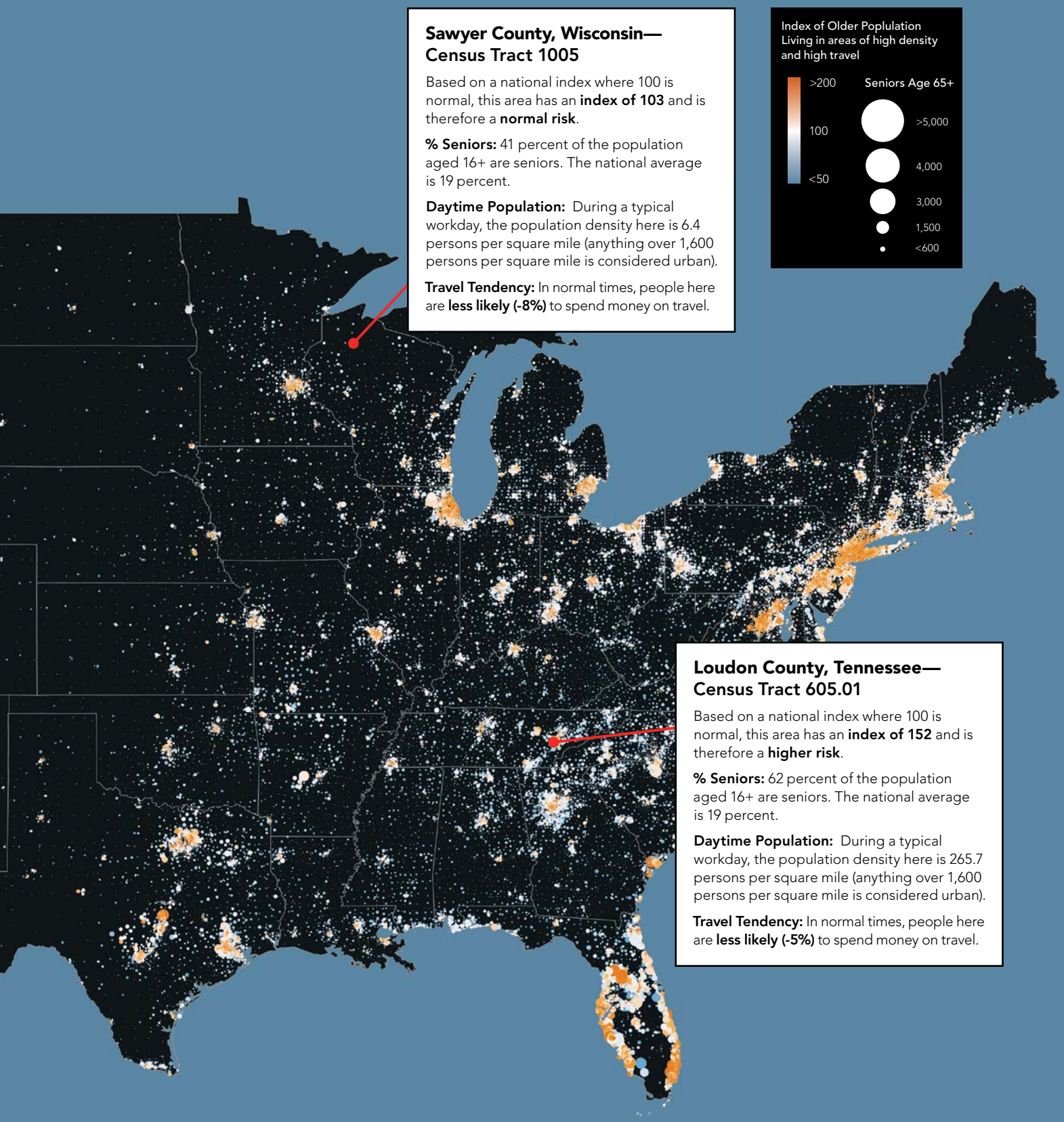
Understanding Which Areas Have a High Daytime Population and More Travelers and Seniors

The coronavirus disease 2019 (COVID-19) exposed communities' weaknesses. Areas with high concentrations of seniors over 65 years of age, urban centers with large daytime populations, and communities with more socially active populations have been affected at a more alarming rate. Experiences like the coronavirus outbreak has forced many organizations to renew their focus on demographic and lifestyle patterns. The more state and local governments understand the makeup of their communities, the better they can serve residents.

Explore this map, along with other variables, on the Esri Maps for Public Policy site (esri.com/policymaps), a complimentary resource to help you make better, data-driven decisions.

This map highlights areas that have one or more of these factors: a high concentration of seniors aged 65+, high expenditures on travel, and/or areas that are much more crowded during a typical weekday. Areas in orange have a very high concentration of one or more of these three characteristics.





Sawyer County, Wisconsin—Census Tract 1005

Based on a national index where 100 is normal, this area has an **index of 103** and is therefore a **normal risk**.

% Seniors: 41 percent of the population aged 16+ are seniors. The national average is 19 percent.

Daytime Population: During a typical workday, the population density here is 6.4 persons per square mile (anything over 1,600 persons per square mile is considered urban).

Travel Tendency: In normal times, people here are **less likely (-8%)** to spend money on travel.

Loudon County, Tennessee—Census Tract 605.01

Based on a national index where 100 is normal, this area has an **index of 152** and is therefore a **higher risk**.

% Seniors: 62 percent of the population aged 16+ are seniors. The national average is 19 percent.

Daytime Population: During a typical workday, the population density here is 265.7 persons per square mile (anything over 1,600 persons per square mile is considered urban).

Travel Tendency: In normal times, people here are **less likely (-5%)** to spend money on travel.

To see this map in full detail, visit **go.esri.com/socially-vulnerable-map**.

Governments Providing Leadership in a Crisis

A Quick Response and Collaboration Equate to New Standard Operating Protocols

Every response to a crisis provides the opportunity to learn and adjust operations to handle similar demands in the future. The coronavirus disease 2019 (COVID-19) pandemic generated a need for two simultaneous response, mitigation, and recovery paths—one to protect public health and human services, the other for economic resiliency. Unlike responses to natural disasters, the strategies that organizations are using to fight the pandemic have all been learned and executed on the fly.

GIS technology has played a pivotal role in supporting data-driven decisions, allocating resources, and keeping the public informed, much like it has in times of earthquakes, terrorist threats, oil spills, hurricanes, tsunamis, flooding, and fires. Cataloging the most common questions and issues quickly leads to an understanding of data and information products everyone can take advantage of during the COVID-19 crisis. This process leads to the ability to scale between the international, national, and localized responses. It allows people and businesses alike to quickly understand what is happening in their communities and how their circumstances fit into the bigger picture.

While the response and recovery phases of the COVID-19 crisis will continue for some time, governments have been presented with the opportunity to share best practices embraced early on as a standard set of operating protocols.

Esri's solutions for the COVID-19 response provides the framework for improving public health preparedness.

Coronavirus Response

This collection of maps and apps is designed to display information about COVID-19 cases, facility closings, and other pandemic-related issues that users can understand in seconds.

Coronavirus Business Continuity

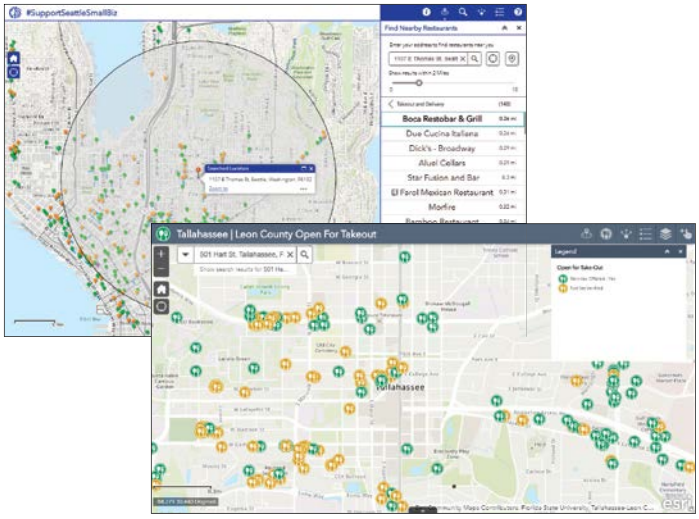
To help organizations monitor their operational capacity, Esri has built a quick-to-deploy solution that simplifies how authoritative information on employee status is shared with customers and senior leadership during the COVID-19 pandemic.

Essential Business Locator

By crowdsourcing essential businesses' details and their locations onto an Esri web map application, governments can provide an extra service to the community with no additional resources.

City of Seattle, Washington—The city's #SupportSeattleSmallBiz application helps local businesses stay afloat by posting their adjusted services.

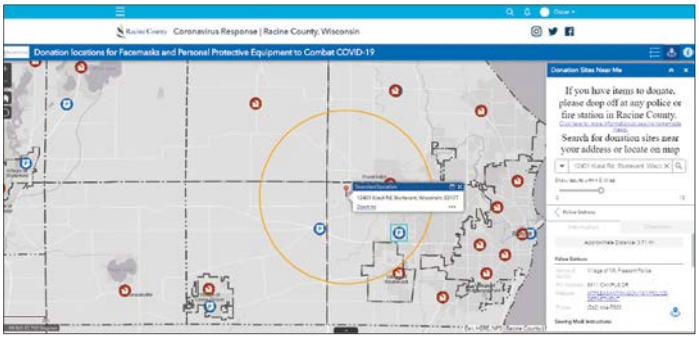
Leon County, Florida—The county's Open for Takeout application locates which restaurants offer takeout, delivery, or curbside pickup.



PPE Donation Locator

As nationwide shortages of personal protective equipment (PPE) become critical, governments can use Esri configurable applications to make simple web maps that can help residents provide lifesaving gear to frontline health-care workers.

Racine County, Wisconsin—Residents can either enter their location or drop a pin and be routed to the nearest donation drop-off location.

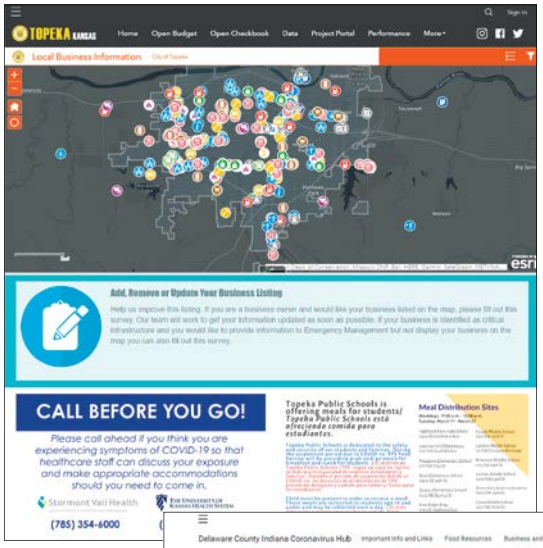


Hospitalization and PPE Inventory

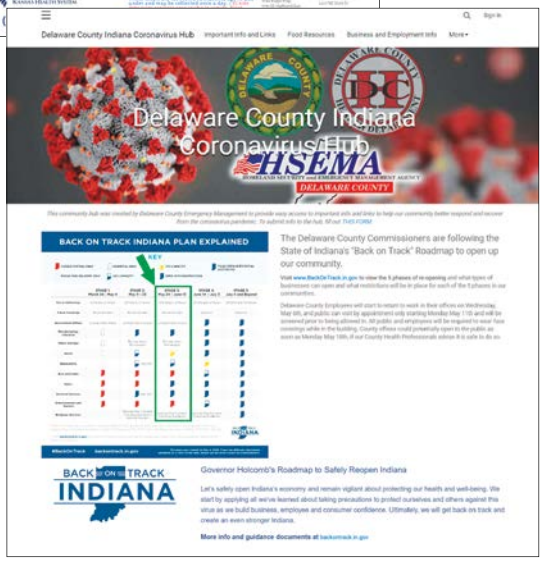
Designed to help health departments collect and report on testing, capacity, supplies, and utilization data, this solution helps emergency managers understand resource capacity and determine when and where assistance is most needed.

Coronavirus Response Hub

ArcGIS Hub is used to inform and educate the public without having to create a site from scratch. With no prior coding skills, governments can stand up a one-stop shop of authoritative COVID-19 related information, resources, and applications to assist their residents.



↑ City of Topeka, Kansas



↑ County of Delaware, Indiana

To learn more about ArcGIS solutions for COVID-19 response, visit **go.esri.com/Solutions4COVID**.

COVID-19

ArcGIS Hub Helping Communities Fight Virus Spread

As the coronavirus disease 2019 (COVID-19) pandemic reaches every corner of our communities, organizations are rapidly deploying GIS tools to bring together and share information that is critical to protecting citizens and slowing the spread of the novel coronavirus.

Two local governments doing just that share why and how they deployed ArcGIS Hub to support their local COVID-19 response efforts and how it has impacted their organizations and communities.

Rick Thompson
GIS Coordinator
Polk County, Minnesota

Q **Why did you choose Hub to support the county's coronavirus response?**

A We had already deployed ArcGIS Hub at the county (hub-pcg.hub.arcgis.com/), and it was getting a lot of use from the public. It had proven an effective way to share information and drive public engagement, so it made sense to add a COVID-19-specific hub (bit.ly/34mfzZy). The information we shared with the public had to be trustworthy, and Hub allowed us to gather verified sources of information in one location. It gave the public a holistic view of everything [people] needed to know to do the right thing during the pandemic to protect themselves and their neighbors.

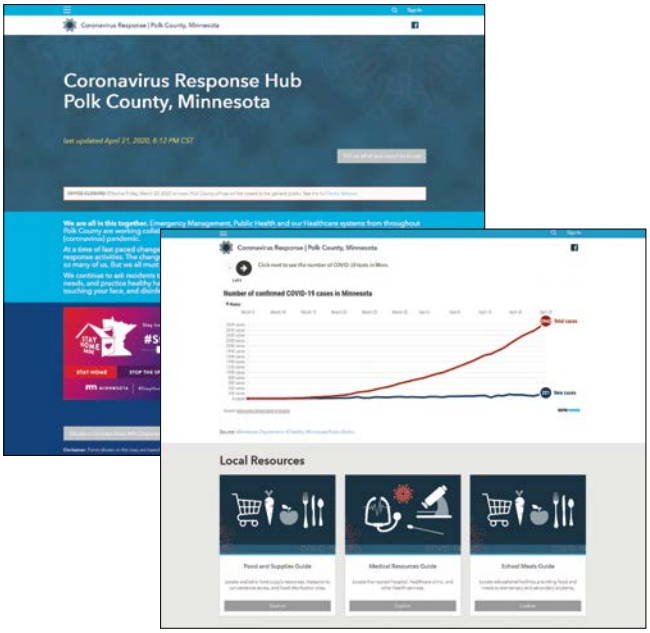
The prebuilt templates included in Esri's Coronavirus Response Hub paired with our existing [Polk] County Hub allowed for an easy transition that could be deployed rapidly.

Q **What has the Hub enabled the county to do?**

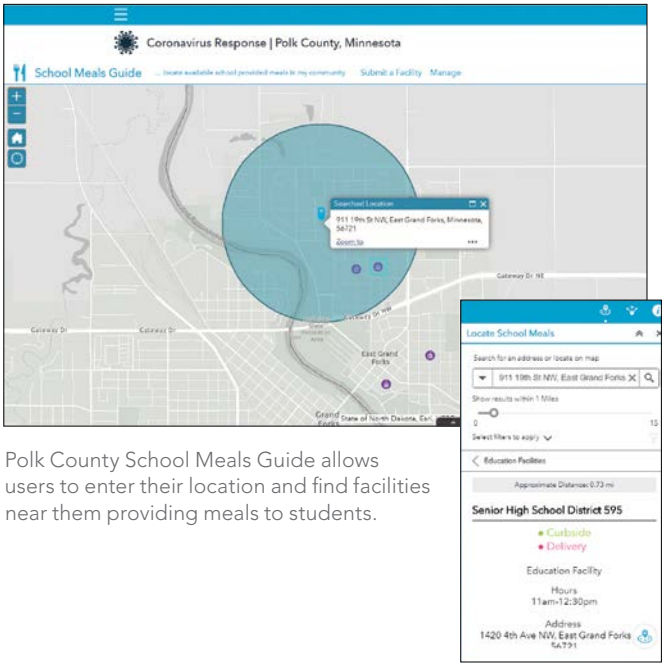
A The most important benefit is the ability to organize trusted information and present it in an environment with which the public is comfortable. We couldn't afford for users to become frustrated and give up on finding answers to questions that could save lives. It has also given all of our departments a unified platform to share updates on services affected by the pandemic. Every department has been impacted, and Hub allows them to share information such as buildings that are closed and operational changes to essential functions such as the Sheriff's Department.

Q **Have you seen any unexpected benefits?**

A The collaboration of multiple departments has generated new ideas for how we can use the GIS tools we have to do more for the public beyond COVID-19. We are excited about what that means for our community.



Polk County's Coronavirus Response Hub shows continuously updated statistics on local COVID-19 cases.



Polk County School Meals Guide allows users to enter their location and find facilities near them providing meals to students.

Kim Christman
Real Property Lister & GIS Manager
Racine County, Wisconsin

Q **Why did you turn to Hub to support Racine County's COVID-19 response?**

A As we considered how to use GIS to support the local response, our long-term GIS partner Pro-West & Associates recommended Esri's Coronavirus Response Hub. It was a good fit for us because COVID-19 response wasn't just about mapping or about issuing a press release; it needed to bring together multiple approaches to create a single location that the public could visit. We quickly saw the potential for providing wide-ranging GIS support using Hub and its ability to support a situation that changed daily by making frequent updates and adding more resources.

Q **What has Hub enabled you to do?**

A Our Coronavirus Response Hub (bit.ly/2X0FGnb) has helped us inform and educate the public very quickly without having to reinvent the wheel. It has allowed us to share and manage multiple types of media via a single platform, whether it is a map, a Word document, or a link to an external resource. We have had almost 25,000 views to date, with the number per day increasing as the pandemic evolves and awareness of the hub grows.

A great example is our story map "The Pandemic & Your Mental Health" (bit.ly/3c8VCs5). The county identified a need to share information on mental health resources, which were no longer accessible by traditional in-person visits but were growing in demand as the COVID-19 crisis took hold. Our land description analyst & GIS technician Emily Szabo developed a story map containing advice and resources, which we were able to quickly share via our hub.

It has given us a platform to collaborate with partners, such as the United Way of Racine County and local health-care systems, and to connect the public with information on local resources.

Q **Have you seen any unexpected results of deploying Hub for COVID-19 response?**

A Yes, we have rolled out GIS to our Health and Human Services Department. A silver lining of the pandemic is that it has taken away any "noise" and caused people to focus on what will help them get through this crisis. For our Health and Human Services Department, Esri tools such as ArcGIS Community Analyst and ArcGIS Pro allow [staff] to use CAMA data to analyze neighborhoods and census blocks and identify areas that could become hot spots.

Q **What advice would you give to someone considering Hub for emergency response?**

A Don't let it scare you! If you don't feel you have the skills to set up a Hub [site], there are resources out there to help—a good partner, Esri's Disaster Response Program, and many more. Get out in front of the request you will most likely receive for location-based information on COVID-19 in your community. Give yourself time to figure out what you need, and make it your own!

Racine County's Coronavirus Response Hub provides a platform for multiple types of media.

and apps to provide an authoritative view of locations open for takeout, delivery, drive-through, and curbside pickup.

Repurposing an Application from the Past

Leon County, located in Florida's panhandle, has been hit by several hurricanes in recent years. During those disasters, the county stood up a web map application that identified which businesses had power and were open and selling goods to the public. The COVID-19 pandemic has put stress once again on Leon County businesses that are delivering essential services.

"After three hurricanes in the past four years, we know that every disaster tests us differently," said Vincent S. Long, Leon County administrator. "One thing remains constant: our team's ability to find unique and effective ways to address the challenges facing our community. And these opportunities are made possible by the highest levels of leadership at Esri who know how integral technology can be in protecting public safety."

With a workflow and web map application similar to those used in past disasters, Leon County GIS staff were able to extract location data for all area businesses and filter out nonessential operations. They used ArcGIS Online, a software-as-a-service (SaaS) platform that supports data maintenance and visualization through interactive web maps. Once staff filtered data down to places that serve and sell food, they were able to quickly create the Open for Takeout Map.

"At that point, everyone in our team was working remotely, and within a day and a half, we were able to stand up the application for businesses serving and selling food throughout the community," said Ned Cake, GIS integration manager for Leon County.

Community Helps Government Deliver Better Service

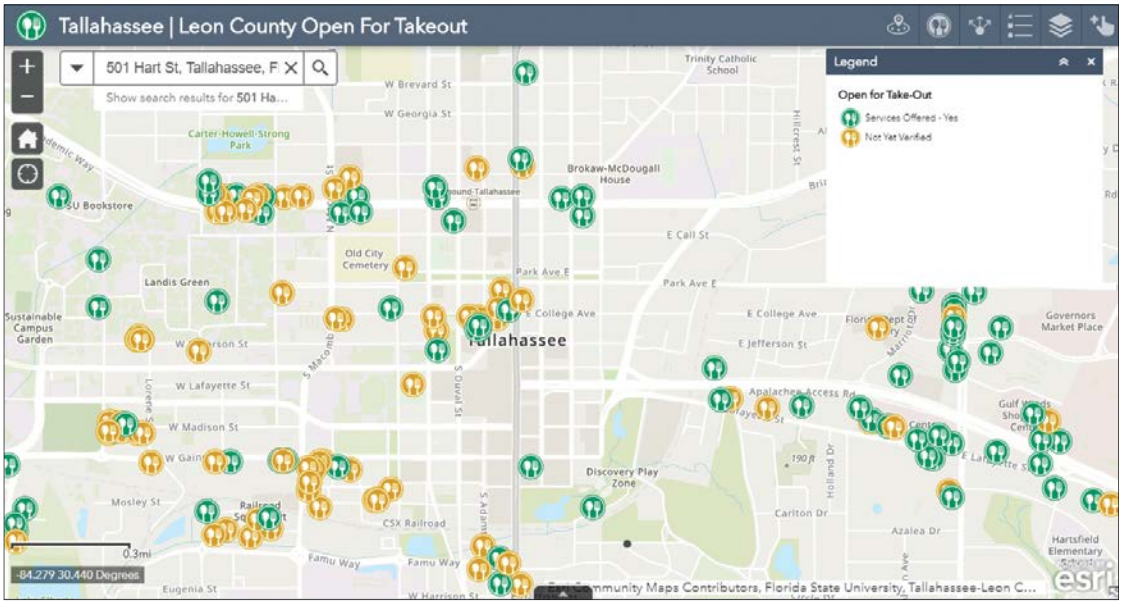
The Open for Takeout Map also empowers the entire community to update business information such as available services, hours, and other details. By crowdsourcing each business's information, the county government can have a dialogue with residents and provide a valuable service quickly. Crowdsourced information is routed to the OEV; once approved, the information goes live in the application.

"Standing up this application not only provided a purpose and met a need within the community during such a critical time, but it's pushed web mapping technology into the hands of those who do not typically use maps," said Scott Weisman, GIS program coordinator. "Another great thing we were able to do was provide editing capabilities to OEV staff members, so now non-GIS users can update business information faster and have ownership of this application."

Keeping residents informed of the hours and service details of essential businesses can be a daunting task for any local government. By crowdsourcing data from the public and empowering nontraditional GIS users with the latest mapping technology, Leon County continues to provide vital resources such as the Open for Takeout Map. Within the first two weeks of standing up the application, the map had 30,000 views.

"As a small business owner, I know the challenges of keeping the lights on and the doors open even during a good day, let alone a global pandemic," said Leon County Commission chairman Bryan Desloge. "That's why I am proud of the work we have done in local government to support our local businesses, from short-term bridge loans to innovative mapping solutions that engage customers and drive interest."

For more information on how to attain GIS software needs, technical support, services, and data during times of crisis, visit **go.esri.com/Leon-Support-COVID**.



↑ Leon County's Open for Takeout web map application.

Elections and COVID-19: Ensuring Safety in the Voting Process

By Chris Thomas, Director of Government Markets

Today the news, social media feeds, and chats with friends remain tightly focused on the coronavirus disease 2019 (COVID-19) pandemic. Much of the discussion surrounds reporting of the number of cases, testing centers, and the constant reminders to practice social distancing. Rightfully so.

It seems like only yesterday that the major focus on these very same news and information feeds revolved around the upcoming 2020 US presidential election. The constant flow of banter, information, and debate had left many of us wishing there was something else that could disrupt the news. Now that it has happened, we find ourselves dealing with that same constant flow of news and opinion but about something we never would have imagined.

There's never been a postponement of a national election. Our democratic process has been upheld during world wars and civil wars. The questions at hand are, How do we ensure that our democratic process stays intact, knowing the pandemic has shifted our hourly, daily, and weekly routines? Can we adjust the voting process, taking into consideration the notion that we may still be dealing with stay-at-home policies in the coming months? More importantly, How do we prepare to hold elections?

Some states have already postponed primaries. Other cities and counties have come up with quick adjustments to their elections processes. Some have instituted drive-through polling locations, created centralized polling locations away from at-risk populations, or provided ballot drop-off centers.

Adapting the Election Process to Crisis Mode

It's uncertain what November will bring. There is much discussion as to whether a complete vote-by-mail process can be executed in time. Some election officials are concerned that voters, whether because of procrastination or other factors, will not take advantage of early voting or voting by mail when given the option. The long lines in the California primaries proved that most voters, given these options, still chose to go to their polling location on Election Day.

If states, counties, and local governments opt to include voting at a physical location, social distancing will unquestionably come into play. The protection of poll workers and election officials as essential workers requires the same safety and social distancing precautions used when purchasing food or prescription medicines.

Site selection methodology can be used to identify the best locations for drive-through polling places; in fact, this is the same process used to optimize drive-through COVID-19 testing centers or food distribution sites.

In previous elections, forward-thinking elections officials in Yolo County, California; Collin County, Texas; and King County, Washington, have used geographic information system (GIS) maps and analysis as a means of modernizing their process, streamlining workflows, and improving communication with the public.

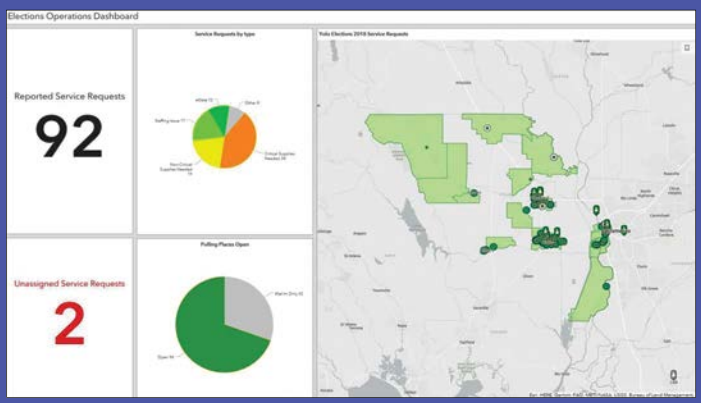
These same GIS applications can be adapted to support social distancing in the remaining primaries, caucuses, and national elections, and here are a couple of examples of how to do that within the time remaining.

Election Tools That Drive Results

Using GIS maps and data, election officials can look at proposed polling locations and quickly analyze the impact on nearby vulnerable populations. For example, the elections community has already placed an emphasis on adjusting polling locations, keeping at-risk populations top of mind. Officials recognize that hosting polling stations in senior centers is no longer viable. And many recreational facilities that once served as polling stations are now makeshift homeless refuges.

Using smart maps informed by GIS, officials can pinpoint and propose

continued on page 19



← Yolo County's operations dashboard of all service requests on Election Day allows the Election department to monitor updates in real time.

Ontario, California, Is Using GIS to Look to the Sky

By Merlin Love, Airspace Link

The federal, state, and local laws surrounding the commercial use of drones, particularly for those outside the aviation industry, can feel like a complicated tapestry of regulations, rules, and red tape. While the sight of drones at recreational events has become ubiquitous, the commercial industry has led the charge in driving the drone business forward for the last three years. Drones have become an invaluable part of the everyday workflow for construction companies, mines, utilities, and engineering firms worldwide. While construction and engineering companies have been on the bleeding edge of adoption, state and local governments are poised to realize the full potential of what this technology has to offer.

Southern California is one of the most densely populated areas in the country. The six primary counties that make up the greater Los Angeles area account for 191 cities, 38,000 square miles, and some 19 million people. Tucked into the middle of the sprawl forty miles due east of Los Angeles is the city of Ontario. Home to Ontario International Airport, the eighth-busiest airport in California based on the number of passengers, and one of the busiest airports for outbound cargo, Ontario presents a difficult challenge, as most of the city lies within controlled airspace that prohibits drones from flying without a special waiver from either the Federal Aviation Administration (FAA) or the local air traffic control tower. These conditions, along with the web of commercial and recreational regulations, create a complex environment for understanding how and where drones can be legally flown.

Laying the Groundwork

Over the last 10 years, the FAA has been making progress in keeping pace with the regulatory requirements for an industry that has exploded in growth. As drones became safer and more reliable, the regulations changed to accommodate the differentiation and needs of the industry. From 2014 to 2016, drone pilots needed a 333 exemption, which was cumbersome to obtain because it required a commercial pilot's license. Recognizing that a more streamlined process was needed, in June of 2016, the FAA released the Part 107 certification. This new certification, earned by more than 120,000 drone pilots in the United States since its introduction, has been the accelerant needed for continued growth during the initial expansion phase of the industry.

Reacting again to the regulatory needs of a growing industry and the demands for safe but regulated drone use in local airspace, in 2018, the FAA introduced the UAS Data Exchange and the Low Altitude Authorization and Notification Capability (LAANC). In the United States, the LAANC program directly supports the integration of unmanned aircraft system (UAS) vehicles into the national airspace. To date, Airspace Link is one of only six companies approved to provide full LAANC services to the public.

A Complete Solution for State and Local Government

Airspace Link's AirHub for Government and AirHub for Pilots are the first-ever fully integrated cloud-based coordination applications for local governments and the drone industry to have seamless connectivity and communication. Airspace Link facilitates the sharing of ground-based data between the FAA, State of California, City of Ontario, and the UAS industry, aggregating numerous data sources to inform operators about potential risk factors and advisories during operational planning. This includes GIS data such as schools, hospitals, government buildings, helicopter pads, airports, stadiums, utilities, transportation, land use, zoning, population density (at different times of the day), road rights-of-way, rules, regulations, and ordinances.

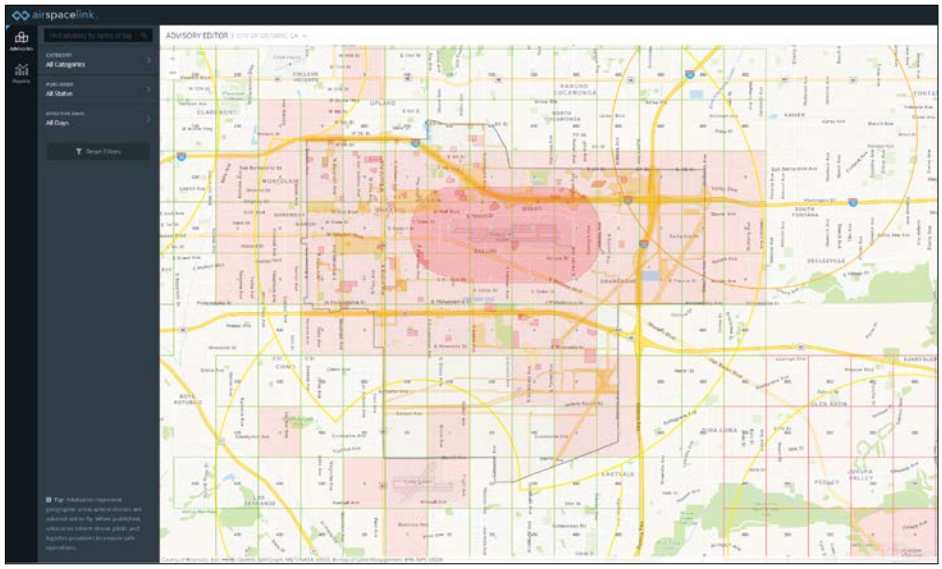
As an emerging partner with Esri, Airspace Link's AirHub uses the Esri Geospatial Cloud and ArcGIS Online to allow Ontario to leverage its existing Esri investment to quickly connect people, government, and data. And because it's a cloud-based solution, AirHub can be used anytime, anywhere with the city's existing Esri solutions. Ontario's AirHub solutions can scale to accommodate hundreds or even millions of people interacting with it at the same time.

Airspace Link staff worked with City of Ontario to provide pilots with a full operational view of the city by combining local, ground-based risk and advisory data with FAA data in a single platform to optimize communication with the drone industry on scheduled and unscheduled local advisories. As Ontario builds ground advisory areas, Airspace Link provides tools to assess the impact on recreational and commercial drone operations. As the city updates risk data and advisories in AirHub for government application, the information can be immediately shared with AirHub for Pilots, providing UAS pilots with the ability to factor in ground and airspace information in their operations plan and authorize themselves to fly legally, safely, and effectively.

Clearing the Runway

By integrating Airspace Link's solution, Ontario is taking steps to prepare for an active role in building the future infrastructure for drone companies of all sorts to collaborate with the community. City administrators can begin to understand how to engage their economic development teams to welcome drone business into the community. City engineers and GIS and IT staff can ensure that flights conducted in or by the city are done so legally, safely, and transparently. Planning, zoning, and public works departments can treat this new infrastructure as something to be understood and developed by the city government, combining drone data with the rich, authoritative GIS data they already have. Finally, Ontario has positioned itself as a future partner to the entrepreneurial companies looking to expand the use of drones in a variety of intelligent and useful ways, from delivering medicine and supplies to providing security and ensuring public safety.

Ontario is taking steps to ensure its part in facilitating how and where drones can and should operate in the community. For more information on how Airspace Link can help you safely integrate drones into your community, visit **go.esri.com/AirspaceLink-Partner** or **www.airspacelink.com**.



↑ Here are Ontario's flight advisory locations. Once published, advisories ensure safety by informing drone pilots of areas where drones are prohibited from flying.

Elections and COVID-19: Ensuring Safety in the Voting Process continued from page 17

alternative locations that factor in transportation access and weigh travel times. Jurisdictions may opt for more consolidated locations. Again, GIS can assist in optimizing those decisions.

As part of our support to governments during the coronavirus outbreak, we have developed a series of free election applications that can be modified to help governments adapt quickly if they need to improve social distancing and optimize Election Day operations. Some of the election solutions apps available through the ArcGIS election solution templates include the following:

- Polling Place Locator
- Locate Voting Centers
- Early Voting
- Report Wait Times
- Request Elections Assistance
- Monitor Election Performance
- Collect Voter Satisfaction
- Share Election Results

With these tools, election officials can continue moving forward with primaries and caucuses with the confidence that they are maintaining social distancing requirements; protecting at-risk populations; and improving communication, outreach, and engagement with the public.

As state and local governments have demonstrated in their responses to COVID-19, they are able to deploy GIS applications quickly. In the same way, they must now begin preparing for potential adjustments in election processes. And if the pandemic impacts the elections in November, the same GIS applications can support governments and help them adapt and modernize processes.

For more information on how to be Election Day ready during a health crisis, download Esri's election ebook at **go.esri.com/Elections-COVID-19**.

380 New York Street
Redlands, California 92373-8100 USA

Presorted
Standard
US Postage
Paid
Esri

Don't miss out on news, insights, resources, and alerts.
Sign up for updates at **go.esri.com/subscribe**.

174284 G911339