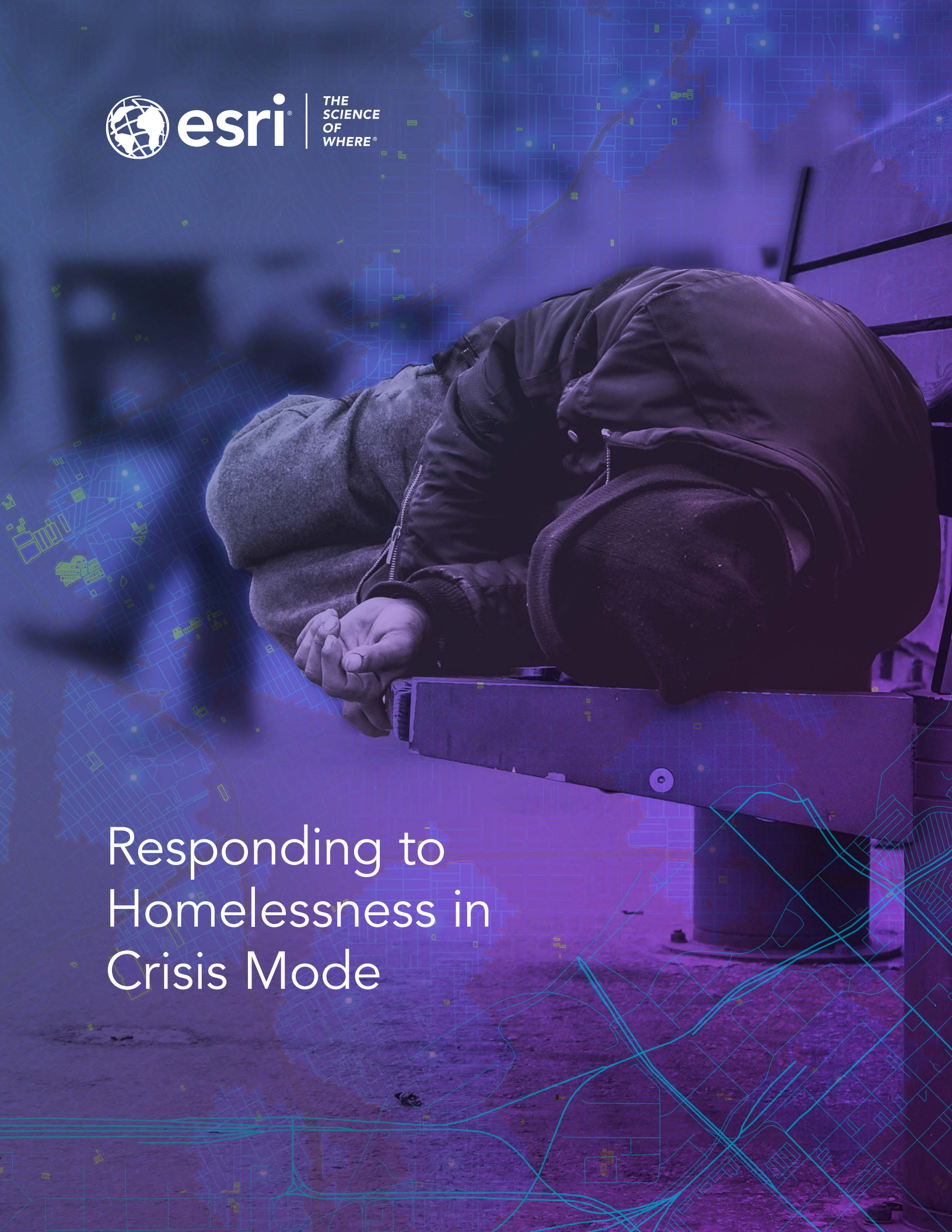


Responding to Homelessness in Crisis Mode

An increase in homelessness brings additional challenges for finite resources. GIS delivers.

If you knew where individuals experiencing homelessness were in relation to social services, transportation, and other community resources, how would you better address the homeless crisis in your community?

The search for solutions and approaches to end homelessness is at the forefront of dialogue in many communities. With over 500,000 individuals experiencing homelessness in the United States, many communities have declared a state of emergency regarding the homeless crisis.

Many local governments have begun to integrate geographic information system (GIS) technology into their strategies to mitigate homelessness.

GIS allows organizations to effectively track and deploy resources using a geographic approach. Esri, the global market leader in GIS, develops the most advanced solutions to help government agencies meet increasing service demands through the use of mobile web maps. Knowing where people in your community are experiencing homelessness and where best to allocate your resources are keys to success.

Addressing Humans in Crisis

The role of GIS when battling social inequities such as homelessness, lack of affordable housing, and opioid addiction must be treated similarly to a natural disaster such as wildfires or hurricanes.

Real-time information must be accurately gathered in the field, collected in a central place, and analyzed to inform effective resource allocation and decision-making. GIS allows responders to make better decisions and policy makers to be better at adjusting methods and tactics to keep a community moving forward. There are six pillars for resolving a crisis in real time: organize, collect new data, communicate, deploy and allocate resources, inform and educate.



"With GIS, we are able to improve the efficiency of our homeless count and more accurately identify areas where we can target services and resources to help reduce homelessness in our community."

Sue Compton
Homeless Management Information System Administrator, Placer County, California

Overcoming Social Inequalities Through Repeatable Patterns



1 Organize Data

Identifying all the variables that impact homelessness leads to a framework of understanding. GIS allows public health officials, human services, law enforcement, and volunteers to gather information from various data sources and use spatial analysis to combine it into a single map to understand the effects of homelessness.

6 Educate the Public and Constituents

Public information on homelessness and what is being done about the issue is important for people to understand how it will affect the community. Health risks, impacts on neighborhoods and infrastructure, and decisions on how and where funding and assistance are being applied to keep the community resilient can be conveyed through publicly accessible dashboards.

5 Inform Decision-Makers

Real-time dashboards can be used to present information on the state of the crisis, financial allocation based on communities, and progress of strategies so that swift decisions can be made in real time to help make the goals of any response and recovery program achievable.



2 Collect New Data

Using Esri® mobile solutions, staff or volunteers can easily collect additional data from the field to use for official point-in-time count numbers and create more data to inform their efforts.

3 Communicate Your Findings

As data is collected and analyzed, the information feeds directly into an operational dashboard. These interactive web map dashboards provide visibility into data that can be understood within seconds.

4 Deploy Tactics and Allocate Resources

With all information on a single map, staff can optimize and allocate resources based on need while identifying areas where people experiencing homelessness are concentrated and where additional services—such as housing, medical attention, food, or other resources—are needed.

Prioritize Homelessness Outreach Efforts

Modesto, California, Utilizes Funding from the CARES Act to Address Homelessness

In 2020, the City of Modesto received $3.8 million in Emergency Solutions Grants program funds from the Coronavirus Aid, Relief, and Economic Security (CARES Act) (2020) to help address homelessness. With this additional funding, the city expanded the Homeless Engagement and Response Team (HEART) to engage and build relationships with unsheltered individuals to provide immediate support, intervention, and connections with assistance programs or mainstream social services and housing programs.

Jessica Hill, Modesto's community development manager, implemented a data collection tool utilizing GIS technology to collect real-time information for people experiencing homelessness that also complies with the federally mandated requirements of the funding source.

Before receiving CARES Act funding, workers involved in outreach for people experiencing homelessness used cumbersome paper forms to collect information from individuals staying in encampments. The outdated paper-based collection approach affected the completeness and quality of the data.

The availability of additional federal funding allowed the city to leverage Esri's ArcGIS® Solutions for homelessness—a set of preconfigured, ready-to-go applications focused on helping the homeless crisis. One solution included implementing a form created using the ArcGIS Survey123 app, which makes a customized survey, tracks locations, and showcases the data on a user-friendly dashboard in real time. The new web-based system allows outreach workers to collect the data required by the federal funding sources on smartphones, iPads, and laptops with a few clicks as they assess individuals experiencing homelessness throughout the city.

Using the Survey123 form enabled city staff to collect the data in only a few moments rather than the 20 minutes the task previously required, increasing efficiency and productivity. The time saved allowed for additional data to be tracked.

By using the location intelligence provided by GIS technology, the City of Modesto has been able to expedite community efforts to expand homelessness outreach. This outreach is part of a larger effort that the city has implemented, called Camp2Home, which provides a six-step path to self-sufficiency for individuals experiencing homelessness and helps lead people to a life with stable housing. This initiative exemplifies how instrumental GIS and data visualization have been to the City of Modesto in improving the community's efforts to address homelessness.

"Now we can track all required information for the grant and additional information more efficiently with the use of GIS, which enables us to allocate more resources to mitigate homelessness."

Jessica Hill
Community Development Manager for the City of Modesto



Communities across the nation are aligning federal funding to create services and solutions to help mitigate homelessness.



The COVID-19 pandemic accentuated the need for improvements in public safety, health, and homelessness solutions.

Moving Communities Forward with GIS

Take a Look at How Snohomish County Utilized GIS to Help At-Risk Populations during COVID-19

People experiencing homelessness are more susceptible to health concerns; therefore, identifying where these individuals are located, what services are needed, and where to provide more resources can help agencies make better-informed decisions. To tackle these issues, applying a geographic approach brings about understanding, preparation, and tactics that help make the goals of any response and recovery programs achievable.

Data and smart maps elevate human services during a time of crisis.

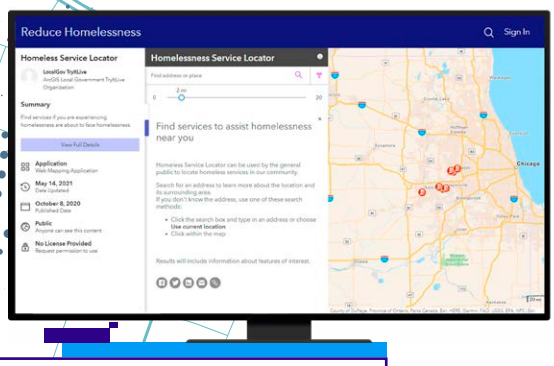
When the pandemic hit Snohomish County, Washington, in early 2020, the Emergency Coordination Center staff knew they needed to act quickly to ensure the safety of one of the most vulnerable populations. To keep unsheltered populations safe during COVID-19, the county had to understand the locations and demographics of the people currently experiencing homelessness in the region. The outreach team included medical staff to provide assessment of any COVID-19 symptoms; a housing navigator to get people connected to housing resources; embedded social workers to link with behavioral health services; and staff from law enforcement, fire department, and emergency services. Over two weeklong outreach periods, the team ended up contacting over 400 unsheltered individuals.

By using the form in the mobile survey app ArcGIS Survey123, which could be displayed visually on an interactive web map, the team was able to collect homeless encampment data. As parks, restaurants, and offices closed, the unsheltered population was left with nowhere to turn for basic amenities. The county's Emergency Coordination Center also used that data to create hundreds of individual hygiene kits, which were dispersed throughout the community. GIS empowered the county to be more proactive in its response efforts. Snohomish County established a pattern of outreach and data gathering to meet the needs of its most vulnerable populations.

"A lot of times we'll know what to do to help either mitigate or resolve issues, but having accessible real-time data has been really helpful in effectively deploying very limited resources. Utilizing GIS has really helped us to better inform and target where we deploy evidence-based practices," said Alessandra Durham, a senior policy analyst with the Snohomish County Executive's Office.

Solutions to Serve People Experiencing Homelessness

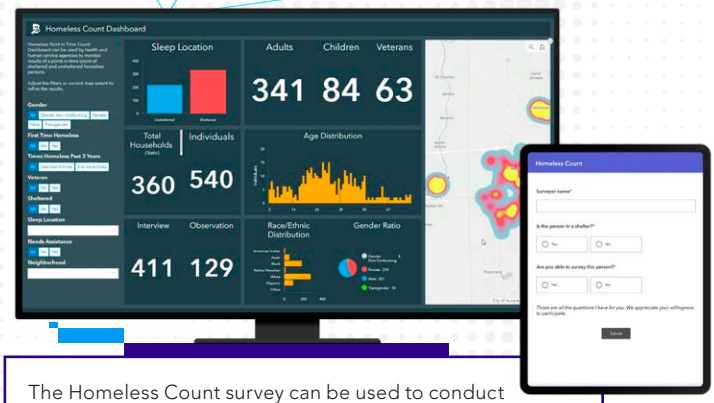
State and local government agencies can leverage multiple GIS applications to help effectively decrease the number of people experiencing homelessness and serve them.



Resources like the Homeless Service Locator can be used by the general public to locate homeless services in their community.

Whether agencies are trying to provide decision-making tools to leaders or improving field collection of location-based data, GIS has a pivotal role to play. The homelessness solutions are a collection of ArcGIS Solutions that can be used by government agencies to identify at-risk areas within a community, count the people experiencing homelessness and inventory resources for them, and increase awareness of the services available to them. The three solutions are available in ArcGIS Online, Esri's cloud-based software that is utilized to create and share web maps.

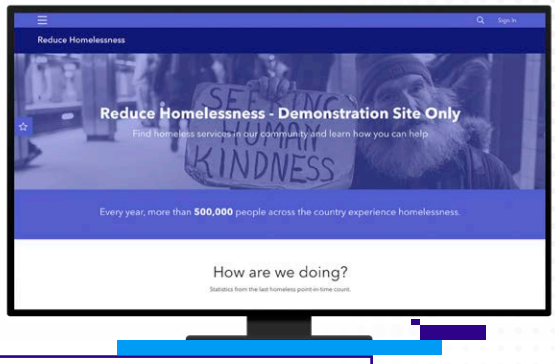




The Homeless Count survey can be used to conduct point-in-time counts of sheltered and unsheltered persons experiencing homelessness. The homeless Count Dashboard can be used to monitor the point-in-time counts.

Solution #1: Homeless Outreach

The Homeless Outreach solution allows you to manage homelessness information and services in the community for the public and allows public health agencies to maintain that information. This collaborative approach helps ease the burden on communities that are dealing with increasing service demands, limited access to technology, and lack of real-time data.



Use the Reduce Homelessness hub to share information with your community and resources for those at risk.

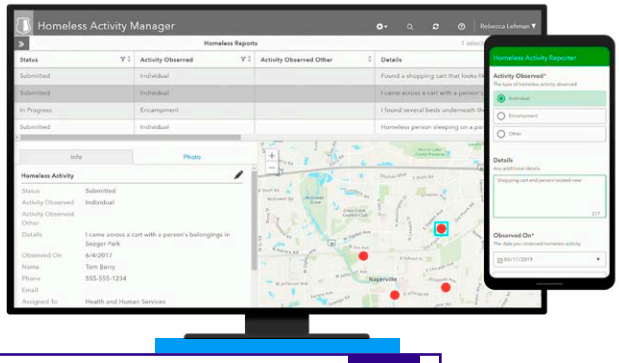
Solution #2: Homeless Point-in-Time Counts

The Homeless Point-in-Time Counts solution can be used to conduct point-in-time counts of sheltered and unsheltered individuals experiencing homelessness. Staff and volunteers can use field apps and location-based information to conduct counts to help meet the requirements of US Department of Housing and Urban Development (HUD) in Continuum of Care (CoC) Program communities. Communities that meet these requirements can increase homelessness services capability and funding through the data-driven approach. Field inspectors can use a mobile device in a connected or disconnected environment to collect survey data. Agencies can quickly configure surveys that streamline the information that is collected about the people needing these services, relevant household information, and shelter details.

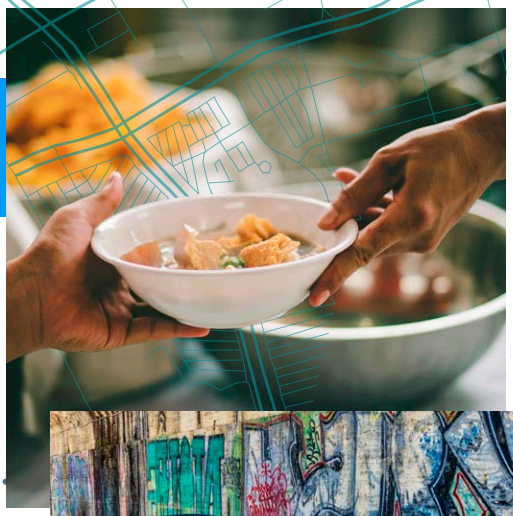
Communicate to the public on the impactful changes being made to reduce homelessness across your communities.

Solution #3: Homeless Risk Reduction

The Homeless Risk Reduction solution can be used to identify where regular reports of homelessness activity may originate and to address regular reports of encampments in a community. These capabilities help you understand where homelessness may originate in the community and allow you to actively monitor these reports so resources such as transportation, housing, and medical assistance can be offered to individuals in need.



The Homeless Activity Reporter and Manager can be used to report individuals experiencing homelessness and their encampments and assign those reports to responsible agencies.







For more information on how to combat homelessness, visit go.esri.com/homeless-crisis.

Create Change Today

Homelessness is a human tragedy that is straining social resources and the capacity of local governments, and mitigating it is no easy task. ArcGIS Solutions are designed to help count individuals experiencing homelessness and monitor their activity in your local neighborhoods while educating your community about local issues, promoting available resources, and helping determine where the greatest need is. Governments have been utilizing ArcGIS tools to get ahead of the homeless crisis and through the health pandemic, natural disasters, or other emergencies. No matter what phase you find yourself in, GIS can help you take the next steps to combat homelessness in your community.

What are the options?

Do it yourself.

Organizations with access to Esri software, as well as strong technical resources and the domain knowledge of dealing with homelessness issues, can implement the approaches described by simply using in-house staff and resources. The solutions are complementary to your use of ArcGIS and have out-of-the-box functionality. The ArcGIS Solutions Deployment Tool allows users to browse a catalog of ArcGIS Solutions and begin configuring the templates to easily start mapping homelessness encampments, resource centers, and other relevant data points. To get started using the DIY model, follow the instructions outlined on the right.

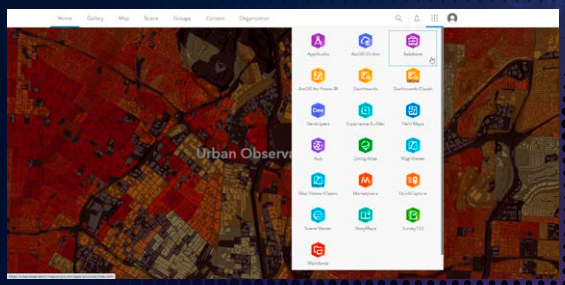
Explore a technology jumpstart package.

Explore jumpstart packages to fill gaps for the short term. Jumpstart packages provide both GIS software and technical staffing. These engagements are designed to supplement agency staff with Esri Professional Services or a certified Esri partner. Jumpstart packages are a service that help staff quickly become self-sufficient in installing, implementing, and managing Esri software. They also provide technical knowledge transfer and best practices for the use of ArcGIS.

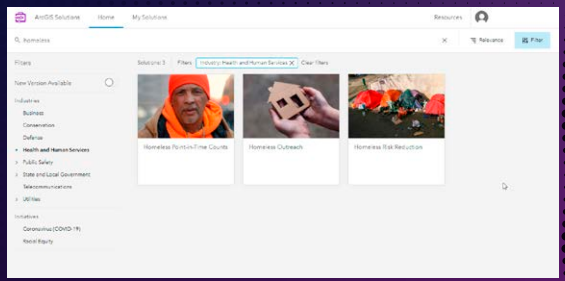
Leverage a professional services engagement.

Want to really use the concepts and apps to further government's mission to eradicate homelessness? Consider a full engagement with Esri Professional Services or an Esri partner to provide consulting and implementation services for an optimal return on your GIS investment. These professional services engagements can help transform an organization through advice and hands-on help from GIS experts, industry specialists, developers, and designers.

1. Sign in to your ArcGIS Online organization.
2. Click the Apps button on the top navigation bar of your organization and click Solutions.



3. Browse the gallery of ArcGIS Solutions by industry or search for a keyword (i.e. 'homeless').



4. Hover over a solution and click View Details to learn more about it. When you decide to deploy a solution, click **Get Now**.

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Esri, the global market leader in geographic information system (GIS) software, offers the most powerful mapping and spatial analytics technology available.

Since 1969, Esri has helped customers unlock the full potential of data to improve operational and business results. Today, Esri software is deployed in more than 350,000 organizations including the world's largest cities, most national governments, 75 percent of Fortune 500 companies, and more than 7,000 colleges and universities. Esri engineers the most advanced solutions for digital transformation, the Internet of Things (IoT), and location analytics to inform the most authoritative maps in the world.

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