# Health GIS Initiatives that Align with Federal Funding Programs

Deployable Solutions and Informational/Learning Resources

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Below you'll find two tables. Each table aligns with the named sections in the blog. The first table links to immediately deployable solutions. These solutions are configured (but modifiable) for specific health challenges that come up over and over. They will save you time and resources. With them, you can skip the development phase of a new initiative and go directly to solving it. The second table has a variety of resources that offer more detailed information as you consider applying GIS to your work. From technical papers, reports and blogs, to interactive StoryMaps, webinars, and even tutorial style lessons, you'll have everything you need to support your funding requests. And if you don't, just contact us (healthinfo@esri.com), we'll help you out.

| Table 1. Deployable Solutions | |
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| **Solution Name** | **Description** |
| **1) Preparedness, Response and Recovery Solutions and Resources** | |
| Coronavirus Vaccine Outreach Solution | Communicate vaccination plans, increase public confidence in COVID-19 vaccinations and ensure the public knows when and where they can be vaccinated. |
| Coronavirus Vaccine Distribution Dashboard | Tabulate, visualize and monitor key vaccine distribution metrics and trends. |
| Vaccine Coverage Analysis Solution | Determine best placement of vaccination sites in consideration of geographic access and priority populations. |
| Coronavirus Site Safety | Create health and safety plans for facilities, sites and campuses (health screening locations, sanitizer stations, PPE locations and isolation areas). |
| Coronavirus Health Screening | Conduct health screenings for those visiting buildings, events or other locations. Record temperature checks and track entry by location and date. Allow self-reporting of symptoms or contacts. |
| Understanding what it takes to flatten the curve | Deploy and use the CHIME Model geoprocessing tool for ArcGIS Pro to model the size and duration of peaks in COVID-19 related hospitalizations. |
| **2) Humans in Crisis** | |
| **Homelessness** | |
| Getting to know the Homeless Solutions | This storymap provides an overview of the homeless solutions and links to each. |
| Homeless Outreach | Inventory available homeless resources and share with those experiencing homelessness. Communicate the extent of local homelessness and solicit volunteers to help deliver services. |
| Homeless Point-In-Time Counts | Digitize the point-in-time counts for sheltered and unsheltered homeless individuals by capturing survey data with field apps, visualizing local homelessness on a real-time map, and exporting data for HUD reporting. |
| Homeless Risk Reduction | Use field apps (by staff and/or the public) to report places where homeless activity occurs and monitor regularly so assistance can be offered to those in need. |
| **Opioid Epidemic** | |
| ArcGIS Solutions to Tackle the Opioid Epidemic | A compendium of solutions for communicating the severity of the opioid epidemic, promoting treatment alternatives and understanding the effectiveness of response activities. |

| 3) Access to Care/Services | |
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| Generate Service Areas | Determine network service areas around facilities using travel time or drive distance across multiple modes of travel. |
| Solve Vehicle Routing Problem | Assign a group of 'customers' to a fleet of vehicles to sequence and schedule visits with the most efficient routes. |
| **4) Strategic Planning** | |
| Performance Management | Monitor key performance metrics and communicate progress made on strategic outcomes to the general public and/or other interested stakeholders. |
| ArcGIS Business Analyst | While this is not the same as the other solution templates listed in this table, ArcGIS Business Analyst is a software product that includes >15,000 data variables and standardized workflows for site selection and planning, optimizing territories, targeting customers, and performing location analytics (such as drive times and distances. |
| **5) Health Equity** | |
| Community Health Assessment | Plan community health survey areas, collect community health information at the household-level and monitor key indicators as the assessment occurs. Uses CASPER methodology and is appropriate for CHNA, RHNA and CHA needs. |
| Community Health Outreach | Launch a healthy communities web destination, provide an authoritative inventory of health services and engage the public. |
| Warming and Cooling Centers | Source and review the locations of warming and cooling centers from community partners and share with the public. |
| Racial Equity Community Outreach | Communicate key racial equity initiatives or programs, visualize workforce diversity metrics, gauge public sentiment, and share authoritative information with the community. |

| Table 2. Compendium of Resources | | |
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| **Resource Type** | **Title** | **Description** |
| **1) Preparedness, Response and Recovery Solutions and Resources** | | |
| Blog | Facility Mapping Solutions for COVID-19 Recovery | This blog covers how ArcGIS Indoors can be used for safer work environments in consideration of health and social distancing needs. Do better office space planning as well as monitoring of high-density common areas with a digital floorplan-based approach. |
| Compilation of Data and Resources | COVID-19 GIS Hub | Find open data, maps, applications, blogs, papers and best practices guides for COVID-19 response here. |
| GovLoop Report | Strengthening Public Health Preparedness with GIS | This report examines lessons learned from COVID-19 and previous health emergencies and includes common data requirements for public health preparedness, best practices for crisis response and an overview of the role of location in mapping public health emergencies. |
| GovLoop Report | Altering the Course of Disease Surveillance: Connecting Cause and Effect to Location | This report reviews the role of GIS in an integrated approach to collecting information, analyzing patterns, communicating results, and monitoring progress for disease surveillance. |

| Learning Resources | COVID-19 Learning Resources | This is a compendium of 128 COVID-19 learning resources on a variety of topics. Many are free and self-paced hands-on tutorial lessons. Trial software is included for all lessons. Note that many if not most lessons are applicable to multiple health-related workflows beyond pandemic response. |
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| StoryMap Capability Review | Public Health Preparedness: A Geographic Approach | This StoryMap reviews the ways that GIS supports CDC's 6 domains of public health preparedness: community resilience, incident management, information management, countermeasures and mitigation, surge management and biosurveillance. |
| Technical Paper | Geographic Information Systems for Coronavirus Planning and Response | This technical paper covers key areas for applied GIS in pandemics: assessing risk and evaluating threats, monitoring and tracking outbreaks, maintaining situational awareness, ensuring resource allocation and notifying agencies and communities. |
| Technical Paper | Locating COVID-19 Testing, Treatment and Resource Distribution Sites | This technical paper details a geographic modeling approach to identify optimal locations for COVID-19 testing sites, treatment sites and food/resource distribution sites. There are links to practical hands-on lessons within. The method is appropriate for health-related site selection of any kind. |
| Technical Paper | Reopen the Workplace: Facility Mapping Solutions for COVID-19 Recovery | Dive into ArcGIS Indoors for management of re-opening workflows such as operational needs (wellness stations, scheduled cleaning), space management (hoteling, hot desking and socially distanced workspaces), tracking and tracing human movement and situational awareness for building occupancy and exposure notifications. |
| Webinar Recording | Community Contact Tracing | In this 1 hour recording, learn about how ArcGIS can be used to develop your own contact tracing system from data collection and management to analysis and insights. |
| **2) Humans in Crisis** | | |
| **Homelessness** | | |
| Blog | Community Planning and Policymaking for Homelessness | Read this blog to see how GIS can support well-designed communities that support and reduce homelessness. |
| Book Chapter Resources | GIS In Science, Volume 1: Finding a Way Home | This website provides myriad resources to help describe how GIS can help jurisdictions understand, prevent and manage homelessness. Book may be ordered from the site. |
| GovLoop Industry Perspective | Responding to Homelessness in Crisis Mode | This piece follows the plan, respond, mitigate and recover model as applied to homelessness. |
| Learn Lesson | Help end homelessness | Learn to create a risk map to predict where people are becoming homeless, prioritize prevention measures, and build policy consensus in the face of various agendas. |

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| Learn Lesson | [Map the impact of housing shortage on oil workers](#) | Learn to work with data to demonstrate a developing homelessness problem and share results with stakeholders. |
| Webinar Recording | [Driving Housing and Homelessness Policy with GIS](#) | From the planning and community development perspective, watch this 37m recording that covers how GIS can support equitable access to housing and end cycles of homelessness and poverty by designing a path of economic mobility. |
| **Opioid Epidemic** | | |
| GovLoop Industry Perspective | [Responding to the Opioid Crisis with GIS](#) | Read about how GIS supports the opioid crisis through education, connecting residents with resources, community engagement and monitoring programs. Real-world examples are described. |
| Learn Lesson | [Investigate prescribed drugs](#) | How do you find the needle in the haystack? This lesson shows how ArcGIS Insights helps identify irregular prescribing habits worthy of deeper review. |
| **Food Insecurity** | | |
| Learn Lesson | [Build an app to expand food access](#) | Good data and evidence may help make the case for certain farmers markets to accept public assistance benefits. |
| Learn Lesson | [Plan routes for food inspectors](#) | It seems there are never enough inspectors. This less will teach you how to use GIS to optimize inspectors and their routes to make them more productive. |
| StoryMap | [Measure and Map Access to Grocery Stores](#) | Learn to think about access to grocery stores in a new way – beyond the identification of food deserts. |
| **3) Access to Care/Services** | | |
| StoryMap | [Network Adequacy and Optimization Using ArcGIS](#) | Read about the regulatory requirement of network adequacy (and recognize that the story speaks to access of all kinds) and see how GIS can solve massive access calculations and use resulting data to improve networks and resource allocation/recruitment. |
| WebApp | [Provider Impact Planning App](#) | Test this web application to discover how GIS can help with hiring decisions for new providers. |
| **4) Strategic Planning** | | |
| StoryMap | [Healthcare Interoperability and Location](#) : How GIS and innovative healthcare standards can drive situational awareness and improve the quality of care for millions. | Learn about HL7 FHIR and how ArcGIS interoperates with FHIR Servers and their data. This workflows offers yet another pathway to doing more with your Electronic Medical Record data. |
| Webinar Recording | [Smart Hospital Operations with ArcGIS Indoors](#) | This 56-minute webinar will share the vision for creating SMART hospitals with ArcGIS Indoors, outline the highest value workflows and review the work that Loma Linda University Health has pioneered. |
| **5) Health Equity** | | |
| Compilation of Data and Resources | [Racial Equity GIS Hub](#) | Find open data, maps, applications, blogs, papers and best practices guides for racial equity here. Note that many of the resources are broadly applicable to all health equity issues. |

| Learn Lesson | [Map Racial Disparities in Breast Cancer Mortality Rates](#) | This lesson shows the disparity in breast cancer mortality rates between white and black women by mapping rates and risk factors. |
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| Learn Lesson | [Measure and Visualize Digital Exclusion](#) | Learn to answer the question, *Are there race groups that are more digitally excluded than others in the United States?,* by mapping, analyzing and sharing the findings. |
| Ready-made maps | [Esri Maps for Public Policy](#) | Explore the pre-made maps to support data-driven policy. Learn to create your own collection of maps and bring them directly into your organizational web pages. |