TRANSFORM HEALTH FACILITIES WITH LOCATION INTELLIGENCE

Implementing GIS for Enhanced Operational Performance and Decision-Making

Location Intelligence Leads to Better Performance Outcomes

Hospitals and health-care facilities today must embrace technology to advance the quality of service, enhance patient satisfaction, and improve day-to-day operations more rapidly. On top of meeting regulatory requirements, operational needs, and safety expectations, health-care facilities are expected to consider sustainable practices and workflows that reduce greenhouse gas emissions.

A geographic information system (GIS) is a comprehensive geospatial platform that meets all modern criteria for enterprise technology—it is cloud ready, secure, interoperable, configurable, extensible, and scalable. It can be configured into systems that serve specific workflows, extend existing enterprise applications, and support diverse organizational needs. GIS provides the analysis and tools to help decrease costs, optimize facility operations, and prevent hospital closures. The benefits include improved communication and efficiency as well as better management and decision-making. This enterprise system empowers health-care facility administrators and managers to support site selection, asset and work order management, disaster preparedness, space management, wayfinding, and much more.

Facility managers enhance their workflows with GIS to

- Upgrade the planning process for efficient site assessments and selection, space management, and disaster preparedness.
- Expedite facility maintenance operations with an enterprise system, keeping patients and staff safe and maintaining readiness for inspections.
- Secure buildings with real-time data to always ensure situational awareness.
- Promote sustainability by optimizing energy use.
- Guarantee a superior visitor experience.

Transform Facility Planning with Spatial Analysis

Health-care facilities represent major capital investments. Facility managers should think spatially to ensure that buildings and campus spaces are utilized efficiently and hold up over time. GIS tools create a digital twin of indoor and outdoor infrastructure and assets that will transform health-care facilities into smart sites and buildings. With a digital twin foundation, you can incorporate real-time and historical data to manage current condition assessments and plan for the future. With an enterprise system to oversee their portfolios, facility managers can identify gaps in services and design expansion projects to ensure long-term use of a facility. Spatial analytics makes it possible to predict foot traffic scenarios and review locations with excessively long dwell times, or even track nosocomial infections. While others try to keep up with the changing needs of their facilities, facility managers who leverage spatial analysis become adept at finding new ways to optimize their operations.

Using GIS to streamline planning functions enables facility managers to

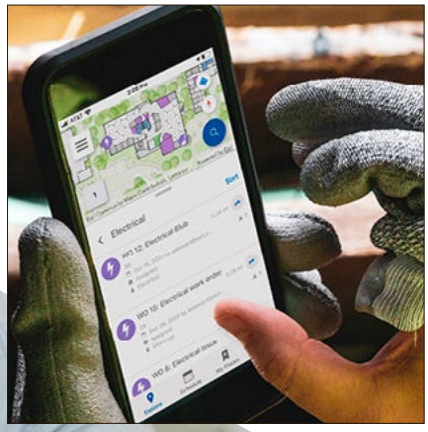
- Maintain a digital twin of their facility in an accessible format for real-time updates.
- Integrate multiple data sources such as demographic data, insurance coverage information, competitive intelligence, travel times, and catchment areas, pinpointing ideal locations to expand into other markets.
- Offer detailed insights at the floor or room level, facilitating space management and usage optimization.
- Extract real-time information (e.g., human movement) from sensors that support analysis and planning.

Build a Facility's Longevity with GIS

Hospital facility managers act as orchestrators of infrastructure life cycle management and thus bear the responsibility of understanding large-scale property programs. This includes handling everything from facility design to medical and nonmedical asset management; recognizing the nuances of ensuring smooth operations inside and outside; and containing costs and supporting long-term use of capital assets. GIS tools assist facility managers in developing a proactive maintenance approach for handling work orders, determining priority levels, remaining in compliance, and submitting status reports seamlessly. Facility managers can use GIS tools to check maintenance tasks in real time, integrate with external software such as major service management systems, and allow other staff or authorized individuals to crowdsource information on maintenance needs. Managing facility operations within an enterprise system also helps organizations prepare for and sail through inspections without any added labor.

GIS technology establishes proactive and maintenance practices to

- Streamline projects and programs to reduce equipment downtime, improve safety, increase labor efficiency, and extend equipment life.
- Monitor assets in real time to prevent shrinkage and improve inventory management.
- Track work crews and status of work orders for improved situational awareness to reduce duplicated tasks and improve efficiency.



Ensure Safe and Secure Facilities with GIS

Ensuring safety and security in health-care facilities is a perpetual concern. GIS tools offer solutions for real-time situational awareness, allowing managers to understand congregation points and monitor security staff. When infrastructure data, evacuation routes, emergency protocols, and safety standards are integrated in an authoritative system, more effective safety and mitigation strategies result. Such capabilities are instrumental in guaranteeing that health-care facilities remain the safe havens they are meant to be.

Facilities managers keep their facilities safe and secure by using GIS to

- Integrate real-time data feeds from security and alarm systems for up-to-date information on security incidents.
- Visualize incident data to identify patterns, trends, and potential vulnerabilities.
- Evaluate safety features and compare them against regulatory requirements.
- Provide real-time situational awareness to secure the facility during an emergency.

Let Location Drive Sustainable Facilities

Embracing sustainability isn't just environmentally responsible—it can lead to significant financial benefits. GIS technology provides facility managers with analysis tools to predict various impacts on buildings. For example, areas with intense sunlight can be identified and slated for improvements in energy efficiency such as incorporating targeted shading devices in summer and daylight harvesting strategies in winter. Visualizing how weather factors interact with building design helps facility managers see where they can make improvements that prioritize both function and environmental adaptation. Spatial modeling and prediction tools allow facility managers to optimize energy management and reduce costs while driving sustainability efforts.

GIS improves your sustainability efforts with

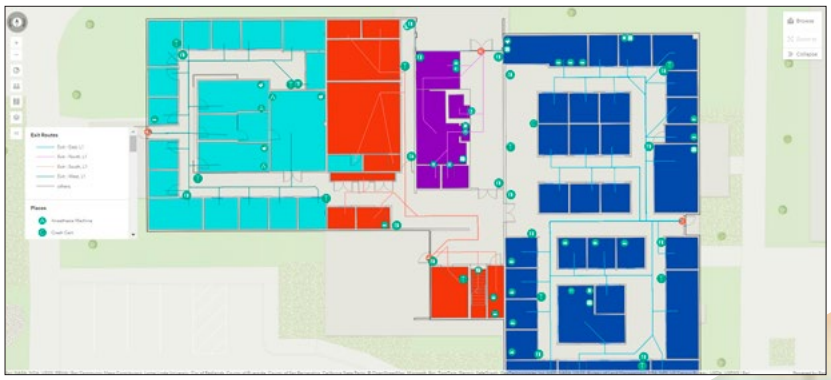
- Artificial intelligence capabilities to determine viable renewable energy options.
- Weather analysis models that help with future planning and resource allocation.
- Dashboards to track resource consumption and environmental impact and compare metrics over time.

Elevate the Patient Experience with GIS Tools

Patients and visitors need to feel safe and secure in health-care facilities. But every health-care organization also wants to ensure a higher-level experience that puts people at ease and enhances the organization's brand. GIS can be used to develop tools that support wayfinding and navigation, optimized parking and shuttle routing, satisfaction surveys and sentiment analysis, and easier access to relevant information.

Facility managers improve the patient experience by using GIS to

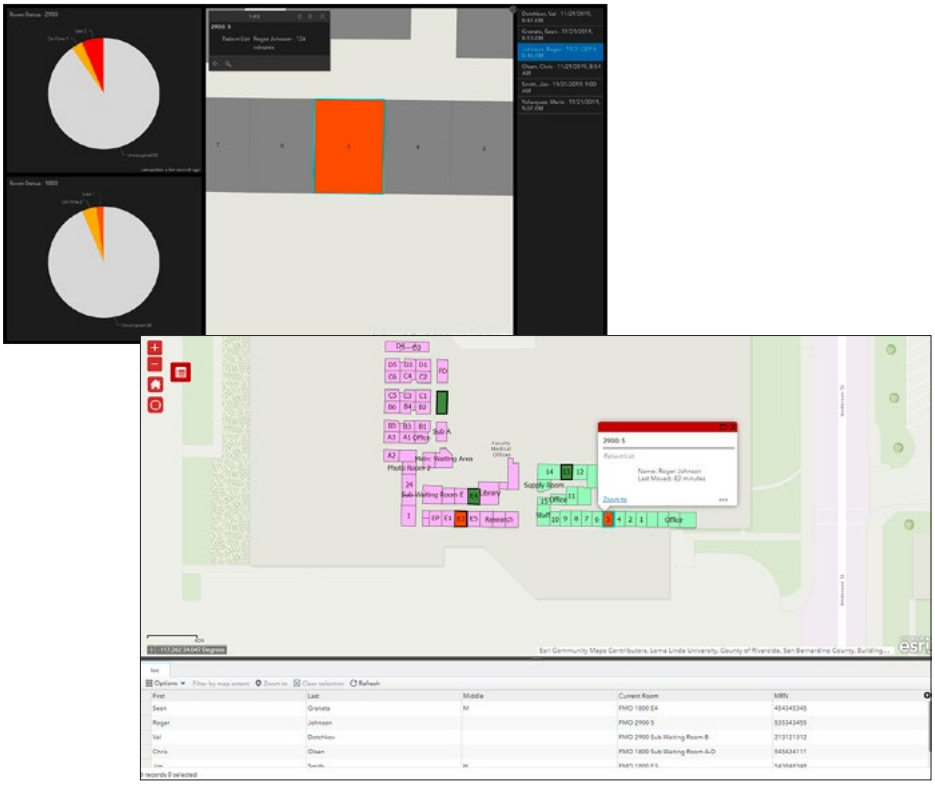
- Help navigate patients across the campus and through its buildings effectively, easing anxiety and improving on-time appointments.
- Collect feedback regarding facilities and delivered services.
- Personalize data visualization based on an individual's location and needs such as the nearest restroom, wheelchair ramp, or parking structure.



Charting Success: Organizations Enhancing Facility Management with GIS

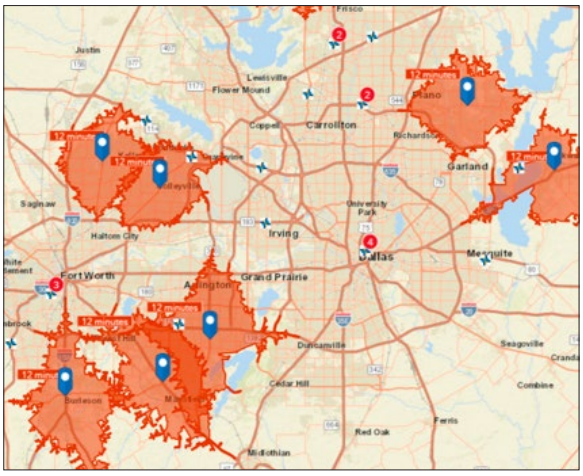
Health-care organizations everywhere are acknowledging the power of GIS technology to enhance their delivery of care. These organizations are streamlining essential workflows, implementing asset tracking, ensuring the security of their facilities, and more. GIS tools provide these organizations with an enterprise system they can integrate with their existing systems. Esri's GIS technology offers interoperability that adds organizational value well beyond facility walls and campus boundaries. Learn more below about some of the leading health-care organizations leveraging GIS tools to improve their facility management.

Loma Linda University Medical Center



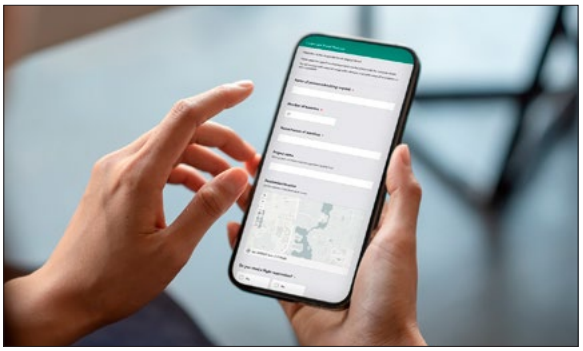
Loma Linda University Medical Center combined ArcGIS® Indoors™ with its electronic health records system to ensure efficient and speedy patient visits. Staff are also tracking assets across their campus in real time.

Emerus



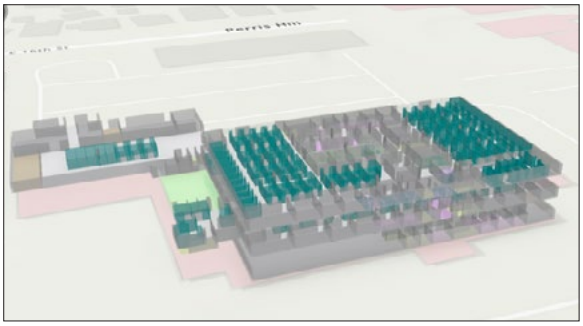
Emerus, the first operator of small-format hospitals (micro-hospitals), deployed ArcGIS Business Analyst™ and its substantial data resources to select the best locations for micro-hospitals, using localized demographic data to prioritize accessibility to underserved populations while accounting for market challenges.

California School Campuses



California school: Two smoke- and tobacco-free California university campuses, including a health system campus, used ArcGIS Survey123 to crowdsource campus reports of tobacco use and waste to support and sustain the schools' smoke- and tobacco-free policies.*

San Bernardino County



San Bernardino County leveraged ArcGIS Indoors to develop a 3D rendering of its office building and seating assignments. This allowed staff to efficiently manage open office space.

*Loureiro SF, Pulvers K, Gosdin MM, Clift K, Rice M, Tong EK. The Development of a Web-Based Tobacco Tracker Tool to Crowdsource Campus Environmental Reports for Smoke and Tobacco-Free College Policies: Mixed Methods Study. J Med Internet Res. 2021 Oct 29;23(10):e26280. doi: 10.2196/26280. PMID: 34714248; PMCID: PMC8590190. California.

Ensure the Highest Return on Investment

Facility managers oversee one of their organization's largest operating budgets. This level of responsibility requires an enterprise system that allows managers to oversee all facility operations, costs, and safety protocols. Today's facility managers are no longer simply managing the built environment but are expected to implement sustainable practices, optimize operational efficiency, and ensure patient satisfaction. This role requires several GIS tools within the ArcGIS suite. The tools listed here will help differentiate your organization and position you as an example for others to follow.

ArcGIS Enterprise: The foundation that will underlie the location-enabled system for your health facilities is ArcGIS Enterprise. It supports your data management, mapping and visualization, and analysis and discovery needs. It acts as the connector for all of your other geospatial applications.

ArcGIS Indoors: Leverage the complete indoor mapping system for facilities management to support maintenance, field services, routing, and employees.

ArcGIS Business Analyst: Define service areas, calculate travel times, and characterize your served populations to provide a foundation for market planning, site selection, customer segmentation, and market development.

ArcGIS Dashboards: Present data and analytics in an intuitive and interactive way to visualize trends, monitor status in real time, and inform stakeholders.

ArcGIS Survey123: Collect data with location-enabled surveys to understand populations, patient and visitor sentiment, and overall satisfaction with services.

ArcGIS QuickCapture: Quickly collect data around your campus such as locations of Americans with Disabilities Act (ADA)-compliant ramps and accessible parking spaces; no-smoking areas; streetlights; stop signs; irrigation controllers; or water, gas, and electricity meters.

Email us at healthinfo@esri.com or get started today.

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Esri, the global market leader in geographic information system (GIS) software, location intelligence, and mapping, helps customers unlock the full potential of data to improve operational and business results.

Founded in 1969 in Redlands, California, USA, Esri software is deployed in hundreds of thousands of organizations globally, including Fortune 500 companies, government agencies, nonprofit institutions, and universities.

Esri has regional offices, international distributors, and partners providing local support in over 100 countries on six continents. With its pioneering commitment to geospatial technology and analytics, Esri engineers the most innovative solutions that leverage a geographic approach to solving some of the world's most complex problems by placing them in the crucial context of location.

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