CITY OF IRVINE GIS

"The Geography of Success"

SKILLS DATA
information
GEO
ANALYSIS
knowledge
GIS
REGIONAL support
ENVIROMENTAL
FIELD projects
APPLY
INDUSTRIES
STATISTICAL MAPS
emerging
INTRODUCTION

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A Geographic Information System (GIS) allows City of Irvine staff and residents to visualize, question, analyze, and interpret data to understand relationships, patterns, and trends contained within location-based information.

Some people erroneously see GIS as just digital maps – the conversion of paper maps to a digital form. GIS is much more than that. GIS allows users to analyze their world geographically (spatially). Spatial analysis is how we understand our world — mapping where things are, how they relate, what it all means, and what actions to take. From the computational analysis of geographic patterns to finding optimum routes, identifying areas for economic development, site selection, and advanced predictive modeling, spatial analysis is at the very heart of geographic information system (GIS) technology.

GIS takes massive amounts of data and puts them into a context that is readily understandable and actionable. GIS enables residents to quickly and easily understand property-related issues, infrastructure work in their area, prepare and recover from natural disasters, visualize all of the services in their area, and to find the information they need that affects their life.

GIS has become a primary information management tool for Irvine and local governments worldwide. Irvine has been using GIS technology since the 1980s. GIS underpins much of the collective organizational effort devoted towards the strategic priorities identified in the City of Irvine Strategic Priorities, including Maintaining High-Quality Essential City Services, and Promote Innovation Through the Effective Use of Information Technology Solutions to Streamline Business Processes and Increase Responsiveness to the Community.

More than 90 percent of local government services and activities have a geographic location (address or property). Therefore, GIS is the platform that should be used by City staff to visualize their data. The usage of GIS technology is now widespread across the organization, and it has transformed into a core information technology at the city for many departments. This underscores the importance that the GIS program should be well planned and well managed.

"More than 90 percent of the data maintained by county governments has a geographic component ripe for mapping and analysis"

What constitutes a successful GIS?

This question has been a topic of debate for decades. Some people argue that success is a robust database of GIS layers. Others contend success is the implementation of software and hardware that enables users to use GIS. However, the ultimate success of a city-wide GIS program is how the GIS is being successfully used to impact the organization and the lives of residents. Quantifying and articulating return on investment is very important for an organization. A GIS program might have very successful projects, but without visibility, these successes might be under-appreciated. Therefore, one of the key responsibilities of the GIS leaders in an organization is documenting successes and giving visibility to these organization-wide.

Some of the most successful GIS projects that Irvine has completed over the past few years include:
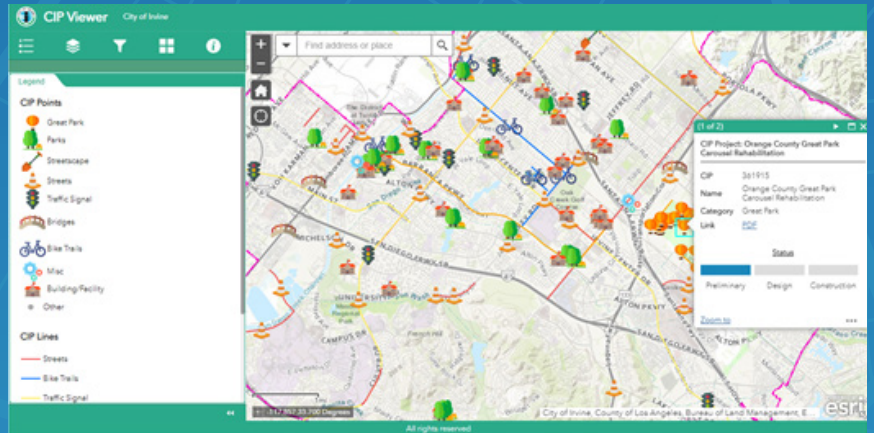

Centerline Ties

Survey grade street centerlines that determine center points at intersections

Explore

SELF-SERVE CENTERLINE TIES
WEB APPLICATION

One of the challenges faced by City Public Works Departments nationwide is providing timely information to contractors. Historically, this required a time-consuming process of requests for information from contractors and staff having to research and retrieve the pertinent information. This resulted in inefficiencies and frustration for contractors and a large time-commitment from staff. The Irvine GIS has greatly assisted in improving this information loop by providing contractors on-line access to detailed information about road data (centerline ties) via a map and linked documents. This project saves time, increases productivity, and reduces frustration.

CAPITAL IMPROVEMENTS (CIP) VIEWER

Irvine has projects throughout the year dispersed throughout the City. As with most cities, staff and residents do not have visualization into the what, where, and why of these projects. The City has implemented a city-wide GIS repository of capital project data and maps that allow for quick viewing of all of the city projects, their status, and links to associated documents.


CITY OF IRVINE NOTABLE DEVELOPMENT STORY MAP

Using the latest GIS technology, Story Maps, the City has launched a site designed to give visibility to manor projects approved by the City. The interface allows users to navigate to any area of the city and see the projects that are; Under Review, Approved, Under Construction, and/or Completed. The application provides the location, photographs, and descriptive text. This assists in meeting one of the City's Strategic Priorities of keeping residents informed.
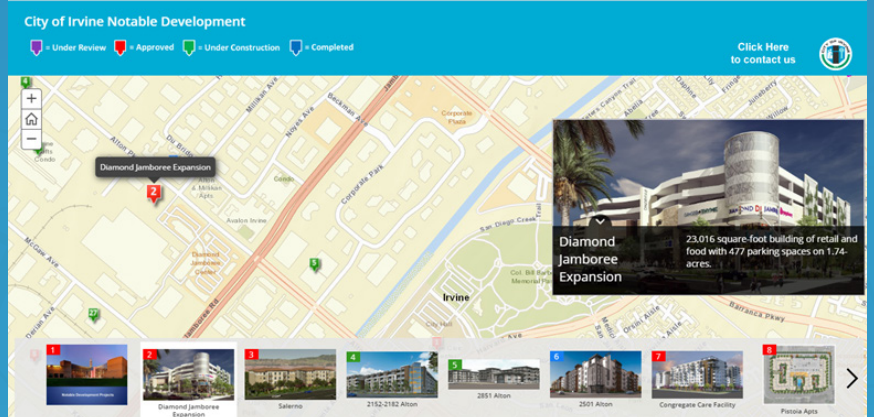
INTERACTIVE AFFORDABLE HOUSING LOCATOR

Affordable Housing is an important topic for the residents and leaders of the City of Irvine. It has been a challenge for residents to understand what options they have available to them. Historically, this information has been hard to discover. The City has implemented an interactive housing locator, that allows a user to navigate affordable housing options via an intuitive map interface. The user can view options via tabs in the application for; All Affordable Housing, Future/Planned Affordable Housing, Senior Housing, and Special Needs Housing.
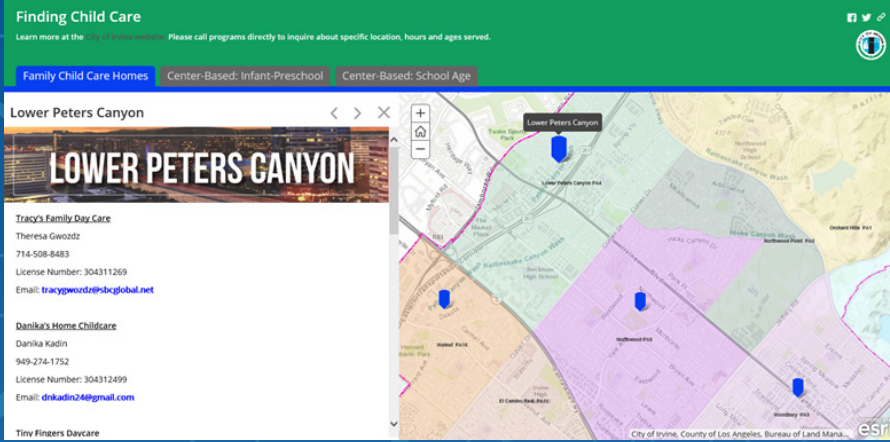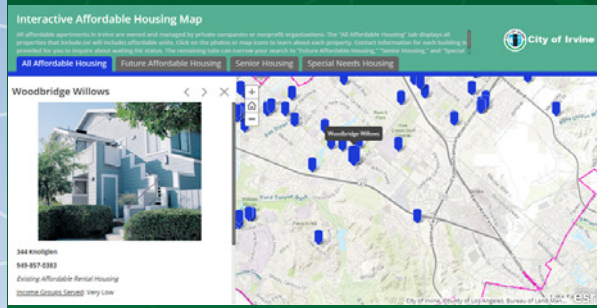
FINDING CHILD CARE INTERACTIVE STORY MAP

A challenge nationally and in Irvine is finding available child care services. This can be an arduous and daunting task for any caregiver. Having one central location to view this information is a huge benefit to the public. The City has launched a Child Care Finder GIS portal that provides the public an interactive map to locate child care facilities by type of facility to include; Family Child Care Homes, Center-Base: Infant-Preschool, and Center-Based: School Age options. Contact information, location, and license number are all provided. Ultimately, this allows a caregiver to see this information geographically (i.e. close to their residence or their worksite).

INTERACTIVE PARK LOCATOR

The City of Irvine has a wealth of parks and a plethora of recreation opportunities. However, like most cities residents and visitors do not have full purview of what is available to them. It is common for outdoor and recreation enthusiast to utter the refrain, "I wish I had known that was available to me." GIS is helping overcome this hurdle through an interactive Park Finder application. This app allows users to search parks by amenities, by name, by location, and link to any number of pertinent informational links.
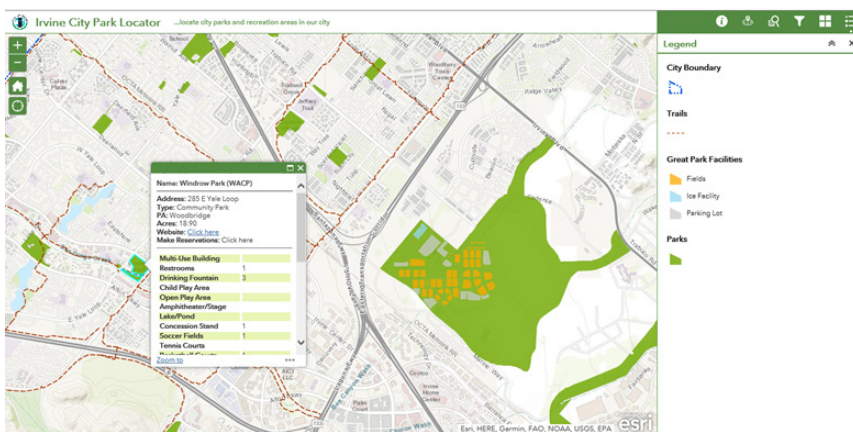
The successes and return-on-investment of GIS at the City is abundant. A few of the many other successes include; integration with the Lucity Asset Management System which enables staff to manage infrastructure more effectively, integration with the OnBase document management system enabling users to view documents based on geographic pertinence, and integration with the 911 system enabling for site specific dispatch ultimately saving time and lives.

GIS MASTERPLAN

Although, the City of Irvine GIS program has experienced success, the City realized that geospatial (GIS) data is becoming more and more important to achieving City goals. To ensure that the City's investment in GIS and data is optimized, the City contracted for a GIS Strategic Plan and Data Management Plan. The outcome was a year-long project to analyze current GIS use, data, processes, and potential GIS use to create a step-by-step plan to propagate GIS use and to optimize data and systems at the City. Multiple data-gathering techniques and assessment methodologies were used to identify City of Irvine current successes and future needs. Key methodologies included:

- **SIX PILLARS OF SUSTAINABILITY –** used to evaluate City of Irvine in regards to gaps and organize action items. The Pillars of GIS Sustainability are as follows:

  - **GIS GOVERNANCE –** how is GIS managed and maintained

  - **DATA AND DATABASES –** key data elements that feed the GIS

  - **PROCEDURES, WORKFLOWS, AND INTEGRATION –** how is the GIS being integrated with other systems and within the workflows of the organization

  - **GIS SOFTWARE –** the appropriate software for various types of users and needs

  - **COMPUTING INFRASTRUCTURE –** the appropriate hardware, network, and field tools

  - **TRAINING, EDUCATION, AND KNOWLEDGE TRANSFER –** ensuring that GIS is understood and that the organization has pervasive knowledge of the power of GIS and how to use it

- **VOICE OF THE CUSTOMER (ONLINE QUESTIONNAIRE) –** questionnaire to solicit the feedback of GIS users in regards to what works, what needs improvements, and unmet needs.

- **GIS BENCHMARKING –** analysis of City of Irvine's GIS program as compared to comparable organizations nation-wide.

- **KICKOFF MEETING AND SEMINAR –** discussion about the what, how, and why of the Master Plan.

- **KEY PERFORMANCE INDICATORS –** enabling City of Irvine with a set of KPIs to track success now and in the future based on the Six Pillars of Sustainability.

- **DEPARTMENTAL INTERVIEWS –** on-site interview with key users to determine an optimal move forward strategy and discussion of possible future uses of GIS.

The results of these data gathering techniques allowed for the creation of a pervasive plan of action that will ensure GIS growth and success.

"A GIS program cannot be run haphazardly. Following best practices and a playbook is key to success."

VISION FOR THE
FUTURE

City of Irvine's GIS is a success. As evidenced by the key performance indicators, the city has achieved implementation of the technology. However, the technology continues to evolve and advance. Many opportunities exist to expand the use of GIS within all departments and with the public. The GIS Strategic Plan identified over a hundred opportunities for further use of GIS. A few of these opportunities are highlighted in the graphic below categorized by the key areas of GIS sustainability.

GOVERNANCE

- Ensure GIS is meeting the needs of the user community through and annual user survey
- Conduct an annual return-on-investment analysis to quantify the benefit of GIS
- Update the GIS Strategic Plan annually
- Form a geospatial customer engagement team

TRAINING & EDUCATION

- Implement a wholistic education program to socialize the power of geospatial tools
- Ensure field staff have training on the latest data collection and visualization tools
- Promote the GIS annually on GIS Day in November

INTERNAL APPLICATIONS

- Implement Targeted Intranet Portals for Departmental GIS Use
- Implement GIS Enabled Operations Dashboards
- Implement an Emergency Operation suite
- Implement a Parks Suite (Great Parks and Community Services)
- Implement an Economic Development Suite

INFRASTRUCTURE

- Ensure that the GIS infrastructure is upgraded commensurate with GIS expansion
- Ensure big data readiness to include load and network capacity tests against high velocity, high volume, and high variety data streams.
- Implement role-based security
- Review and optimize imagery storage

DATA & DATABASES

- Acquire/develop all desired layers based on needs assessments
- GeoEnable IT Systems so that users can view their information in a geospatial context
- Create a Master Data List so that the user community have visibility as to what data is available
- Provide Metadata for All Users so they understand the derivation, accuracy, and other key information about the data they are using

PUBLIC FACING APPLICATIONS

- Implement a geospatial hub to promote and simplify GIS with the user community
- Home Ownership Associations (HOAs) Story Map for Community Development
- Implement a General Plan Story Map highlighting key elements of the City's General Plan
- Implement a Great Park Virtual Tour
- Implement an Irvine Green story map that highlights the City's green initiatives
- Implement Public Safety Story Maps (Meet the Officers, National Night Out, Cold Cases)
- Implement the My Government Services application that allows residents to identify key services in their area

THE **APPLICATION** OF
GIS IS **LIMITED** *ONLY* BY THE
IMAGINATION
OF THOSE WHO **USE** IT.
JACK DANGERMOND