



Agenda Report

21-1605

Agenda Date: 12/7/2021

INFORMATIONAL REPORT TO COUNCIL

SUBJECT

Informational Report Regarding Bi-Yearly Project Status Report of the GIS Services Program

COUNCIL PILLAR

Deliver and Enhance High Quality Efficient Services and Infrastructure

BACKGROUND

On October 29, 2019, Arini Geographics was awarded a contract for Enterprise GIS Consulting Services. The contract was awarded as a three-year professional services agreement for the initial term of the contract, with the option of one additional two-year renewal term. Council has requested a bi-annual project status report of GIS services. This is the fourth report.

DISCUSSION

With location a common attribute across numerous city services and assets, the City's Enterprise GIS Program is a framework of people, process and technology enabling geospatial and asset information across departments to be managed in a single system. Integrating this information and making it available to staff and the public enables operational effectiveness, data-driven decision making, cross-departmental and regional coordination, citizen engagement and transparency.

Efforts are focused on both projects and day-to-day operations. Despite challenges encountered due to COVID-19, there is significant progress for the current reporting period.

Projects - Highlighted project accomplishments during this reporting timeframe:

Project	Current Reporting Period	Next Reporting Period
infoMap 3.1 Upgrade	✓ Completed	
Streets Sidewalks Inventory	✓ Completed	
Mobile Map for PD	✓ Completed	
Police Records Management	✓ Completed	
Enterprise Permitting Integration	✓ Completed	
Streets Speed Limit Upgrade	✓ Completed	
Integrate 2020 Aerial Imagery	✓ Completed	
Basemap Operations Dashboard	✓ Completed	
Enterprise GIS Infrastructure	In Progress*	Completion Planned
Streets Trees Inventory	In Progress*	Completion Planned
Stadium COP V4 Upgrade	In Progress	Completion Planned

Various EAM Integrations	In Progress	Completion Planned
Add high-resolution aerial imagery	In Progress	Completion Planned

- Upgraded the new infoMap to version 3.1 which now includes functionality that helps City staff easily find information related to historic parcels and addresses, very useful for a multitude of City functions, especially permitting and public safety.
- Completed GIS inventory of over 423 miles of sidewalks lining the City streets, including segmentation by property boundaries (22,311 front of property sidewalk polygons). Also integrated a total of 4,123 ramp locations previously mapped, together with EAM-specific designed digital cartography (see the depiction below).



- Completed the Mobile (Multi-source) Map for 911 field operations, which is now running on all first responders Mobile Data Computers (MDC) and synchronized with the Computer Aided Dispatch (CAD) system.
- Completed Enterprise GIS integration and location awareness for the new records management system (RMS) for the Police Department, validating records location and significantly aiding research and reporting by various location-driven constraints and scenarios.
- Completed integration with the new Enterprise Permit Management System, which provides live location validation for new and more than 500,000 existing permit records, several ways of searching and mapping sites of interest, optimal routing for inspections, and an easy way to review historical records for properties and addresses through infoMap.
- Updated the speed limit attribute of the City Streets layer, based on the data from the new traffic signs inventory. The refresh improves the optimal routing functionality being used in public safety, traffic engineering, building inspection and code enforcement applications.
- Integrated the 2020 high-resolution aerial imagery into the City Enterprise GIS Basemap, also

available on infoMap 3.1 and MapSantaClara, <https://map.santaclaraca.gov>.

- Implemented a new Operations Dashboard available internally to City staff, which offers a near real-time visualization of edits done to the City Enterprise Basemap.

Planned activities over the next six months:

- Overhaul of the City Enterprise GIS Infrastructure with significant technology improvements to ensure higher availability and security, optimize performance and better support transactional GIS through multiple integrations. This major update is replacing the end-of-life underlaying technology, preventing potential business interruptions to the Enterprise GIS system and mission critical applications currently integrated with GIS (permitting, 911 dispatch, records management, publicly available apps and story maps, etc.). *Certain activities related to this effort will continue into the next reporting period to allow for a citywide engagement on the go-live event, the decommissioning of the previous GIS infrastructure and vendor assisted (Lucity/CentralSquare) EAM integration.
- Complete citywide GIS street trees inventory. Over 20,000 trees lining the city streets, including trees located on street medians and city property, have been mapped and photographed. Digital measurements of the tree height and canopy width have been recorded as attributes, the latter used to complete the EAM-oriented cartography (see depiction below). The measurement of the tree trunk diameter (also known as the diameter at breast height, DBH), requires more field sampling and, weather permitting, will continue into the next reporting period. *This activity does not affect the planned EAM integration tasks and timeline.



- Complete the upgrade to the Common Operational Picture providing live situational awareness to public safety activities related to events at the Levi's Stadium. This effort started in August 2021 to align with dependent technology upgrades and will continue to completion

throughout the next reporting period.

- Assist with the integration of the work order and computerized maintenance management system, part of the City's EAM, for most of the GIS inventories of Streets Division's asset classes: storm drain, traffic signs, city streets, sidewalks, streets and intersections.
- Add the 2021 high-resolution aerial imagery into the City Enterprise GIS Basemap, also available on infoMap 3.1 and MapSantaClara. This new natural color image is the result of the ongoing partnership with the County of Santa Clara, together with most of its constituent Cities and special districts, enabling the City to refresh this critical component of every map yearly at a very affordable price.

Day-to-Day Operations - Quality assurance and critical data updates are continually being performed in several areas:

Statistics and information related to Enterprise GIS activities can be found in the attached infographic (Attachment 1), indicating City Basemap updates since May 1, 2021, records count in the Enterprise Geospatial Repository (EGR) by department, as well as infoMap and MapSantaClara usage statistics by functionality and geography.

- **City Enterprise GIS Basemap** - specialized mapping system keeping track of the City's foundational map layers (addresses, streets, parcels, ownership, general plan and zoning designations, multiyear aerial imagery) and key-related attributes. From May 1, 2021 through October 31, 2021, over 2,500 addresses were updated.
- **MapSantaClara** - web-based application provides tailored GIS access and reporting functionality to the public. MapSantaClara received over 20,000 visits over the current reporting period.
- **Open Data Geospatial Portal** - web-based repository providing access to GIS data without the need to request such information, saving City staff time -<https://map.santaclaraca.gov/data>.
- **Story Maps** - specialized web-based GIS outlets that facilitate information dissemination and increase the level of service to the public, including Development Projects - <http://santaclaraca.gov/devprojects> and Live Traffic Cameras - <http://santaclaraca.gov/trafficcam>.
- **Public Safety** - many GIS interconnections and dedicated datasets both Fire and Police Departments, and are being maintained with regularity, including maps for the Computer Aided Dispatch (CAD) system and police mobile data computers (MDCs).
- **Enterprise Asset Management (EAM)** - key focus area enabling more effective management of City's assets to improve their utilization and performance, reduce capital and operational costs, and improve quality of service. City GIS is an integral part of the EAM Program as the system of record for all assets tracked.
- **Regional GIS Collaboration and Coordination** - collaboration with neighboring cities, the County of Santa Clara, and other government agencies to ensure regional timely and quality data acquisition and sharing. Through an ongoing agreement, City is receiving fresh annual high-

resolution aerial imagery, which is the foundational GIS layer for the City Basemap. A separate effort seeks standardization of GIS data layers for emergency response, including next 911 implementation.

- **Steady State GIS** - fulfilled numerous requests from various City departments, including a comprehensive analysis of potable and recycled water, sanitary sewer, and storm drain pipelines that categorized total length of pipelines by diameter and service areas, information which is being used for a citywide right-of-way fee study.

ENVIRONMENTAL REVIEW

This is an informational report only and no action is being taken by the City Council and no environmental review under the California Environmental Quality Act ("CEQA") is required.

FISCAL IMPACT

There is no cost to the City associated with this report other than administrative time and expense.

PUBLIC CONTACT

Public contact was made by posting the Council agenda on the City's official-notice bulletin board outside City Hall Council Chambers. A complete agenda packet is available on the City's website and in the City Clerk's Office at least 72 hours prior to a Regular Meeting and 24 hours prior to a Special Meeting. A hard copy of any agenda report may be requested by contacting the City Clerk's Office at (408) 615-2220, email clerk@santaclaraca.gov.

RECOMMENDATION

Note and file the Informational Report regarding the Bi-Yearly Project Status Report of the GIS Services Program.

Reviewed by: Gaurav Garg, Director of Information Technology/CIO

Approved by: Deanna J. Santana, City Manager

ATTACHMENTS

1. Infographic - Enterprise Geospatial Program Activity v2