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October 2, 2017

**ADDENDUM NO.1
REQUEST FOR PROPOSALS NO. 17-101
ENTERPRISE ASSET MANAGEMENT SOFTWARE SELECTION AND
IMPLEMENTATION SERVICES PROJECT
DATE DUE: OCTOBER 19, 2017 AT 4:00 P.M.**

Notice is hereby given that the City of Santa Ana Public Works Agency has made certain modifications, additions, and/or deletions, in the specifications to:
RFP No: 17-101 - ENTERPRISE ASSET MANAGEMENT SOFTWARE SELECTION AND IMPLEMENTATION SERVICES PROJECT. This addendum shall become a part of the original Request for Proposal.

RESPONSES TO QUESTIONS ASKED/CLARIFICATIONS:

1. May companies from Outside the USA apply for this?

Companies located outside the USA may apply.

2. Does the selected consultant need to come over there for meetings?

Yes, the selected consultant will be required to attend meetings and workshops on site.

3. Can we perform the tasks (related to RFP) outside USA?

Tasks that are not required to be performed on site (meetings, workshops, installations, etc.), may be performed anywhere.

4. Can we submit the proposals via email?

No, the RFP clearly states that you may not submit proposals via e-mail.

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5. Would the City consider proposals for only part of the scope? For example only Task One or only Task Three?

No, the City is looking for proposals from consultants that have the ability to complete all the tasks listed in the scope of work. Proposals that address only one task will not be considered.

6. "Task One" (P. 14) identifies existing assets, and priorities for "GIS data collection tasks". "Task Two" (P. 15) mentions developing EAMS workflows "for all identified asset groups based on priority". We assume those asset groups identified with the Task One description do not together comprise a complete list of asset groups to be included in the EAMS/CMMS implementation project. Can the City provide a complete listing of PWA asset groups that are to be included in the project?

This is the correct assumption. The City is currently unable to provide a complete listing of assets for the project and expects the selected consultant to use their experience in Public Works related asset management to complete this list during the course of the project. The City intends to negotiate with the selected Vendor to clarify the work performed based on the City's priorities for implementation.

7. The Description of Work – Scope of Services description (P. 13) mentions a "recently completed Enterprise GIS and Asset Management Implementation Plan project". Is there documentation from that project that can be shared with prospective bidders of the subject project?

Yes - Documentation from the Needs Assessment portion of the project is attached at the end of this addendum. While the Needs Assessment was performed as a citywide project, this project will focus solely on implementation in the Public Works Agency.

8. If the vendor does not offer concurrent or on-site license pricing will the city disqualify the vendor? If the agency will allow for named user pricing what is the estimated number of users for Back Office and Mobil Field Staff?

No, while the City desires the licensing models outlined in the scope of work, the City will not disqualify vendors that propose alternate licensing models. The amount of estimated users for implementing in a phased approach is currently unknown. The vendor may choose to propose a pricing structure based on the number of user accounts purchased, (10, 25, 50, 100 users, etc.) with price breaks as the amount of users increase. The City intends to negotiate with the selected Vendor to obtain the price structure that offers the best quality and value for the City.

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9. Is the stated budget of \$400,000 for services and \$75,000 for software inclusive of all three tasks mentioned under the Description of Work?

The City has set an initial budget of approximately \$400,000 for the implementation effort and \$75,000 for the acquisition of software licensing. The City will work with the selected Consultant to prioritize the work to ensure that higher priority projects are completed first and within the City's initial budget. The City is aware that a full implementation may exceed the initial budget and will allocate future funding as needed to complete the project.

All other terms and conditions remain the same.

Trevor Burgan
GIS Administrator
714-647-5657

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CITY OF SANTA ANA

ENTERPRISE GIS & ASSET MANAGEMENT

NEEDS ASSESSMENT REPORT

Version 1.0

Contents

Executive Summary..... 1

Needs Assessment Overview 3

Existing Environment 4

Key Findings 6

Management Initiative Needs 9

Application and System Needs 13

Data Needs..... 14

Data Maintenance Workflow Needs..... 16

Next Steps: Strategic Initiatives and Implementation Planning 18

Appendices..... 20

 Appendix A: Codes/acronyms definition 21

 Appendix B: Interviews and participants list 23

 Appendix C: Business functions summary 25

 Appendix D: Prioritized needs summary 28

 Appendix E: Departmental interview summary..... 38

 Appendix F: Departmental interview notes..... 65

Executive Summary

The City of Santa Ana (City), incorporated in 1886, serves as the financial and governmental center of Orange County, and an example of a city faithfully serving its citizens with public assets and vital services. The City also has been a long user of the Geographic Information System (GIS) technology and maintains physical assets to provide critical public services for residents, visitors, and businesses. The City also understands the present opportunities in implementing enterprise-level technologies in GIS and asset management practice to address the current challenges and barriers City staff face in performing required business functions and operational activities.

The City engaged Psomas to perform the needs assessment and implementation planning for GIS and Enterprise Asset Management (EAM) at the citywide level, with the following guidelines:

- Both GIS and asset management should be approached as an enterprise strategy.
- The GIS will serve as the primary asset registry.
- Data ownership and stewardship will be clearly defined primarily based on the time and place of its origin.
- Information access will be provided through secure but accessible computing solutions that include mobile and office computing devices.
- Citywide GIS and EAM will be supported by a clearly defined organizational structure with oversight, management, and technical advisory groups.
- Public Works and Planning will lead initial efforts in the citywide GIS and EAM implementation and establish enterprise framework and priority.

The purpose of the needs assessment is to identify the current environment in which the City uses GIS and manages public assets, and existing and future needs in citywide context, by 1) collecting, 2) synthesizing, 3) normalizing, and 4) analyzing the diverse needs and opportunities presented by City's stakeholders.

Key findings presented in this report

- The City currently has wealth of information collected and archived over the years that can continue to serve and benefit City operations.
- Although GIS is decentralized with key deployment at PWA, Water, and Police, the respective accomplishments represent a high level of proficiency.
- The GIS industry has matured into an everyday technology enabling the City to consider many alternatives and solutions that are specific and appropriate for the City of Santa Ana.

- Being a city with a rich and long history of public service, City's assets and infrastructure are in conditions that are open to opportunities for EAM implementation.
- The standardization of asset classification, which comes with EAM best practices, will enable dynamic tracking and valuation of City's assets and enhance City's fiscal accountability.
- City's staff presented the importance of technology and data required to serve the citizens with, over tools and information focused on City operations that occur behind the scene.
- There is an opportunity for the City to significantly improve the level of public service through enterprise GIS and EAM implementation.

Next steps in the strategic planning process:

The next steps in the enterprise GIS and EAM planning process are:

- Define strategic initiatives that guide the development of implementation projects.
- Assess and develop system design recommendations based on City's technology strategies and industry best practices.
- Prescribe implementation road map to accomplish goals, track progress, and monitor performance.

Needs Assessment Overview

The purpose of the needs assessment phase is to identify the existing GIS and asset management environment including processes, systems, staff activities, data, and policies. The assessment included review of existing information systems and the GIS technology environment. Interviews were conducted with nearly all City divisions to identify the diverse of business functions, and operations, and needs. The objectives of the enterprise needs assessment were to collect, synthesize, normalize, and analyze the diverse needs and opportunities presented by City stakeholders. The needs assessment phase included the following milestone tasks:

1. Orientation: open sessions to engage City stakeholders, presenting the project objectives, work plan, participation requirements, and expected outcome.
2. Pre-interview survey: online survey form collecting information on departmental environment in using GIS and asset management practices, prior to scheduled interviews.
3. Departmental interviews: conducted group specific interviews; refer to *Appendix B: interviews and participants list*, *Appendix C: business functions summary*, and *Appendix F: departmental interview notes*.
4. Data analysis: compile all data collected, synthesize, and normalize; refer to *Appendix E: departmental interview summary*.
5. Prioritize needs matrix: presents the prioritized needs in a) management, b) applications and systems, c) data, and d) maintenance workflows; refer to *Appendix D: prioritized needs summary*.
6. Aggregate needs assessment report

This report presents the prioritized needs and opportunities identified by the stakeholders with a focus on identifying practical approaches for the City to advance GIS and asset management. The findings from the needs assessment will be guided by City's strategic vision to derive at the most effective and sustainable implementation road map in deploying enterprise GIS and EAM program.

This report includes the following sections:

- Executive Summary
- Needs Assessment Overview
- Existing Environment
- Key Findings
- Management and Operational Needs
- Application and System Needs
- Data Needs

- Data Maintenance Workflow Needs
- Next Steps
- Appendices

The full participant's list for the needs assessment interviews is presented in *Appendix B: interviews and participants list*.

Existing Environment

The City of Santa Ana, incorporated in 1886, serves as the financial and governmental center of Orange County and an example of a city faithfully serving its citizens with public assets and vital services. The City is supported by 12 functional departments, of which 9 were engaged as key stakeholders in the needs assessment phase for the enterprise GIS and asset management planning.

Public assets and services are related to specific locations in the city. GIS can help manage location-based activities to optimize or enhance City services for the residents, businesses, and visitors alike.

The City has been a long user of GIS technology and has maintained critical public assets from day one. The City has also witnessed and employed numerous strategies and best practices throughout the years in managing geospatial assets. However, advancements in GIS and asset management technologies and best practices demonstrate a significant gap with the current city practices.

Presented below are the current environment in GIS and asset management practices.

GIS

City's GIS environment started in the mid-1990's in Public Works with the Bentley technology and solutions framework, utilizing MicroStation as the computer aided drafting software and Intergraph's GeoMedia for GIS. Currently, the City still uses MicroStation for drafting and designing, however, the City has migrated to Esri's ArcGIS suite of software while still supporting customized legacy database applications.

Applications

Below is the list of existing GIS and/or related applications:

- SAGIS viewer: ESRI ArcGIS Desktop and Server
- SAGIS map vault: Frontpage 2003;

Departments

- [City Attorney](#)
- [City Manager](#)
- [Clerk of the Council](#)
- [Community Development](#)
- [Finance and Management Services](#)
- [Fire](#)
- [Library Services](#)
- [Parks and Recreation](#)
- [Personnel Services](#)
- [Planning and Building](#)
- [Police Department](#)
- [Public Works](#)

- GovClarity: web GIS viewer hosted by Digital Map Products
- ArcGIS online: Esri
- Legacy database applications
 - Parking permit database: Access
 - EEDMS application: HTML5/ASPX
 - Sanitation Inspection: Access
 - Drainage fee assessment application: Access

Although not a GIS application, SAPIN (Santa Ana Property Information Network) is a custom-built system used by the City to maintain property, permit, licensing, and inspection data. The function of SAPIN and the data it contains were identified as key opportunities for improvement with GIS and a land management system.

Refer to *Appendix D: prioritized needs summary, application and system needs* for a list of existing software and applications related to the City's GIS infrastructure.

Data

The GIS Administrator for Public Works Agency maintains the SAGIS database consisting of a geodatabase, layers, and files consumed by the GIS applications used by the City. Data needs including the existing GIS data inventory is presented in *Appendix D: prioritized needs summary, data needs*. The GIS data is stored in different locations and in multiple data storage types: i.e., File Geodatabase, Shapefile, Enterprise Geodatabase, etc. More importantly, much of GIS data maintenance activities occurs in ad-hoc nature and without standardized workflow procedures. The primary base map layers are proactively maintained by the GIS Administrator.

Operation, resources, and support

The information technology hardware and software are maintained by the PWA GIS Administrator using virtualized servers and license managers (Esri suite of software, MicroStation.) The GIS Administrator also perform technical support tasks for computing equipment and other technology components, such as printers.

The Police Department and the Water Resources Division perform GIS data development, applications development, operations, and support independently of the GIS Administrationr using internal staff and contractors. These groups also purchase and maintain GIS related software and data layers independently.

Asset Management

Asset management has always been a core business function. The City has adapted various best practices, trends, and tools to maintain and sustain City's public assets throughout the long history of service. The list below presents the current asset management environment and existing practice/processes.

- Each Agency develops and maintains public assets related to the respective business functions.
- The asset data is developed and maintained in various formats using different technologies.
- Much of asset data is maintained via ad-hoc processes throughout the City. The Police Department and Water Resources Division have standard maintenance procedures, however, they are performed as general practice and not based on documented standards and workflows.
- City's public asset inventory currently is not comprehensive, complete, nor unified in a common format or system.
- Asset condition are predominately unknown or outdated.
- The city does not have an enterprise asset management (EAM) strategy to enable the proactive and optimized maintenance or replacements of assets.
- City's asset valuation requires merging of numerous information from various sources, which requires manual compilation, conversion, and integration to perform.
- City's EAM environment can benefit greatly by implementing one of the industry leading commercial off the shelf (COTS) solutions that have proven functional capabilities and economic viabilities.

Refer to *Appendix D: prioritized needs summary*, under *data needs*, for the full list of asset data City currently maintains. The data inventory presents both the GIS and asset characteristics as it can be either GIS, asset, or both.

Key Findings

The needs assessment phase identified the current environment at the City in GIS and asset management practices. Psomas analyzed the information collected during the needs assessment process to identify opportunities for enhancing GIS and asset management at the City.

GIS

The City has been adopting and using various GIS technology platforms for past 25 years. The historic approach and implementation of GIS in City business and operations have been decentralized and predominantly departmentally focused. The resulting fragmented GIS has significant redundancies, inadequate collaboration, and is not achieving the quality and economies of scale that an enterprise GIS could provide. Generally, departments are open to new opportunities that can enhance GIS capabilities and efficiency. The key findings from the needs assessment are presented below.

- The PWA GIS Administrator has a long history of serving City's GIS operations, resulting in for institutional and technical knowledge base that will provide critical support for the enterprise GIS planning and implementation.
- The City has a wealth of information collected and archived over the years in various forms and systems. Much of the information is geospatial in nature that can better serve City operations when incorporated into citywide GIS and information management environment.
- Although GIS is decentralized with key deployments at PWA and Police Department, there is a respective history of usage, expertise, and knowledge, as well as exposure to current GIS industry best practices.
- Many business functions and operational activities already use GIS, reducing the burden of change management when enhanced GIS is introduced and deployed. A significant number of these business functions have workflows that can be integrated with GIS for automation in data collection, access, and maintenance.
- The GIS industry has matured into an everyday technology for public agencies and citizens alike providing a variety of strategies, solutions, and successful deployment case studies. The proven strategies provides alternatives and solutions which are specific and appropriate for the City of Santa Ana.
- City assets are geospatial in nature and the asset management practices will benefit from a fully deployed enterprise GIS by providing the most accurate and the latest information. The executive management and Council members could access management dashboards and customer case information from an integrated GIS program.

Asset Management

Although the City has faithfully and adequately been maintaining public assets over the years, the current practices do not meet the industry standards in best practices, strategies, or technology applications to proactively manage 1) comprehensive inventory, 2) condition assessment, 3) proactive maintenance, 4) optimized replacement, and 5) fiscal accountability. The key findings from the needs assessment are presented below.

- The City has a long and rich history of serving the citizens with vital civic services with critical public assets and infrastructure. This also means that these public assets and infrastructures are in aged conditions that maybe open to opportunities for EAM implementation.
- By using GIS as the primary asset registry, different agencies and departments can continue to utilize the best-in-class solutions to manage assets specific to individual business units, with assurance of seamless connection and integration with GIS.

- EAM system will generate, track, update, and archive information associated with City's maintenance activities through computerized maintenance management practice.
- Systematic identification and management of assets will enable activity and cost tracking, asset depreciation based on remaining useful life to enhance City's fiscal accountability.
- There are many available EAM solutions with a proven history of successful deployment and operations for cities comparable to Santa Ana. This creates an opportunity for the City to select the most appropriate solution for the City in magnitude and complexity of implementation and ongoing operations.
- Based on the level of services the City is currently providing, there is an opportunity for the City to significantly enhance its services through enterprise EAM system and practices.

Management Initiative Needs

The management initiative needs represent opportunities that will address and solidify the managerial and operational oversight, through policies and standard operational procedures (SOP), providing the framework for enterprise level technology deployment and proactive change management. These needs are equally, if not more, important than the technologies themselves; without proper management and operational oversight, technology investments can face barriers and challenges detrimental to their progress.

These initiatives are representative of views and needs from the City staff perspectives and will need to be further validated and refined by the City's vision and strategic direction; they are not a list of recommendations at this time. These initiatives are also presented below and in *Appendix D: prioritized needs summary*, supported by the interview notes and analysis presented in *Appendix E: departmental interview summary* and *Appendix F: departmental interview notes*.

The prioritization process considers various factors to a given initiative. Listed below are the prioritization criteria used in the needs analysis process; systems, applications, data, and maintenance workflows all are prioritized through the same criteria and process.

- *Specific technology implication*: type of technology association to either GIS, EAM, or both.
- *Baseline assessment*: current state and/or progress, whether existing and meeting needs, existing but require enhancements, or does not currently exist or need full redevelopment.
- *Relevance and Importance*: indicates the interview group who identified and agreed with the need.
- *Potential Benefits*: indicates the level of potential benefits based on the following sub categories with a scale from 0 (no benefit) to 5 (high benefit):
 - Citywide enterprise value
 - Enhance service level
 - Improve efficiency
 - Cost savings
- *Cost*: indicates the level of over all potential cost in addressing the need, both in terms of effort (i.e., man-hour) and cost (monetary.)

The management initiatives are listed below with a) primary/originating agency, and b) descriptions.

1. Centralized information management strategy - Citywide

Develop citywide information management strategy (producing policies and SOPs) that will over time eliminate silos and duplicate systems and data that require manual and error prone management practices; standard practice in data maintenance workflow and automation.

2. Develop CIP information management process – Public Works

The CIP process engages many stakeholders within the City, generating mission critical data throughout its business workflow processes. The information produced and captured in this process must be managed via standardized data flow process running concurrently to the business workflow processes. Ex: automate “intelligent” CIP data to interact with “intelligent” pavement asset data to coordinate citywide requirements, restrictions, and activities.

3. Develop standard business workflow process for CIP and private development – Public Works

Develop standard business workflow process for CIP and private development, from inception, planning, design, development, construction, and to recording and maintenance, to ensure that parties involved in the overall process adheres to SOPs designed to benefit and protect the City and its citizens. Ex: design/review process that includes an official, predefined, and standardized constructability review.

4. Streamline business license application process at public counter – Public Works

Review, assess, and develop new and streamlined workflow process for business license application issuance at public counter. Currently, applicants must go through a duplicative filing and payment process requiring both the hard copy application and manual data entry.

5. Define Key Performance Indicators (KPI) for City services – Planning and Building, Public Works

Verify and/or develop Key Performance Indicators (KPI), based on the City’s Strategic Plan, other management guidelines, and Agency-specific operational priorities; management of these KPIs can be supported by technology-based solutions, such as Management Dashboard, associated reporting methodology, and monitoring procedures.

6. EAM vision, strategies, and priorities - Citywide

Enterprise-level strategy and practical approach for prioritizing City's assets, criticalities of failure to maintain, and methodology to perform optimized replacement and maintenance. In coordination with (and in preparation for) the EAM system deployment, the City needs to develop Citywide standards for the asset definitions, categorization, required data attributes, conditional assessment policy, maintenance work order processes, and other necessary management oversight to successfully deploy the enterprise asset management program.

7. Develop standard business workflow process for inspection tasks – Public Works

Currently, inspection requirements and activities are performed across the Agencies and Departments, creating opportunity for citywide workflow process that enables data and resource sharing, as well as conflict management protocol; with technology integration, many of the interaction points can be automated and reconciled dynamically and instantaneously with mobile computing capability and equipment.

8. Consolidate Parks maintenance contracts – Parks and Recreation

The City's park maintenance contracts are separated by districts, to promote competitive bidding, high level of services, and flexibility in coverage among multiple contractors. There is an opportunity to combine contracts related to a common asset category to enhance accountability, i.e., combined tree and irrigation contract can place the responsibilities for any adverse conditions with the tress within City park system.

9. Develop technology training strategy and curriculum - Citywide

As enterprise-level technologies and corresponding applications are integrated with the business and operations of the agencies and departments, City staff no longer has the option of being not proficient in using these technology solutions. It also requires that the City develop a comprehensive technology training strategy and curriculum to provide opportunities for every user to reach necessary competency and proficiency.

10. Standard procedural documentation – Planning and Building

The City has many SOPs being utilized, refined, and developed continuously to perform tasks and activities in providing City services. Many of these are documented, while some are verbally communicated or reside with individual experts throughout the City. The City can improve standardized operations and build in accountability with developing official catalog of SOPs that are readily accessible to City staff, as well as integrate into workflow processes. This catalog can be further enhanced with predefined checklist per each mission critical workflow processes.

11. Information sharing policy with the County - Clerk

Orange County has the responsibility of ownership and stewardship of regional data that benefits all cities under its jurisdiction. For example, the County has the official duty as the assessor and the public recorder for properties, parcels, and businesses located within the County boundary. The City currently has the information sharing relationship with the County; the City should transform this into an information sharing policy with official standards and agreements.

12. Procure and deploy credit card payment – Planning and Building

The City currently does not accept credit card payment for various planning fees over the counter. Enabling the credit card payment will enhance public service through improved convenience.

13. Review property notification process for applicants - Planning and Building

The City currently has a tool in GovClarity to select properties and generate notification mailing list, which is not available to applicants as a tool or an available City service; review the current process and identify the need and viability of adding this tool/service as fee based option for the applicants.

14. Initiate knowledge/change management program - Planning and Building, Parks and Recreation

Initiate a knowledge management program, with specific policies and SOPs, to address the changing demographics of the City staff, their expertise, and institutional knowledge; there are many

examples of City experts retiring/exiting without proper process to transfer City's institutional knowledge, resulting in lost expertise, knowledge, and undocumented information.

15. Develop workflow process for new assets captured from private development – Public Works

There is a process in which the City currently captures new City assets added by private development; however, without policies and SOPs to guide and ensure. This process should be standardized and complied with, using technology -based process automation.

16. Staffing resource evaluation and augmentation - Planning and Building, Public Works

Empty and/or vacated positions are not backfilled, creating resource restrictions to perform necessary tasks and functions; the City needs to perform a review of the current staffing resource level and identify gaps to achieve performance goals and KPIs, along with strategies for temporary augmentation when necessary.

17. Establish regional EOC data sharing cooperative - Police

Establish regional data sharing agreements to establish, maintain, and share GIS data representing the entire Orange County area. Potential collaborators include OCFA, Orange County Sanitation District, and other private service providers.

18. Unify data workflow between Cityworks and InfraMap – Public Works

Cityworks and InfraMap are different software applications however whose functions in managing data workflows can be unified for greater efficiency, higher data quality, and eliminating error-prone maintenance activities.

19. Enhance OCFA coordination - Planning and Building

The City requires information from OCFA to comply with reporting regulations and other assessment, i.e., annual inspection records. This data coordination can be enhanced with standards and agreements for the data to be readily available for download.

20. Review and assess preventive enforcement and outreach workflow process - Planning and Building

The City should review and assess the viability of developing and implementing a citywide preventive enforcement and public outreach program. Efficiencies could be achieved by consolidating the City's comprehensive data on complaints, service requests, code violations, and inspections.

21. Asset/financial data reconciliation (with Finance) - Public Works

There are agencies and departments who are required to report to Finance for asset valuation and amortization. This process uncovers differences in values, and requires manual reconciliation during every reporting period. The City should perform baseline reconciliation of asset data and valuation to improve future reporting process and accuracy.

22. Increase internal GIS and EAM resources and capabilities - Public Works

The City should internalize more of the core GIS and asset management capabilities since these are critical expertise to planning, management, and operations of City services, and are persistent

activities. The City must assess and procure the necessary staffing resources, and technical capabilities, to deploy and sustain GIS and EAM at the enterprise level.

Application and System Needs

The application and system needs are represented by technology tools, in commercial software and custom-developed applications, and necessary technology-enabling initiatives to advance implementation and usage of the technology tools. The needs assessment process identified numerous application and system needs, which are then normalized and prioritized, resulting in 83 specific needs as presented in *Appendix D: prioritized needs summary*. As indicated in the appendix, and due to the intimate connection between GIS and EAM drivers in City's business functions, many of the needs are serving and/or impacting both technology platforms.

Presented below are three major categories of the application system needs, their descriptions, and top five needs in each category as representative examples. As with the management initiative needs, these technology components are views and needs from the City staff perspectives and will need to be further validated and refined by City's vision and strategic direction.

1. Technology initiatives

The technology initiatives are designed to ensure proper deployment and/or enhancement of mission-critical technology elements in City's operations, corresponding to components identified as application and system needs. Listed below are representative samples derived from the needs assessment process.

- Enterprise GIS implementation and deployment: enhance current level of GIS deployment to citywide and enterprise implementation.
- GIS-EDMS integration – enable seamless and automated link between GIS and EDMS (Laserfiche) with appropriate maintenance workflows.
- EDMS deployment – fully deploy Laserfiche for all departments and for all document types that are required by City business.
- Select and deploy SAPIN enhancements/replacement – replace the existing permit management system in SAPIN with commercial software package that can extend enterprise capabilities in other technology areas of City requirements.
- Procure and deploy EAM system – select future EAM system based on carefully defined City requirements; procure and deploy at citywide level based on predefined implementation plan.

2. Software procurement or maintenance

The software procurement or maintenance identifies the software packages provided by commercial vendors, requiring either new procurement or ongoing maintenance, in support of City's business and operations. Listed below are representative samples derived from the needs assessment process.

- Laserfiche - enterprise EDMS
- AppOrder – MySantaAna
- SAPIN - enterprise permit system
- GovClarity - GIS Viewer
- TriTech – Computer Aided Dispatch system

3. Application development or enhancement

The application development or enhancement is defined by customized application tools, to be either newly developed or enhanced, and to be integrated with City's workflow processes. Listed below are representative samples derived from the needs assessment process.

- One click parcel report – generates a comprehensive report for selected parcel(s), displaying all available attributes with flexible/collapsible categories, and generate a hardcopy report.
- Citywide GIS portal/viewer – provides comprehensive and unified access to all available GIS data.
- CIP planner/viewer – provides capability to access, analyze, and coordinate on CIP planning, specific information, schedule, and progress, deployed as an extended module to the enterprise GIS viewer, replacing existing Access database application.
- Service request module– provides unified access to City's service request database; replace current Access databases separately maintained by different departments and/or consultants.
- GIS mapping/printing (predefined templates) – selectable map templates predefined for specific thematic and functional requirements, i.e. this is an enhanced function to map printing tool provided with the citywide GIS viewer

Data Needs

In the context of citywide GIS and EAM implementation, data is the most critical component that drives the applications and systems in performing necessary activities, ultimately supporting the business functions for agencies and departments. Consequently, proper management and maintenance to ensure the highest level of accuracy, currency, and accessibility are the foundation of the successful enterprise GIS and EAM program.

The data needs are represented by information that serve as fuel for the technology tools. The needs assessment process identified 106 prioritized data needs as presented in *Appendix D: prioritized needs summary*. As indicated in the appendix, and due to the intimate connection between GIS and EAM drivers in City's business functions, many of the needs are serving and/or impacting both technology platforms. It is likely that there are other data needs not captured during this needs assessment process; the implementation, deployment, and sustained usage of GIS and EAM system will uncover and necessitate additional data requirements.

Presented below are three major categories of the data needs, their descriptions, and top five needs in each category as representative examples. As with all other prioritized needs, these are listed based on the City staff perspectives and will need to be further validated and refined by City's vision and strategic direction.

1. Basemap data

The basemap data and layers are primarily GIS information that forms the geospatial foundation for all other spatial data, including City's assets. The ownership for these layers are predominately external to the City. For example, Orange County serves as the primary owner of landbase data; federal agency owns and updates the demographic and census related data layers. The primary need for these layers are the standard process by which the City obtains their timely updates, and SOP in maintaining City's repositories and archives. Listed below are representative samples derived from the needs assessment process.

- Landbase (parcel/address/owner)
- City's jurisdictional boundaries (zoning, land use, etc.)
- Aerial orthophotos and imagery
- Demographic/Census information
- Seismic hazard layer

2. GIS data

The GIS data refers to any information that is primarily defined by its location, of which the ownership belongs to the City. Although City's assets also fall within this generic definition, the data needs under this category is limited to non-asset specific information. The prioritized samples listed below show the perceived importance of GIS data required to interact with and serving the citizens, over GSI data required for City operations that may happen behind the scene. Listed below are representative samples derived from the needs assessment process.

- Permit data
- Complaints data

- Traffic accident/collision data
- Enforcement data/history
- Illegal discharge records

3. Asset and management data

This data category is defined by actual assets (inventory) and management data (conditions and maintenance) supporting the overall EAM. As with the GIS data identified previously, the prioritized asset data listed below show the perceived importance of information necessary for proper management/maintenance of assets, over the data required for actual definition and inventory of City assets. Listed below are representative samples derived from the needs assessment process.

- CIP data
- Street pavement moratorium
- Service request call log
- Inspection records
- Maintenance records

Data Maintenance Workflow Needs

All data serving the citywide GIS and EAM program require proper maintenance and management. This needs assessment process identified the data maintenance processes that are readily and clearly defined as critical workflows that require either full development or additional enhancements. There are 29 specific needs as prioritized in *Appendix D: Prioritized needs summary*. As with other needs defined previously, many of the workflows are serving and/or impacting both technology platforms. And because of this characteristic, the majority of the data maintenance workflow needs (70%) address combined needs for both GIS and EAM aspects of the data set. The remaining 30% of the workflows are focused on improving the quality, currency, accuracy, and relevancy of the citywide GIS data infrastructure.

Presented below are two major categories of the data maintenance workflow needs, their descriptions, and top five needs in each category as representative examples. As with all other prioritized needs, these are listed based on the City staff perspectives and will need to be further validated and refined by City's vision and strategic direction.

1. Combined GIS/EAM integration

The combined GIS/EAM integration and sustained usage require data maintenance workflows involving multiple data sets and business processes. Listed below are representative samples derived from the needs assessment process.

- Incident/service request/complaints tracking/update
- Contractor provided asset inventory and maintenance data (updates)
- Asset maintenance tasks, schedules, and updates
- Pavement/sidewalk data update
- Traffic/transportation asset/GIS data update

2. GIS data enhancement

The GIS data enhancement addresses the data maintenance workflows focused on improving and enhancing the citywide usage of GIS through timely and accurate data updates at an enterprise level. Listed below are representative samples derived from the needs assessment process.

- SAPIN (permit, license, inspection, etc.) data updates
- EDMS updates with new documents; notification
- All governmental and jurisdictional areas changes
- Manage parking permit requests and issuance
- Private development project information update

Next Steps: Strategic Initiatives and Implementation Planning

The next phases in the strategic planning process will produce strategic initiatives and implementation planning objectives; City has identified the following visioning guidelines:

- Both GIS and asset management should be approached as an enterprise strategy.
- The GIS will serve as the primary asset registry.
- Data ownership and stewardship will be clearly defined primarily based on the time and place of its origin.
- Information access will be provided through secure but accessible computing solutions that include mobile and office computing devices.
- Citywide GIS and EAM will be supported by a clearly defined organizational structure with oversight, management, and technical advisory groups.
- Public Works and Planning will lead initial efforts in the citywide GIS and EAM implementation and establish enterprise framework and precedence.

Strategic Initiatives

Strategic initiatives are derived from City's visioning guidelines, and are designed to address citywide objectives for GIS and EAM through a framework of standards, processes, information repositories, and information systems. Each initiative will be expanded during the next phase of strategic planning to define implementation projects that are manageable implementation components.

The following are the strategic initiatives for the citywide GIS implementation.

- Institutionalize the City's information through comprehensive and unified data management
- Increase efficiency of work processes; eliminate duplications in data and effort
- Standardize and automate business and data maintenance workflows

And the following list presents strategic initiatives for EAM deployment.

- Maintain up to date and accurate asset inventory and condition assessment
- Manage assets to maximize their useful life, value, and optimized replacement
- Provide highest level of services through City's public assets

Implementation Planning

The findings from the needs assessment phase, guided by the strategic initiatives, will be transformed into practical and focused "projects" through implementation planning process. These implementation projects are defined by the following characteristics.

- Clear objectives and defined deliverables/expected outcome
- Self-contained set of required tasks with assigned responsibilities
- Corresponding work plan and schedule that fits into the overall implementation road map
- Planning level budget to identified the required funding

The final phase of the planning process brings alignment to the City's goals and objectives for the enterprise GIS and EAM, with an actionable implementation road map, supported by phasing schedule for implementation projects. The final strategic plan will compile goals, strategies, and an implementation plan into a document that can serve to inform external stakeholders and as a unifying prescription for City's internal stakeholders.

Appendix A: Codes/Acronyms Definition

Needs Category	Code
Management, Policy, Procedural, Standards	MPS
Systems, applications, and tools	SAT
Data, information, and documents	DID
Miscellaneous	MCS
Interview Groups	Code
City Manager's Office	CMO
Clerk of the Council	COC
Community Development Agency	CDA
Departmental Traffic Order	DTO
Finance and Management Services	FMS
Parks and Recreation Agency - Maintenance	PR
Planning and Building Agency - Administration	PBA
Planning and Building Agency - Building Safety	PBB
Planning and Building Agency - Code Enforcement	PBC
Planning and Building Agency - Planning	PBP
Personnel Services	PS
Police	PD
Public Works Agency - Construction	PWC
Public Works Agency - Development	PWD
Public Works Agency - Engineering	PWE
Public Works Agency - Maintenance	PWM
Public Works Agency - Traffic & Transportation	PWT
Public Works Agency - Water	PWW
Other Acronyms	Code
Americans with Disabilities Act of 1990	ADA
Best Management Practices	BMP
Comprehensive Annual Financial Report	CAFR
Closed Circuit Television	CCTV
Capital Improvement Program/Project	CIP
Computerized Maintenance Management System	CMMS
Customer Relations Management	CRM
Departmental Traffic Order	DTO
Electronic Document Management System	EDMS
Enterprise Asset Management System	EAMS
Fats, Oils, and Greases	FOG
Geographic Information System	GIS
Global Positioning System	GPS
Information Technology	IT
Key Performance Indicator	KPI
National Pollutant Discharge Elimination System	NPDES
Orange County Fire Authority	OCFA
Pavement Condition Index	PCI
Pavement Management System	PMS
Regional Water Quality Control Board	RWQCB
Request for Council Action	RFCA
Request for Proposal	RFP
Right of Way	ROW or R/W
RTA Fleet Management Software	RTA
Supervisory control and data acquisition	SCADA
State Water Resource Control Board	SWRCB
Standard Industrial Classification	SIC
Storm Drain	SD
Scope of Work	SOW
Traffic Management Center	TMC
Underground Service Alert	USA
West Coast Arborist	WCA
Water Quality Management Plan	WQMP