

City of Beverly Hills
Public Works Services Department
345 Foothill Road
Beverly Hills, CA. 90210

Infor (Hansen) Computerized Maintenance Management System

*Request for Proposal For
Infor System Re-implementation and Optimization Support*

December 2014

I. Introduction

The City of Beverly Hills Public Works Services (PWS) Department is requesting proposals from qualified, interested firms to provide professional services for the upgrade, re-implementation and optimization of the City's Computerized Maintenance Management System (CMMS) system, Infor (Hansen). This RFP describes the required plan, scope of services, schedule, and the selection process.

II. Background

The City of Beverly Hills initially implemented Hansen CMMS in 1997 primarily for water asset management. In 2009, the City upgraded to the Hansen 8.x platform and expanded the assets under management to include water, storm water, streets, sewers, physical plant, work order management, inventory, and GIS. While much progress has been made, the City has not fully leveraged the potential of a comprehensive asset management and work order management system. This engagement will re-implement the system to create an enterprise asset management and work order management system.

In 2013, a gap analysis was conducted to detail what actions would need to be taken to fully implement and utilize the Infor system for all six divisions of Public Works Services Department (PWS). Exhibit A is the report for this gap analysis. It is the intent of this RFP to acquire consultant services to assist PWS in implementing the recommendations from this report.

III. RFP Hansen Optimization Specifications

General: The City of Beverly Hills Department of Public Works Services has Hansen 8.2 CMMS system with ArcGIS. The City would like to upgrade to the newer version of Hansen and optimize its use with industry best practices in Asset Management. The Hansen system is used across the majority of the Public Works Services Department but the system is not being fully utilized by all the work groups. In some cases the assets have not been synced from GIS to Hansen. The Department of Public Works Services seeks a qualified firm to perform the following tasks in conjunction with City staff in an effort to upgrade and optimize its Hansen 8.x.

Please provide a proposed methodology, schedule, and costs based on the following approach:

Task 1 – Project Meetings

Task 1.A. Kick-off Meeting

Consultant will meet with the City staff (Project Team) in a one 1-hour Kickoff Meeting to review and discuss the scope of work, the format of deliverables, levels of detail and the project schedule.

Consultant and the City Project Team will also discuss and identify the staff to participate in the Workshops (Task 2). The Kickoff Meeting will be used to discuss the high level departmental goals for the Public Works Services Department and the specific business interactions with customers and other divisions within the City.

Consultant will work with the Hansen information already provided to help set up the configuration needs and begin to develop the configuration document. The primary deliverable of this effort will be a comprehensive project plan that includes activities, deliverables and deliverable dates. Project teams will be identified, roles and responsibilities will be discussed, and a project governance structure will be detailed.

Task 1.B. Project Update Meetings

Consultant will meet onsite with the City Project Team monthly (or more frequently) throughout the duration of the project to provide updates on project progress and to discuss issues, concerns, and strategic direction. Deliverables include regular status reports, issue logs, change order management, escalation, etc.

Task 2.A. Service Request Code Development

Consultant will facilitate a series of workshops to review the existing configuration, service types and Hansen codes and define the final codes for service requests that are input to Hansen. The City will define the initial list of codes to be used in Hansen with the help of the Consultant. The workshops will be an opportunity to build consensus and establish the final pick list of service type codes used in the various system modules of Hansen, set the default information in Hansen and associate the codes with the appropriate asset types. The information from these workshops will be used by the Consultant to configure Hansen and to update the Configuration Management Document. Deliverables include documentation to facilitate the workshops including existing configurations, best-practice configurations, and decisions made by the group. Final documentation that details the production configuration will be placed into the Configuration Management Document. Consultant is also expected to implement the final configurations within the system for all of the modules.

Task 2.B. Activity Code Workshops

Consultant will facilitate a series of workshops to review and update the conventions for using service requests and work activity codes in Hansen. The workshops will be an opportunity to align work activity and problems with the asset types and build consensus on the final pick list of codes used as work activities. There should be an allowance for additional follow-up meetings with individuals or small groups to perform field observations as necessary. The information from this workshop will be used by the Consultant to configure and to update the Configuration Management Document. Deliverables include documentation to facilitate the workshops including existing configurations, best-practice configurations, and decisions made by the group. Final documentation that details the production configuration will be placed into the Configuration Management Document. Consultant is also expected to implement the final configurations within the system for all of the modules.

Task 3 – Prepare Draft Updated Configuration Management Document

Consultant will update the Hansen Configuration Document based upon information discovered during the workshops. This document will capture the configuration decisions that were made during the workshops and incorporate those into the Configuration Document originated with the City Project Team. Consultant will meet with appropriate City staff to assess the current Hansen architecture. Consultant will update the Configuration Document based on the existing system architecture and work with City staff to review the configuration and document changes to prepare a final Configuration that is appropriate for the City's Public Works Services workflow and dataflow activities. Formal acceptance of the Configuration Management Document is the primary deliverable of this activity.

Task 4 – Present Final Configuration Document

City will review the draft version of the Configuration Management Document. Consultant will present the final Configuration Document to the City Project Team for discussion during a final meeting.

Task 5 – Implementation and System Update

The consultant will take the lead in upgrading the Hansen software, hardware, and databases to the latest appropriate versions. Consultant will take the lead on the software setup and configuration of the new system, including testing and validation. Consultant will also be the main contact for the City in defining the hardware/software requirements, system testing, and implementation of the system.

Consultant will take the lead in upgrading existing Hansen add-ons and plugins to make them compatible with the new version of the Hansen software. Based on agreed-upon

software and database requirements, consultant will specify the appropriate hardware and compute environment for the system. Consultant will take the lead on system setup and configuration of the upgrades, including testing and system implementation. The City is using the following add-ons:

1. GIS Map Drawer
2. Inventory Control
3. GIS Administrator
4. CMS (Comcate) API integration

The Consultant shall update the Hansen System based on the requirements defined in the Configuration Management Document and provide the following services:

1. Develop an asset management plan and staffing requirements to support the plan.
2. Configure all modules in accordance with Configuration Management Document.
3. Implement comprehensive training plan to ensure all appropriate users are able to leverage the system.
4. Define and implement work order and asset management best-practices procedures in concert with City staff.
5. Link GIS-based assets with work order process to ensure that work orders are matched with assets.
6. Design and implement a process that synchronizes GIS Data with Hansen on a regular and repeatable basis. It is desired to have the synchronization performed as a job during off-peak hours.
7. Working with the City's GIS team design and implement a process to make GIS data available to both the asset management system as well available to the enterprise GIS system.
8. Design and implement a process that synchronizes wastewater CCTV data with the assets in Hansen on a regular and repeatable basis. It is desired to have the synchronization performed as a job during off-peak hours.
9. Document a plan to edit GIS data in a versioned SDE environment. This environment will need to be implemented using current system resources. The respondent must work with Information Technology to agree on a configuration that will meet the needs of The Department of Public Works Services while adhering to IT Policies.
10. Develop and document data models that will be configured and tracked in the Hansen system as well as the GIS.
11. Prepare an asset hierarchy for City assets and a definition of each asset class that the City currently owns and operates.
12. Prepare a configuration management document for the Hansen System that

documents all data standards and current configuration at the completion of the system update and implementation.

13. Prepare and deliver a training program for all of the above tasks so that The City of Beverly Hills can own all steps in the business process.
14. Provide On-Call support of Hansen and associated systems.

IV. Proposal Schedule and Requirements

Proposals shall not exceed fifteen (15) pages, exclusive of cover, dividers and resumes. Five copies of the proposal shall be provided with the cost proposal in a separate, SEALED ENVELOPE. Proposals must be received by **2:00 p.m. on Friday January 30, 2015**, Beverly Hills City Clerks Office, 455 Rexford Rd, Beverly Hills, CA. 90210. Attn: Melonie Alvarez.

For consideration, the Consultant's proposal must include the following:

1. Provide a summary of the Consultant's experience and similar projects (minimum of 3 distinct projects) directly applicable to the proposed scope of work.
2. Provide a description of the management team and key project team members, including professional qualifications, tenure of management, and ownership of the participating Consultant. Furnish references.
3. Identify all sub-consultants proposed for the project design team, with their qualifications. Furnish references.
4. Provide a description of the Consultant's approach to the project. Identify key activities and how the Consultant's approach will ensure a quality product and timely and accurate completion of the project.
5. Provide a fixed-price fee for all services that includes an hourly rate not to exceed basis for all services detailed in this document. The Consultant rates shall include markup that will be applied to all fees for any additional services and shall be compensation for all costs and expenses incurred but not limited to labor and materials of all employees and all other persons retained by Consultant, travel expenses, long distance telephone calls, word processing, duplicating and all other items of general overhead including documents and drawings as described in the performance of the Scope of Services. The amount of the contract will be subject to negotiation and will be based upon the Consultant's rate schedule.
6. Provide a statement of Professional Liability Insurance for the accuracy, validity and reliability of services.
7. The Consultant shall maintain Professional Liability, General Liability and Worker's Compensation insurance in force at all times during the terms of the agreement.

V. Consultant Selection Criteria

The selection process will consist of two steps:

Step 1 – Qualifications

- a. Criteria for selection of the Consultant firm will be based on several considerations including consultant's experience and qualifications of the project manager and project team members on similar projects.
 - Capability, and experience in providing the Scope of Services as demonstrated by the Proposal.
 - Expert knowledge and work experience associated with understanding of the issues, options, and approaches related to a CMMS, Infor preferably, system development.
 - Knowledge and understanding of the critical data, strategies, performance measures and goals of a public works operations.
 - The value offered to the City considering cost in comparison to capabilities and experience of the candidates.
 - Expert knowledge and experience in CMMS development and implementation.
 - Possession of a Infor (Hansen) certifications needs support system configuration.

Step 2 - Interview

Proposals will be evaluated and rated based in the above criteria and the top three (3) candidates will be invited to an in person interview for final selection.

Consultant interviews will be held on **Monday, February 9, 2015** with the proposed Project Manager and project team for the top three (3) proposers.

VI. Type of Contract/Notice to Proceed

The request to award contract to the selected consultant is scheduled for approval before the City Council of Beverly Hills on **February 17, 2015**. The Consulting firm should anticipate receiving a Notice to Proceed as soon as possible after award.

VII. Further Information and Contacts

Questions regarding this project may be directed to the Project Manager, Melonie Alvarez, at 310-285-2468 (mcastro@beverlyhills.org).

Appendix A

March 24, 2014

1.1 Intro:

The City of Beverly Hills (City) Department of Public Works recognizes the opportunity to optimize their Hansen 8 computerized maintenance management system (CMMS) and improve their associated business processes. The City sees Hansen as the key data repository to support their enterprise asset management program. The City hired HDR Engineering Inc. to assess the current use of Hansen and make recommendations to the City for improved use of the tool. HDR led a two hour asset management strategy workshop and an on-site analysis of the current state of Hansen as it relates to their asset management program. The objective of the business analysis was to identify gaps in the current business practices related to the use Hansen and how it could be used more effectively. The analysis of the City's current business practices took place in a series of interviews with key stakeholders. Interviews looked at The City's business objectives, vision for the future and the use of the Hansen 8 CMMS System in supporting those goals.

Observations were made and recorded during the interviews. Business practices were categorized and compared to industry best practices using HDR's Enterprise Asset Management (AM) Framework, shown in Figure 1.1 below.



Figure 1.1 HDR AM Framework

It was observed that the following three factors are important to the successful use of Hansen as an enterprise asset management system at the City:

- The Commitment to standard business practices across all divisions of the Department of Public Works;
- A staff focused on the goals of asset management with the skillset, desire and knowledge to use the Hansen system; and
- Integration and synchronization of asset data with an authoritative data source and business processes for the syncing and maintaining the asset registry.

The leadership through the City’s Public Works senior management team, as well as a top-to-bottom commitment to service excellence, is a major strength for the City in making changes to not only the Hansen system, but in embracing better asset management business practices. With a few minor changes in business processes, the City of Beverly Hills Department of Public Works can become the model City for successful enterprise asset management.

2.0 Potential Obstacles and Barriers

A summary of the current obstacles is described in the table below.

Current Issue	Comment
A point person that “owns” Hansen /GIS does not exist	No individual within the City is currently responsible for the Hansen System.
Relationships between technical power users are strained	One of the most difficult obstacles to deal with is that staff with technical expertise does not share a similar vision for how the systems and people work together. Personnel are passionate about their current work without big picture perspective or knowledge of best practices.
IT priority for foreseeable future is on financial system	Information Technology has limited staff and it was clearly stated that the MUNIS system will be a top priority for the department for the foreseeable future. There is a 5 year action plan that is in its fifth year; IT plans to rewrite the master plan at the end of 2014.
A person to perform analysis does not exist	There is no staff position that has the role of business analyst to manage data or analyze Hansen data to the level The City is looking for. This could be an obstacle in the future but there is no plan to develop a position at this time.
An Asset Hierarchy has not been developed	An asset hierarchy is one of the essential building blocks in building an asset management program. A hierarchy adds structure to a systems asset registry allowing costs and conditions to roll up to asset groups. All assets in the registry should be part of the asset hierarchy.
Lack of Data Standards	Data standards are an integral part of any mature IT system. The city needs to have documented data standards and a change control process to ensure support the goal of data integrity. In order to succeed in the integration of enterprise asset management data, these best practices can not be optional.

Current Issue	Comment
System usage standards / documented business processes do not exist	<p>The biggest obstacle to long term success is the lack of standard business process for using the Hansen system. The training most staff receive was during a one week session. Several users have forgotten the information. Hansen usage should align with the business strategy. The following is a list of obstacles that need to be dealt with before the Hansen system can be use effectively:</p> <ul style="list-style-type: none"> • Usage between divisions varies • Use codes for service requests are not consistent and may be to descriptive • There is not a consistent approach to create a work order from a service request • Work codes are not used consistently • Work orders are filled out after the work has been completed • Managers are unaware of how divisions are using the system
System is not used to make business decisions	The main use of the Hansen system today is for recording work activities after the work has been completed. Several users are using the system proactively but not in a consistent manner. The lack of consistency makes the use of data in decision making unreliable.
Data does not produce meaningful reports	Data is sparsely populated and entered after the fact in most cases. Reports that come from the system are generally not meaningful and do not aid in making business decisions.
Create standards for work requests vs. work orders	The service request and work order process do not seamlessly flow so that service requests can be associated to a work type. There are no standard business processes in place to associate work requests to work orders and work orders to assets.
Asset Registry in GIS not synced with Hansen	Syncing GIS with Hansen is a technical change; developing this process will be in important step in managing asset data across the enterprise.
GIS technical architecture is not mature	<p>IT needs additional resources to support enterprise GIS. Although it may meet current user needs, moving from GIS data in shape files (.shp) in a non-versioned environment to a Geodatabase could be very beneficial. Current problems are:</p> <ul style="list-style-type: none"> • GIS in shape files and not in enterprise GIS • Enterprise SDE database is not versioned; edits take place on “default” version
Current Map Service is on ArcIMS, a system that is no longer supported by ESRI	Hansen map Services are being rendered using ArcIMS; this technology is no longer supported since the release of ArcGIS 10.1.

Current Issue	Comment
Knowledge of Asset Management principles and best practices need greater attention	Management and staff need a common understanding of asset management best practices. To improve staff buy-in to performing work they need to see how asset management relates to their specific job with a line of site to the strategic goals.
A small segment of staff have had Hansen training	This will pose difficulty in getting staff buy-in to performing work that they may not see as their job. This will also hurt the accessibility to the system and may slow the use of mobile / field use of the system.

3.0 Evaluation of Hansen as an Asset Management System

Asset Management Element	Objectives for City of Beverly Hills
Service Levels	<p>The levels of service are the starting point for assessing the City’s asset management program. A customer service level is any City service that a customer perceives as valuable that can be defined and measured. Hansen and the customer information system should work as an integrated system to manage and report on customer levels of service. Work activities and asset performance should be tracked within Hansen. MUNIS and CRM should be used to track customer information. The defined levels of service should be associated with both systems and clearly stated and available to the public.</p> <p>The strategy for developing levels of service is to clearly identify the current levels of service and come to an understanding with regulators, customers, and other stakeholders as to which service levels are prime obligations and which are targets to be met on a best-efforts basis. These service levels need to be updated as required so that they reflect the long-term interests of stakeholders.</p> <p>Stakeholders should be kept informed of the performance of the City against its service levels and long-term cost targets to ensure the ongoing reputation of the City is enhanced and allows the City greater influence over its levels of service to its customers and the environment in the future. Hansen integrated with MUNIS financials will be critical to tracking the cost part of the equation.</p>

Asset Management Element	Objectives for City of Beverly Hills
Enterprise Strategy	<p>The Enterprise Strategy identifies the goals of the City and the approach for reaching those goals with respect to the management of assets necessary to meet the service level targets. The Enterprise Strategy is a combination of many strategies, each of which has an objective or set of objectives with specific measurable actions.</p> <p>A maintenance strategy should be part of the overall Enterprise Strategy. This should be documented at a high level to explain how the individual strategy is implemented and managed with the asset details organized by asset within Hansen.</p>
Risk Mitigation	<p>Risk mitigation is the process of developing options and actions to enhance opportunities and reduce threats to asset performance and enterprise strategy objectives. The key components of risk that can be tracked in Hansen are the asset criticality, the frequency of risk events, and the consequence of those events. All of these require a specific configuration within the Hansen system. Asset condition monitoring will be most effective when asset criticality is well defined.</p> <p>The idea of evaluating risk in asset management is to ensure failure modes can be identified, levels of acceptable risk can be evaluated, critical assets and business processes are identified, consequences or failures are known, and risks are avoided or reduced. For risk management of assets it is necessary to establish goals, objectives and strategies, and the scope of the risk assessment and the management process.</p> <p>Without establishing goals and objectives, the City will be unable to evaluate the acceptability of risks. Risk is broken down into risk identification, risk analysis and risk mitigation. The City should develop a risk policy with a risk and criticality assessment related to assets being a part of the Operations and Maintenance Strategies.</p>

Asset Management Element	Objectives for City of Beverly Hills
Asset Decisions	<p>Asset decision making relies on good data from the Hansen system. Engineering and management depend on reliable data to help define problems as well as justify the proposed solutions to policy makers. Asset decisions should be documented and follow a repeatable process. A decision making process should outline the threshold for which asset decisions require a business case evaluation (BCE) in order to obtain approval, the process for approval of asset decisions below the threshold, and the process for approvals within the BCE process.</p> <p>The BCE process requires data from Hansen regarding asset performance, maintenance cost and condition. Reports and queries from Hansen should be easily attainable to facilitate the decision making process.</p> <p><u>Asset Plans</u></p> <p>Asset plans, developed by asset class (pump, pipe, valve, etc.) and/or system (pump station, signal, treatment plant, etc.), should be part of the asset management process to give the City a snapshot of important information concerning an asset. The asset plans for the assets owned and operated by City should be kept in an electronic database system with the asset details managed within Hansen. The asset plans should be kept up to date using electronic systems, and the plans will be produced in hardcopy for workers unable to access a computer. The City should make use of asset plans in the building of facilities, such as those produced by business case evaluations (BCE), to provide the basis for more detailed operation and maintenance strategies and rehabilitation and refurbishment (R&R) plans for each asset class. Once facilities are in operation, the plans will be used to measure and periodically compare actual ownership costs with forecasted costs to improve future forecasts. The City should use the data in Hansen to measure its actual ownership costs for existing facilities and prepare similar asset plans for these facilities. An asset plan is a roadmap to asset ownership costs, expressing best estimates of these costs throughout the entire asset lifecycle. In addition, the asset plan includes operations and maintenance strategies for the asset as well as rehabilitation and refurbishment plans.</p> <p><u>Asset Financing</u></p> <p>The City's asset financing strategy should include life cycle planning, decision-making, and financial management components. The Hansen CMMS has the ability to provide better knowledge of future capital needs and future operation and maintenance costs if the system is configured to manage current cost and asset performance. This process of forecasting will improve the quality and dependability of City's business plan and better document City's future funding needs. It is important for the City to</p>

	<p>understand and define the costs elements within Hansen and the interface to the MUNIS financial general ledger in order to make defensible estimates of future costs so that proper budgets can be prepared and resources can be properly allocated. Improved cost forecasting allows for improved management of assets through the decision making process. Better forecasting of asset replacement costs over several years will help the City to better identify future funding needs and better control over rates. Policies that balance replacement and refurbishment against new projects and improvements will result in more control over rate fluctuations.</p>
<p>Asset Life Cycle</p>	<p><u>Acquire</u></p> <p>New asset development strategies employed by the City result in new assets to be maintained. Acquisition of assets is made to get the best project outcome for the City, but the organization of data can be costly. The Hansen system will be an important part of the new asset acquisition strategies for routine asset replacements. These should be well developed for different asset/equipment types, taking into account the project risk profile and criticality indexes that can be maintained in Hansen.</p> <p><u>Operate</u></p> <p>The operations strategies employed by the City should be used to verify that the cost, reliability, and service levels for the City assets are met. The Hansen system is not the primary location of operational strategies employed by City, but information such as the asset criticality are used to manage the risk profile of each facility, piece of equipment and every hierarchical level in between. The operating strategies of the assets will be developed so that the asset reliability is maintained according to the assets risk profile. These strategies take into account the remote monitoring and control available at each of the assets and consider the monitoring design versus the actual set points.</p> <p><u>Monitor</u></p> <p>The City will need to continue to populate the Hansen system with asset information and add all assets in order to effectively manage a condition monitoring program. The City should use condition monitoring for assets where: condition monitoring is suitably justified, i.e., where the cost of the technique is less than cost of the asset failure; to predict failure; and to intervene before catastrophic failure. Methods of monitoring asset condition vary according to the asset class. Once the ways in which an asset can fail are defined, then monitoring methods can be chosen to predict failures. Hansen should be configured as the asset condition scoring system wherever possible and appropriate. The scoring system should reflect the asset condition and allow for comparative analysis and consequence of failure analysis. Condition assessments, and trends in assessments, are</p>

normally used to support maintenance scheduling, prediction of (R&R) timing, and deciding on R&R actions.

Maintain

A maintenance strategy is a document developed after understanding the risk profile of a facility or piece of equipment. The maintenance options are typically categorized in Hansen as: Run to failure; Condition based maintenance; and Preventative maintenance (Calendar based or Run based) with an analysis of the maintenance costs for all City assets performed monthly and annually. The cost analysis can be done using standardized reports within Hansen and should be done by analyzing each preventative maintenance task and by looking at the frequency and effort required. Each task should be coded by the type of labor needed to carry out the task. Changes to the operator's or maintainer's maintenance program must be redesigned accordingly to improve asset reliability.

Rehabilitation

Asset replacements should be done within well-defined strategies for different asset classes and within different operating risks. The asset condition within Hansen becomes the primary data element that should be tracked. Replacements take into account obsolescence and efficiency and are complementary to long range planning efforts. The strategies for routine asset replacements should be translated into decision support models that ensure that decisions are consistent and made in a timely manner. The approach taken to identify assets for R&R is to look broadly at the performance of the electrical/mechanical asset base and rank equipment according to selected parameters such as rate of failure or reactive maintenance costs. This ranking will generate a prioritized list of equipment, which will be subjected to further economic evaluation.

Retirement

The City should itemize its assets within Hansen and the Fixed Asset Register in accordance with an established hierarchy and at a level of detail that supports its normal business processes. When assets are retired because they are either disposed of or no longer in use, all databases and necessary journal entries to remove the asset's financial information should be updated. The retirement will be part of the asset plan and a record for each asset will be maintained, as necessary, for asset planning and for making asset decisions such as determining optimal maintenance intervals and actions, timing and types of capital refurbishments, and timing of retirements/replacements. The City should review and document its processes for informing the finance department of retirements or replacements and define how Hansen and MUNIS are reconciled. Criteria for capitalization and retirement review as well as how the review conduct

	should be conducted.
People and Processes	<p>The City should develop a systematic approach for educating and motivating the workforce to generate both direct and indirect value for the AM Program. The objective of the Education strategy will be to encourage innovation, problem solving, and skills improvements at all levels of the City. Skilled and knowledgeable staff require an investment in training. This investment leads to improvement in service, which leads to public trust. Trust leads to better relationships with customers and stakeholders that will be necessary to support the goals of City. The education and development program for all staff involved in the AM Program will be based on their specific roles and responsibilities.</p> <p><u>Continuous Improvement</u></p> <p>Continuous improvement will include quality assurance (QA) plans and procedures and will provide the framework for ensuring all AM processes and procedures implemented at the City are monitored for improvement opportunities. The City should annually audit its AM program in an effort to ensure continual improvement and provide quality assurance that procedures and processes are implemented. A program should be developed which defines the City audit procedure for the AM program. The program will allow for reviews of the quality procedures in place at City, define roles and responsibilities, and define the corrective action process.</p> <p><u>Knowledge Sharing</u></p> <p>Knowledge sharing supports the strategic framework of the AM program and involves the information systems, data, and the manner that staff use information and coordinates on activities. The City should develop a knowledge sharing program as an essential part of measuring organizational success. The knowledge sharing strategy is a combination of data, processes, and software technology strategies. Data is used to support the management of organizational goals, business processes, business interactions, and the workflow of individual performers. Hardware and software technology will vary based on application needs to meet the strategic goals. Standards will be maintained at all times to document user needs and integration requirements.</p>

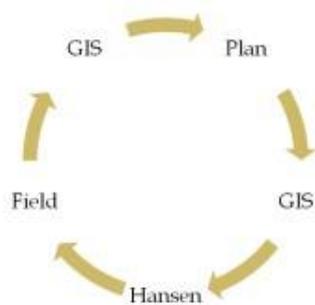
Asset Management Element	Objectives for City of Beverly Hills
Asset Knowledge	<p>Asset knowledge is critical to achieving good asset management outcomes. The asset knowledge of the operating assets of the City is captured through asset hierarchies and asset inventories in the Hansen CMMS and the GIS employed at City. The use of the CMMS and GIS to capture this information allows asset managers to understand their assets from any level and equipment performance across multiple installations. Assets must be classified to enable City to compare the performance of assets of similar type. The asset classification process will be well defined and documented (for example, pump stations could be an asset class, pumps could be an asset class, pipes by materials could be an asset class, etc.).</p> <p>The City must understand asset costs and reliability through data access and knowledge sharing. All assets should be given a minimum performance limit within the Hansen system and targeted for a desired level of performance. Failure codes should be used to help measure an asset’s reliability and aid in the analysis of data. The tendency is to grow the selection of available codes with unique identifiers to cover each specific instances of failure, which makes analysis very difficult. The list of available codes should be kept as few as possible.</p>

4.0 Hansen Improvement Recommendations

There are several recommendations that will allow the asset management program at the City to advance quickly. These changes are primarily in the People and Process area of the asset management framework. There are some fairly minimal changes that could be made in the Asset Knowledge area of the framework. These recommendations could be implemented within two year time frame.

4.1. Sync GIS with Hansen

The most essential change that can be made to the Hansen system would be to develop a workflow for syncing GIS data with Hansen. It is recommended that plans be entered in the GIS soon after they are received by the engineering division. The asset in the GIS should have an attribute that annotates the sources of the data; it is typical to use plan, as-built, survey, field verified or aerial image (remote sensing). Systems would be synced periodically and is often done as a “job” after work hours; this ensures “up-time” of both the Hansen and GIS systems. It is not uncommon for systems to be synced nightly. However, weekly syncs are often acceptable timeframes in most organizations.



Before creating a workflow for syncing GIS with Hansen it is highly recommended that a data-model be developed; it is much harder to make changes to the GIS and / or Hansen after the system has been in use.

4.2. Develop an Asset Hierarchy

An asset hierarchy is one of the essential building blocks in building an asset management program. A hierarchy adds structure to a systems asset registry allowing costs and conditions to roll up to asset groups. Considerations in developing an asset hierarchy should be given to the level of asset the City would like to report on.

4.3. Define Initial Business Processes

It is essential to develop City-wide business practices. It is advisable to get most major divisions up and running on Hansen as the asset management system of record. Work orders and service requests should be defined and used in a uniform, enterprise-wide fashion. A system where service requests can be aggregated to “buckets” of work orders allows for more robust reporting and analytics in the future. It may not be important to immediately define all business processes since, as the system matures, the business processes will also mature.

4.4. Establish an Asset Management Project Leader

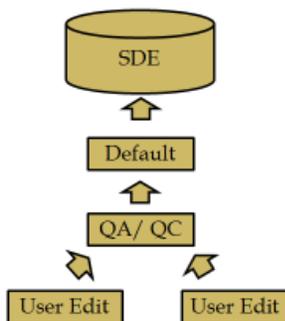
One of the most important components of an asset management program is direction and leadership. Assigning a project leader is a good first step in developing a successful asset management program. A project manager will guide the program in its early stages and maintain the program as the system reaches a maturity. The potential for the project leader to manage an asset management group in the future should also be considered.

4.5. Training Program

An important part of increasing the accessibility, usage and quality of the use of the Hansen system will be dependent on training the staff. A trained staff will allow the program to mature since all staff will be using the software in conformance with best practices. A good training program helps with the change management process.

4.6. Re-Organize Staff as a Centralized Asset Management Team

It would be ideal to develop an asset management team that would manage both Hansen and the GIS bearing in mind The Department of Public Works end goals. The ideal team would include skills that would allow for the administration of Hansen, GIS data entry and a general knowledge of business processes. If developing an asset management team a Memorandum of Understanding between IT, Engineering and Operations should be developed with a business analysts / program manager assigned to manage the program. If the second of the aforementioned scenarios is implemented it will be essential to manage Hansen updates in an enterprise manner. It is advised to use a versioned GIS environment as shown in the image to the left. This will allow The City to build a true single source of data and eliminate redundant and / or out-of-sync data systems.



4.7. Develop Preventative Maintenance Plans and Levels of Service Goals

In the first six (6) to twelve (12) months a plan should be developed to that outlines level of service goals and a maintenance strategy that includes specific preventative maintenance plans. This will be important in defining the data that needs to be captured. As data is collected towards your goals reports and metrics should be defined comparing actuals v. levels of service to develop preventative maintenance plans.

4.8. Implement Mobile Technology

Huge gains in the quality of the City's data in Hansen and the GIS can be made by implementing mobile technology for field operations. Giving crews ownership of a piece of the enterprise asset management process aids in the "buy-in" to the asset management program, this develops culture of better asset management. The City can start off with a pilot approach to mobile technology, but should develop a long term strategy to make the most effective use of technology that leads to a paperless organization.

4.9. Refine Business Processes

As systems mature so will the asset management business processes. It is a best practice to refine business processes on a regular basis so that they are continually being optimized. The best organization strives for continuous improvement.

5.0 Action Plan

Category	Opportunity	Time-Frame	Priority
Levels of Service	Set up Hansen to track the cost of meeting levels of service and variances in meeting level of service targets	Immediate	Med
	Develop Key Performance Indicators (KPI's) and configure Hansen to support the reporting of KPIs	Near-Term	Med
	Develop a process for publishing internal KPI's and levels of service externally	Long-Term	Low
	Use KPI's to measure performance against historic values	Long-Term	Med
Risk Mitigation	Develop a method for using criticality in defining the condition assessment needs and inspection criteria	Immediate	High
	Update each asset in Hansen with a criticality value	Immediate	High
	Develop condition codes that can be used to track an asset against its expected reliability	Immediate	High
Enterprise Strategy	Prepare an Enterprise Asset Management Program Plan	Near-Term	High
	Develop a mobile strategy that works towards a paperless organization	Near-Term	Low
	Implement a pilot mobile technology using cloud computing	Near-Term	Low
	Develop an IT Master Plan for Hansen and all other tools that interface or support processes associated with Asset Management business practices	Long-Term	Med
	Create a Maintenance Strategy for each asset class and ensure work is schedule and prioritized to minimize work order backlogs and improve reliability as measured by criticality and asset condition.	Long-Term	Med
	Document business processes and implement appropriate procedures, intervals, and rating methodologies for how new assets are determined and prioritized for the CIP	Long-Term	Low
Asset Decisions	Optimize the CIP project prioritization using a business case evaluation or value engineering process and a risk scoring process	Near-Term	High
	Develop asset management plans for each asset class that defines the minimal level of preventative maintenance, condition assessment and renewal planning	Near-Term	High
	Create a system and methodology for managing risk versus levels of service targets	Near-Term	High

Category	Opportunity	Time-Frame	Priority
People and Processes	Identify a Hansen System project leader	Immediate	High
	Synchronize GIS with Hansen	Immediate	High
	Define Initial Business Processes for supporting Asset Management Goals	Immediate	High
	360 degree workflow to sync GIS data with Hansen	Immediate	High
	Train a broader group of users in the use of Hansen and set up a users group that meets regularly	Near-Term	Low
	Standardize processes and templates for service requests	Immediate	Med
	Standardize all codes within Hansen and document as part of a Configuration Management Manual	Immediate	Med
	Set up a continuing education for all Hansen users	Near-Term	High
Asset Knowledge	Develop a standard asset hierarchy	Immediate	High
	Determine the asset classes and minimum data needed for reports and asset tracking	Immediate	High
	Establish a GIS / Hansen workflow data-model	Immediate	High
	Be able to link or reconcile the Hansen Asset Listing to the Fixed Asset Register in Finance	Near-Term	Low