CITY OF HAMILTON

CORPORATE SERVICES DEPARTMENT
Information Services Division

and

PUBLIC WORKS DEPARTMENT
Environmental & Sustainable Infrastructure Division

TO: Chair and Members Audit Finance and Administration	**WARD(S) AFFECTED:** CITY WIDE
COMMITTEE DATE: September 8, 2011	
SUBJECT/REPORT NO: Hansen 8 Migration (FCS11059/PW11057) (City Wide)	
SUBMITTED BY: Roberto Rossini, General Manager Finance and Corporate Services Gerry Davis, CMA General Manager Public Works **SIGNATURES:**	**PREPARED BY:** Al Little 905.546.2424, Extension 4287 Dan McKinnon 905.546-2424, Extension 5941

RECOMMENDATION

(a)   That the purchase of Hansen Information Technologies - Canada Inc. software licensed products, support services and customized professional services be single sourced to Hansen Information Technologies - Canada Inc.;

(b)   That Hansen Version 8 and its future upgrades be approved as the Corporate Standard for Asset and Infrastructure Management for the following areas: Water and Wastewater Operations, Storm Water, Road Operations, Parks Traffic, Cemeteries, Forestry and Horticulture for the City of Hamilton in accordance with Policy #14 of the Purchasing Policy;

(c)   That the General Manager of Finance and Corporate Services be authorized and directed to enter into and execute on behalf of the City of Hamilton, in a form satisfactory to the City Solicitor and with content acceptable to the General Manager of Finance and Corporate Services, the following agreements with Hansen Information Technologies - Canada Inc., and Intergraph Canada Limited, together with all necessary associated documents, to implement subsections (a) and (b) above:

   (i)   Software Licence Agreement for Hansen Version 8 and future upgrades;

   (ii)   Software Services Agreement for the provision of consulting services necessary to assist City of Hamilton staff in the migration of the existing Hansen Version 7 to Hansen Version 8 for a cost of $1,300,000. Council approved $1,100,000 in the 2011 Capital budget to be funded from Capital Account # 5140657627. The additional $200,000 will be requested for Council approval in the 2012 capital budget process.

   (iii)   Leverage the current Enterprise Agreement with Intergraph Canada Limited (report FCS09035) to modify and test the interfaces between Hansen Version 8 and our GIS applications using funds in the approved capital budget as noted in subsection (ii);

   (iv)   Annual Maintenance Agreement for software support services related to Hansen Version 8 with an escalation clause of 2% per year until December 31, 2015.

EXECUTIVE SUMMARY

Hansen has been in use across the Corporation beginning in Water and Wastewater Operations Division since the late 1980's. Since that time, the program has evolved and currently supports a number of business units across the Corporation. These include Water and Wastewater Operations for Water Distribution, Wastewater Collection, Community Outreach and Water Meters, Engineering Services for Asset Management, Operations for Roads, Parks, Forestry, Traffic and Cemeteries, Environmental Services for Waste Management, Planning and Economic Development for Animal Control and Parking Enforcement and Corporate Services for the Customer Contact Centre and Municipal Service Centres.

Hansen Information Technologies has advised that development for the existing Version 7 of the software ceased in 2007 and support for Version 7 will no longer be available effective Q1 2013. In order to support the complex business transactions and work processes that are needed to operate and manage the work environment, we need to ensure we are on a stable version of the application and therefore an upgrade is required.

This new version, Hansen Version 8, provides the following improved functionality:

   • Has a new architecture which is web based and built on software standards which promote greater inter-operability with other solutions e.g. GIS, Peoplesoft, etc.

- Hansen will run inside the Internet Explorer browser and therefore requires no client-side application, eliminating the need to install a new client application on each user's machine
- every time there is a functional upgrade; you only need to open a web browser.
- Improved inter-operability, using standard web technologies so users can more easily access and exchange data with other solutions. For example, it will be easier to export data to popular applications such as Microsoft Excel.
- Improved analysis and reporting using a new reports manager that enables the use of Crystal Reports and other third-party tools. For example, with this new version asset conditions can be calculated from inspections, manually entered, and automatically created from Work Orders. The Ad Hoc Reports capability allows users to query the Hansen database without using third-party reporting tools.
- Improved reporting for members of council and management. Management information can be available through customizable screens which will show you relevant reports, maps, and other data so that you can take action rapidly.
- Improved auditing capabilities.
- Enhanced security features that supports privacy legislation and departmental security.
- Improved work flow using configuration options that allow for faster changes as business requirements change.
- Allow the migration to Windows 7 which will be the new corporate standard operating system.

The purpose of this report is to obtain Council approval of:

(a) Hansen Information Technologies - Canada Inc. and specifically Hansen Version 8 and its future upgrades as the Corporate Standard for Asset and Infrastructure Management software for the following Divisions: Water and Wastewater Operations, Storm Water, Road Operations, Parks Traffic, Cemeteries, Forestry and Horticulture for the City of Hamilton for the time period of 2011 - 2015**;**

(b) Single source of the Professional Consulting Services to Hansen Information Technologies - Canada Inc;

(c) Entering into Agreements to implement recommendations (a) and (b) above.

Alternatives for Consideration - See Page 8

FINANCIAL / STAFFING / LEGAL IMPLICATIONS

Financial: The City of Hamilton is currently a user of Hansen Version 7 software, with an active Support Agreement with Hansen Information Technologies and, as a result, there is no cost for the Hansen Version 8 software. Costs associated with completing the migration from a "client/server" technology to a web based platform are related to application configuration for the review, setup and testing of all modules, sub-modules and customized modules including asset management, work management, asset

valuation, contract management, licensing and code enforcement, customer service, access control, security setup, inventory management including materials, vehicles and tools. This also includes training costs for knowledge transfer so City of Hamilton staff are self-sufficient for the ongoing maintenance and support of Hansen Version 8.

Council has previously approved capital budget for the Hansen Software migration – from Version 7 to Version 8 for $1,050,000. This funding will also ensure that current interfaces between the new version of Hansen and Geographic Information Systems (GIS) applications are developed by Intergraph. These applications ensure quality control, synchronization and automation of data maintenance of sewer and water assets, between Hansen and GIS. The result is the ability for GIS to perform graphical location, analysis and mapping of sewer and water infrastructure. These costs were approved in the 2011 capital budget.

Since the implementation of Hansen, as with all major corporate software applications, the City of Hamilton has maintained an annual Service Agreement to ensure appropriate access to Hansen experts for support and to continue to receive software for new upgrades and releases and this Agreement will continue with the upgrade to Version 8. This ongoing operating expenditure for this annual Maintenance Agreement will be $275,000 per year, plus applicable taxes, with an annual escalation clause equal to 2% per year. It is also recommended that this annual Agreement contain the potential for annual renewals until December 31, 2015.

Staffing: A Steering Committee has been established for the upgrade project with a staff level Working Committee of key technical experts from each of the affected Departments and Divisions. These experts will be utilized to work with internal and external subject matter experts to assist in the project. The expected effort for the key technical experts from each Department is approximately 250 person days. This effort will be split between nine different Divisions. The technical effort provided by the Water and Wastewater Operations Group is approximately 1150 person days. It is estimated that this project will take 24 months to complete.

Legal: It is expected that, with the additional features of the new version of the product, Hansen Version 8 will be more efficient to meet our confidentiality and due-diligence responsibilities, as it relates to information housed within Hansen. Hansen has recognized that all records in the custody or under the control of the City of Hamilton are subject to the provisions of the *Municipal Freedom of Information and Protection of Privacy Act* and may be subject to disclosure unless the record or part thereof falls within one of the exemptions under the *Act*. Hansen is also required to comply with the statutory obligations under the Federal *Personal Information and Protection of Electronic Documents Act* and other privacy related statutes. Agreements will be required for the migration to Hansen Version 8 which will include software licensing and consulting services for the migration from Hansen Version 7 to Hansen Version 8 and for annual maintenance and support. The Agreements will be in a form satisfactory to the City Solicitor and with content acceptable to both the General Manager of Public Works and the General Manager of Finance and Corporate Services. As such, the Agreements will contain commercially reasonable Terms and Conditions to reflect the agreed upon business arrangement including insurance requirements.

HISTORICAL BACKGROUND

In February 2003, a review of maintenance management systems used by the City of Hamilton was completed by Prior & Prior Associates Ltd. The study undertook a detailed review of the six maintenance management systems in use, at that time, throughout the Corporation. The final report recommended that the Hansen Information Technologies system be adopted as the Corporate Standard for asset and infrastructure management. Although Hansen was never designated by Council as a Corporate Standard it has been, in practice, the standard for Public Works as an Operations Work Management system relating to Water Distribution, Wastewater Collection, Water Meter Operations, Road Operations, Parks, Cemeteries, Traffic, Forestry, Waste Management and Asset Management.

Since 2003, the use of Hansen Technologies as a work management system relating to customer calls, maintenance management and asset management system has grown significantly across a number of Departments and Divisions. These include Water and Wastewater for Water Distribution, Wastewater Collection, Community Outreach and Water Meters, Engineering Services for Asset Management, Operations for Roads, Parks, Forestry, Traffic and Cemeteries, Environmental Services for Waste Management, Planning and Economic Development for Animal Control and Parking Enforcement, Corporate Services for the Customer Contact Centre and Municipal Service Centres. Since the late 1980's Hansen has been evolving and expanding throughout Public Works and the rest of the Corporation. The 2003 review by Prior and Prior concluded that Hansen was the best overall platform from which to provide these critical functions and services and, as a result, Hansen has grown in use across the Corporation ever since with approximately 650 users currently on the system.

Hansen is an asset management application that is used by other Municipalities such as: City of Brampton, City of Mississauga, Region of Peel, Region of Halton, Town of Markham, City of Toronto, City of Windsor, City of Thunder Bay, Regional Municipality of Halifax, City of Moncton, NB, and City of Richmond, BC.

In 2006, Hansen announced that it had launched a web based version of its software to enable its users to enjoy the improved functional benefits of this platform. Subsequently, in 2007, Hansen announced that it would discontinue application development of its existing client server based product which the City of Hamilton currently uses. Migrating to web based platforms is a logical progression to newer technology offering enhanced functionality, and a "best practice" within the software industry, in general.

The migration to Hansen Version 8 is expected to take approximately two years to complete and will require the use of third party software experts, as well as, a number of key technical experts within each of the user groups. Oversight and Technical Implementation Committees have been set up to facilitate the migration, as well as, a detailed training plan for users of the system.

The migration is proposed to roll out in three phases beginning with the Customer Service module followed by the Permits and Licensing modules followed by the Assets and Work Order modules.

POLICY IMPLICATIONS

Although software maintenance is included in Purchasing Policy Schedule "B" - Recurring and Non-Competitive Expenditures of the City's Purchasing Policy, Council approval is being requested for entering into this Agreement as the Maintenance Agreement is in excess of $250,000 per year (approx. $275,000/yr plus 2%/yr escalation). A potential five year horizon for entering into this Maintenance Agreement is recommended as it provides the City of Hamilton some stability with respect to budgeting for these costs over a longer term.   Purchasing Policy #14 (Policy for Standardization) allows for the following:

"Standardization is a management decision-making process that examines a specific common need or requirement and then selects a Good and/or Service that best fills that need to become the standard".

Since the late 1980's, the City of Hamilton has invested significantly in the licence acquisition of asset and infrastructure management software from Hansen Information Technologies. This asset and infrastructure management software has become a fundamental component of daily operational requirements in many Divisions of Public Works. Purchasing Policy #14 (Policy for Standardization) continues:

"Where the establishment of a standard will result in a single source purchase, that purchase shall also be approved by the Manager of Purchasing and Council or by the Standards and Approved Products Committee";

In addition to the acquisition of asset and infrastructure management software from Hansen Information Technologies, the firm has also been used extensively by numerous Divisions for the provision of Professional Services associated with the customization of their asset and infrastructure management software products. These Professional Services engagements vary in scope and number, from year to year, and have typically been secured through Purchasing Policy 10/11 approvals. This report serves to eliminate the need for these numerous Policy 10/11 approvals.

The recommendations contained in this report support the Mission Statement of the Public Works Business Plan "Innovate Now" and also support the Corporate Services, Information Services goal of software rationalization and standardization.

RELEVANT CONSULTATION

The Steering Committee and Working Committees for this project are comprised of staff from Corporate Services, Planning and Economic Development and Public Works. A draft Project Charter is being developed by this group to ensure a smooth transition to the new system.

The Legal Services Division has been consulted respecting the drafting and negotiation of a new software license agreement, software support agreement, software services agreement, Hansen 8 Software Order Form and Statement of Work.

The Procurement Division has been consulted respecting the procurement of services necessary to complete this project.

Information Services Working Committee.

ANALYSIS / RATIONALE FOR RECOMMENDATION

Hansen Information Technologies and its Hansen Version 7 platform is currently in use within the City of Hamilton and over the many years it has been in service it has provided a reliable, stable platform for asset and infrastructure management systems. Since 2003, it has also provided reliable service as a customer information management system for Water Wastewater and Storm Water management.

Staff have researched the new attributes and capabilities of Version 8 and are confident that this new software will provide excellent additional features desired by the City of Hamilton while remaining familiar to users. Additional reporting capabilities of the new program will also enhance staff ability to provide timely, meaningful information for a variety of uses.

The Public Works Department is poised to begin a systems migration of the existing Hansen software platform to the new version. Currently Version 7 is in use, however, this new version, Hansen Version 8, provides the following improved functionality:

- a new architecture which is web based and built on open standards which promote greater interoperability with other software e.g. GIS, Peoplesoft, etc.
- Hansen will run inside the Internet Explorer browser and therefore requires no client-side application, eliminating the need to install a new client application on each user's machine every time there is a functional upgrade; you only need to open a web browser.
- Improved interoperability, using standard web technologies so users can more easily access and exchange data with other solutions. For example, it will be easier to export data to popular applications such as Microsoft Excel.
- Improved analysis and reporting using a new reports manager that enables the use of Crystal Reports and other third-party tools. For example, with this new version asset conditions can be calculated from inspections, manually entered, and automatically created from Work Orders. The Ad Hoc Reports capability allows users to query the Hansen database without using third-party reporting tools.
- Improved reporting for members of Council and management. Management information can be available through customizable screens which will show you relevant reports, maps, and other data so that you can take action rapidly.
- Improved auditing capabilities.
- Enhanced security features that supports privacy legislation and departmental security.
- Improved work flow using configuration options that allow for faster changes as business requirements change.
- Allow the migration to Windows 7 which will be the new operating system.

In 2003, Prior and Prior assessed maintenance management systems used by the City of Hamilton on the basis of need, usage and benefits. The report confirmed Hansen as the preferred maintenance management solution for water and wastewater and some other areas within Public Works. As part of maintenance management system, is the

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ability to intake staff or resident inquiries and service requests (a Customer Relationship Management system). As the Customer Contact Centre (CCC) takes some calls from business units in Public Works and Animal Control, it leverages Hansen as a solution to input these service and information requests into the system. The CCC and the rest of the organization leverages other software solutions in their day-to-day operations, some of which also function as Customer Relationship Management (CRM) systems – e.g. Amanda (Municipal Law Enforcement), Archibus (Facilities), Yardi (Housing) etc.. With the Hansen upgrade, the organization will continue to leverage Hansen and these other solutions until further consolidation of calls and departmental contact centres into the CCC is implemented and a review of the different CRM solutions is completed.

ALTERNATIVES FOR CONSIDERATION

Alternatives to migrating to Hansen Version 8 are (1) to continue with the use of the current version; or (2) conducting a review of other products in the marketplace for consideration as replacements for Hansen at the City of Hamilton.

1. Continue Using Hansen Version 7.7.411

As an alternative to moving forward with the migration to Hansen Version 8, the City of Hamilton could continue to make use of Hansen Version 7.7.411 (the currently installed version). This option would not merely mean maintaining the "status quo", as risk mitigation strategies would need to be employed to address issues such as lack of standard vendor support, and the obstacles to implementing new, value-add features/functions.

The potential benefit of staying on the current version of Hansen is that the costs of the currently proposed migration could be deferred. However, we would still need to continue paying the annual software maintenance fees, however, deferring the upgrade to a later date will increase the cost for professional services.

Version 7.7.411 is already roughly 10 releases behind the final release by Hansen Information Technologies for Version 7 (7.7.810). As such, Hansen Information Technologies has advised the City of Hamilton that they will no longer be developing enhancements for this version. This means that the software vendor considers our version of Hansen to be stable, and they will not be focusing any support or development resources on it. If the City of Hamilton chooses to stay on the current release of Hansen, the capacity for first, second level and third level support would not be available through the vendor and would need to be developed in-house.

Hansen Version 7.7.411 is not supported running under the Windows 7 computer operating system. If the City of Hamilton continues to use Version 7.7.411, then the computers for users who need access to Hansen cannot be upgraded beyond the current version for the Operating System.   There are other applications used by the City of Hamilton which require these upgrades, and so the City of Hamilton may be faced with needing to support a mix of Windows XP desktops, and Windows 7 desktops. Additionally, Windows XP is nearing the end of support by Microsoft, which will mean there will not be any further development of security patches (sometime in 2014).   Without the security patches, the City of Hamilton will have issues with

Purchase Card Industry Data Security Standards (PCI DSS) compliance which would require that Hansen client PC's be segregated from the rest of the City's network. This would mean an increase in the complexity and costs for supporting such an environment, both in Information Services and within the departments who use Hansen.

There are a number of systems which integrate with Hansen. Failure to migrate to an up-to-date version of Hansen may impact the City's ability to upgrade those other integrated systems. Such systems include PeopleSoft (for payroll and GL), and Intergraph (for GIS). The City of Hamilton may not have the option to hold off on the upgrades of these other systems. This may lead to compatibility issues, and drive up the costs for upgrading and maintaining the integrations themselves.

Choosing not to migrate to Version 8 would also mean that Hamilton would not have the option to take advantage of the benefits of new features and development that will continue with the new web-based version of Hansen Version 8. The ability to leverage a web client for accessing Hansen would greatly reduce the software footprint on users' computers, which may present opportunities to make use of thin clients for Hansen users. Hansen Version 8 does offer web-portal capabilities. As an enhancement to customer service, Public Works is anxious to explore the deployment of this option to other Divisions within Public Works but cannot unless we move to Hansen Version 8.

These risks collectively suggest that we are likely to suffer significant degradation of our ability to provide good customer service, and of our ability to provide staff with a quality tool for asset and work management across the areas currently using Hansen, should we choose not to proceed with the migration to Hansen Version 8. If we choose to keep using Hansen Version 7, we will have to continue to invest just to maintain current service levels. To better quantify and to be able to effectively manage each of these risks, detailed analysis would be required, which would surely involve investing more time and effort (and money). For these reasons, we do not recommend deferring the migration to Hansen Version 8.

2. Conduct Review of Potential Replacement Systems for Hansen

An alternative option would be to defer the migration to Hansen Version 8, and to evaluate the best currently available solution based on our present and projected future needs as identified by each user group. This could be accomplished by developing an RFP for a replacement system (or systems), engaging members from each of the current Hansen user groups, and perhaps others who are currently using other asset and work management systems and may be interested in implementing functions within a larger service management solution.

The potential benefit of staying on the current version of Hansen and conducting a review of potential replacement systems is that the currently proposed migration costs could be deferred. Additionally, there may be an opportunity to rationalize the list of systems the City of Hamilton currently uses for asset and work management, replacing Hansen plus other asset/work management systems with one system, which could reduce the complexities of supporting the multiple systems we currently have allowing improvements in efficiency and reductions in on-going support costs.

This option would likely require 12 to 18 months of work by multiple resources to analyze the current requirements and then to draft the RFP. It is also likely that another 18 to 24 months would be needed to complete the implementation of a replacement system(s). These efforts would have costs associated with them regardless of whether internal or external resources were used. In the meantime, Hansen would continue to be used in its current version which would mean that for the duration before a new system is ready for production use, all of the points raised in alternative option (1) above would be applicable. If Hansen was again selected, as the best possible solution, the costs, at that point to re-implement the solution, could be higher than the current estimate to migrate to Hansen Version 8. We would be prudent in continuing to pay the annual software maintenance costs for Hansen, so that if Hansen was selected again, we would not need to purchase the software and licenses again. Alternatively, if some other solution was accepted, it would be new software requiring the purchase of the software and all licenses, plus the services for implementation, and it is expected that training costs for the new software would be much higher than simply training the existing staff on the changes between Hansen Version 7 and Hansen Version 8.

The estimated 2.5 years needed to arrive at the point where another system was ready to be commissioned would also be a period where we are limited with respect to being able to implement any new features that might help to drive efficiencies and improvements in service delivery, and during which staff would become increasingly frustrated with the lack of good tools enabling them to provide quality services. In addition, the cost to move to a new asset management system would be more complex and would cost significantly more.

Therefore, the recommendation is to commit to upgrading to Hansen Version 8 to address the immediate needs and mitigate the risk of remaining on unsupported software with a plan to re-evaluate the solution by 2015.

CORPORATE STRATEGIC PLAN

Focus Areas: 1. Skilled, Innovative and Respectful Organization, 2. Financial Sustainability, 3. Intergovernmental Relationships, 4. Growing Our Economy, 5. Social Development, 6. Environmental Stewardship, 7. Healthy Community

Skilled, Innovative & Respectful Organization
◆   The use and implementation of Hansen Version 8 allows staff to develop skill and work with an industry leading management system and provide excellent customer service. Greater protection of personal information enhances corporate respect.

Financial Sustainability
◆   The ability to produce a greater selection of reports as well as to produce timely reports helps to assist in decision making. Making meaningful information more readily available enhances our ability to manage in a fiscally responsible manner.

APPENDICES / SCHEDULES

None