



Report to: General Committee

Report Date: December 11, 2007

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**SUBJECT:** Making it Happen with AMANDA  
**PREPARED BY:** John Wright x4712

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**RECOMMENDATION:**

That \$80,100 from project 8176 (AMANDA Enhancements) and \$15,000 from project 8006 (AMANDA Operational Audit) of the 2008 Capital Budget be pre-approved for the following purposes:

- a. The "Time and Activity Tracking Module" be implemented to support KPI reporting and fee model maintenance at a cost of approximately \$29,700,
- b. Letter of Credit automation be implemented, at a cost of approximately \$26,400 and
- c. Support services be procured to augment the capacity of our staff AMANDA administrator at a cost of approximately \$24,000, and
- d. That consulting services be procured for an estimated cost of \$15,000 to update the assessment of Markham's AMANDA implementation to identify any gaps between the system's functional capability and its implementation in Markham with particular focus on any fiduciary or security implications of such gaps;

That the above services be awarded to CSDC Systems Inc., on a preferred supplier basis pursuant to section 7(1)c of the Purchasing Bylaw;

And that Staff be authorized and directed to do all things necessary to give effect to this resolution.

**EXECUTIVE SUMMARY:**

AMANDA is a suite of application components designed for the management of government programs and services that involve people and property and has been with the town since 1996. It was initiated in the Building Standards Department to manage building permitting and inspections and has expanded too many other Departments in the Town (e.g. Planning/Urban Design, Engineering, By-laws, Legal, Recreation, Waste Management, Finance, Waterworks, Fire, etc.) to assist in the management of their departments as well as a data tracking system. It has evolved over time from a very simple data store to a sophisticated process management tool that will include an Internet 'browser-based' interface, with the latest version (AMANDA 5) meeting the demanding expectations of a modern, technologically sophisticated community.

An ambitious plan (AMANDA Enhancements) was initiated through the 2007 IT capital program (seeking \$325,000) to enable (among other things) the migration of AMANDA to an Internet browser-based interface. This plan was deferred at a budget Sub-Committee pending a more detailed report from staff. At the time of the deferral the Make it Happen Task Force (MIHTF) was established and it included a working group to determine improved automation for reviewing and approving development applications. The report by staff was put on hold pending the outcome of the MIHTF.

Recommendations from the MIHTF included the advancement of AMANDA to a browser-based interface (AMANDA 5) to improve the speed and effectiveness of communication among the Town, developers, builders, other agencies and the public and to improve tracking and management capabilities. Before moving to AMANDA 5 staff recommend purchasing a module for tracking time and activity of application processes and services for Letter of Credit improvement and services to ensure the integration of these new functions with existing AMANDA 4 platform is properly achieved. These recommended immediate improvements are a total cost of \$80,100 already secured through development fees received in 2007 and are included in the 2008 IT capital budget. Staff are recommending pre-approval of these funds to expedite the process improvements identified by the Task Force. The remaining funds requested in the 2008 IT capital budget of \$308,210 will provide for the AMANDA 5 enhancements are to be considered through the normal 2008 budget process.

Staff are also seeking pre-approval funding of \$15,000 to identify any gaps between the system's functional capability and its implementation in Markham with particular focus on any fiduciary or security implications of such gaps. This is based on the importance of periodically taking stock of our AMANDA implementation to date especially as we integrate AMANDA with other corporate applications and extend access to the public and other agencies. These services and purchases will be provided by the developer of AMANDA, CSDC Systems so staff are recommending awarding these projects to CSDC Systems on a preferred supplier basis pursuant to section 7(1)c of the Purchasing Bylaw.

**PURPOSE:**

The purpose of this report is to:

1. To obtain immediate approval to award the contract for the most urgent elements within the list of AMANDA enhancements requested in the 2008 Capital Budget in order to respond to various customer, community and user requirements.
2. To ensure that Markham's AMANDA implementation is efficient, functional and secure.

The recommendations within this report align with the recommendations of Working Group 5, Development Application Software/Automating User Interface, of the Make it Happen Task Force, as endorsed by Development Services Committee and Council in November 2007.

**BACKGROUND:**

AMANDA is a suite of application components designed for the management of government programs and services that involve people and property. It has been in use by Markham since 1996 when it was implemented in the Building Standards Department to manage building permitting and inspections. Direct use has been expanded to many other departments across the Town, specifically, By-law and Licensing to manage their department activities, Planning/Urban Design and Engineering in assisting with the review and approval of development applications, Legal Department for tracking agreements and processes, Fire Department for fire inspections and investigations, Finance Department for tracking letter of credits and Development Charges, Waterworks for tracking water meters and Heritage for maintaining inventory of heritage buildings. Data from the Amanda database is being used by Waste Management for blue box inventory and Recreation for marketing services for new pools.

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Total costs of AMANDA related projects since 1996 are estimated at \$1.3M which has been funded entirely by user fees. This investment has enabled a wide range of benefits including:

- instant application status accessible by all staff, issue tracking and information for senior management
- automated business rules improve the quality and timing of workflow
- data support for key performance indicators
- individual workload reporting and automated workload redistribution
- automated document and report generation
- transfer of administrative application processing functions from professional staff to support staff
- automated distribution of information versus manual and hardcopy transfers
- reduction of two staff positions in Compliance Letter Processing within the Building Department
- Building Inspector's office time reduced and hand-written checklists replaced by mobile data exchange
- repetitive data entry tasks eliminated
- Reduced circulation of planning applications from 3 weeks to 3 days.

Because programs and services vary among jurisdictions and between business units, AMANDA uses a "Variable Data Model" to enable each user group to tailor the system to its unique needs. This model depends upon business users learning and being engaged in the initial deployment and on-going evolution of the application.

Since 1996, the implementation of AMANDA in the Town has evolved from a very simple data store to a sophisticated process management tool. It permits automation of development applications providing accuracy, consistency and time management opportunities. It now includes the use of mobile devices by building, by-laws and fire inspectors and will soon be integrated with a Voice Response system to enable building customers to access AMANDA from any telephone. Adopting the Internet 'browser-based' interface of the latest version of AMANDA will meet the demanding expectations of a modern, technologically sophisticated community.

An ambitious plan named "AMANDA Enhancements" was outlined in the process of identifying 2007 IT capital requirements. The plan was intended to enable (among other things) the migration of AMANDA to an Internet browser-based interface. The \$325,000 estimated cost of the project is funded by building permit fees. The Budget Sub-Committee of Council in 2007 deferred the Amanda funding pending a report from staff. This coincided with the striking of Mayor Scarpitti's "Make it Happen Task Force" (MIHTF), which included review of Amanda in consultation with the Information Technology Sub-Committee of Council.

On October 17, 2007, the Information Technology Sub-Committee suggested the AMANDA Enhancement project be split into two parts: modules to be implemented on the current AMANDA 4 platform for which pre-budget approval will be sought and that the upgrade to AMANDA 5 go through the normal 2008 budget process. Recommendations 1 a to 1c effect the first part of this suggestion. The upgrade to AMANDA 5 is included in the rest of the AMANDA Enhancement project in the 2008 Capital Budget submission.

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**OPTIONS/ DISCUSSION:**

The MIHTF struck a Working Group “To identify where process automation would reduce approval times and improve service quality (and) to identify where an Internet enabled interface may improve the speed and effectiveness of communication among the Town, developer, builders, other agencies and the public.” The Working Group identified specific opportunities for deploying technology to improve convenience, compress development approval time, reduce costs or enhance regulatory effectiveness (Attachment 2). These opportunities aligned very closely with the recommendations of the development industry representatives on the panel.

The Working Group including development industry reps, advanced the following suggestions for using technology to improve the effectiveness and timeliness of the approval process:

- 1. Streamlined applications** – paper application forms (eg. For draft plan approval, zoning, site plan, permits, etc.) containing repetitive information represents a burden on the Town’s clients, a data entry burden on Town staff. There are opportunities to offer on-line form-filling that integrates data directly into AMANDA. Issues of data validation and effective permissions must be addressed
- 2. Access to application approval status** – clients see real value in the ability to enquire on-line the status of an application, what processes remain outstanding, content of comments from role players, and any impediments to approval. It was recognized that for such a system to be effective, all role players involved in the approval process must participate consistently by maintaining up-to-date approval attempt results.
- 3. Zoning bylaw on-line availability** - Electronic versions of zoning bylaws would be of value to clients and their planners and designers. Systems must be developed that assure the accuracy of the current by-law as well as maintain the amendment history. AMANDA can help manage the process and ensure the quality of the published materials. Other solutions should also be explored.
- 4. Document retrieval** – It is common for Town staff to repetitively request documents from clients that have already been provided. The AMANDA attachment feature is ideal for electronically storing documents and associated with the relevant application, property, process or person. AMANDA is not a document management system, but any such system must integrate with AMANDA to enable context relevant document retrieval.
- 5. Digital Submissions** – The industry has adopted computer aided design tools for producing drawings and would benefit from their electronic submission rather than the current exchange of printed and annotated copies. It is recognized that there are practical, technical and behavioural issues to resolve, but some form of digital document exchange would be beneficial to the Town and its clients. The Building Department is embarking on a pilot with select builders focusing on repeat housing permit plans. Several licenses for Adobe Acrobat must be procured.
- 6. Integration with other agencies** – Coordination of external (and internal) approvals prerequisite to building and development permits would benefit from an accessible, systematic log of approval status. This requires a client-facing Internet site and the ability to exchange approval information with outside agencies which do not use AMANDA. The anticipated upgrade to AMANDA v.5 together with the eReview module will enable this important integration and coordination.
- 7. e-Commerce** – The development industry considers the ability to pay fees on-line sufficiently attractive for them to absorb the associated bank charges. They suggest an offsetting “convenience

fee” be levied. Although not anticipated in current project plans, this feature would require AMANDA v.5 and its public portal capabilities.

**8. Letter of Credit management** – The development industry needs to see better management of letters of credit used to secure their performance. System improvements would enable clients to query the status of securities posted, the work they apply to, reductions and releases. AMANDA currently has capabilities for managing Letters of Credit that are not being fully exploited. Enabling client access would require the client-facing Internet presence enabled by AMANDA v.5.

Items 1, 2, 4, 6 & 8 in the list above can all be enabled using AMANDA v.5, the remaining items can be integrated within the AMANDA workflow and operating environment.

The “AMANDA Enhancements” plan was adjusted to reflect the work of the MIHTF Working Group. (ATTACHMENT 1). Meanwhile, the other MIHTF working groups also recognized the important role technology could play in addressing the issues they raised. In particular, working groups exploring letters of credit, complete applications, Timelines for approvals/KPI’s, streamlining legal agreements and communication and support to clients all identified the potential benefits of exploiting AMANDA.

Recommendation 1. refers to rows 2, 3 and 4 of Attachment 1 and requires an expenditure of approximately \$80,100 out of the 2008 capital project 8176 under AMANDA Enhancements. It is comprised of the following elements:

**Time & Activity Tracking Module** (\$29,700)– provides functionality for effectively attributing time and costs to specific activities. This will help refine our cost/fee model.

**Letter of Credit Automation** (\$26,400) – this functionality already exists but requires training and technical support to implement.

**Implementation Support and Services** - (\$24,000) Consulting and training contingency to ensure the integration of these functions with existing AMANDA features is properly achieved.

The elements of the AMANDA Enhancement Program set out in rows 5 through 9 are subject to the approval of the rest of project 8176 (AMANDA Enhancements) through the normal 2008 budget process. Those elements are essential to meet the expectations arising from the MIHTF. A separate and important rationale for proceeding as soon as possible with online service capabilities emerged from the Town’s annual Emergency Planning Exercise, “Operation Outbreak.” The November 2007 exercise helped prepare municipal leaders to respond effectively to the kind of disease pandemic experts consider inevitable. An effective on-line service would facilitate “social distancing” to reduce the risk of being exposed to contagions by reducing or avoiding contact with other people. It would also afford staff acting as care givers or under quarantine the ability to continue to work. The preparation for this kind of event must be made before the emergency is imminent.

Recommendation 2. is based on the importance of periodically taking stock of our AMANDA implementation to date. This is especially important as we integrate AMANDA with other corporate applications and extend access to the public and other agencies. Cash management practices and financial reporting within AMANDA must align with corporate standards and accepted accounting principles. Staff are currently finalizing Amanda linkage to our existing GIS

mapping system that will enable users to search status of applications and properties by finding a property on our GIS map.

The assessment will be conducted by CSDC Systems in conjunction with the Senior Business Analyst for Development Services. Costs of the exercise are estimated at approximately \$15,000 to be funded out of the 2008 Capital project 8006. The results and recommendations of the assessment will be reported and approval sought for any expenses that may arise.

## **FINANCIAL CONSIDERATIONS**

### **Items to be funded from project 8176 AMANDA ENHANCEMENTS**

<b>Description</b>	<b>Dollar Amount</b>
Original Budget	\$388,310
Current Budget Available for this award	\$80,100
Less Cost of Award	
Time & Activity Tracking Module	\$29,700
Letter of Credit Automation	\$26,400
Implementation Support and Services	\$24,000
<b>Total</b>	<b>\$80,100</b>
Budget Remaining after this award	\$0

### **Item to be funded from project 8006 AMANDA Operational Audit**

<b>Description</b>	<b>Dollar Amount</b>
Original Budget	\$25,000
Current Budget Available for this award	\$25,000
Less Cost of Award	
AMANDA Technology Assessment	\$15,000
Budget Remaining after this award *	\$10,000

\* Upon payment of all the invoices, any remaining funds will be returned to original funding source

Staff recommends the above budget items be pre-approved in the 2008 Capital Budget.

Staff further recommends the contract for the above services be awarded to CSDC Systems Inc and that the tendering process be waived in accordance with Purchasing By-Law 2004-341, Part II, Section 7 Non Competitive Procurement, item 1 (c) which states "when the extension of an existing contract would prove more cost effective or beneficial".

## **ENVIRONMENTAL CONSIDERATIONS:**

None

## **ACCESSIBILITY CONSIDERATIONS:**

None

## **ENGAGE 21<sup>ST</sup> CONSIDERATIONS:**

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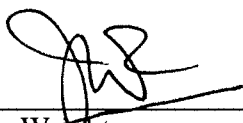
This project is aimed at improving services delivered to our clients. Enhancing AMANDA aligns with the organizational principle of Innovation and the strategic objective of being a leader in E-Government Services.

**BUSINESS UNITS CONSULTED AND AFFECTED:**

Finance, Planning, Engineering and ITS departments have been consulted in the preparation of this report.


**RECOMMENDED**

**BY:**



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John Wright  
Director Building Standards



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Jim Baird, MCIP, RPP  
Commissioner Development Services

**ATTACHMENTS:**

Attachment 1 – Amanda and related Technology Enhancement program 2007 – 2009

Attachment 2 – Make it Happen Working Group 5 Final Report

## ATTACHMENT 1

### AMANDA and related Technology Enhancement program 2007 - 2009

Budget Yr	Project	Project	Deliverables	Cost	Make it Happen Task Force suggestions***	Comment
2006	7319	1 Development Conditions Management	Software & Services	\$39,270		2006 capital - project P.O. issued
2008	8176	2 Time and Activity Tracking Module	Software & Services	\$29,700		Supports KPI reporting and fee by-law maintenance
		3 Letter of Credit automation for Engineering	Services	\$26,400	8	
		4 Implementation support & services from CSDC	Services	\$24,000		Required to augment capacity of AMANDA Administrator
		Amount Requested for Pre-approval		\$80,100		
		5 Planning Module	Software & Services	\$23,935		
		6 eReview	Software & Services	\$33,538		
		7 AMANDA Public Portal	Software & Services	\$140,837	1, 2, 5, 6	
		8 Implementation support & services from CSDC	Services	\$48,000		
		9 Additional Turnkey costs	Software, hardware, Services	\$61,900		
				\$388,310		What we need in 2008
2009		10 Executive Monitor	Software & Services	\$31,320		2009 Project
		11 On-line zoning by-law availability		?	3	2009 Project
		Digital Submission/annotation of drawings & DMS integration		?	4, 5	2009 Project
		13 e-Commerce capability to accept large fee amounts		?	7	2009 Project

\*\*\*Note: refers to suggestions documented in Minutes of WG5 meeting July 11, 2007



## ATTACHMENT 2

**MAKE IT HAPPEN TASK FORCE****Final Report*****Working Group 5#: Development Application Software/  
Automating User Interface***

**Project Name: Development application processing software/automating user interface**

Chair:	Jim Jones	x7757	jjones@markham.ca
Lead:	John Wright	x4712	jwright@markham.ca
Staff:	Jamie Bosomworth	x2180	jbosomworth@markham.ca
	Greg Cookson	x2492	gcookson@markham.ca
Development Representatives:			
	Jeff King	905 882-1100	KingJ@mmm.ca
	Nik Mracic	905 669-5571	NMracic@MetrusDev.com
	Bill O'Donnell	905 731-8687	billodonnell@libertydevelopment

**Project Purpose:**

To identify where process automation would reduce approval times and improve service quality and identify where an Internet enabled interface may improve the speed and effectiveness of communication among the Town, developer, builders, other agencies and the public. In addition this group was to look at opportunities for deploying technology to improve convenience, reduce costs or enhance regulatory effectiveness for the development approval process.

**Synopsis of Findings:**

This group was able to visualize the benefits in moving to improved automation that would eliminate duplication, allow real time tracking, provide consistency and to create overall efficiencies within the entire application/development process. The Town's automation tool is AMANDA. It is a powerful process management tool with a large array of capabilities that has been incompletely deployed in Markham. Process management is a significant challenge for all applications. Opportunities arise for the deployment of AMANDA in many of the Town's business units to improve the processing of these applications. In addition by using a Web Access (Amanda 5) could

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permit developers to view their status of applications in real time, enable commenting agencies to submit their comments directly to the AMANDA application folder and permit on-line payments for many of Markham permits/licences and applications. The following are examples of how AMANDA has shown its worth in an integrated environment:

- Building, Bylaw, Engineering and Planning Departments depend on the same AMANDA property database
- Property database is being linked to the Inside Markham GIS viewer.
- Building Permit folders are linked through AMANDA to Municipal Services folders which are administered jointly by Waterworks, Engineering and Fire departments
- Building Permit folders are linked through AMANDA to Subdivision and site plan folders which are administered primarily by the Planning Department
- Development Charge calculation and collection processes are integrated between Finance Department and Building Department
- Letters of Credit folders are accessible by Finance Department and the departments requiring the security.

The group was clearly seeking improved automation throughout the entire development process to improve efficiencies and save time.

**Recommendations and Action Items Summary:**

Within the Towns current application of Amanda, improvements are being made on a continual basis to improve the efficiencies of our processes (e.g. site plan process). In addition changes to the implementation of Amanda need to be completed to incorporate the recommendations of the other working groups of this Task Force. A plan will be developed this Fall to incorporate these recommendations.

Additional modules within the current application can be purchased to further enhance capabilities of Amanda before going to a web base application. Property condition module has been purchased by the Town and will be deployed over the next few months within the planning process to improve the insertion and tracking of conditions attached to a folder/property. Letter of credit service has been asked for but is currently not funded. It will more fully integrate securities of an application with the Finance Inspection Departments. Time and activity module is also lacking funding. This module will permit the tracking of time associated with each activity within a process to allow staff to manage resources better. Both of these areas are seeking funding from Council within the next month.

An 'audit' of the AMANDA implementation is currently being undertaken to help direct improvements in the scripts used, documentation of business rules, and adherence to best accounting practices.

A 2008 project approval will be sought to enable AMANDA's capabilities on the Internet that will include the purchase and implementation of Amanda 5. These will include enhanced Planning modules, email interface with external agencies, process status query and on-line application submission. On line zoning bylaw capability, full digital submission/annotation of drawings and e-Commerce capacity is anticipated in subsequent business cycles.

Other opportunities to incorporate Amanda into other business areas of the corporation include:

- Integration of property tax information with other property information will assure reliability and data integrity for all property database users
- Cash management system currently being sought will enable bills produced in AMANDA and payments received in the new system to remain synchronized
- Engagement of outside role players such as TRCA, MOE, etc. can be achieved so that site plans, building permit and subdivision prerequisites are effectively managed without redundant data entry and correspondence.