Winnipeg

Public Works Asset Management Performance Audit

Part 2 – Facilities Maintenance

June 2006

Final Report

Audit Department

Leaders in building public trust in civic government

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Executive Summary

Introduction

As a result of a series of Integrated Risk Management Workshops conducted by the Audit Department, physical asset management was identified as a priority area for a performance audit. Due to the scope of activities included in this function, we decided to focus on two services: Roadway Construction and Maintenance and Facilities Maintenance Services of the Public Works Department.

This report deals with Facilities Maintenance. The objectives of the audit were to assess the following:

- the extent to which the services delivered adequately reflect the department's mandate, objectives and priorities;
- the adequacy of the design and implementation of the risk management and control framework for the delivery of services;
- the compliance with key legislation, regulations and policies governing the delivery of services; and
- the extent to which service performance results are relevant, accurate, balanced and meaningful.

Background

Well-managed infrastructure is essential to the City's growth, economic development, safety and quality of life. The City's facilities infrastructure included in the Public Works' portfolio represents a very large investment of public funds; it is estimated at a replacement cost of $797 million as of December 31, 2004. Much of the existing infrastructure was built many decades ago, and this makes the management of maintenance of the assets more crucial. Poorly maintained assets increase the chance of accidents and can add costs to users.

The primary mandate of the Public Works Department is asset management, which is a systematic process of acquiring, maintaining, upgrading, operating and disposing of physical assets cost-effectively. It combines engineering principles with sound business practices and economic theory and provides tools to facilitate a more organized, logical approach to decision-making.

The Building Services Division (BSD) is responsible for Facilities Maintenance Services. The mandate of BSD is to partner with stakeholder groups to operate, maintain, protect and preserve the City's physical building infrastructure to provide for current and future facility needs. Given the current financial environment, BSD must be able to demonstrate that scarce resources are being used effectively and efficiently as well as have the capacity to report on the consequences of funding decisions made by the Administration and Council.

Report on Performance

Building Services Division faces a significant challenge to adequately maintain the City's facilities within the approved budget. The growth in service requests, the high levels of spending on corrective maintenance and the results of citizen and customer surveys all point to a serious deterioration of the building infrastructure. This is not surprising given the constraints placed on the financial resources available to support Facilities Maintenance. The Public Works Department has reported a significant infrastructure deficit for several years. The latest information that was available on the facilities infrastructure deficit indicates that the

annual average planned deficit is $17.2 million from 2004–2008.

As well, the City's approach to facilities investment and maintenance decisions has tended to reflect tradition, intuition, personal experience and resource availability. Systematic application of objective analytical techniques has not been applied because of the lack of a system and available, complete and reliable information on the facilities. The result of developing a work plan without an effective asset management system is inefficiencies and higher costs over the long-term. This approach to asset management, in general, and resource allocation and investment analysis, in particular, is tactical rather than strategic. The Building Services Division has taken steps recently to improve its performance through the acquisition of an asset management system. It is clear that challenges still lie ahead to utilize the system to its full capacity.

We were not able to fully evaluate the performance of the Facilities Maintenance service grouping in each performance area that we identified because of the lack of established performance standards and information. BSD has not established targets against which to measure its performance which is consistent with other cities we surveyed. There is limited information from BSD or other jurisdictions to use as a basis for comparison. Nevertheless, we have identified and reported on some indicators that provided perspective on the current level of performance. The results for customer surveys indicate relatively low levels of satisfaction with the condition of buildings and the timeliness and response to service requests. The number of service requests has increased by 19.7% over the last three years. BSD management estimates that only 10% of the maintenance work performed is preventative. Consequently, it is likely that facilities will deteriorate at a faster rate, exacerbating the existing problem.

Public Works will not be able to assess the effectiveness or efficiency of the Facilities Maintenance service without a more comprehensive performance measurement system. Without the ability to objectively report on results, it is difficult for Public Works to discharge its accountability to Council and to the public.

Key Observations and Recommendations

In attempting to explain the results of the Report on Performance, we examined four areas of focus that we believe must be well managed for business objectives to be achieved. We also focused on key controls that should be in place to manage significant risks associated with these business objectives. Below are some of the key observations and recommendations that we believe will improve the current control environment and position the Building Services Division to realize opportunities in the future:

Determining the Work to Be Done

- There are several departments and divisions that have some responsibility for facilities owned by the City. Our review found issues regarding a lack of coordination of facilities management from a corporate perspective as well as a duplication of responsibilities across departments. The result has been a diffusion of accountability and a degree of inefficiency.

- For example, we were unable to secure a complete inventory of the City's physical building

assets. In addition, the total costs associated with City maintenance activities are not transparent. Furthermore, similar functions are being carried out by different departments. A problem that has been identified is the lack of a defined "owner" of certain facilities with the result that no department is being held accountable for all asset management decisions related to these facilities. Corporately, this has led to poor decisions or an absence of decision-making in such areas as divestment of facilities that have exceeded their useful lives.

- We have recommended that the responsibility for all Civic facilities be assigned to one entity. We have suggested that several benefits could be realized including greater efficiencies and potential cost savings. As an interim step, duplicate activities should be consolidated. We have further suggested a rationalization of all asset management activities and the consideration of options for alternate service delivery.

- Building Services Division needs to develop a comprehensive performance management process that includes the identification of desired outcomes, established levels of service, service standards and benchmarks and to regularly report on the achievement of intended results to senior administration and Council. The information from measuring results allows management to make informed decisions and can help to support budget requests with performance data.

- BSD has to develop and implement plans to ensure maximum usage of the capabilities of the recently purchased VFA.facility asset management system. A plan should be developed to conduct condition assessments for the remaining facilities that were not included in the contract, including all other civic facilities that are not in BSD's portfolio. BSD also needs to develop a process to maintain and update condition information, and the process should include set reassessment cycles. The condition information will enable BSD to develop optimal plans for the preservation of facilities.

- Building Services Division needs to ensure that all the systems involved in asset management are interconnected to the extent possible to ensure consistency of data across systems and to eliminate double entry of data.

- Building Services Division needs to develop and establish short-term and long-term asset management plans that outline needs and priorities using asset management principles. Life cycle cost analysis should be used as a project evaluation tool to identify and prioritize projects that will lead to the long-term preservation of facilities.

Controlling Costs

- The effectiveness of BSD's operations is significantly impacted by the current budgeting process. The budget is not established based on an optimal list of projects. In addition, funds are often re-

allocated from planned maintenance activities to cover any shortfall in the amounts budgeted for utilities to operate the facilities.

- BSD recovers the costs of its services from its clients through a chargeback system and this chargeback bill-out model has not been revised since 2003. Clients are not confident that rates reflect actual costs. BSD has been able to recover the costs of its overhead each year well before the year end and in 2005 fully absorbed overhead expenses part way through December. Prior to the closing of the GL, BSD provides a "rebate" to its revenue customers for this surplus which is based on the annual labour hours and materials expended. This same rebate is not provided to its recovery clients and in effect, they pay a higher overhead rate than the revenue customers. The chargeback process needs to be reviewed to ensure that the essential elements of transparency, fairness and reasonableness are evident.

- Based on the limited information available, the City's inventory includes some facilities that should be considered for disposal since their preservation needs exceed replacement costs. BSD or some other organizational unit should be assigned the responsibility of determining when to dispose of facilities that have exceeded their estimated useful life and making the appropriate recommendation to Council.

- Risk management is an integral part of project management and should be thought of as a component of any project management methodology. BSD needs to implement a formal risk management process that incorporates procedures consistent with the level of project risk.

- Certain articles of the CUPE Agreement have made it more onerous on a smaller scale for BSD to contract out work that may result in cost reductions in some cases.

Quality of Work

- BSD needs to develop, document and maintain quality standards for maintenance work performed in all types of facilities. These standards should be communicated to staff, civic tenants and external contractors when necessary. This will ensure that good quality maintenance work is performed and is consistent from facility to facility.

- The Building Services Division needs to ensure that documentation of key operational procedures is in place. Guidance on what should be documented and where this documentation should reside should be developed.

- BSD needs to develop a formal quality inspection process for both external and internal maintenance work. Inspections are currently carried out on an informal basis but are not documented for all projects undertaken. A quality report/checklist should be developed and completed for inspections to ensure that the maintenance work carried out adheres to the contract and/or the quality standards expected.

- In the Public Works Department, 58% of the staff will be eligible to retire by 2010 and, as a result, BSD may have difficulty maintaining continuity of knowledge and skills in the future. A formal Succession Plan should be developed and adequately funded.

Impacts on the Public and Staff

- Currently, the City does not have a coordinator for the Asbestos Management Program. Since BSD monitors more than 250 buildings with asbestos, we believe BSD should be given the responsibility to oversee the Asbestos Management Program for all City facilities.

- Building Services Division needs to develop a process to ensure that the Community Centres are fulfilling their responsibilities with regards to the annual inspections of fire protection equipment and fire extinguishers. In addition, for other City facilities, BSD needs to implement a process to monitor the inspections of fire extinguishers to ensure that they are conducted by the contractor on a timely basis.

- Significant improvement is needed with respect to the annual inspections of heating systems. The lack of a centralized inventory listing of gas fired appliances at each location results in a time-consuming exercise to identify the facilities that are due for inspection.

Conclusions

The services delivered by Building Services Division are consistent with the mandate, objectives and priorities of the Public Works Department. The responsibility for asset management of buildings and facilities owned by the City, however, is split among several departments of the City. There is an opportunity to improve the performance of asset management activities through the consolidation of responsibilities into one department or Special Operating Agency.

The infrastructure deficit has been well articulated and is fast approaching a crisis level. There will come a point in time whereby a lack of new infrastructure and preservation investments will have economic impacts. In addition, it would appear that if the Building Services Division is to maintain facilities in a safe manner and meet legislative requirements as well as use appropriate asset management strategies, the number of facilities maintained will need to decrease, or the budget will need to increase or both. Citizens have made their concerns known. Resolution of a problem of this magnitude is well beyond the ability of the department to manage on its own. Indeed, municipal leaders have taken their concerns to the senior levels of government, and there is some basis for anticipating relief in the future. Within these financial constraints, the Department has done a reasonable job of making trade-offs among relative priorities.

Having said that, we are unable to state definitively that the citizens have received value for money for the tax dollars spent on this service. The lack of complete performance information leaves the Department unable to demonstrate the efficiency and effectiveness of its activities. And until the asset management system is fully utilized, we cannot be certain that planning efforts and maintenance decisions are optimal, either with existing resources or in anticipation of additional funding in the future. We believe that implementation of our recommendations will improve the

Facilities Maintenance Service and help the Public Works Department establish a higher degree of transparency and accountability. With support from decision makers and funding partners, Public Works can work towards building and maintaining an appropriate building infrastructure to benefit all citizens.

Mandate of the City Auditor

The City Auditor is a statutory officer appointed by City Council under the *City of Winnipeg Charter*. The City Auditor reports to Council through the Audit Committee (Executive Policy Committee) and is independent of the City Administration. The City Auditor conducts examinations of the operations of the City and its affiliated bodies to assist Council in its governance role of ensuring Civic Administration's accountability for the quality of stewardship over public funds and for the achievement of value for money in City operations. After communication to City Council, an audit report becomes a public document.

Background

In 2003, we conducted a series of Integrated Risk Management Workshops and used the results of these workshops to update our annual audit plan. Physical Asset Management was identified as a priority area for a performance audit. Due to the considerable scope of activities included in Physical Asset Management, we decided to focus our Audit on two services: Roadway Construction and Maintenance and Facilities Maintenance Services of the Public Works Department. This audit dealt with Facilities Maintenance.

Audit Objectives

The objectives of the audit were to assess the following:

- The extent to which the services delivered adequately reflect the department's mandate, objectives and priorities;
- The adequacy of the design and implementation of the risk management and control framework for the delivery of services;
- The compliance with key legislation, regulations and policies governing the delivery of services; and
- The extent to which service performance results are relevant, accurate, balanced and meaningful.

Audit Scope and Approach

This second stage of the audit focused on the performance of the Facilities Maintenance service for the period of January 1, 2004 to December 31, 2005. Physical security was excluded from the scope of the review. Due to the time and resources required to properly evaluate this function, physical security will be considered as a separate audit in the future.

We approached our audit in three phases:

- Preliminary survey phase
- Fieldwork phase
- Reporting phase

In conducting our audit, we employed a variety of methods:

- We conducted interviews and discussions with the Director of Public Works, Manager of Building Services Division, Supervisor of Financial Services and the

Superintendents of the various branches within BSD.

- We worked with management to determine the most significant risks that could inhibit or prevent the achievement of their business objectives and used the risk assessment to focus our audit resources on specific areas. We also identified and evaluated controls in place to mitigate significant risks.

- We obtained facilities maintenance information from the cities of Edmonton, Calgary, Hamilton and Richmond to determine whether there were opportunities to improve management practices and results at the City of Winnipeg.

- We interviewed Building Services Division's three main customers; Civic Accommodations, Parks and Open Space and Community Services. We also conducted interviews with the Managers in the Water and Waste and Transit Departments, the Real Estate Division of the Planning, Property and Development Department and the Emergency Mechanical Services Branch of the Fire Paramedic Service.

- We reviewed and analyzed relevant Public Works Department reports, operating information and documentation.

- We reviewed the key policies and administrative directives governing the management of physical assets, human resources and contracting.

- We developed a *Report on Performance* based upon information available.

We communicated the results of our audit on an on-going basis and presented a formal report to Public Works Senior Management, the Chief Administrative Officer, Audit Committee and Council at the end of the audit.

Audit Conclusions

Based on the audit work completed, we concluded that:

- The services delivered by Building Services Division are consistent with the mandate, objectives and priorities of the Public Works Department. However, we found that the responsibility for asset management for buildings and facilities owned by the City is split among several departments of the City. There is an opportunity to improve the performance of asset management activities through the consolidation of these responsibilities into one department.

- The Building Services Division needs to implement improvements to the control framework to ensure that risks are managed such that there is reasonable assurance that business objectives will be met.

- The Building Services Division generally complies with the key legislation, regulations and policies governing the delivery of services.

- The Building Services Division has not established performance targets (other than meeting its budget) against which to measure its performance. This limits the ability to understand whether the Department's performance results met expectations.

The audit was conducted in accordance with generally accepted auditing standards. In preparing our report, we have relied upon extensive interviews with Building Services Division management, staff and others, and information, data, and other documentary evidence provided to us. The conclusions reached in this report are based upon information available at the time. In the event that significant information is brought to our attention after completion of the audit, we reserve the right to amend the conclusions reached.

Acknowledgement

The Audit Department extends its appreciation to the many individuals who participated in the audit. Their comments and insights assisted us in completing our analysis and provided the foundation for many of the report recommendations.

City of Winnipeg Audit Department Team
Brian Whiteside, CA•CIA, Deputy City Auditor Kevin Milne, CGA, CIA Senior Auditor (Project Leader) Lorna Smith, MBA, CGA, CIA Senior Auditor

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Shannon Hunt, CGA, CFE
City Auditor

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Introduction

It is the responsibility of the Public Works Department to deliver municipal public works services relating to the planning, development, operation and preservation of roadway systems, parks, open spaces, natural area systems and the maintenance and security of civic buildings.

A common responsibility for the divisions of the department is physical asset management. The Department provides integral components of asset management for the following types of assets: Roadway Systems, Structures, Traffic Signals and Traffic Signal Plant, Parks and Open Space Systems, and Facilities. See Appendix 1 for an organization chart.

Facilities Maintenance

The Building Services Division (BSD) is responsible for facilities maintenance services, which include core programs of building maintenance, building operations and the Power Smart Program. These core programs are delivered to a number of customer departments (Community Services, Civic Accommodations, and Parks and Open Space) as well as to Special Operating Agencies on a full cost recovery basis. The mandate of BSD is to partner with stakeholder groups to operate, maintain, protect and preserve the City's physical building infrastructure/assets to provide for current and future facility needs.

Key goals and strategies

The key goals and strategies for facilities maintenance services are:

1. Improve organizational clarity, technology, work techniques and methods.
2. Support interdepartmental cooperation.
3. Identify and implement an environmental stewardship program.
4. Develop and implement a Physical Asset Management Program.
5. Develop and implement a risk management program.

Core Programs – consist of specific processes and activities undertaken by BSD in delivering facility maintenance including:

Building Maintenance Program

This core program consists of a number of services including Building Automation System Maintenance; Structural System Maintenance; Plumbing Maintenance; HVAC Maintenance; Elevator Maintenance; Electrical Maintenance and Refrigeration Plant Maintenance.

In turn, each service consists of a number of processes including CLAIR (Clean, Lubricate, Adjust, Inspect, Repair); Legislative Inspections; Seasonal and Recurring Maintenance and Activities; Major Repairs; Install/Replace/Upgrade; Calibrate/Balance; Preventative Maintenance; and Reactive Maintenance.

Building Operation Program

This core program consists of a number of services (and processes) including Custodial (cleaning methods specific to different building types/uses); Customer Services (front line customer contact and setting up for special events); Monitoring and Control (building security; building life safety systems; building automation systems; emergency response and air quality); Building System Operation (providing routine legislative checks and inspections); Water Quality (pool chemistry and balance; chlorination

systems maintenance); Ice Making / Maintenance (plant start up /shut down; ice installation/maintenance); and Pest Control (process coordinate contractors).

Power Smart Program

This core program's service manages the delivery of utility savings according to the Power Smart Agreement on behalf of all City departments to ensure that energy measures proposed by Manitoba Hydro are properly installed in the best interests of the City.

Support Programs

A number of programs are required to support delivery of BSD core programs. These support programs consist of various services and processes including Hazardous Materials Management (manage asbestos, PCB's, mould, and other hazardous material present in buildings); Utility Management (monitor, conserve and make efficient use of energy/water and take remedial action if necessary); Technical Support (providing engineering/project management; standards and asset management); Safety Management; Work Management (Maximo); and Financial Management.

The 2004 planned expenditures for BSD was $25,764,509 and the capital budget was $3,570,000. The operating budget for this Division is recovered from the customer departments and the SOAs that BSD provides service to on a full cost recovery basis. BSD has 261 full time equivalent staff positions. See Appendix 2 for Building Services Division Organization Chart.

Building Assets

The Building Services Division is responsible for maintaining and operating 657 buildings within the City's inventory of 1,100 buildings plus small seasonal and outbuildings. The asset inventory, which is detailed below, is diverse in function, age and construction.

Asset	Client Group	Inventory		FCI Current Condition	Current Replacement Value (estimate)
		Number	Square Feet		
Office Buildings	CA/PW	24	544,900		$81,607,000
Police Stations	CA	15	265,700		39,858,000
Libraries	CA	15	271,800	0.19	40,771,000
Ambulance/Fire Buildings	CA	7	107,600		16,141,000
Combination Buildings	CA/PW	9	389,300		58,390,000
Maintenance Buildings	CSD/PW	44	126,300		16,608,000
Arenas	CSD	18 (City)	523,100	0.36	73,232,000
	CSD	12 (community)	454,700	0.16	45,470,000
Indoor Soccer	CSD	2 (community)	49,000	0.09	7,235,000
Swimming Pools	CSD	12 Indoor	585,300	0.53	156,860,000
	CSD	11 Outdoor	25,500	1.13	9,422,000
Wading Pools	CSD	93	64,800	0.31	13,620,000 (includes basin)
Community Centre Buildings	CSD	92	899,500	0.41	134,920,000
Assiniboine Park Zoo Buildings	CSD	105	108,800		13,647,000
Assiniboine Park Conservatory	CSD	9	46,800	0.49	7,608,000
Golf Courses	PPD	18	27,400		3,557,000
Seasonal and Outbuildings	PW, PPD	101	28,200		3,154,000
Historic Buildings	CA/PW	9	93,800		14,069,000
Miscellaneous	PW, CSD, CA	52 (City)	401,000		56,643,000
		9 (community groups)	57,500		4,641,000
TOTAL		**657**	**5,071,000**		**$797,453,000**

Inventory as at December 31, 2004. Note: Parking structures are not included in these totals.

Abbreviations:

FCI = Facility Condition Index
CA = Civic Accommodations Division, Planning, Property & Development Department
CSD= Community Services Department
PPD= Planning, Property and Development Department
PW= Public Works Department

Value of Assets

Several techniques have been used to establish the value of municipal infrastructure assets. For the purpose of renewal planning, replacement cost is generally the preferred method of quantifying the value of an asset.

Based on average replacement values of $110 to $268 per square foot, (dependent on building type with indoor pools being the highest cost), an estimated building replacement value of $797,453,000 as of December 31, 2004 was developed for the facilities under BSD's jurisdiction. The replacement values are based on the information provided in the *Public Use Facilities Study* (PUFS).

Asset Management

Asset management is a systematic process of acquiring, developing, maintaining, upgrading, operating and disposing of physical assets cost-effectively. It combines engineering principles with sound business practices and economic theory, and it provides tools to facilitate a more organized, logical approach to decision-making. Thus asset management provides a framework for handling both short-and long-range planning.

At its core, asset management is a strategic, as opposed to tactical, approach to managing assets. The process works as follows: First, performance expectations (levels of service) consistent with goals, available budgets and policies are established to guide the analytical process, as well as the decision-making framework. Second, inventory, condition and performance information is collected and analyzed. Asset management links user expectations for system condition, performance, and availability with system management and investment strategies. This information provides input on future system requirements (needs). Third, the use of analytical tools and procedures produces viable cost-effective strategies for allocating budgets to satisfy the needs of the City and the public, using performance expectations as critical inputs. Asset management provides ready access to quantitative and qualitative data and allows decision makers to more readily identify and focus on key issues. Alternative choices are then evaluated, consistent with long-range plans, policies, and goals. The ability to weigh and articulate the impact of choosing one alternative over another through "what if" analyses is enhanced, and importantly, the support and documentation explaining the selection is improved. A fact based, reproducible, systematic approach can enhance the dialogue among decision makers regarding capital investment levels. The entire process is re-evaluated annually through performance monitoring.

A typical Asset Management System involves these key components:

Physical inventory – A complete and accurate inventory of the infrastructure assets is maintained.

Condition assessment – A condition assessment of each inventory item needs to be performed and maintained. Scheduling of inspections varies with the kind of infrastructure being managed; elements that tend to change quickly are inspected more often.

Modeling – The infrastructure elements' condition assessments from previous years are input into a deterioration model and used to predict the elements' condition in the future. The models can also be used to perform "what if" analyses on the system, predicting the performance based on different treatment schemes.

Expert System – Expert systems can consolidate the knowledge of a number of experts by developing a set of rules and logic provided by them. Scenarios fed through the system will result in decisions that are consistent and supported.

Database – The information stored in the database is made up of the results of the inventory, condition assessment, deterioration modeling and expert system. The database must be arranged so that it is easy to use and efficient. The information in the database must be kept current.

Goals – These are targets for optimization that are used in the analysis. Typical goals are determined by the politicians or are forced by budget constraints.

Optimization – This is the process by which the program attempts to meet the goals imposed on it.

Analysis – A plan is produced for how to use the available resources to provide the most value.

Project assignment – The results generated from the analysis stage are plans for improvements for individual infrastructure elements. These are translated into project assignments that can include: doing nothing, maintenance, repair or rehabilitation.

Follow-up – It is important to revisit the condition assessments and inventory on an ongoing basis to ensure the effectiveness of the system and the accuracy of the information in the database.

Report on Performance

Benefits of Performance Measurement

Municipal managers want to be efficient and deliver value for their services. Taxpayers need to know how their tax dollars are spent and how their services compare both year-to-year and in relation to others. There are four main reasons why performance measurement is essential:

- Enhances accountability - In today's environment, it is important that taxpayers are informed about what Building Services Division plans to achieve, what it is actually achieving and what the service costs. Measuring and reporting on performance strengthens the understanding between staff and Council of the expected results and actual results for the service. It helps focus Council's decision making and helps BSD staff understand the level and type of service delivery required. Performance measures demonstrate to taxpayers how they are being served and the value they are receiving for their tax dollars.

- Helps to improve performance - The analysis of performance results identifies opportunities for municipalities to improve the quality, efficiency and effectiveness of the services.

- Stimulates productivity and creativity - Performance measures can be used to create new incentives and rewards to stimulate staff creativity and productivity.

- Improves budget processes - Performance measures can help municipalities develop budgets that are based on realistic costs and benefits, not just historical patterns. Performance measurement can also improve the monitoring of budgets by measuring whether the budget and expected service levels are being met.

Current Performance Results

An integral part of our audit is the assessment of the performance of the Building Services Division with respect to its facilities maintenance operations. In assessing the performance of an entity, program or service it is essential that the different types of performance measures are not viewed in isolation. It is also important to measure quality as well as unit costs. Results should be viewed in terms of how much is achieved and how well. Although the term "quality" can have many different meanings, it essentially boils down to meeting client or taxpayer expectations. Therefore, both efficiency and effectiveness measures should be considered when evaluating the overall performance, since there is often a trade-off between the two. For example, BSD may be able to reduce its unit costs for maintenance work significantly, but only by providing a quality or level of service that taxpayers find unacceptable. Performance data is also most meaningful when comparisons can be made (i.e. actual to budget, year to year, jurisdiction to jurisdiction).

From our review of industry information, we determined that facilities maintenance operations are assessed either in terms of the quality or cost of services performed or how well the condition of the buildings is maintained. The American Public Works Association (APWA) focuses on performance indicators such as the janitorial cost per square foot, which provides information on the efficiency of the services

performed. In contrast, the Association of Physical Plant Administrators (APPA), a leading authority in the subject of asset management, uses the Facility Condition Index (FCI) as one of the measures to rate the level of maintenance that is provided by an organization. The FCI is widely used and accepted as a reliable benchmark to measure the relative condition of facilities. We will provide more information on the FCI and APPA's maintenance hierarchy later in this section of the report where the performance indicators are discussed in detail.

The availability of relevant and reliable performance information is critical to the provision of an objective performance assessment. Currently, BSD collects and monitors very limited performance data and the survey responses from other Canadian cities indicate that performance reporting with respect to facilities management is not yet well developed. Notwithstanding, we have identified certain performance indicators, which we believe are critical in assessing whether BSD is achieving its mandate. While most of these indicators address either the condition of the facilities or the services performed by BSD, there are a few others that have been included, which would enhance the understanding of the overall asset management activities. Although no information was available for some of the performance indicators, we have highlighted them because they are useful measures, which will enable Public Works senior management to assess the BSD's performance in the future.

Performance Indicators

We identified the following performance indicators as useful in gaining an understanding of how well the Building Services Division is performing maintenance of the City's facilities:

Effectiveness Measures

- Change in infrastructure deficit/deferred maintenance
- Preventative maintenance vs. corrective maintenance
- Service requests
- Customer satisfaction
- Compliance with regulations
- Timeliness of service response
- Availability of facilities
- Average Facility Condition Index

Efficiency Measures

- Budget variances
- Year to year comparison of annual maintenance and janitorial costs
- Maintenance cost per square foot
- Janitorial cost per square foot

Effectiveness Measures

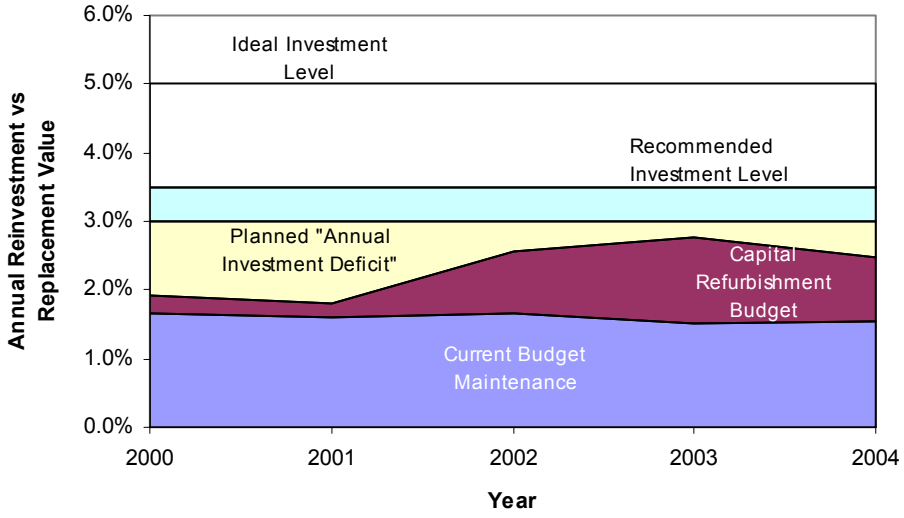
These measures refer to the extent to which a service is achieving its intended results.

They focus on the outcomes of a service or program. The emphasis is on the quality of service, the benefits a service delivers to taxpayers or the impact the service has on the quality of life in a community. Results are usually expressed as percentages or ratios.

Change in Infrastructure Deficit

The infrastructure deficit is essentially the difference between the required level of funding to sustain a desired level of service and the planned or budgeted expenditures. It represents the amount of additional funding required to prevent deterioration of the asset below the present condition.

Up-to-date information was not available on the unfunded needs and how they have changed from year to year. The most recent *State of the Public Works Infrastructure in the City of Winnipeg* document that was presented to the Standing Policy Committee on Public Works by the Public Works Department in September of 2003 indicated that $35 million should be spent annually on average for buildings.



Source: 2003-2005 Public Works Business Plan

However, in 2003, the actual investment was $22.1 million and the planned investment for the period 2004 – 2008 is $17.8 million annually on average. This means that the annual average planned deficit between 2004 and 2008 is $17.2 million. It should be understood that these figures are based on high level estimates and we were unable to assess their reasonableness since supporting documentation was not available. BSD has not developed a comprehensive plan that would allow an accurate figure to be determined. The level of service has not been defined for all facilities and, moreover, the City does not have a complete inventory listing of all its buildings or complete information on the condition of the buildings.

Furthermore, there is uncertainty regarding the accuracy of the replacement values that were used to develop the estimates. Without a complete inventory of buildings and current condition assessments, there is no assurance that all the maintenance needs estimated are accurate. In the event that the estimates are reasonable, for every year there is a funding deficit for preservation of an asset, the backlog of required preservation work grows.

The graph above highlights the fact that Public Works is facing a significant shortfall of funds for the maintenance and refurbishment of the facilities where the Department has been identified as being responsible for maintaining the facilities. *The Whitestone Building Maintenance and Repair Cost Reference* (1998) recommends that on the basis of a 50-year maintenance cost profile, the required maintenance and refurbishment reinvestment should be between 2% to 5% annually. Due to Winnipeg's severe environmental conditions, an annual investment of between 3% and 3.7% of the building replacement value has been recommended.

The current level of funding is insufficient to maintain the current level of service. The result, over time, will be deterioration in performance of the facilities, and an increasing requirement for corrective maintenance. Given limited funding, this will likely result in funding being diverted away from required preservation to corrective maintenance.

Change in Deferred Maintenance

Another useful measure to assess BSD's performance is deferred maintenance, which is defined as maintenance work that was not performed when it should have been or was scheduled to be and which, therefore, is put off or delayed for a future budget cycle. Deferred maintenance occurs due to lack of adequate funding, diversion of maintenance funds for emergencies and competition for resources. While regular maintenance is performed for reasons of safety, energy conservation, operational efficiency, breakdown prevention and routine repairs, if such maintenance is not performed routinely, a deferred maintenance backlog will be accumulated. Generally, a practice of continuing to defer maintenance will result in higher costs and more breakdowns than if regular maintenance had occurred.

We were unable to obtain the deferred maintenance amount as BSD has not tracked this information over the years. Due to funding limitations, BSD's mode of operation has been primarily to concentrate on performing repairs that have safety and legislative implications (corrective maintenance) and therefore not much effort has been given to implementing a plan to gather such information. However, in 2004, a pilot project was undertaken with VFA Inc. and condition assessments were conducted for facilities at five locations. The results of this assessment indicate that the cost to correct the identified deficiencies is approximately $26.5 million. If condition assessments were conducted for all 657 facilities that are in BSD's portfolio as well as for the other City facilities that are maintained by other departments, it is quite likely that the calculated deferred maintenance amount would be considerably higher than $26.5 million. Prioritizing and quantifying the deficiencies would provide valuable information to facilitate the allocation of funds. Without sufficient funding, the deferred maintenance backlog will continue to increase and the City of Winnipeg's facilities will deteriorate to a point where maintenance or rehabilitation is no longer an option.

Preventative Maintenance versus Corrective Maintenance

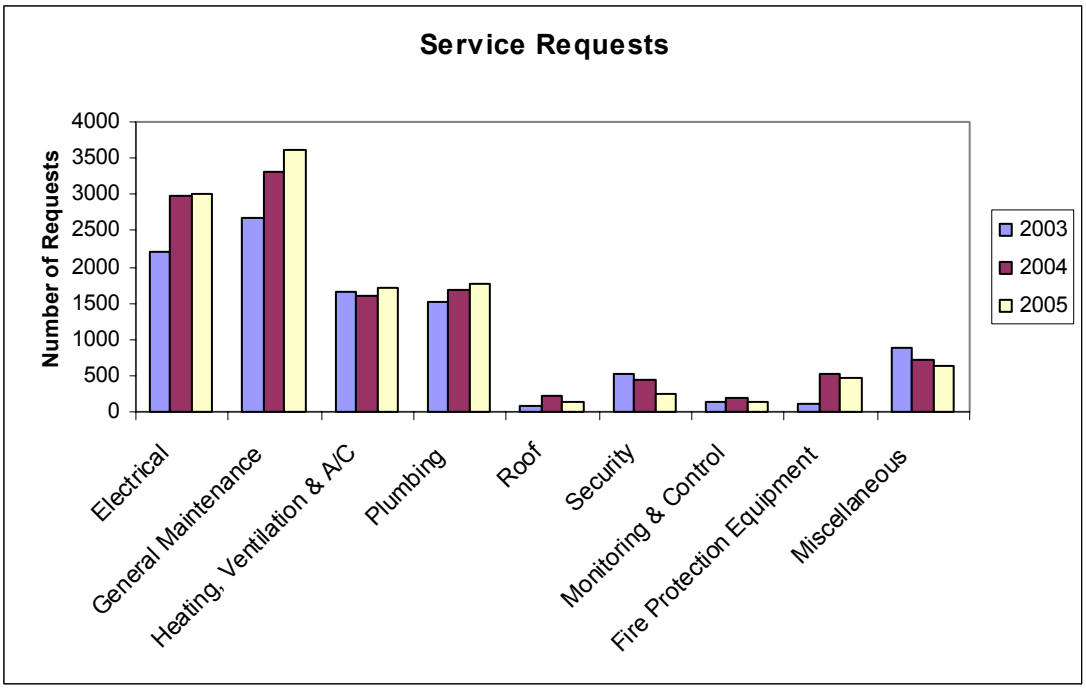
A strong preservation program is essential to assist management in focusing on preserving the facilities while minimizing the total cost of ownership of the facilities. In such a program, both preventative and corrective maintenance are needed to provide and maintain well-run facilities. However, the focus should be on preventative maintenance activities since the costs associated with corrective maintenance are usually significantly higher. Effective maintenance practices include performing treatments before deficiencies arise and ensuring that when deficiencies do arise that they are treated promptly before they become major problems. Therefore, one of the goals of any good asset management system should be to increase the amount of preventative maintenance that is undertaken and, as a result, reduce the need for corrective maintenance.

BSD does not track any information pertaining to preventative maintenance, so precise information was unavailable on the actual expenditures devoted to preventative compared to corrective maintenance work. BSD's management estimated that 10% of the work is preventative, so BSD is currently using the majority of its facilities maintenance resources to address corrective maintenance. This is a result of the fact that the BSD does not receive adequate funding to maintain the current condition of its assets. Consequently, it is likely that the facilities will deteriorate at a faster rate resulting in more corrective maintenance issues that have to be addressed immediately. This is inconsistent with proper asset management where preventative maintenance should be given priority.

Service Requests

BSD's work management system, Maximo, tracks work orders or service requests by type and cost. The number of service requests related to a facilities asset condition is a good indicator of the state of the infrastructure assets compared to what is expected by users. A service request is defined as a call or group of calls that resulted in a work order being created (i.e. if 5 calls came in for the same problem, it would be recorded as 1 service request).

The graph below indicates the various service requests relating to the condition of facilities assets for the years 2003 to 2005. Over this period, the number of requests increased by 19.7%, with the most significant increase relating to electrical work. The category of general maintenance accounted for 27.2%, 28.3% and 30.6% of the service requests in 2003, 2004 and 2005 respectively, but further analysis is required to determine the specific type of work that was requested.

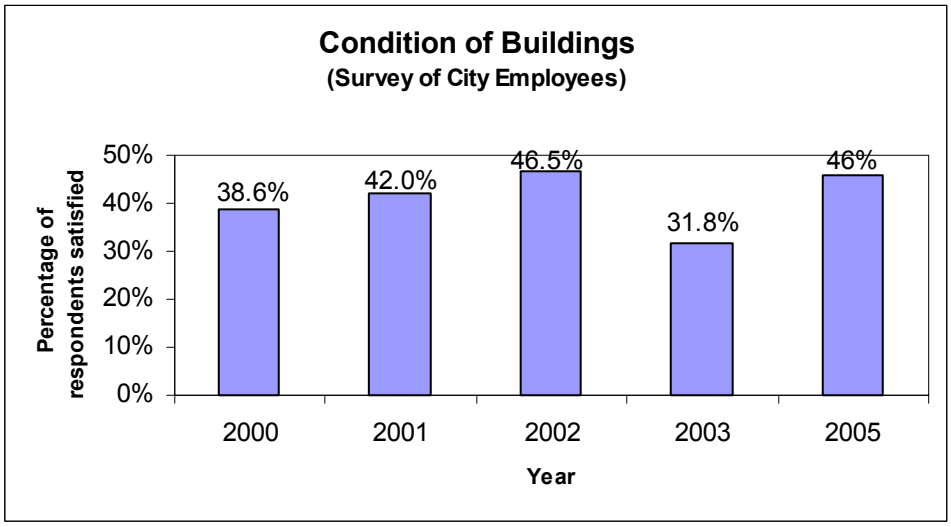


Source: Building Services Work Order Management System - Maximo

It is evident that more maintenance work is being requested and this could be a reflection of the fact that the condition of the facilities is declining or that the work performed was inadequate and required rework. It also could be a reflection of the Division's more extensive use of the tracking system to document service calls in the past two years.

Customer Satisfaction

A critical component to evaluating effectiveness is the extent to which customers are satisfied. The Customer Services Division of Public Works conducts an annual survey to assess the satisfaction of City employees with the condition of the Civic buildings that they occupy and the services provided by BSD.

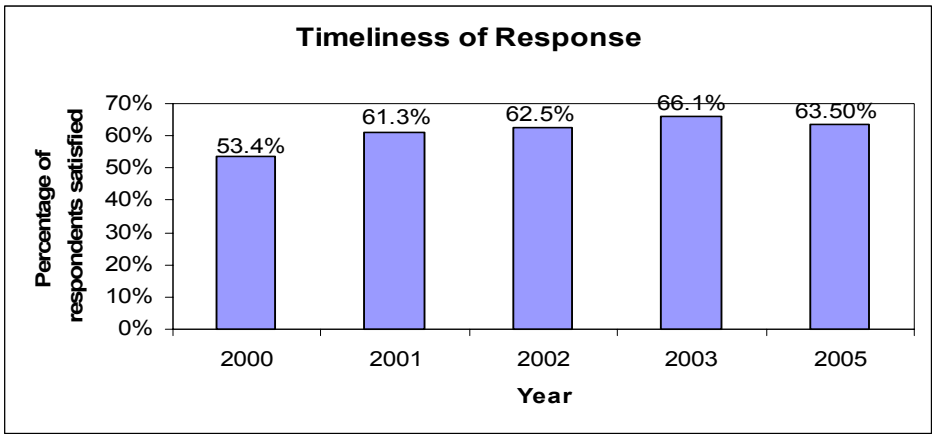


Source: 2005 Building Services Survey

This chart above shows employee satisfaction with the condition of the City's Civic buildings. The level of satisfaction level has been below 50%, over the five-year time period indicated.

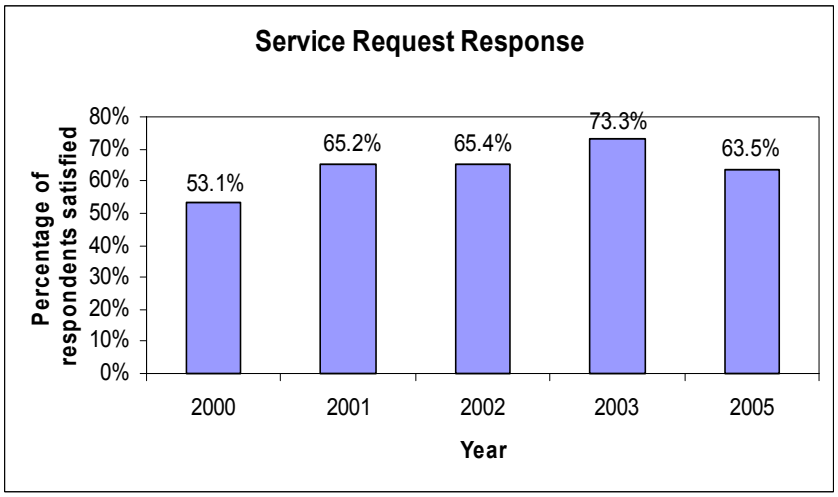
We were unable to determine if this is a reasonable satisfaction level as BSD has not established a target level of satisfaction.

The graph below measures employee satisfaction with the timeliness of BSD's response to service calls. Here the satisfaction rating consistently improved each year from 53.4% in 2000 to 66.1% in 2003 and then dropped to 63.5% in 2005.



Source: 2005 Building Services Survey (internal customers)

The next graph indicates that there was also significant improvement in the level of satisfaction with regards to BSD's response to the service requests from 2000 – 2003 but a significant decline occurred in 2005. This could be an indicator of a reduced capacity to respond to an increasing number of requests.



Source: 2005 Building Services Survey (internal customers)

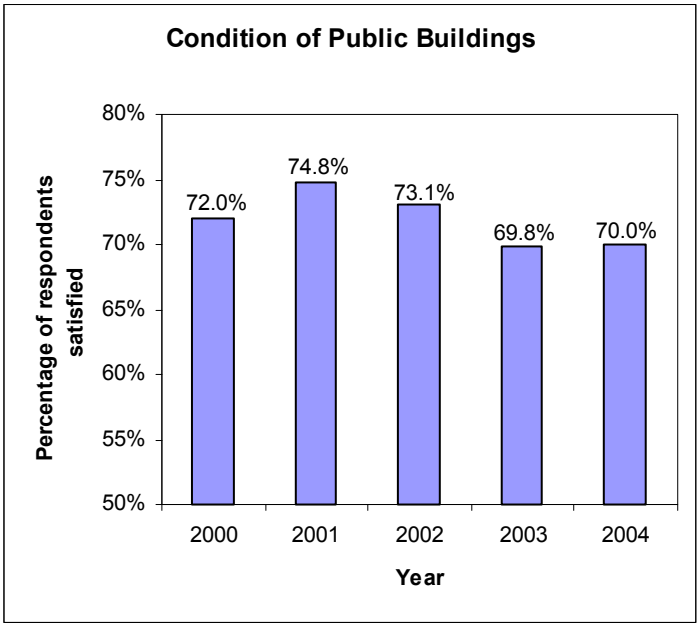
The level of satisfaction with response improved until 2003 and dropped off in 2005. The results of the employee survey also indicated that there was a considerable level of dissatisfaction in some areas. The table below highlights the areas where the overall level of dissatisfaction rated as "unsatisfied" or "very unsatisfied" was higher than 30% in 2005. Some areas of dissatisfaction such as air quality and heating can only be addressed through the replacement of old systems that cannot be modified or repaired to improve performance. Funding for replacement of these systems will be required to address these areas. It is evident that there are

some areas where BSD is not meeting customer expectations with respect to the level of service. BSD had not received the comments accompanying the 2005 survey to enable further analysis of the results before we completed our draft report.

Building Services Division Survey Areas of Dissatisfaction	
Category	**% Respondents**
Air quality	46
Heating	37.2
Cleanliness of flooring (carpet/tile/linoleum)	35.7
Water quality	32.8
Cleanliness of workspace	32.8
Custodial services	30.1

Source: 2005 Building Services Division Survey

In addition to this annual employee survey, Public Works also conducts an external customer satisfaction survey in the spring and fall of each year. This is a telephone survey of randomly selected citizens to assess their satisfaction with the City's facilities and the services provided by the Department including facilities maintenance. The chart below shows that from 2000 – 2004 the satisfaction rating for the overall condition of the City's public buildings has been approximately 70%. The level of public satisfaction with the condition of the buildings was much higher than the ratings of the City employees for the buildings they occupy.



Source: 2004 Public Works Citizen Survey

Compliance with Regulations

Tracking the percentage of time that BSD is compliant with the various safety and health regulations would be beneficial since this information would indicate whether further investigations are warranted to identify reasons for non-compliance and the corrective action that should be taken. If non-compliance with a specific regulation occurs repeatedly, this would be an indicator that there are problems that need to be addressed. Currently, Building Services Division is not tracking this indicator. Considering the consequences and implications of non-compliance with the applicable regulations, it is essential that the BSD implements a system to obtain the relevant data.

Availability of Facilities

Closure of facilities due to failures and breakdowns and unscheduled repairs could be indicative of the age of the facilities as well as inadequate and ineffective maintenance processes. If the buildings that Building Services Division maintains are not available for use by the public and the City's employees, then this would be an indication that the services are not meeting the customers' expectations. The desired level of service should be that the facilities are in an acceptable condition and are always available for use.

BSD does not normally track this measure but some information was available for arenas, wading pools and indoor and outdoor pools. During 2004, there were no closures of arenas and wading pools due to emergencies or planned maintenance. Indoor and outdoor pools were open 97.8% and 99.6% of the time respectively and the instances in which they were closed were as a result of scheduled maintenance or circumstances beyond the control of BSD. Without complete information for all facilities, it is difficult to determine the effectiveness of BSD in this performance area. This information is needed for Community Centres, Leisure Centres and Civic Accommodations buildings.

Timeliness of Service Response

A typical measure of effectiveness for any service is how quickly staff responds to service requests. BSD currently does not measure how long it takes to perform a service request, nor has it established a standard time to respond. BSD should consult with its customers and other jurisdictions to determine what an acceptable service response time is within a given budget. This way the customers can be involved in the decision of what level of service they want and can afford. Once a set of service standards is determined, BSD should measure and report on its performance against these standards. Some of the measures could be:

- Average response time
- Percentage of service responses addressed within minimum acceptable standards
- Average time to complete a work order
- Preventative maintenance completion rate

Average Facility Condition Index

FCI is calculated by dividing the total value of the existing deficiencies by the current replacement value of the building; the higher the FCI, the poorer the condition of the building. As previously mentioned, APPA has developed a maintenance hierarchy which includes FCI values for the different maintenance levels. Some of the characteristics of the five maintenance levels are provided in the table below. FCI's have been calculated for some of the facilities that are

maintained by Building Services Division. In the *Public Use Facilities Study* (PUFS) which was issued in June 2004, condition assessments were conducted for 311 facilities and FCI's were developed for each facility.

APPA'S Maintenance Hierarchy					
Level	**Description**	**Preventative Maintenance vs Corrective Maintenance**	**Facility Maintenance Operating Budget as % of Current Replacement Value**	**Building Systems Reliability**	**Average FCI**
1	Showpiece Facility	100%	> 4.0	Breakdown maintenance is rare and limited to vandalism and abuse repairs	< 0.05
2	Comprehensive Stewardship	75-100%	3.5 – 4.05	Breakdown maintenance is limited to system components short of mean time between failures	0.05 – 0.15
3	Managed Care	50 – 75%	3.0 – 3.5	Building and systems components periodically fail	0.15 – 0.29
4	Reactive Management	25 -50%	2.5 – 3.0	Many systems unreliable; constant need of repair; backlog of repair needs exceeds resources	0.30 – 0.49
5	Crisis Response	0%	< 2.5	Many systems non-functional; repair only instituted for life safety issues	> 0.50

The table below provides the average FCI for each building group and the associated maintenance level based on APPA's hierarchy.

Public Use Facilities	
Building Group	**Average FCI**
Maintenance Level 5 - Crisis Response	
Outdoor pools	1.05
Indoor pools	0.53
Senior Centres	0.7
Recreation Centres	0.55
Maintenance Level 4 – Reactive Management	
Community Centres	0.41
Leisure Centres	0.38
Field Houses	0.38
Daycares	0.39
Arenas	0.36
Wading pools	0.31
Maintenance Level 3 – Managed Care	
Community Centre Arenas	0.16
Libraries	0.19
Maintenance Level 2 – Comprehensive Stewardship	
Indoor soccer pitches	0.07
Maintenance Level 1 – Showpiece Facility	
-	-

Source: *Public Utilities Facilities Study* & APPA's Maintenance Hierarchy

The PUFS report stated that the current City portfolio of public use facilities has an average FCI (0.42) in the Reactive Management range, and, unless funding levels are increased immediately, facilities will continue to deteriorate at an accelerating rate to the point where forced closure or emergency replacement becomes the norm. The PUFS report provides compelling evidence that the City's public use facilities need additional funding so they can be maintained at an acceptable level.

The PUFS report recommended the Managed Care level of service for the ongoing preservation of the City's recreation, leisure and library service infrastructure. This recommendation reflects Council's direction; in January 2004, Council adopted the *A.C.T.I.V.E. Policy Framework*, which included the principle that recreation, leisure and library facilities would be managed to the industry standard of Managed Care. On May 18, 2005, Council also approved the *Recreation, Leisure and Library Facilities Policy*, which provides direction for the provision and maintenance of these facilities. The policy specifies a commitment to a managed care level of maintenance for all new facilities and, where possible, for existing facilities. The managed care level of funding is consistent with other jurisdictions in Canada for recreation, leisure and library facilities.

We reported earlier that management estimated that BSD is currently only performing approximately 10% preventative maintenance. Based on APPA's maintenance hierarchy, this level of preventative maintenance would fall between the Reactive Management and Crisis Response categories. The objective of maintaining the facilities at the Managed Care level would require that the level of preventative maintenance be increased to 50% - 75%.

Of the remaining 346 facilities that BSD maintains, FCI's have been calculated for only 5 locations. This was done during the pilot project that was conducted by VFA Inc. The overall FCI for these facilities was calculated to be 0.2896, which is in the Managed Care category, but VFA reported that this FCI is poor by industry standards. This could be because it is at the upper end of the Managed Care range and close to the Reactive Management category. We considered using the information in the *10-year Maintenance and Repair Plan*, to determine the FCI's for the 118 facilities that are included in the plan. However, we concluded that the results would be understated and would not accurately reflect the condition of the facilities since all current deficiencies were not included in the plan. Information was also unavailable to calculate the FCI's for the other 228 facilities that are in BSD's portfolio. More information will be provided about the VFA pilot project and the *10-year Maintenance and Repair Plan* later in this report.

Overall, of the 657 facilities that are in BSD's portfolio, 47% represents the public use facilities and these have an average FCI of 0.42. Based on the industry standards, at this FCI level, the backlog of repairs exceeds resources; therefore, substantial resources will have to be invested in order to improve the condition of these facilities. Although FCI information was not available for the other facilities, it is likely that increased resources would also be required to maintain them at an acceptable level.

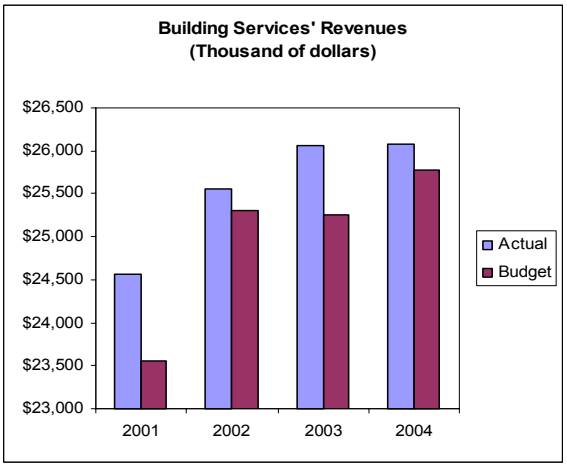
Efficiency Measures

Efficiency measures are the amount of resources used to produce a given amount of service. They are usually

expressed in unit costs. They are designed to indicate how efficiently resources allocated to a department or division are being utilized.

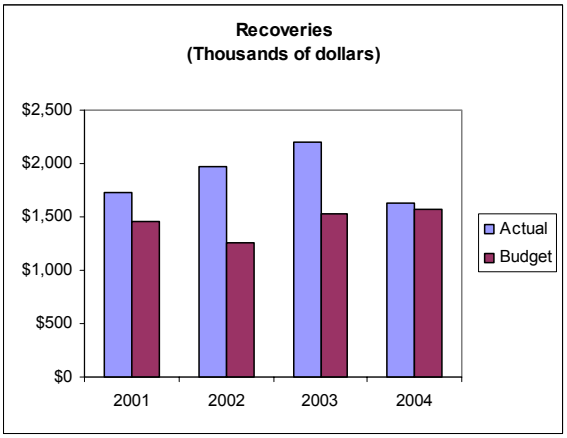
Budget Variances

Building Services Division is considered to be a quasi-utility and is mandated to fully recover its expenditures from its customers. The primary source of BSD's revenue is from its three main customers who have specifically committed funds in their budgets for regular maintenance work. Community Services Department accounts for 55.6% of BSD's revenues, while Civic Accommodations (a Division of Planning, Property and Development) accounts for 37.4% of revenues and Parks and Open Space (a Division of Public Works) accounts for 5.5%. BSD also performs additional work requests for these customers as well as other departments and agencies. These latter work requests constitute recoveries which are typically annual in nature and, because the customer's commitment is not known during the budgeting process, they have a higher risk than revenues earned from their primary customers. The chart below depicts the actual and budgeted revenues for the years 2001-2004; it indicates that the actual revenues were consistently higher than the budget in each year. This is because considerably more work was done for BSD's main customers, in particular Community Services, since this department required a significant amount of safety and regulatory work.



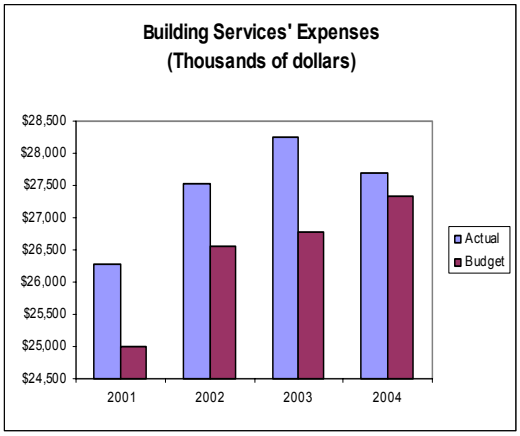
Source: City of Winnipeg Detailed Financial Statements

The next chart compares the actual and budget amounts for recoveries, and it indicates that for 2002 and 2003, the actual recoveries were 57% and 44% higher than the budget respectively. Although there is no guarantee during the budgeting process that BSD's customers will commit to providing the necessary funds to undertake additional work, this is a significant funding source for BSD's operations.

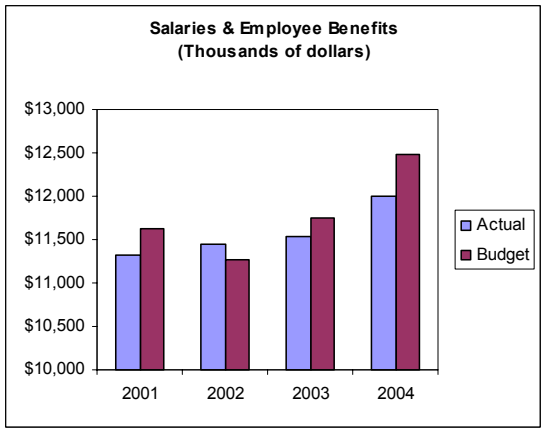


Source: City of Winnipeg Detailed Financial Statements

A comparison of the budget and actual expenses over the period 2001 to 2004 shows that the actual expenses consistently exceed the budget. The graph below indicates that the variance was significant in 2001 to 2003, but there was some improvement in 2004.



Source: City of Winnipeg Detailed Financial Statements



Source: City of Winnipeg Detailed Financial Statements

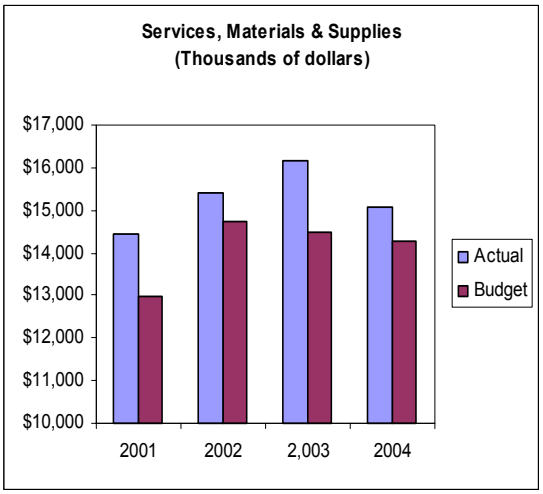
BSD's management emphasized that they are continually challenged to fulfill all their responsibilities due to the limited budget dollars they receive. As a result of this, it has become increasingly difficult to provide the same level of service as they have in the past. Most of the work that is currently performed is corrective in nature and the priority is to address safety and legislative requirements with very little preservation work being undertaken. According to management, the areas in the budget that pose the greatest challenges are salaries and utilities. These items continue to increase at a higher rate than the increases contained in the budget.

Although the results depicted in the chart above right may suggest that the budget allocation for salaries has been adequate, we determined that over the last several years BSD has decreased its staff complement and has been using deficit avoidance and vacancy management as a means to achieve its budget.

In 2004, deficit avoidance represented 7 vacant positions, all of which related to trades personnel who would normally perform the general maintenance work. In addition, vacancy management in 2004 was $218,055. It is clearly evident that the staffing levels are based on the available funding and not on the work that needs to be done. With a decrease of almost 20 FTEs over the period 2002 to 2005, it is expected that it would be difficult for BSD to provide all required services. General maintenance work and, more significantly, preservation work that needs to be done in order to maintain the facilities at an acceptable level is continually being deferred.

Building Services Division	2002	2003	2004	2005
Full Time Equivalents (FTEs)	276.43	257.85	260.69	257.19
Vacancy Management Allocated	$191,938	$348,368	$218,055	$299,943

In contrast to the salaries, the actual expenses for the category of services, materials and supplies were higher than the budget for 2001 to 2004.



Source: City of Winnipeg Detailed Financial Statements

The most significant expenses in this category are utilities and contracted maintenance. BSD is responsible for the utilities expenses for only 347 of the facilities that are in its portfolio. The table below shows that, on an overall basis for 2002 and 2003, the actual utilities expenses were lower than the budget. However, the budget allocation for electricity was inadequate in these years. Utility rates have increased significantly over the period 2000 to 2005 (electricity – 18%, gas – 55%, water 11%), but the budget for heat and water has been reduced from year to year and, in 2004, the actual heating expenses were over budget by $251,744.

Consideration needs to be given to the fact that in any given year, the actual utility expenses will be dependent on the usage, which is related to the weather conditions. Comparison of the weather data for 2003 and 2004 indicate that more heating was required in the 2004 winter months. The budget for heat should be established based on "normal" winters so that in years following a warm winter the budget won't be reduced on the anticipation of another warm winter. In the past, over spending of the utilities budget has been dealt with by diverting funds from other areas, which would eventually result in diminished maintenance services. In those years when a surplus is experienced, the funds are diverted to contracted maintenance which will enable more maintenance work to be carried out.

Contracted Maintenance Costs	2002	2003	2004
Budget	$3,231,350	$3,017,828	$3,031,450
Actual	$4,126,270	$4,027,331	$3,277,248
Variance	$(894,920)	$(1,009,503)	$(245,798)
Variance	27%	33.4%	8.1%

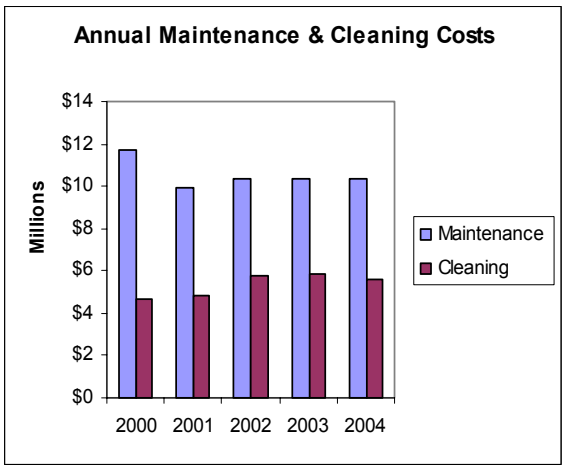
Contracted maintenance is crucial to BSD's operations since the staff does not have the skills to perform some of the required work. However, the table above indicates that there is always a negative variance between the budget and the actual costs. Although the variance in 2004 was only 8.1%, the amount expended was 18.6% less than the prior year. The combination of the decline in available funds for contracting and the escalating costs to contract out has forced BSD to control the amount of work that is contracted out. The emphasis is on specialty areas where there is no choice but to contract out; the result is that the level of service will be decreased and the maintenance backlog will continually increase.

Utility	2002		2003		2004	
	Budget	Actual	Budget	Actual	Budget	Actual
Heat	$3,397,907	$2,604,238	$3,087,904	$2,896,711	$2,879,731	$3,131,475
Light/Power	$3,062,895	$3,192,584	$3,042,624	$3,241,416	$3,187,560	$3,130,502
Water	$967,623	$820,515	$965,795	$850,161	$838,664	$768,962
Total	$7,428,425	$6,617,337	$7,096,323	$6,988,288	$6,905,955	$7,030,939

To summarize, BSD's ability to provide service is being eroded. Although the budget allocations are increasing overall, year-to-year, they are not increasing in line with the increase in staff salaries as a result of the collective bargaining process. BSD has been managing this shortfall by decreasing its staff complement and using vacancy management. The long term consequences of carrying out this strategy will be the continued deterioration of the condition of the facilities they are responsible for maintaining. It would appear that if Building Services Division is to maintain facilities in a safe manner and meet legislative requirements as well as use appropriate asset management strategies, the number of facilities maintained will need to decrease, or the budget will need to increase, or both.

Year to Year Comparison of Annual Maintenance and Cleaning Costs

The chart to the right depicts the annual maintenance and cleaning costs for the period 2000 to 2004. The figures reflected in the graph include the overheads that were applied when customers were billed. For both the maintenance and cleaning costs, there was not a significant difference from 2002 to 2004. The fact that there has not been much variance in the costs from year to year could indicate either that BSD has been able to control the costs in spite of the restricted budget or that only the minimal work that is required is being performed. Based on the results of our audit work, the latter appears to be more likely and could be an explanation for the customer dissatisfaction found in customer surveys ratings with respect to the cleanliness and physical condition of the buildings.



Source: Building Services Work Order Management System - Maximo

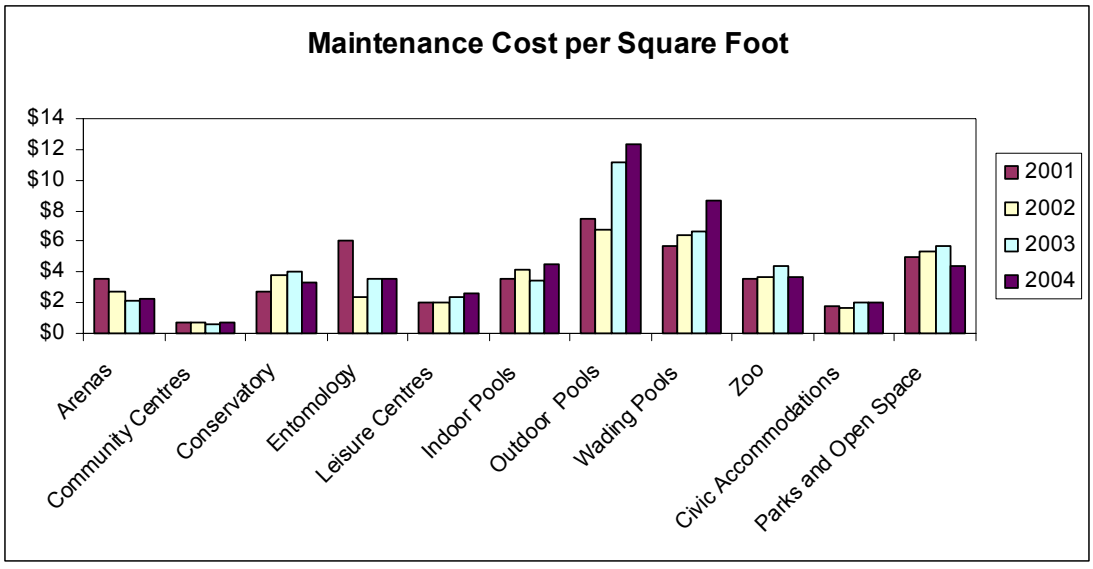
Further analysis of the costs by building groups indicate that the Civic Accommodations buildings, indoor pools, Parks and Open Space and arenas account for 36%, 20%, 12% and 9% of the annual maintenance costs respectively. BSD provides second line maintenance to Community Centres so their cost is only 5% of the overall annual costs. With regards to cleaning, 40% of the costs related to Civic Accommodations buildings, 29% to indoor pools and 17% to arenas. BSD's responsibility in this area does not cover all building groups since the Community Centres, Conservatory and Assiniboine Park Zoo are cleaned by the occupants.

Although the annual costs over these years indicate that there is not a significant variance, it should not be assumed that this is due solely to the efficient operations of BSD. The allocation of funds in the budget process coupled with the BSD's mandate to operate at a break-even point, are significant factors to be considered. Building Services Division has to rely on the outcome of the negotiations with its customers to ensure that sufficient funds will be available to cover the various costs.

Maintenance Cost per Square foot

A comparison of the maintenance cost per square foot by building group over the period 2001 to 2004 indicates that the costs for outdoor and wading pools are consistently the highest and that there was a significant increase in 2004 compared to 2003. This is due to the fact that several problems were experienced with these facilities and there was an increase in the regulatory requirements by the Manitoba Health Department. For the other building groups, the costs have remained at about the same level or in some instances have decreased slightly over this period. The unit cost reduction for arenas from 2001 to 2002 is attributed to the fact that up until 2001, four arenas were contracted out, but after that it was reduced to one. In addition, incorrect coding of some costs resulted in the information for 2001 being overstated. As expected, Community Centres have the lowest cost because BSD only provides second line maintenance for these facilities.

While a positive trend of unit cost reductions may suggest greater efficiencies, there may be several reasons for this occurrence such as a decrease in the level of services provided, and this information only reflects a portion of the true performance picture. Without appropriate comparative information such as that from other municipalities, it is difficult to assess the reasonableness of these costs by building group. We requested information from Calgary, Edmonton, Hamilton and Richmond. Richmond did not respond to our request and of the others, only Hamilton provided a response regarding performance indicators and measures. The information they provided relating to maintenance cost per square foot was limited and did not provide any real basis for comparisons.

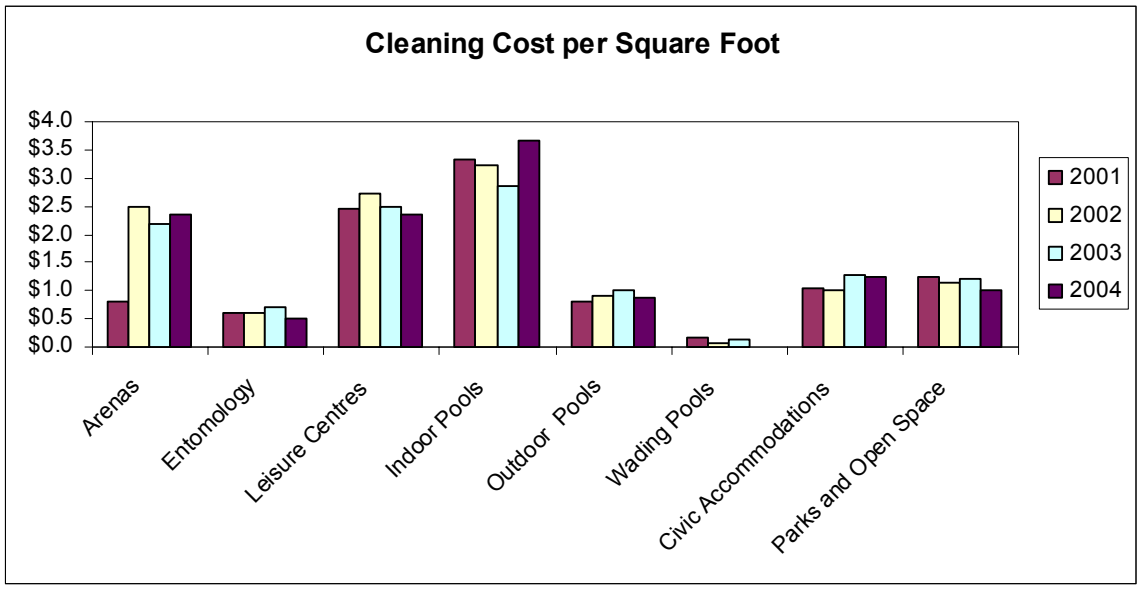


Source: Building Services Work Order Management System - Maximo

Cleaning Cost per Square Foot

From the chart below, it is evident that there has not been a significant change in the cost over the years for the various building groups, with the exception of arenas where there was a 200% increase in 2002 compared to 2001. The reason for this anomaly is that prior to 2002, problems were encountered in the coding of the costs and the method of reporting was then changed so the figure for 2001 was understated. For wading and outdoor pools, the cost is low compared to the other building groups and this is because BSD only supplies the cleaning materials while the actual work is done by Community Services staff. The difference in cost between types of facility is partially due to the difference in the level of service provided.

In order to assess BSD's performance in this area of work, it would be necessary to have appropriate benchmarking information so that meaningful comparisons can be made. From a year to year perspective, it appears that there is not much fluctuation in the costs, with the exception noted above.



Source: Building Services Work Order Management System - Maximo

Summary of Performance Results

We were not able to fully evaluate the performance of the Facilities Maintenance service grouping in each area that we identified because of the lack of established performance standards and performance information maintained by BSD. There is also limited information to use as a basis for comparison with other jurisdictions.

BSD has not established levels of service for maintenance of all facilities and does not have complete and up-to-date information on the condition the facilities in its portfolio. Information on the condition of public use facilities was made available through the PUFS report. The PUFS report points to deterioration in the condition of public use facilities. In addition, BSD does not maintain performance information on the level of compliance with regulations, availability of facilities or timeliness of service response. A more comprehensive performance measurement system is required to more objectively and completely report on results.

We have identified and reported on some indicators that provide perspective on the current level of performance including the following:

- The results of the customer surveys indicate relatively low levels of satisfaction with the condition of buildings, timeliness and response to service requests.

- Over the last three years, the number of service requests has increased by 19.7%, with the most significant increase relating to electrical work.

- BSD does not track information on preventative maintenance. BSD's management estimated that 10% of the work is preventative: BSD is currently using the majority of its facilities maintenance resources to address corrective maintenance.

The growth in service requests, the high levels of spending on corrective maintenance, and the results of citizen and customer surveys all point to deterioration in the condition of the facilities.

A significant factor contributing to BSD's performance is the level of funding that is allocated to facilities maintenance. The Public Works Department has reported a significant infrastructure deficit for several years. The latest information that was available indicates that the annual average planned deficit is $17.2 million from 2004-2008. Although the budget allocation has increased each year over the last 3 years, it has not been sufficient to meet the increasing costs, in particular, for salaries, utilities, and contracted maintenance. Accordingly, BSD has been using vacancy management as a means to operate within its budget. In addition, there has been a reduction of approximately 20 FTEs since 2002.

To date, BSD's approach to facilities maintenance decisions has been tactical rather than strategic focussing on correcting known deficiencies rather than performing preventative maintenance. Systematic application of objective analytical techniques has not been applied because of the lack of an appropriate system and the availability of complete and reliable information on the facilities. While BSD has taken steps recently to improve its performance through the acquisition of an asset management system, it is clear that challenges still lie ahead to develop and utilize the system to its full capacity.

Positioning for the Future

In our *Report on Performance*, we looked at the current Facilities Maintenance service being provided by BSD. In the remainder of the report, we will review and analyze potential reasons for the performance. We will assess the extent to which BSD has identified significant risks that could impede the achievement of its business objectives related to this service and implemented a control framework to manage these risks. We also consider whether controls are operating as intended and provide recommendations where improvements are required. We believe that a strong control environment will enhance current performance and position BSD to realize opportunities in the future.

Our audit work focused on four areas that must be well managed to achieve the business objectives of the Facilities Maintenance Service. These are described below with evaluation criteria.

Areas of Focus and Criteria

Determining the Work to be Done

The roles, responsibilities and services provided by BSD should be well defined, communicated and understood within the Public Works department and by all other City departments.

BSD should have clear performance objectives, targets, standards and information on results.

BSD should treat the right facility at the right time with the right treatment.

Controlling Costs

BSD should have an effective framework in place to control costs.

Quality of Work

BSD should ensure that maintenance work is of appropriate quality.

Impacts on the Public and Staff

BSD should minimize negative impacts of maintenance work on the public and staff.

Risk Profile

A risk profile is a map that indicates the most significant risks facing the operations of an organization at a point in time. The Risk Profile for the Facilities Maintenance service was adopted from the department's *Corporate Plan and Budget Submission* and categorizes risk according to the City's *Corporate Risk Framework.* We organized the risk profile according to the Areas of Focus for the audit. (We subsequently combined Performance of Assets with Determining the Work to be Done). Management reviewed and validated the Risk Profile. The Risk Profile can be found in Appendix 3.

In the final section of the report, we will consider the effectiveness of the controls implemented to manage the risks identified. We used a control model to identify key controls that should be in place (The model is described more fully in Appendix 4.) The recommendations contained in the report are intended to provide management with actions that will assist in the mitigation of the significant risks or control gaps identified during the audit. Management can also use the Risk Profile on an on-going basis to identify where their resources should be focused to effectively manage the key risks associated with Facilities Maintenance. The Risk Profile will change due to changes in the operating environment. Implementation of the audit recommendations will also change the Risk Profile as risk management practices are strengthened.

Observations and Recommendations

Our observations and recommendations are categorized by Area of Focus. On our Risk Profile, we identified five Areas of Focus that must be well managed to achieve the business objectives of the Facilities Maintenance Service. For reporting purposes, we combined the first two Areas of Focus, Performance of Assets and Determining the Work to be Done. All recommendations should be considered within the context of both current operations and future challenges.

Determining the Work to be Done

The roles, responsibilities and services provided by BSD should be well defined, communicated and understood within the Public Works department and by all other City departments.

BSD should have established clear and measurable objectives and performance targets, and strategies consistent with achieving the objectives in order to report on the BSD's performance against targets.

The appropriate asset management information is required to ensure that the right decision is always made. BSD requires appropriate information on the assets it manages to assess what maintenance work needs to be carried out. The best practice is to carry out the required maintenance work on the right facility at the right time with the right treatment.

Roles and Responsibilities

The mandate of the Building Services Division is to partner with stakeholder groups to operate, maintain, protect and preserve the City's physical building infrastructure/assets to provide for current and future facility needs. Overall, the roles, responsibilities and services carried out by BSD with respect to identifying and determining the work that needs to be done are defined, communicated and understood within the Public Works Department and by other City Departments that have building maintenance responsibilities. As well, clear communication channels have been established between BSD and its major clients.

At the same time, our review found several issues regarding a lack of coordination for facilities maintenance from a corporate perspective as well as a duplication of responsibilities across departments. The result has been a diffusion of accountability and a degree of inefficiency. Some examples are discussed below:

Condition of Physical Building Assets

Currently there is no department in the City that has information on how well all facilities owned by the City are maintained. In fact, we were unable to secure a complete inventory of the City's physical building assets. Each department with maintenance responsibilities was aware of the facilities for which they were responsible, but there was no complete inventory of all civic facilities. Despite its stated mandate of partnering with stakeholder groups to operate, maintain,

protect and preserve the City's physical building infrastructure/assets to provide for current and future facility needs, in practice, BSD is only carrying out this mandate for the 657 facilities that are in its portfolio. BSD does not know the condition of all civic facilities or what maintenance or preservation work is being performed on facilities outside of its direct control.

Furthermore, the recently completed PUFS report identified several properties where the cost of preservation exceeded the cost of replacement. This report only looked at public use facilities maintained by Building Services Division. BSD, however, was not the owner of these properties. At this point in time, there is no central department charged with the responsibility of recommending that a decision should be made to replace or surplus these facilities because of the physical condition.

Cost of Facilities Maintenance

The total costs associated with maintenance activities for all facilities owned by the City are not known. While maintenance activities performed by Building Services Division account for a significant portion of the total costs, costs borne by other departments are not transparent within the City's budgets. This means that the City cannot provide a total cost (including staff and contract resources) for maintaining its portfolio of its physical assets (buildings and facilities) without further discussion with all applicable departments.

Maintenance Responsibilities of Other Departments

There are a number of departments within the City that are responsible for maintaining their own facilities including the Transit Department, the Fire Paramedic Service and the Water and Waste Department. The managers responsible for the maintenance of these facilities indicated to us that, either due to the unique nature of their facilities (Water and Waste Department) or because they operate on a 24/7 basis (Water and Waste, Transit Department and the Fire Paramedic Service), they require internal staff to carry out their facility maintenance. They further indicated that they have, upon occasion, asked for advice from BSD on other aspects of building maintenance. They indicated their relationship with BSD was good and that any work that was done was of very good quality. Nevertheless, coordinating the resources from all departments would provide more flexibility to deploy resources to higher risk priorities.

Leased Facilities

The Real Estate Division has the responsibility for negotiating leases with community groups who wish to use civic facilities for various activities. Many of these facilities are the responsibility of either Community Services or Civic Accommodations. At the same time, clauses in the leases may result in maintenance responsibilities that are to be undertaken by BSD. As a result there are three departments (four divisions) that have an interest in and/or responsibilities with respect to these facilities. Some of these leases are old and date back to a time before the City amalgamated. Many of the older leases are very broad and maintenance responsibilities are not clearly defined. This leads to time consuming negotiations among all parties involved to resolve who will pay for significant maintenance costs when work in leased facilities is required. Often, compromises are made that may not preserve the value of the specific facility.

We reviewed four lease agreements that had been negotiated by the Real Estate

Division to determine if maintenance responsibilities were clearly defined for each party involved with the lease. The leases clearly outlined the maintenance responsibilities of the lessee and the lessor. The agreements indicated that 'the City' is responsible for certain maintenance aspects of the facility and has the right to inspect and carry out other work on the facility. The division or department within 'the City', however, was not defined. Assumptions have been made that BSD, due to the nature of its operation, would be responsible for the maintenance of these facilities. The funding required to carry out maintenance on these facilities, however, has not been provided to BSD.

The staff in the Real Estate Division indicated that part of the problem when negotiating the leases is that there is no one "owner" to take full responsibility for the facility. For example, a facility may be the responsibility of the Community Services Department but staff in that department see themselves only in the role of users of the facilities as part of their service delivery function. No department is taking the overall ownership role and, as a result, poor asset management decisions can be made or, in some cases, decisions are not taken when they should be.

The Real Estate Division also indicated that they have recently implemented an inspection process for leased facilities that will initially involve the inspection of all leased facilities at least once per year. Once the inspections are carried out, they intend to work with the lessee and the concerned departments and divisions to get the necessary maintenance work completed. They have hired a person to administer this program and carry out the inspections. Although this effort is commendable, since many of these facilities have not been inspected for many years, we are concerned that this will result in a duplication of effort. BSD already has the expertise on staff to carry out building inspections.

Contracted Maintenance

In our discussions with Civic Accommodations management and BSD management, we found that each of these divisions has technical staff in place who carry out similar functions relating to the contracting out of building system repair projects. In BSD, the Contracted Maintenance Services Branch is responsible for managing contracts relating to building system repair projects such as boiler replacements, roofing projects, HVAC system replacements, etc. These projects are carried out in the facilities for which BSD has maintenance responsibility and for the facilities of Civic Accommodations and other departments when requested.

In Civic Accommodations, this work is carried out by their Technical Services Branch. In addition to managing contracts relating to building renovations to suit the needs of clients, this Branch also manages contracts relating to boiler replacements, roofing projects, HVAC systems, etc. in Civic Accommodations facilities. The Manager of Civic Accommodations indicated that they must retain technical expertise on staff to ensure that they have a clear understanding of buildings and that they are able to contract out renovations for clients on their facilities when required. In addition, when time allows, they also manage building system repair projects for other City departments when requested. The Manager of Civic Accommodations stated that the mandate of the Technical Services Branch is to support the overall property management and that he believes that a vast majority of projects are managed by the appropriate division.

In our opinion, it is not efficient to have two different divisions carry out similar type of work. We understand that preliminary discussions between Civic Accommodations and BSD have recently been held to look into the logistics of integrating these two branches into one.

Consolidation of Facilities Maintenance

Although the relationship between BSD and other departments that have maintenance responsibilities is good, it is not clear that having several departments involved in facilities maintenance is the most effective model for the City. It is also unclear how BSD can fulfill its mandate when it is not responsible for the entire portfolio of physical building infrastructure/assets. Furthermore, in the absence of established service standards, it is not known whether similar facilities are maintained to the same standard. There may be opportunities to re-deploy resources to higher risk priorities.

In our opinion, consolidation of this function would provide several benefits:

- a consistent level of maintenance across all City facilities;
- a more unified maintenance operation to replace the current fragmented service delivery model.
- more precise revenue and expense information related to maintenance activities;
- better inventory and condition information on the City's facilities;
- reduction of duplication of maintenance activities with potential associated cost savings and greater efficiencies:
- resolution of the ownership issue;
- better utilization of maintenance staff; and
- clear accountability for managing the condition of physical building assets including recommending divesting of assets that have exceeded their useful lives and re-investing in preservation of current assets.

We believe that one entity should be given the authority to make the necessary decisions concerning all facility maintenance activities and/or provide guidance to other departments in the management of their facilities. The physical consolidation of staff is not as important as the centralization of the authority to manage the resources. Consideration should be given to allowing departments that have special facilities (and equipment) to retain the responsibility and resources for the maintenance of these special facilities. In the interim, those functions that clearly represent a duplication of effort across departments should be amalgamated.

While discussion of the consolidation of the entire asset management function is beyond the scope of this audit, we believe that there is merit in the rationalization of all asset management activities. The establishment of a Special Operating Agency (SOA) similar to those established for Fleet Management and the Parking Authority might be an appropriate solution. The SOA would act as the "owner" of City-owned facilities with the authority to provide complete asset management services including the maintenance of facilities.

Recommendation 1

a) We recommend that responsibility for facilities maintenance for all Civic facilities be assigned to one department, division or agency. As a first step, consolidation of duplicate activities should be initiated.

Management Response

The Administration is presently completing a Civic Facilities Integration Initiative (CFII), which is reviewing Building Services', Civic Accommodations' and Real Estate's role in the asset management process. The review (the CFII) has been provided with the Auditor's recommendation regarding functional and organizational consolidation. The City will draw upon the findings of the CFII in responding to this recommendation.

The Administration is open to considering the possibility of consolidating the facilities maintenance functions, both in-house and contracted, for the Civic Accommodations, Community Services and Parks and Open Space buildings, whether by way of organizational restructuring, or by way of service level agreements between departments. Given the significance of this proposed change, the findings of the CFII, expected this summer, will play an important role in the Administration's deliberations and response.

Currently elements of Civic Accommodations and Building Services perform facilities maintenance for <u>different</u> buildings in these building groups. As such, there isn't duplication but there may be opportunity to consolidate these groups for improved efficiency/effectiveness to be achieved in utilizing these resources under the direction of one facility maintenance authority.

At this point in time, we believe it is premature to consider consolidating facilities maintenance for the current Water and Waste, and Transit Departments' self-maintained portfolio.

b) We recommend that consideration be given to developing a feasibility study to rationalize the asset management function and explore options for alternate service delivery.

Management Response

The Civic Facilities Integration Initiative (CFII) sponsored by Public Works and PP&D is nearing completion. This initiative is a review of Building Services, Civic Accommodations and Real Estate's role in the asset management process.

The CFII Committee expects to present a final report and recommendations to senior management in early summer. The recommendations will be an opportunity to address long-term asset management options.

Service Level Agreements

A Service Level Agreement (SLA) should constitute the expectations for performance between the service provider and the customer. The Service Level Agreement should include the communication process between parties, the staffing and service hours and the costs to be charged for services.

BSD has developed and signed a Service Level Agreement (SLA) with the Community Services Department (CSD) and with Golf Services (GS). The SLA with the Community Services Department defines the customer and the service provider and identifies the types of maintenance and respective responsibilities. It also dictates that the

full cost of service will be recovered, including overhead costs. The SLA, however, only dictates a general level of service in that "the objective is to create an appropriate and pleasant work environment". There are also no provisions for preservation work unless additional funding is available; it is not a standard part of the agreement.

In addition, Council adopted a new policy on recreation and leisure facilities in May of 2005 that will have a significant impact on the facilities that are the responsibility of the Community Services Department. This policy makes a commitment to a *Managed Care* level of maintenance and states that "a *Managed Care* level of maintenance will be required for all new facilities." In addition, "Council will strive to attain this level of maintenance for existing facilities." The stipulations in this policy will have an impact on the current and future maintenance requirements for these facilities. The Service Level Agreement between the Building Services Division and the Community Services Department will have to be updated and adjusted to take the stipulations in this policy into consideration.

BSD also has an SLA with Golf Services. This agreement was much shorter and less specific than the Community Services agreement. The agreement did include the responsibilities of BSD in general and a small footnote on the responsibilities of Golf Services.

BSD has not developed an SLA with Civic Accommodations or Parks and Open Space. They have had initial discussions on an SLA with Civic Accommodations using the Community Services SLA as a guideline, but they have not as yet developed and signed an agreement. Management of Civic Accommodations indicated that although they can use the Community Services SLA as a guideline, the SLA between Civic Accommodations and BSD would be more complicated. Community Services has basically one tenant for all its facilities and that is Community Services. The SLA with Civic Accommodations will have to consider the many different tenants occupying the Civic Accommodations' facilities and the different levels of service required by these tenants. This agreement will require resources to negotiate, and we were advised by Civic Accommodations that these resources are not currently available.

Recommendation 2

a) We recommend that BSD develop and enter into service level agreements with their main clients, Civic Accommodations and Parks and Open Space. They should also enter into a new agreement with Golf Services. The service level agreement signed with Community Services should be used as a guideline; however, more emphasis should be put into the preservation aspects of the service level agreement.

Management Response

The Public Works Department agrees with this recommendation. The Building Services/Community Services Department's Service Level Agreement will be used as a guideline to develop SLA's between:

- *Building Services and Civic Accommodations- negotiations are currently on hold pending the final CFII report*
- *Building Services and Parks and Open Space – negotiations have not yet begun*
- *Building Services and the Winnipeg Parking Authority – preliminary negotiation began*

in 2005 and will be resumed in the fall.

- *Building Services and Golf Services – negotiations will be undertaken over the next few months to improve on the existing agreement.*

NOTE: representatives of Public Works and Community Services presented a paper to the Canadian Parks and Recreation Association National Conference in 2004. At that time, and to the best of our knowledge, the City of Winnipeg was/ is a leader amongst municipalities in the development of the Service Level Agreements.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance - Implementation Plan****.*

b) We recommend that BSD review and update the Service Level Agreement with Community Services to take into consideration the requirements of the new *Recreation, Leisure, and Libraries Facilities Policy.*

Management Response

The Public Works Department agrees with this recommendation. The SLA with Community Services will be updated to reflect:

- ✓ *The 2006 Current Budget*
- ✓ *The 2007 to 2009 Current Budget preparation*
- ✓ *The impact of decisions of the application of the Recreation, Leisure and Library Facilities policy.*
- ✓ *Issues of common interest between the two departments*

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance - Implementation Plan.***

Performance Management

Performance targets and measures provide essential information needed for BSD to evaluate the level of service it provides with respect to facilities maintenance.

Levels of Service

Establishing levels of service is an important part of strategic planning. A level of service is a composite indicator that reflects the social and economic goals of the community and may include any of the following parameters: safety, customer satisfaction, quality, quantity, capacity, reliability, responsiveness, environmental acceptability, cost and availability. The defined levels of service comprise any combination of the above parameters deemed important by the municipality and its citizens.

Industry standards relating to levels of service are individual to each municipality. The best practice for asset management is to treat the right facility at the right time with the right treatment. This approach requires more funding than is available to most municipalities but is the long-term lowest cost approach. Edmonton indicated that they assess each building component (structural, electrical, mechanical etc.) on its functionality, appearance, applicable distresses/defects and age. Each criterion is weighted (depending on the component) and an overall Condition Index (CI) is determined. The overall CI ranges from 100% (brand new) to 0%. Experience has taught them that the closer a component gets to 40% the more likely is it to breakdown or fail. For most of their building components they use a minimum level of service of 30 – 40% of the Condition Index range; however for critical components (i.e. those that can have a severe impact on services offered by the facility) a minimum level of service of 40

– 50% of the Condition Index range is considered appropriate.

Hamilton indicated that they are in the process of drafting service level agreements with some of their clients, and Calgary indicated that they have service level agreements with some of their clients.

BSD has not established service level standards. Without establishing formal levels of service for all of its clients, including standards for preservation work, clients are not aware of the level of service they should expect and BSD cannot be held accountable for maintaining facilities within its purview to the appropriate level.

Recommendation 3

BSD needs to develop standards of service for each client and type of facility. A minimum acceptable level of service should be established and communicated through the Service Level Agreements.

Management Response

The Public Works Department agrees with this recommendation. Standards will be established in conjunction with Recommendations #2 and 4.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance - Implementation Plan****.*

Performance measurement

Leading-edge organizations, whether public or private, use performance measurement to gain insight into, and make judgments about, the effectiveness and efficiency of their programs, processes, and people. These best-in-class organizations decide on what indicators they will use to measure their progress in meeting strategic goals and objectives, gather and analyze performance data, and then use this data to drive improvements in their organization and successfully translate strategy into action.

Performance measures are meant to provide more complete information about an entity's performance than do traditional budgets or financial statements and schedules. Primarily, performance measures are concerned with the *results* of the services delivered by the government. Subsequently, they help to provide a basis for assessing the economy, efficiency, and effectiveness of those services. Performance information is needed for:

- setting goals and objectives;
- planning program activities to accomplish these goals and objectives;
- allocating resources to programs;
- monitoring and evaluating results to determine if progress is being made toward achieving the goals and objectives; and
- modifying program plans to enhance performance.

The performance indicators that BSD uses should provide quantifiable, relevant and reliable information on the economy, efficiency and effectiveness of its service delivery. Information from measuring results allows management to make more informed decisions about operations. To enable BSD management to monitor and report on its performance, service standards and service goals that link to the objectives for the Facilities Maintenance service have to be established. Service standards establish the minimum level of performance to be delivered. Service goals describe what results are expected to be achieved and when they are to be achieved. Establishing goals and reporting on actual results

enhances the accountability of the Building Services Division and helps to manage customer expectations.

In its 2003-2005 business plan, the Public Works Department reported on the following performance indicators for the Building Services Division:

- Unit cost per sq. ft. for maintenance
- Unit cost per sq. ft. for janitorial
- Customer satisfaction

Comparative information was provided for the unit costs for the period 2000 to 2002, while customer satisfaction measures were provided for the period 1999 to 2003.

However, the Building Services Division has not established service standards or measurable goals that can be used to put the results into perspective. To date, management has been satisfied with the informal reporting that is being done through meetings and oral reports. In the absence of a more comprehensive performance management system, BSD management is limited in their ability to make informed decisions to maintain and improve upon the level of service provided to the public and City employees.

Our literature review revealed that there are various performance measures that are used to assess facilities maintenance operations. The table below provides examples of such measures, which are classified into one of 3 categories.

Performance Measures		
Workload	**Effectiveness**	**Efficiency**
• Number of work orders processed • Number of facilities maintained • Number of square feet maintained • Number of preventative maintenance services performed • Number of quality control inspections of facilities maintained.	• Rate of customer satisfaction • Timeliness of service response • Work completion rates • Breakdown rate • Percentage of time facilities available to users and occupants • Completion of renovation projects compared to project schedule • Deferred maintenance • Facilities Condition Index (FCI)	• Unit cost per square foot

The *Report on Performance* section of this report identifies additional effectiveness and efficiency measures that would also be useful in assessing BSD's performance. BSD needs to systematically collect and compile data for the performance measures noted above. Data gathered will only be meaningful if it is compared to the BSD established service standards or benchmarking information. The appropriate set of performance measures will provide important operational feedback that will challenge BSD management to assess the adequacy of the services and to consider ways to improve service quality, efficiency and effectiveness.

Recommendation 4

BSD needs to develop a comprehensive performance management process that includes the identification of desired outcomes, established levels of service, service standards and benchmarks for the evaluation of results and to regularly report on the achievement of intended results to senior administration and Council.

Management Response

*The Public Works Department agrees with this recommendation and is currently implementing an initiative, the **BSD Maximo Implementation Strategy,** to further expand the use of Maximo, Building Services' CWMS system.*

The Key Performance Indicators (KPI) module in Maximo is designed to gather and report on benchmarks and performance measures. Implementation of this module will be made a priority.

*Our progress will be updated in the **Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan.***

Asset Management System

According to the *National Guide to Sustainable Municipal Infrastructure*, historically, many Canadian municipalities have used a reactive approach to manage their municipal infrastructure. The adoption of a proactive approach will require the

implementation of an adequate asset management plan, which emphasizes strategic planning, preventive maintenance and resource management. The objective of asset management is to optimize the life cycle value and performance of assets while continuously improving service delivery and customer satisfaction.

There are several benefits to be derived from applying good asset management principles, and some of these are as follows:

- provision of better and consistent levels of service to the public, at less cost;
- reduced life cycle costs;
- more accurate financial planning;
- more efficient data management;
- better decisions regarding resource allocation; and
- improved service and performance.

Earlier in the report, we outlined the key components of a typical asset management system. The discussion below highlights some of these areas which we consider to be critical to enhancing the future operations of BSD.

Asset Inventory

Comprehensive knowledge of the assets owned is the foundation of any asset management program and is the basis upon which all decisions are made. Without a complete and accurate inventory of the infrastructure assets, it is difficult to formulate an effective asset management strategy. The inventory records should be more than just a listing of the assets owned, but should include all relevant information, that would facilitate effective decision-making in the asset management process. Accordingly, the records for a building inventory should include not only the location but also the date of construction, the square footage, original cost, replacement value, and condition.

We were unable to obtain an up-to-date comprehensive inventory listing of all city-owned buildings since it is unclear who has the responsibility to maintain a complete facilities inventory. In our attempts to obtain an inventory listing, we contacted the Property Assessment Department and the Planning, Property and Development Department as well as the Risk Management Branch of Corporate Finance. We obtained a list from Civic Accommodations (a Division of Planning, Property & Development department), which indicated a total of 824 buildings, but this was based on the inventory at December 31, 1991. Based on information reported in Public Works 2003 – 2005 business plan, the City's building inventory consists of approximately 1,100 buildings. BSD, however, does not perform maintenance on all 1,100 facilities; BSD is responsible for only 657 buildings.

Although BSD has a listing of the facilities that it maintains, there is room for improvement with respect to the information that is included in the list. Currently, the Asset Management List includes information on the location, use of the building, replacement value and square footage. However, this information is not available for all the facilities. Information on the replacement cost and the square footage was missing for 13% and 16% of the buildings respectively, the majority of which were Parks and Open Space facilities. Moreover, the inventory records should also include the date of original construction of the facility as well as the Facility Condition Index.

Our audit work revealed that the date of construction was included in the PUFS report for approximately 51% of the 311 facilities that were included in this project. This information was not

reflected in the Asset Management List. We also found that we could not reconcile all the information in the summary inventory table with the detailed Asset Management List. The inventory table indicated a total of 657 buildings, which were categorized by the various asset types, while the Asset Management List included over 1,000 locations. We found instances where there was more than one building structure at a particular address and these structures were listed separately in the Asset Management List. It was also difficult to determine the assigned asset type for each building as presented in the inventory table. In addition, the Asset Management List included all the parks and parking structures that BSD is responsible for, but these were not included in the summary table. Adequate documentation was not available to facilitate the reconciliation of the Asset Management List and the summary inventory table.

It is not only important to have a listing of the facilities, but there should be adequate controls to ensure that the records are updated by only authorized personnel and that the information is accurate. Although BSD has a process in place to update the inventory listing, a greater effort is required to ensure that all the information is accurate and complete. Annually, the Superintendents of the respective branches are each provided with a copy of the inventory listing and they are required to report any changes in the recorded information. The Manager of BSD then updates the listing as required. We were informed that the square footage information in the Asset Management List is not accurate for all the facilities. Based on management's assessment, the information is only approximately 60% accurate. This is because BSD does not have the resources and/or has not made it a priority to visit the facilities and obtain an exact measurement.

Recommendation 5

a) We recommend that a complete inventory listing of all City-owned facilities be developed.

Management Response

The Public Works Department agrees with this recommendation and is currently working towards this goal, utilizing the VFA.facility asset management software purchased in 2005.

The VFA.facility asset management software accommodates the information specified in this recommendation. The building audit process collects information relative to the building inventory, feature, area, age, replacement value and condition.

Currently, over 1.6 million square feet of City buildings have been audited and information input into the data base. A further 2 million square feet will be audited in 2006,

*A preliminary **BSD Asset Management Strategy** has been developed for the further implementation of VFA.facility audits at City buildings.*

It should be noted that it is currently not within the mandate of Public Works to collect this information for other department buildings outside of the Building Services portfolio. Partnerships with departments who 'own' specific City buildings will continue to be initiated by Building Services to expand the audits to all City buildings.

*Our progress will be updated in conjunction with Recommendation 5b) **Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan**.*

b) We recommend that BSD update its Asset Management List to include the date of construction, replacement value, and square footage for all buildings.

Management Response

The Public Works Department agrees with this recommendation. The VFA.facility asset management software accommodates the information specified in this recommendation.

The information gathering and expansion of the process is ongoing and will continue in conjunction with Recommendation 5 a)

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan****.*

Asset Condition

Comprehensive knowledge of the condition of the assets owned is an essential component of any asset management program and is necessary to make informed asset management decisions. Condition assessments serve two purposes: to identify maintenance and rehabilitation needs and to monitor the health of the facilities network. As a crucial element of the asset management program, the condition assessment process provides answers to the following questions:

1. What are the existing physical and functional conditions of the facilities?
2. What changes are required to correct existing conditions?
3. What will the changes cost?
4. What are the priorities?

Facilities Condition Assessment

A condition assessment is a systematic and flexible approach developed to provide facility managers with accurate and up-to-date knowledge on the condition of their assets. Condition assessments provide information that enables informed decisions to be made regarding where funds are best spent to provide safe assets and extend operating life. A critical consideration in the process relates to the maintenance of the condition data. If the data is captured in a static report, it would be difficult and time-consuming to update the information, and there would be no long-term value. Various specialist consultant organizations offer detailed Facilities Condition Assessment (FCA) services, including software solutions which have the capability to adequately maintain the condition data and allow the generation of a variety of reports according to standardized criteria.

The FCA is a vital step towards understanding the condition and planning the preservation of a facility or a portfolio of facilities. Planning for the preservation of a building requires an estimate of the deferred maintenance backlog as well as the anticipated future component renewal requirements. An FCA is a comprehensive assessment of a building's condition and the condition of its systems; these systems include roofing, mechanical, electrical, plumbing, interior and exterior. While buildings are constructed to last for extended periods of time, systems within a building have different expected life spans, which require replacement (often multiple times) during the life of the building. The FCA program provides the platform that is used to implement an ongoing system of identification and prioritization of capital repair projects. An FCA program has a wide range of benefits:

- It provides an improved approach by which to properly manage the facilities assets in a more proactive manner (as opposed to reactive maintenance). The creation and maintenance of a centralized database of deficiencies is the

number one goal of an FCA effort. The program provides a solid knowledge of the deficiencies that must be corrected, and when all of the deficiencies have been consolidated, it would be far more difficult to omit critical items from the design of on-going renovation projects.

- It also provides a central location for the storing of facility condition data. Previously, it would most likely have been necessary to consult various individuals, possibly from different departments to obtain all of the condition data for a particular building. The FCA program puts the condition information at everyone's fingertips.
- Facility condition data is organized and sorted such that reports can be viewed and printed using a wide variety of criteria. Each user can sort and print the data that suits their particular need.
- It is a useful tool for organizing and prioritizing all deficiency corrective measures using standardized criteria.
- It provides a means to assure that funding sources have been identified for each project to help assure that each deficiency is properly addressed.
- An effective process to determine the scope of projects and the budget estimates is available, which greatly improves the accuracy of forecasting future capital renewal and maintenance needs. Without the centralized and complete deficiency database, only projects planned for the immediate future typically have any supporting cost and/or prioritization information. The lack of detailed information on longer-range projects makes forecasting maintenance funding needs extremely difficult. This difficulty in forecasting results in future budget requirements being based on historical expenditures as opposed to what is actually needed. This information will be valuable at the decision-making level for assessing funding requirements.
- It is a power tool that is useful in the development of a five-year capital renewal model that shows the needs versus available funding.

A key aspect of the FCA methodology is the use of benchmarking tools which enable organizations to assess the relative condition of their buildings and gauge the facility performance relative to the organization's mission. Earlier in the *Report on Performance* section, we mentioned the Facility Condition Index (FCI), which is a standard quantitative measure that is used to compare the condition of a facility. The FCI is useful in determining which buildings should be considered for major renovations or upgrades and it also facilitates comparisons both within and among institutions.

Although the nature of the condition assessment process may vary among municipalities, it is recognized that the process is an essential part of the asset management strategy. Hamilton indicated that 60% of its facilities have been assessed, and it has an aggressive schedule in place to assess the remainder. Areas that are covered in the assessments include the existence and condition of the components and costing of the identified maintenance and preservation work. Edmonton conducts detailed inspections every 4 years and the building components are inspected for functionality, appearance and compliance with regulatory requirements. Calgary's process consists of an annual inspection of the architectural and structural portions based on a 10-year window. Richmond, B.C. has also implemented a condition assessment process, and the intention is to assess all 150 buildings and then

perform re-assessments on 20% of the inventory every year. These cities all have software applications that maintain the condition data and although the systems are different, the important consideration is that the information needs are met. Richmond reported that, prior to 2001, they relied on static assessment reports generated by consultants or used Excel spreadsheets to track their condition information. However, this proved to be very time consuming since it was difficult to maintain the information. The VFA.facility software has greatly facilitated the process. They can easily identify and report exactly where deficiencies exist since each building is assessed in terms of components.

BSD Knowledge of Facilities Condition

Currently, BSD is in the process of implementing a formalized condition assessment process. Management has indicated that the absence of a formalized condition assessment process to date was due to the lack of funding to implement a system. As a result, BSD has primarily adopted a reactive approach to address its maintenance responsibilities. Although adequate details on the age of all the buildings maintained by BSD were not available, the information gathered indicates that several of the buildings are quite old and require major investment. With an increased need to replace aging and failing systems, the FCA would be beneficial in identifying those systems that are either past or reaching the end of their useful lives, and would also help to determine and prioritize the current and future maintenance needs. Without an established condition assessment process, which incorporates a set reassessment cycle and the criteria to be used for the assessment, it is difficult for BSD to operate in the most effective manner.

In the absence of a formalized condition assessment process, BSD has employed other strategies to determine the work that needs to be performed. One strategy is the annual facility inspection of Community Centres. The purpose of these inspections is to develop a work plan to address the identified deficiencies. However, no costs are applied to the work plan. BSD also relies on the *10-year Maintenance and Repair Plan* to guide the work that it performs primarily on the Civic Accommodations facilities. Although this plan has been used to develop operational work plans, there are limitations in that there is no indication of the current deficiencies and the plan covers only 118 facilities.

To a limited extent, BSD addressed this shortcoming when it accumulated the information for the *Public Use Facilities Study* (PUFS). The major systems of the 311 public use facilities were inspected and, based on the life expectancy of the systems, the work that needed to be done over the next 10 years was determined. Although the estimate of proposed work was at a high level with no details of the current deficiencies, the information gathered included the associated costs for the preservation needs, which was compared to the replacement value to determine the FCI for each of the 311 facilities. Despite the limitations, the information was useful in identifying the facilities in which it would not be economical to invest additional funds.

In its recognition of the need for an objective method to evaluate the maintenance and renewal needs of the City's facilities, BSD conducted a pilot project with VFA Inc. The project involved detailed FCAs at the facilities in five locations, and it was completed in September 2004. One of the primary goals of the assessment was to demonstrate the decision support

capabilities of VFA.facility, VFA's capital planning and management software program as well as to determine if the software satisfied the needs of the City. The results of the assessment were provided in various reports, including a list of all the deficiencies that were identified at the five locations and the costs to correct the deficiencies. The deficiencies were classified according to established criteria, including the priority, category and primary system association. The FCI was also calculated for each facility. The results of the assessment process facilitated effective decision-making with respect to the allocation of resources and the prioritization of issues for the facilities assessed.

In September 2005, a contract was awarded to VFA Canada to supply and implement VFA.facility. The contract also included the building condition assessment of specified facilities, populating the software database with the condition information and the training of staff to conduct such audits and utilize the software. In order to secure the required funds to acquire the software, BSD partnered with other departments, one of which was the Fire Paramedic Service. Consequently, although the condition assessments were conducted at 108 locations with a total of 1,088,436 square feet, five of these locations were fire stations which are not maintained by BSD.

While it is commendable that the process has commenced to address the lack of meaningful asset management information, it should be emphasized that there is much more work that needs to be done. The buildings that were assessed represent only 21% of BSD's total portfolio, so BSD has to formulate a plan to ensure that condition assessments are also performed for the other facilities. Moreover, BSD needs to establish a formalized process to maintain and update the condition information. Reassessment cycles should be established for all the facilities and this could be based on the building group. Management informed us that the timing of the audits of the other facilities is largely dependent on the support and provision of funding from the facility users/owners and currently a plan has not been devised. Benefits will only be derived from the significant investment that has been made if the software is fully utilized and trained staff are allowed to use the skills as soon as possible.

Recommendation 6

BSD should formulate a formal plan to conduct the condition assessments for the other facilities in its portfolio as well as other city facilities not currently in its portfolio. Every effort should be made to develop and implement the plan at the earliest possible date to ensure that the initial training received by the staff will be fully utilized. In addition, BSD should develop a process to maintain and update the condition information, and the process should include set reassessment cycles.

Management Response

*The Public Works Department agrees with this recommendation. A preliminary **BSD Asset Management Strategy** has been developed for the further implementation of VFA.facility audits at City buildings.*

Partnerships with departments who 'own' specific City buildings will continue to be initiated by Building Services to expand the audits to all City buildings.

Building Services staff are performing audits on smaller buildings.

*Our progress will be updated in the **Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan**.*

Information management systems

Effective information management is critical to the success of any asset management strategy. Sound asset management decisions will only be as good as the completeness, accuracy and timeliness of the information being utilized. The ability to analyze information about the performance, construction, preservation and maintenance of an asset throughout its life cycle is essential to manage it effectively. BSD should always have access to the following information that will facilitate the decision-making process:

- asset type
- asset condition
- what needs to be done
- when the work needs to be done
- how much it will cost

In addition, an effective work management system should be in place to identify, report, correct and document substandard conditions and maintenance requirements. There should also be effective controls in place to ensure that accurate and complete data is entered into the respective systems.

Although there are a number of software packages available for infrastructure asset management, and selecting the correct software is important, the software is only a tool. The data and information are more valuable than the software. The availability of appropriate information is important to ensure that the right decision is made. Relevant, reliable and complete information will, over time, allow BSD to optimize the management of its assets in terms of life cycle costs, level of service and risk.

The effectiveness of BSD's decision-making process has been significantly affected due to the lack of appropriate asset management information. BSD utilizes three systems to collect and analyze asset management information – Maximo, PeopleSoft and VFA.facility. BSD also utilizes Excel spreadsheets to track project information. Although Maximo has several capabilities, BSD uses it primarily as a work management system and for cost tracking. There are two modules in Maximo that would be beneficial to BSD's operations: preventative maintenance and safety plans. Documentation of the preventative maintenance procedures and frequency will allow the work orders to be generated automatically when the work is due. Inclusion of the safety plans, for example for the asbestos program, will allow information on the facilities with asbestos to be easily available and also facilitate the scheduling of safety inspections. BSD is currently working on automating the workflow process, which would enable real time work request status to be available to management, customers and workers. It is expected that the efficiency of BSD will be improved since there should be a smoother workflow.

Considering the impact that the shortage of resources has had on BSD, an area that requires immediate attention relates to the double entry of data into Maximo and PeopleSoft. Currently, information from the timesheets and invoices is entered into both systems, but work is in progress to integrate the systems to avoid the need for double entry of the data.

The acquisition of VFA.facility software represents a significant investment for BSD, and it is expected that this tool will greatly enhance the asset management process. However, this will only occur if all the capabilities of the software, as outlined in the contract, are fully utilized. Apart from managing the data that is collected during the building condition audit, the software is also capable of projecting and analyzing the deferred

maintenance and capital renewal costs. This information is vital to effectively communicate the funding needs of BSD to decision makers. The software also allows the transfer of data to and from Maximo so that work orders can be created according to the grouping of the identified deficiencies.

Our review found that the information systems when fully implemented will meet most of the best practices highlighted in the InfraGuide, including:

- Data is entered closest to the source and stored in one location.
- Data is easily retrieved and shared throughout BSD. The systems are accessible by anyone in BSD who needs the information.
- Data can be aggregated to provide an overall condition assessment for portions of or the entire system. Currently, condition data has been gathered for 21% of the portfolio and entered into VFA.facility.
- Data is analyzed to show change in overall condition over time, including future projections. Currently, VFA.facility has the capability to perform this analysis and it is expected that the staff will eventually perform this type of analysis and reporting.
- Data is analyzed for life cycle trends. Currently, VFA.facility has the capability to perform this analysis and it is expected that the staff will eventually perform this type of analysis and reporting.
- Data is analyzed for cost comparisons. Analysis tools are available for accessing Maximo database tables but they are currently not being used due to resource constraints to set up the tools.

Over the years, asset management decisions have been made in the absence of complete information about the state of the facilities. The lack of information on the condition of the facilities, the changes in condition and life cycle trends have resulted in sub-optimal decisions. Continuing to invest money in repairing facilities (wading pools) that have deteriorated to the point of replacement is one such example. The recent acquisition of asset management software should facilitate the making of effective decisions, provided that BSD gathers the required data and makes maximum use of the system's capabilities. The condition information as well as changes in the condition will enable strategic plans to be made with regards to the preservation of the facilities. It provides a process to manage the facility assets in a proactive manner and allows effective prioritization of facility projects. In addition, analyzing the life cycle trends of the facilities will provide valuable information to forecast or project future maintenance costs as well as to devise a replacement plan for major systems over the building life cycle.

Recommendation 7

a) We recommend that BSD expand its use of the Maximo system to include the preventative maintenance and safety plans modules. The information generated would assist in planning the work and maintaining safe facilities.

Management Response

The Public Works Department agrees with this recommendation and currently, is strategically implementing existing Maximo modules relative to this and other recommendations.

The Preventative Maintenance module is currently being "piloted" for the inspection of gas-fired appliances maintained by BSD.

The Safety Module is currently being "piloted" for management of the Asbestos Management Program.

These modules will be implemented further to other equipment and safety programs following the completion of the pilot projects.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan****.*

b) BSD should continue its efforts to ensure that the systems involved in asset management are interconnected to the extent possible to eliminate double entry of data and reduce manual procedures.

Management Response

The Public Works Department agrees with this recommendation and has been working with Corporate Finance for a number of years, towards integrating the systems involved in asset/work management.

A number of links have been established between Maximo and PeopleSoft software including:

- ✓ *Accounts Payable*
- ✓ *Purchase Cards*
- ✓ *Utility Bills*

Work is proceeding for the further linkage of Maximo and PeopleSoft for

- ✓ *Timesheet entry*
- ✓ *Journal Entries*

The Department has explored the purchase of a pre-packaged link between VFA.facility and Maximo in order to electronically export/export information to/from Maxim.

At this point in time, data from VFA.facility is being electronically imported into Maximo using the Generic Data Loader (a Maximo module Building Services owns) generating Work Orders. Upon completion of the Work Order, the resulting Maximo information will be manually entered into VFA.facility twice a year.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan****.*

c) BSD should make every effort to ensure that plans are developed and implemented to maximize the usage of VFA.facility. It is critical that condition data is collected for all the facilities, entered into the database and analyzed in order to obtain a comprehensive understanding of the state of the City's assets.

Management Response

The Public Works Department agrees with this recommendation.

The ***BSD Asset Management Strategy*** *will be revised to reflect the Audit's Recommendations.*

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan****.*

Identification and Prioritization of Needs

In the context of limited funding, it is crucial that priorities are established both objectively and relative to municipal and corporate policy objectives. To do this, the decision-making process and the models that support it must be rational. An asset management plan is an excellent method by which the prioritization of asset management alternatives can be objectively assessed for facilities while being correlated with strategic policy objectives.

Sustainable development has been defined as "meeting the needs of the present generation without compromising the ability of future

generations to meet their own needs" (*InfraGuide*, 2003b). An asset management plan should include a financial plan to sustain the assets.

Asset Management Plan

Multi-year planning improves engineering and economic decision making. It enables the City to evaluate the long-term impacts of accelerating or postponing projects from one year to another and to evaluate the trade-offs between lower-cost treatments that have to be paid for now rather than costlier treatments that will need to be paid for later and the impact of diverting funds to preventive maintenance.

Considering the costs and benefits of preservation-oriented investment strategies in the context of other investment options is particularly important because the City's facilities have matured and are now deteriorating in response to usage and environmental factors. Preservation can be defined as a customer-focused program of activities to provide and maintain serviceable facilities. The goal of facilities preservation is to cost-effectively and efficiently improve asset performance as measured by attributes such as availability, facility condition, safety, and service life.

Asset preservation programs represent a departure from traditional approaches to asset maintenance in which deficiencies are addressed first. Preservation seeks to reduce the rate of deterioration. Over the long run, the preservation approach is less time consuming and costly than the traditional, reactive approach. However, a strategy of preservation may be more difficult to justify because the public expectation is that the worst facilities receive attention first. As well, the public often considers facility preservation treatments as fixing something that isn't broken. It is incumbent upon BSD to demonstrate how preservation in the long run will result in lower costs and better facility conditions.

An asset management plan must also include a financial plan to sustain the assets. The financial plan should ensure that resources are available to rehabilitate and ultimately replace the assets at the optimum time to achieve the lowest life cycle cost. An asset management system should have the capability to produce reports that answer the following questions:

- What funding is required in future years to achieve target levels of service?
- What will be the future condition of the facilities given projected funding levels?
- How much additional funding will be required in the future to compensate for budget cuts?
- How will the condition of the facilities change if funds are diverted to preventive maintenance?

BSD currently does not have an asset management system in place that can answer these questions. The VFA software purchased in 2005 has the capability to answer these questions. Since purchasing the software, facility condition assessments have been conducted at 108 facilities which included the assessment of over one million square feet. BSD hopes to conduct condition assessments on the remainder of their facilities portfolio over the next couple of years. However, this will depend upon the necessary funding being provided by the users of the facilities. Once condition assessments have been completed, the modeling module included with the software could be used to develop scenarios such as how much preservation work would be required to achieve a particular Facility

Condition Index (FCI). BSD is in the early stages of implementing an asset management system that could be used for project identification and prioritization. Once an adequate inventory and condition assessment process is developed, BSD can work towards using this information for project identification and prioritization.

Current Method of Selecting Projects

In the absence of a formalized condition assessment process, BSD has employed other strategies to determine the work that needs to be performed. BSD relies on the *10-year Maintenance and Repair Plan* to guide some of the work that it performs. This plan relates primarily to Civic Accommodations facilities but also contains plans for some other facilities. This plan is a joint effort of BSD and Civic Accommodations staff and is based on some preservation principles. This plan is reviewed by BSD and Civic Accommodations staff each year and is adjusted accordingly. Civic Accommodations staff make the final decisions on the work that will be undertaken from this plan.

We reviewed the plan for the period 2004 to 2013. The information in the plan consisted of the projects that were considered necessary to be undertaken over the ten-year period as well as the applicable costs. For each facility, a description of the required repair work, the cost and expected year of completion was provided. Although this plan has been used to develop operational work plans, there are limitations in that there is no indication of the current deficiencies and the plan covers only 118 facilities.

For community centres, each centre is inspected annually and all safety and regulatory issues are documented and slated for repair in a work plan. Other non-safety items are also documented but will only be completed if funding is provided and time allows. Items that are not completed in the current year are brought forward to the next year.

There is also a five-year work plan for Community Centre refurbishing and improvements. This plan is developed by BSD staff and identifies the capital work that will be completed on the respective centres between 2005 and 2010 and the estimated cost of each item. Some of the more common items on the five-year plan were roof replacements, HVAC/mechanical replacements, structural repairs and building refurbishment. The work on this plan will only be completed if funding is available; any work not completed will be carried forward to the next year.

Recently, BSD has developed plans for Parks and Open Space buildings. Historically, the work on these buildings has been carried out on a reactive basis when required.

Currently, BSD identifies and prioritizes projects based on safety and regulatory requirements. Once BSD has assessed the condition of all the facilities in its portfolio it needs to identify and prioritize projects and present a plan that will provide the best value for the money spent for maintenance over the long term.

Life Cycle Cost Analysis

When developing the optimal list of projects, it is important to evaluate potential projects based on the costs incurred over the life of the project. One of the recommendations in the *Strategic Infrastructure Reinvestment Policy* (SIRP) report of May 1998 was “that all capital programs for new or rehabilitated infrastructure be subjected to life cycle costing analysis to determine the most cost effective options for consideration”.

This recommendation was to be phased in over a three-year period where, at the third year, life cycle cost analysis would be considered for all capital projects. The life cycle cost analysis (LCCA) technique is a widely accepted and useful project evaluation tool. Simply stated, LCCA is an evaluation of costs incurred by the City and the user over the life of the project. It allows the analyst to conduct comparative analysis among various alternatives. Comprehensive LCCA includes all the economic variables essential to the evaluation: user costs such as delay and safety costs associated with maintenance and rehabilitation projects, capital cost, and life-cycle maintenance costs. Despite its acceptance, it is currently not applied in many cities. This is because there are some significant impediments to implementing engineering economic analysis in general. The main concerns surrounding implementation of LCCA by cities focus on the following technical issues:

- selecting an appropriate discount rate;
- quantifying user costs;
- securing credible supporting data;
- projecting costs and demand throughout the analysis period;
- estimating salvage value and useful life;
- estimating maintenance costs and effectiveness; and
- modeling asset deterioration.

Typically, there are several alternatives for renewal of a facility and each alternative could produce a different service life and different capital cost. The life cycle costs (including renewal cost, future maintenance costs, and future renewal costs) as well as social costs for each alternative need to be estimated to identify the preferred alternative.

BSD has not implemented life cycle cost analysis as a project evaluation tool. Due to financial constraints, BSD carries out very little preservation work and focus primarily on conducting maintenance work that ensures the facilities in the portfolio are safe and meet legislative requirements. With the acquisition of VFA.facility BSD will be able to consider life cycle costing when determining project identification and prioritization. This software has the capability to select an optimal project list and, once the condition data is populated, can help in determining project identification and prioritization. The Capital Planning and Management Solutions (CPMS) module included with the VFA.facility software provides this function. This software represents an integration of three distinct and critical areas that facility managers must manage and address: business processes, methodology and technology. Ultimately, facility managers strive to maintain their facility portfolios at optimum performance for the lowest costs. By strategically managing capital assets, facility managers can strive to successfully balance overall facility costs and performance, making it more cost-effective to maintain buildings in better condition over time. Using CPMS, managers can optimally allocate capital funds and determine the proper timing and execution of repairs and renovations, so that their facilities support the overall mission of the organization.

Where life-cycle cost analysis has been applied, results have shown that implementation of a preservation strategy may cost less over the life of an asset than the traditional “worst first’ approach that waits until the deficiencies are evident.

In order for BSD to use life cycle costing strategies and the CPMS module of the VFA.facility software to determine

project identification and prioritization, management will have to consider the technical issues outstanding and develop solutions to address them.

Recommendation 8

We recommend that BSD develop and establish short-term and long-term asset management plans that outline their needs and priorities using asset management principles. These plans should identify and prioritize projects that will lead to the long-term preservation of the facilities.

Life cycle cost analysis should be used as a project evaluation tool when identifying and prioritizing these projects. In order to use life cycle cost analysis, the technical issues will have to be addressed. Life cycle cost analysis should be carried out on all capital programs for new or rehabilitated facilities.

Management Response

The Public Works Department agrees with this recommendation, noting that it is consistent with the mandate provided by the Strategic Infrastructure Reinvestment Policy Report (SIRP), adopted by Council in 1998.

These features will evolve with the maturation of the implementation of the asset management program as addressed through the ***BSD Asset Management Strategy*** *and ongoing implementation of the VFA.facility software and auditing process.*

Life Cycle Cost Analysis is included in the VFA.facility software and, over time, will be used in the development of the BSD capital programs, and potentially in other department capital programs.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan.***

Controlling Costs

BSD should have a management control framework in place to control the costs of managing and maintaining physical assets.

Financial Management

Financial Planning and Budgeting

The Budget is the key communication document in Civic government. Every municipality prepares a budget to preserve its facilities, and every municipality has some sort of planning that precedes budgeting. The quality of the planning and budgeting processes has a major impact on the condition of the facilities and on the life-cycle costs of maintaining them. The link between planning and budgeting is critical. Planning should provide the basis for, and substantiation of, the budget. The budget should be based on well-documented preservation needs.

Effective communication with elected officials about the state of the facilities assets and the consequences of asset deterioration and failure is vital in bringing about successful infrastructure investment decision-making. Information that should be reported to Council includes

- the consequences of different budgets in terms of facilities condition;
- specific projects that will not be done because of funding limitations;
- the quantity of unfunded needs (infrastructure deficit); and
- changes in unfunded needs from year to year.

Expressing infrastructure needs in a manner that clearly shows the effect of each funding or planning decision allows BSD to substantiate its recommended priorities. It also allows decision makers to evaluate the consequences of their decisions. Providing and communicating measurable outcomes allows municipalities to ensure their funding decisions have the desired effect and, if necessary, gives them leeway to adjust planning goals and priorities.

Council has received several key reports that deal with infrastructure needs including the *Strategic Infrastructure Reinvestment Policy* (SIRP) report, two bi-annual *State of the Infrastructure* reports and the *Financing Infrastructure Preservation, Challenges and Opportunities* report. Council adopted the SIRP report but did not approve the budget to allow for all the approved initiatives to go forward. The *Financing Infrastructure Preservation, Challenges and Opportunities* report outlined the funding requirements for infrastructure preservation and highlighted several potential sources of dedicated funding for infrastructure preservation work.

In the future, the Department plans to provide an annual *State of the Infrastructure* report and, with the implementation of the asset management system, should be able to provide the necessary information to decision makers. In addition, Public Works should be providing Council with analysis of various alternatives and options to assist in its decision making process. Reports should be generated on an annual basis that outline what impacts the current funding decisions will have on the condition of assets, the

level of service, and future maintenance and reconstruction requirements and costs. For example, what is the effect on the condition of the facilities if the current funding levels are continued? What is the effect, in terms of dollars, of delaying preventative maintenance and what does $1 today translate into ten years from now?
One of the purposes of the asset management system is to provide better information to managers, Council and the public to facilitate more informed policy and budget allocation decisions. Public Works should strive to be a leader by providing this level of analysis to decision makers. It is critical that Council know the consequences of the decisions it makes. Without these reports, the true impact of funding decisions will not be known.

BSD needs up-to-date, reliable and comparable information to develop its capital allocation and building repair and renovation plans. With the acquisition of VFA.facility, BSD will be better able to provide the decision makers with meaningful asset management information in order to ensure that appropriate resources are committed on an annual basis to the preservation of the facilities. The report-generating capabilities of the software will enable BSD to make informed decisions regarding facility infrastructure condition, multiyear capital budgeting and capital project planning based on information that has been collected through a building condition analysis.

Recommendation 9

We recommend that BSD develop a plan to effectively utilize the capabilities of VFA.facility in order to produce reports that

- show the consequences of different budgets in terms of asset condition;
- list the specific projects that will not be done, because of funding limitations; and
- track the quantity of unfunded needs, and changes in unfunded needs, from year to year.

This information should be included in the budget submission to Corporate Finance and Council.

Management Response

The Public Works Department agrees with this recommendation and will track the information outlined in the Recommendation through the further implementation of the VFA.facility software and auditing process.

The VFA software has the capability to graphically and numerically illustrate the consequences of budgets on the asset condition and to provide a list of building requirements.

Recognizing Asset Valuation and Use

Knowing the value of infrastructure assets is essential because it bears a direct relationship to the cost of providing current services and provides a basis for estimating maintenance and replacement costs over the long term. The issues of current and future affordability and financial sustainability of infrastructure must be a major focal point in the decision-making process.

Several methods have been used to establish the value of municipal infrastructure assets. The two main methods are historical cost and replacement cost.

<u>Historical Cost</u>
The main advantage of historical cost is that it is a reliable measure. It

represents the actual transactions and events that took place at the time of construction of the asset. Historical cost has been generally accepted by accounting standard setters around the world; it is well understood, and is still the preferred method of accounting for all capital assets. BSD does not have or maintain any records relating to the historical cost of the facilities that are in its portfolio. The capital debt was consolidated in different departments during the 1998 re-organization and, as a result, the former Parks and Recreation capital debt went to Public Works. BSD management, however, was uncertain if adequate records of what debt belonged to which facility was maintained. We were advised that it would be considerable work to go over previous records to determine what was spent when or if it is even possible. From a public sector perspective, it has been argued that using historical cost is meaningless, given the long life characteristics of infrastructure assets. In addition, because infrastructure assets need to be replaced on an ongoing basis, many are of the view that the costs of using infrastructure assets should be based upon its current cost (replacement cost), rather than an allocation of its original cost. Therefore, and especially for long-lived infrastructure assets, historical cost may not be the most relevant information for decision makers.

BSD should determine if compiling the historical costs of the facilities will be required to meet future external financial reporting requirements. If the information will be required, the Department should consult with Corporate Finance on how to best proceed given the limitations on the historical cost information available. On a go forward basis, historical costs for all new facilities should be tracked and recorded in the new VFA.facility asset management system to help with the valuation of the facilities inventory for accounting purposes.

Replacement Cost

For the purposes of renewal planning, replacement cost is generally the preferred method of quantifying the value of an asset.

The replacement values used by BSD to value the facilities in their portfolio were based on information provided in the *Public Use Facilities Study* (PUFS). Based on average replacement values of $110 to $268 per square foot, (dependent on building type with indoor pools being the highest cost) an estimated replacement value of $797,453,000 was developed. We were advised that the values calculated in the PUFS report were done at a high level and may not be the most accurate values for the facilities in the BSD facilities portfolio. In addition, the square footage information on some of the facilities in the BSD portfolio was unavailable and, in some cases, estimates were made. The consultants from VFA that are working with BSD Management have indicated that they have the ability and expertise to calculate replacement costs and have done so for other clients primarily for insurance purposes. The replacement cost information could be used to value the facilities and then would be stored in the VFA.facility asset management system and would be considered when determining the work that should be done on facilities. As well, establishing a method of accounting for the cost of infrastructure assets is required before the City can recognize the cost of use of the assets (depreciation). There are developments in local government accounting standards that will likely require municipalities to report on the cost and use of the infrastructure assets in their annual financial statements. (The preferred cost basis to report in the financial statements is historical cost but

replacement cost is seen as an acceptable alternative.) This requirement has already gained support in the United States.

A major risk associated with infrastructure assets in the public sector, both from a management and a citizen point of view, is the issue of replacement. Information about replacement should be given to decision makers. Maintaining the service capacity of the facilities infrastructure is at the heart of asset management. The City of Winnipeg should endeavour to provide this information on an annual basis and report it in a manner that facilitates year-to-year comparisons.

Recommendation 10

a) BSD, in consultation with Corporate Finance, should determine what method of valuation and costing of the existing facility infrastructure will be required to meet future external financial reporting requirements. On a go forward basis, historical costs for each facility should be tracked and recorded in the VFA.facility system to facilitate the valuation of the facility asset inventory for accounting purposes.

Management Response

Corporate Finance is in the process of establishing the process/rules/methods of asset valuation for accounting reporting purposes. The Public Works Department has been working with them to assist with their needs in this regard.

For the purposes of managing assets (as opposed to financial reporting), the department may require an alternate method of valuation.

The Department will explore these alternatives further and report in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan****.*

b) The replacement cost for each facility should be recorded in the VFA.facility system to assist with timely reporting of this information. BSD should also endeavour to provide this information on an annual basis and report it in a manner that allows year-to-year comparisons to be made.

Management Response

The Public Works Department agrees with this recommendation.

VFA.facility calculates the replacement value of the buildings in its database on an annual basis, utilizing RS Means costing information. As buildings are input into VFA.facility, this recommendation will be met.

Preliminary discussions have occurred with the Risk Management Division of Corporate Finance regarding utilizing VFA.facility as a means to provide a current replacement value for the City's buildings for insurance purposes. Further discussions will be held.

See Recommendation 10 a)

c) BSD should also establish a method of recognizing the cost of use (depreciation) of the facilities infrastructure.

Management Response

This Recommendation will be discussed with Corporate Finance in conjunction with Recommendation 10 a)

Budgeting Process

The establishment of overall infrastructure funding needs is a useful and valuable benchmark even in the absence of the funds required to do the actual work. The budget should be established based on an asset management plan. Information from the

asset management plan should be presented to Council at the beginning of the process to allow Council to determine the priorities for the City as a whole each year and to allocate the budget accordingly. Councillors should be presented an "optimized" project listing and the selection of projects to be included in the budget should be based on the efficient allocation of resources for different purposes (e.g. infrastructure, preservation, expansion of capacity, environmental protection, and increased safety) and to different assets. The efficient allocation of resources, and the ability to evaluate the consequences of different budget allocations, is a principal premise of asset management. Any deviation from this "optimal solution" should be analyzed and reported to Council as to its effects on the change to the overall condition of the facilities and the long-term cost to maintain the assets.

Currently the BSD budget only deals with 657 of the City's more than 1,000 facilities. To determine the total cost of maintaining all of the City's facilities, the budgets of other departments must be scrutinized. The current budget process at the City of Winnipeg is top-down. Although BSD has a *10-year Repair and Maintenance Plan,* which identifies the maintenance needs for some of the facilities, the information in this plan is not referred to during the budgeting process. For the operating budget, the Department negotiates a target budget number with its customers, that is usually based on the prior year's budget with salaries and materials adjusted for inflation. A general decrease or increase is applied that is usually equally applied to all departments. Since BSD is structured to recover all its costs from its customers, the amount of work undertaken for each of its major clients is dependent on the results of the negotiation process between BSD and each client. For the capital budget, a target level is also provided, usually based on the five-year forecast from the previous year's capital budget. BSD then goes through a process to assign projects within the target levels. Based on the City's current standards, capital projects are defined as any construction or item costing more than $100,000 and having an estimated useful life of 10 years or more.

The current operating budgeting process has resulted in BSD having to divert funds from services, materials and supply budget accounts to cover increases in other accounts. This was particularly evident in relation to heating expenses where there were significant increases in the utility rates, and costs rose by more than 20% from 2002 to 2004. Increasing the annual operating budget by only the inflation rate usually means that required maintenance work will get deferred. The consistent diversion of funds, which are already limited, from required maintenance activities will only exacerbate the problem of poorly maintained facilities.

Recommendation 11

a) Best practice for developing budgets suggests that the asset management plan and an optimized list of projects should be considered prior to establishing priorities and the setting of budget target levels. The information presented to Councillors should include an optimized listing of facilities maintenance projects to be completed throughout the City.

Management Response

The Public Works Department agrees that the asset management plan and the optimal list of projects should be considered prior to establishing the priorities and setting budget target levels. It should be noted that constraints such as geographic ward distribution or inter-governmental

funding of specific programs or projects may result in deviations from the optimized list.

As such, impacts of such deviations would need to be presented.

b) Recognition should be given to the rate of increases in utility rates so that the approved budget will be more in line with the actual costs.

Management Response

The Public Works Department agrees with this Recommendation.

Currently, the SIRPIC policy directs departments to include inflationary increases for labour, materials and fuel. It does not include inflation for utilities.

There would be merit in changing the policy to include utilities inflation.

Financial monitoring and reporting

Management's primary financial concern is monitoring how the total spending of BSD compares to the budget. Discussions at the monthly management meetings address not only the variances relating to the operating budget but also the capital budget. BSD uses the forecast reports that are submitted to Corporate Finance as the means to monitor and compare the operating budget to the actual costs. Although the reporting process is less frequent during the earlier months of the year, BSD management expressed confidence that they obtain adequate information to monitor the costs and report on the variances. The Supervisor of Finance indicated that when the forecast reports are due on a monthly basis (September to December), closer monitoring occurs, and there have been occasions when further investigations have been conducted to the transaction level to determine the precise reasons for the observed variances.

While there is formal reporting of the operating budget variances to Corporate Finance, the monitoring of the expenses against the capital budget is done primarily for BSD's purpose. In this case Excel spreadsheets are used to track and compare the costs to the budget. These spreadsheets are updated monthly to reflect the actual costs to date and the information is distributed to the various managers for discussion at the monthly management meetings. Although the spreadsheets are valuable in monitoring the project costs, there is no formal documentation of the explanations for any variances.

BSD also compares the annual work plan to the actual work performed for capital projects. There have been instances when some aspects of the planned work had to be deferred to the following year, either because there was insufficient funding to undertake the work that was identified in the *10-year Repair and Maintenance Plan* or emergency repairs/priorities came up during the year. There is no documentation of such changes and there is no formal, standardized financial reporting on the performance and status of the capital projects.

Recommendation 12

BSD should develop a set of standardized reports on the financial performance of capital projects. These reports should include the explanations for the variances from the budget.

Management Response

The Public Works Department agrees with this recommendation.

The Building Services Division will work with other Divisions within Public Works to formulate and utilize a standardized reporting system.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan****.*

Disposal of obsolete facilities

The purpose of an asset management system is to ensure that the assets remain capable of delivering the performance required by the business, over the asset life cycle, at the lowest cost. The end of the asset life cycle is reached when the asset is no longer capable of delivering the required operational performance, or cannot be cost effectively maintained to achieve the required levels of dependability. At this stage, the options are either modification or disposal and replacement of the asset. Effective management of the disposal process will minimize holdings of surplus and under-performing assets and will maximize the return to the City on such assets**.** Success factors that are critical to the disposal process are as follows:

- Under-utilized and under-performing assets are identified as part of a regular, systematic review process.
- The reasons for under-utilization or poor performance are critically examined and corrective action is taken to remedy the situation, or a disposal decision is made.
- Analysis of disposal methods has regard to potential market or other intrinsic values (such as historical importance); the location and volume of assets to be disposed of; the ability to support other government programs; and environmental implications.
- Regular evaluation of disposal performance is undertaken.

Physical assets have a limited life expectancy and an effective asset management plan will take into consideration the optimum time to replace those assets that have exceeded their estimated useful lives. It is critical to monitor the condition of the assets and the maintenance costs incurred over time since this will provide valuable information to facilitate the making of informed decisions. If the deferred maintenance costs of an asset are greater than the replacement cost, disposal of the asset should be considered. Tracking this information and communicating it to the relevant authorities is crucial to ensuring that the appropriate disposal action is taken at the right time.

Currently, BSD does not have a comprehensive asset management plan and does not conduct periodic reviews to identify facilities that are owned by the City and have exceeded their useful lives. BSD sees its role as limited to providing maintenance services to facilities as long as they are used by the programming group, whether or not it is economically wise to do so. This approach is ineffective and inefficient since scarce resources, in some cases, are being invested in assets that have exceeded their useful lives.

In the absence of an established process to identify those facilities that should be considered for disposal, we used the PUFS report to identify the buildings that had a Facility Condition Index greater than 0.7. There were 36 facilities that were in this category, with FCI's ranging from 0.74 to 3.97 with an overall average of 1.14. The facilities included 11 Outdoor Pools, 8 Community Centres, 8 Wading Pools, 5 Recreation Centres, 2 Indoor Pools, 1 Senior Centre and 1 Sports Field House. The total replacement value for this group of facilities was $24,849,315 while the preservation needs were determined to be $26,191,411. Of the 36 facilities, 14 had FCI's that were greater than one, indicating that the

preservation needs were higher than the replacement value. It would make economic sense to replace these assets. For the other 22 facilities, although the preservation needs were less than the replacement values, consideration should also be given to replacing these assets since there was not a significant difference in the amounts. It is likely that of the other 346 facilities that are in the BSD'S portfolio, there are some that should also be considered for disposal.

Although BSD does not have the authority to order that a facility be closed, they are in the best position to provide advice on the management of the assets. They have knowledge of the facilities that are obsolete and should be demolished and replaced. Accordingly, BSD should gather the required information and make a recommendation to the appropriate officials. This process will be facilitated by the development of adequate policies and procedures, which would provide clear guidance on the action to be taken regarding obsolete buildings and facilities.

Recommendation 13

a) BSD should develop a process to identify facilities that have exceeded their estimated useful life and should convey this information to the users of the facility and Council to facilitate the cost effective management of facilities.

Management Response

The Recreation Leisure and Library Facility policy sets out levels of service to strive to achieve for publicly accessed recreation buildings.

Similar standards for other buildings would be beneficial.

b) The responsibility for recommending when facilities should be disposed of should be assigned to BSD or some other organizational unit responsible for managing the facilities from acquisition to disposal. In addition, polices and procedures should be developed to provide direction on the action to be taken regarding buildings that have exceeded their estimated useful life.

Management Response

The Public Works Department agrees with this recommendation, noting that such recommendations would involve multiple considerations, and multiple stakeholders.

Chargeback process

BSD operates on a full cost recovery basis. Accordingly, the charge back process is an integral part of BSD's operations. In order to ensure that its costs are recovered, BSD has developed a bill out rate for its staff. The components of this bill out rate are the hourly rate for the front line worker plus overhead, which includes the applicable costs for the worker, branch and division. In addition, administrative processing fees of 10% and 2 - 4% are applied to the costs for materials and utilities respectively.

BSD produces billing reports for its three main customers on a monthly basis. These reports provide only the year to date costs for the various building locations and work categories, which are coded based on the type of building system. Although the reports do not contain details of the specific work that was performed at each location, the accumulation of the costs by work category provides the customer with some information regarding the type of work that was performed. The reporting would be more effective if the information also included monthly balances since it is time-consuming for customers to determine the respective

monthly balance for a specific building location. In addition to these reports, customers are also provided with a spreadsheet that summarizes the overall monthly costs for labour and materials. A journal entry is processed to charge the amounts to the respective customers.

In addition to the regular maintenance activities performed for its three main customers, BSD also recovers funds from performing special work requests, which are typically annual in nature. These requests come from other departments or groups such as the Winnipeg Fire Paramedic Service, Water & Waste Department and Winnipeg Transit as well as from BSD's three main customers. The reporting of these transactions differs in that all labour and materials costs are accumulated in one report. The presentation of the information in this manner makes it easy to determine the costs that are associated with a specific project.

We found that BSD's three major customers have had concerns with the charge back process, specifically in relation to the lack of some details about the process and the amounts that are charged. Two customers still have concerns. Civic Accommodations indicated that although they understood that they are to be charged actual costs, including overhead, for the maintenance work performed, they are not confident that the charges are accurate. They also mentioned that improvement was needed in the financial reporting. Community Services was concerned about the fact that their attempts to obtain an explanation of the 'burdens' (overhead) had not been addressed.

Based on the comments from customers, and in order to obtain a better understanding of the process, we requested the relevant information that would enable us to assess the transparency, fairness and reasonableness of the chargeback process. We found out that once BSD has recovered all its budgeted costs in total for the year, BSD stops charging its primary customers for any work performed thereafter. This usually occurs in the last month of the year. The table below provides information on the unbilled hours for 2004 and 2005.

UNBILLED HOURS				
CUSTOMER	2004		2005	
	Hours	$	Hours	$
Community Services	7,097.75	320,781.36	18,484.95	773,225.46
Civic Accommodations	7,908	322,680.82	8,210	326,928.45
Parks and Open Space	117.50	5,536.50	-	-
Total	15,123.25	648,998.68	26,694.95	1,100,153.91

We found through discussions with the Supervisor of Finance that the major factor that contributed to the significant increase in the unbilled hours related to the fact that, for example, in 2005 BSD achieved approximately $400,000 more in recoveries and $400,000 more in revenue than anticipated. It was unnecessary, therefore to bill the primary customers for all the work performed during the year at the bill out rate established at the start of the year. The unbilled hours report represents 2.5% and 4.1% of the amount that was actually billed to the customers in 2004 and 2005 respectively. Although these percentages may not be significant, we consider this approach to be inaccurate. The fact that BSD is able to absorb all of its overhead expenses through its primary customers and through recoveries before the year end indicates that overhead rates are too high. This means that throughout the year customers are being overcharged on a per job cost basis and, because recovery customers do not get a rebate they are subsidizing the Division's primary customers. The Supervisor of Finance indicated that recovery customers are essentially charged an overhead premium due to the lack of budget commitment year over year and uncertainty of the amount of work that BSD carries out for them. This overhead premium is not rebated to recovery customers and therefore, is used to offset overhead expenditures which results in lower costs to BSD's primary customers. The Supervisor of Finance indicated that the rates are reviewed and adjusted slightly when required but the model has not been formally reviewed since 2003. Discussions relating to changes in the model have been ongoing for over a year and there are plans to make changes in 2006.

BSD is primarily focused on operating within its budget and recovering all of its costs, but at the same time there has not been a concerted effort to ensure that its billing process makes business sense and is transparent. The current process is arbitrary and is not truly a chargeback system since the costs charged to the customers are not a true reflection of all the work that was performed. Customers need to know the actual costs incurred to enable them to establish realistic budgets for the next year.

BSD needs to revise its billing process and ensure that the essential elements of transparency, fairness and reasonableness are evident. BSD should work with its customers to help them to fully understand the process, so it will be clear that the amount charged is a true reflection of the maintenance work that was undertaken.

Recommendation 14

a) We recommend that BSD review the chargeback model to ensure the rates being charged are reasonable. BSD should bill its customers for all work that was performed in the year and make minor adjustments to reflect actual costs, if required, at year end.

Management Response

The Public Works Department agrees with this recommendation and is currently reviewing the "Bill Out Rate" model utilized in charging work.

The review of the Bill Out Model is anticipated to be complete by mid-July 2006.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan****.*

b) BSD should clearly explain the chargeback process including the overhead rates to Civic Accommodations, Community Services and Parks and Open Spaces and work

with them to provide monthly reports that will satisfy their needs.

Management Response

The Public Works Department agrees with this recommendation.

Reports have been prepared for the 2005 year-end, which detail all labour and materials, work performed through the year, all adjustments required at year-end, and associated rebates to our customers.

Consultations with primary customers (Community Services, Civic Accommodations and Parks and Open Space) are currently being been planned for mid-June 2006. The agenda for these meetings includes: reviewing of these 2005 reports; clarification of billing and year-end procedures; and determination of all reporting requirements that would better satisfy the customers' needs.

It should be noted that Building Services is in the early stages of implementing the Work Requestor module of Maximo. This module provides customers with the ability to track work requests' progress as well as associated cost, and is available on a just-in-time basis.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan****.*

Contract management

Contract management is the process which ensures that both parties to a contract fully meet their respective obligations as efficiently and effectively as possible. The purpose of contract management includes the following:

- to ensure the contractor is in compliance with the terms and conditions of the contract;
- to ensure the contractor delivers timely and quality services;
- to ensure accountability of public funds in accordance with applicable laws, regulations and contract provisions; and
- to promote and protect the public interest.

The specific nature and extent of contract management varies from contract to contract and is generally tailored to the type of contract and contractor involved. Factors that may influence the approach to contract management include:

- the complexity and sensitivity of the services to be provided;
- the level of funding;
- experience of the contracting parties; and
- contractor prior performance.

BSD uses contractors for a variety of work and this usually occurs in those instances where BSD does not have the required skills and expertise. For 2004, the costs incurred for contracted maintenance was $3,277,248 which represents 12% of BSD's expenses for that year. The Contracted Maintenance Services (CMS) Branch is responsible for contract administration of work/projects over $5,000. The primary means employed to manage the contracted services is through the City's bid opportunity process. Our review found that there is strict adherence to the Materials Management bid opportunity process and BSD uses a standard contract or bid opportunity that contains specific clauses:

- Project management responsibilities are defined.
- Subcontractor considerations or clauses are included.
- Substantial and total performance completion dates are specified.

- Liquidated damages clauses are included.
- The contractor is required to demonstrate adherence to the *Workplace Safety and Health Act* and has the responsibilities of a Prime Contractor in accordance with the Act.

Although the contracts do not contain a specific clause on minimum quality standards, they do contain performance and technical specifications and the contractors are expected to complete the job satisfactorily. Accordingly, there will be site inspections by BSD staff or by a hired consultant who has specific expertise. For larger, more complex jobs that may involve progress payments, satisfactory completion has to be evidenced through the issuance of the *Certificate of Substantial Performance* and the *Certificate of Total Performance*. If the Contract Administrator is not satisfied with the quality of the work, payment will be withheld until the contractor has addressed the deficiencies. Although there have been situations where contracted projects have not been completed on time, the liquidated damages clause was enforced on only one occasion, and this occurred several years ago. The Superintendent of Contracted Maintenance Services indicated that there are normally several factors that contribute to the delays and BSD assesses each factor and determines if there are actual financial implications for the City. The CMS Branch monitors the work to ensure compliance with the terms of the contract and with the health and safety regulations.

We found that it is unusual for contract payments to exceed original contract award amounts. If this occurs, it is due to one of two situations. First, the contractor may have identified additional work that needs to be done, but was not included in the original contract. Before this work is done, BSD has to approve it after the contractor has provided the estimate of labour and materials. Secondly, the user group may request the scope of work to be expanded. If this occurs, the user group must commit to provide the additional funding required. Overall, the management of contracted services is adequately controlled and there are safeguards in place to ensure that the contractor completes the job satisfactorily and in accordance with the terms of the contract.

Risk management

Risk management is a process essential to the successful management and completion of a project. All significant projects should have risk management activities documented in a systematic manner. Not all projects require the same risk management process be applied because of the differences in size or complexity. Smaller, less critical, projects may require only a scaled-down risk effort.

Currently, BSD does not have a formal risk management process. BSD's management emphasized that the staff is qualified, knowledgeable and experienced in the type of work being undertaken and they are able to cost effectively manage the risks. For example, for higher risk projects, there will be weekly site meetings and more frequent inspections and if an extensive maintenance project is involved, a lead person or prime contractor will be appointed to manage the safety plan.

With regards to the selection of the projects to be completed, BSD bases its decisions on the risks associated with the safety and legislative requirements to protect the public. However, other factors are also considered, such as the need to ensure that the facilities are kept open or to gain efficiencies and

improve the environment for the occupants.

The lack of a formal risk management process means that that BSD cannot provide documented support as to how the assessment of risk played a part in the selection of projects. We believe BSD should document the risks considered in the selection of its significant maintenance projects.

Recommendation 15

BSD should develop and implement a formal risk management process. A documented risk management evaluation should be considered for the selection and performance of significant or complex projects, while informal risk management practices are appropriate for smaller, less critical projects.

Management Response

The Public Works Department agrees with this recommendation.

A risk management strategy/protocol will be developed that is in keeping with the Corporation's risk management protocols.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan****.*

Impact of Collective Bargaining Agreement

Management indicated that there are several clauses in the CUPE agreement that have affected the planning of work and overall costs. Those that were specifically highlighted included the following:

- Article 4 – Employment Security
- Article 18 – Overtime
- Article 19 – Notice of Lay Off and Reduction in Hours of Work
- Article 27 – Technological Change
- Letter of understanding – Change Initiatives
- Letter of understanding – Redeployment

The primary area of concern related to the fact that the CUPE agreement requires that a comprehensive process be followed for the City to contract out work performed by a CUPE member. The process is the same for two jobs or 100 jobs. According to *Article 27*, *Technological Change*, the Union not only has to be notified of any proposed changes that will affect the conditions of employment but also has to be involved in discussions about such changes. *The Letter of Understanding* relating to *Change Initiatives* states that the "parties commit to work with one another to avoid contracting out, by pursuing internal savings through various change initiatives such as Special Operating Agencies, work redesign and other efficiency initiatives." Consequently, the Union has not been receptive to BSD's attempts to contract out work, even though there could be a reduction in costs. Furthermore, this *Letter of Understanding* specifies that the Alternate Service Delivery (ASD) process should be employed for any proposed change initiatives that involve CUPE members. This requirement has proven to be frustrating for BSD management, since attempts to contract out aspects of the work have resulted in a time-consuming exercise that generally did not result in change. As an example, management noted that BSD, over the past four years, had put forward minor contracting initiatives to attempt to reduce costs, and the most recent initiative which involved the contracting out of two vacant janitorial positions had not been dealt with to date.

Management indicated that the effect of the CUPE Agreement increased labour costs and, as a result, the cost of service delivery beyond that previously budgeted.

It is recognized that the role of the Union is to represent the best interests of its members and secure the most favourable working conditions for them. However, it is also important that every effort is made to ensure that the terms of the Collective Agreement do not impose such restrictions that would prevent the implementation of measures that would enhance the effectiveness and efficiency of business operations. The implications of the various clauses and their possible impact should be carefully reviewed during the negotiation process.

Recommendation 16

We recommend that BSD inform the Human Resources staff responsible for negotiating the Collective Agreement of the relevant clauses that impact its operations and provide evidence as necessary to support their position.

Management Response

The Public Works Department agrees with this recommendation and as a department made its needs known to the City bargaining committee during the last round of contract negotiations.

Quality of Work

BSD while controlling costs, needs to ensure that work is of appropriate quality.

Poorly maintained facilities are both expensive and inconvenient for citizens. The service life, future maintenance costs, level of service and user costs are directly related to the quality of work performed on the facilities. The principle – that the delivery of safe and effective facilities is a duty owed to the taxpayer – is the basis for a quality assurance program. In order to obtain a reasonable degree of quality assurance for the City, quality standards should be established and clearly communicated to staff, civic tenants and external contractors and they should be enforced.

Since most local governments have limited resources for inspection, sampling and testing, a quality assurance program must depend upon assistance from other individuals external to the city. Such a program, therefore, must include the activities of consulting engineers who perform construction engineering services, materials testing laboratories, and contractors who perform the actual work. The efforts of all of these participants should be coordinated by a comprehensive set of design standards, specifications, sampling and testing guides, and maintenance standards. However, the existence of these control mechanisms alone is not enough; the City must be sufficiently organized, staffed and trained to ensure compliance on the part of all concerned.

Benefits of Quality Assurance

Quality assurance measures should result in the following benefits to the City of Winnipeg:

- **Greater Value for Money Spent** — Quality assurance should ensure that the public receives the performance for which it has paid. Conversely, quality assurance should identify areas where more quality is bought than is needed.
- **Decreased Maintenance Costs** — It is commonly accepted that facilities that are well built to begin with and adequately preserved will not be as expensive to maintain during their service lives.
- **Improved Performance** — If designs and specifications are properly prepared and the quality of construction and maintenance work is well controlled then the end product should perform as expected.
- **Fairness to All Concerned** — Quality assurance programs cannot be for the sole benefit of the City of Winnipeg. Contractors, suppliers and consultants all must be able to conduct their business at a fair profit. Everyone should benefit by clearly establishing what is expected, how it will be verified and the consequences of non-compliance. By knowing what the standards are from the beginning, those dealing with the City of Winnipeg can afford to do their job right the first time. When too much personal discretion and judgment is allowed for both contractors and staff, BSD is open to charges of favoritism and misuse of public funds. Quality assurance establishes clear rules and procedures and provides proven checks and balances.

(Source: Quality Assurance for local agencies, Melvin Smith, Illinois Department of Transportation)

Quality Standards

Quality standards should be established, documented and clearly communicated for both contracted work and maintenance work that is carried out by BSD. For contracted work, quality standards are established and communicated to external contractors through the use of the City's bid opportunity documents and contracts. The bid opportunity documents and the corresponding contracts contain clauses that specify the responsibilities and work requirements for both the City and the Contractor. For larger project requirements, specific design documents that outline what is to be constructed are included. Different types of facilities may require different design guidelines to be adhered to for similar types of projects.

BSD has not maintained design guidelines and maintenance standards for each type of facility. For example, there should be documented quality standards for the compaction, steel, concrete, etc., for the construction of a wading pool since this is a facility that would be constructed on a somewhat regular basis. Community Centre Design Guidelines, which are quality standards, have been developed for construction work that is to be carried out either by contractors or by BSD staff in Community Centres. This has not been completed, however, for all facility types.

Quality standards have also not been established and documented for maintenance work carried out by BSD. Reliance is placed on the expertise of staff members when carrying out maintenance work. Staff with the required licenses and experience are assigned work that is within their capabilities and experience and they are expected to know to what standard the work should be completed. Some of the areas where standards could be developed include:

- Plumbing – type and quality of piping (both ABS & copper), guidance on splicing from copper to ABS, guidance on repairing leaks.
- Electrical – specific types of wiring to be used for different applications.
- Roofing – types and quality of roofing materials to be used.
- Painting – surface preparation and paint quality.
- Carpeting – surface preparation, carpet quality, adhesive.
- Concrete Work – compaction standards, steel re-bar placement, concrete strength and finishing methods.
- Furnace Replacement – BTU's per square foot, location.
- Renovations – disposal of materials, types of doors, flooring, paint, etc.

BSD has not made development of documented internal quality standards a priority. To develop, document and maintain these standards would require the allocation of resources on an ongoing basis. Management has advised that developing and maintaining quality standards would take away from the maintenance work that must be done to maintain the facilities at a safe level and in compliance with legislative requirements.

Recommendation 17

We recommend that BSD develop, document and maintain quality standards for the maintenance work performed in all types of facilities. These quality standards should be communicated to staff, civic tenants and external contractors when necessary.

Management Response

The Public Works Department agrees with this recommendation and is currently preparing for an APWA Accreditation audit this fall. This audit will determine if Public Works (including Building Services) meets the best practices determined by the APWA for municipalities of our size.

Defining, documenting and communicating processes and standards is a key element of the APWA Audit.

BSD has been working towards the APWA Accreditation over the last year.

VFA.facility and Maximo provide the vehicle to embed these standards into a readily recallable format.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan****.*

Operational Procedures

It is important to ensure that operational procedures are adequately documented to facilitate continuity in maintenance work responsibilities. Operational procedures are the established method to provide direction for the basic management and control of day-to-day activities in facilities. We were also advised that the Public Works Department is looking at working towards being accredited by the American Public Works Association (APWA). The APWA standards require that all operational procedures be formally documented.

In BSD, there is no control in place to ensure that operational procedures are adequately documented. The position of the former supervisor was eliminated due to financial constraints. Overall, there is no consistency in what is documented or what is required to be documented. A central file or operating procedures manual for each facility does not exist. Often staff have to contact different individuals to obtain the required information for a specific building. We did find that some procedures for certain facilities were documented, in particular, arenas.

In the absence of adequately documented operational procedures, there are other mitigating controls that can be employed to ensure quality maintenance work is performed on a regular basis and that operational procedures are followed. Maintenance work should be assigned to staff who have the necessary capability and expertise to perform the work to the required level of quality. In fact, we were advised that reliance is placed on the experience, expertise and/or qualifications of the individuals carrying out the work, and that staff are conscientious and take pride in the workmanship that they provide. BSD does not use a work tracking system to assign projects to staff. The Supervisors and Foremen assign projects based on their experience and knowledge of the skills and capabilities of their staff. Projects are assigned to staff with the right skills to carry out the particular job. The problem with this approach is that when these experienced individuals leave the organization, valuable operational information will leave with them. And many of the staff in BSD are, or will be, eligible to retire within the next five years. We believe that operational procedures need to be adequately documented to facilitate continuity in maintenance work responsibilities.

We were advised that operational procedures have not been adequately documented because BSD does not have the resources to carry out this work.

Recommendation 18

We recommend that BSD ensure that key operational procedures are documented. Guidance should be provided on what should be documented and where this documentation should reside. The procedural manual should contain information on the location of the various systems in each building; how to access the systems as well as how the system functions (operating manual); and the maintenance procedures that should be carried out.

Management Response

The Public Works Department agrees with this recommendation and is partially addressing this recommendation through the APWA Accreditation described relative to Recommendation 17.

*The **BSD Maximo Implementation Strategy** also addresses the electronic communication of operating/maintenance requirements, the PM module (includes procedures) as well as links to electronic maps/drawings.*

Operating Manuals are currently being updated for Arenas, Pools and a number of office buildings. Other building groups in order of complexity will be added.

Determining the 'ownership' of the buildings would assist in this process. See Recommendation #1.

*Our progress will be updated in the **Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan**.*

Quality Inspection Process

To ensure that there is adherence to quality standards; maintenance work must be adequately supervised and inspected. Without a formal inspection process, there is no evidence that the work completed adheres to quality standards and results in the value anticipated. In BSD, there is no formal inspection process in place for work that is performed by internal staff. While Foremen are required to carry out random spot checks on specific jobs, they do not document these inspections. The checks are completed on an informal basis.

For contracted work, BSD has established practices to ensure that the work that is being conducted is of adequate quality. Inspections are required for larger projects, and there is a requirement for certificates of substantial performance and total performance to be completed by the contractor and approved by the Contract Administrator before payment is made to the contractor. On some larger projects, consultants are hired to monitor the projects and provide BSD with periodic inspection reports. In addition, the staff attend weekly site meetings and maintain close contact with the consultants and contractors that they hire.

On smaller projects, the process is not as rigorous and is not documented. Inspections are performed at the work site at key times and, in some cases, pictures are taken that show that the appropriate procedures are being followed. Often, however, there is no documented evidence that the project was reviewed or inspected for quality purposes.

In addition to ensuring there is adherence to quality standards, there also needs to be an adequate control process in place to monitor work performed, provide feedback, and take corrective action when necessary.

External Maintenance Work

To evaluate the control process in place for work that is conducted by external

contractors for BSD, we reviewed 16 project files to determine if inspections were performed and if the quality of work was adequate. Only 6 of the 16 files reviewed contained evidence that the quality of work received was adequate. There was no evidence, other than the fact that the invoice was approved and paid, to provide assurance that the quality of work was adequate on the other 10 files.

Our review indicated that an adequate control process to monitor the work performed, provide feedback and take corrective action was evident only in projects with a dollar value greater than $46,000 (six project files). No specific project value threshold was defined by BSD where different procedures were to be followed. Our review found that for all projects with a dollar value below $21,000 (10 project files) there was no evidence that a final inspection took place or that the quality of work was adequate.

Staff assured us that they do not approve any invoices for payment to a contractor unless they receive the quality of work agreed to in the contract and that they are satisfied with the quality of the work. The staff further advised us that to complete inspection reports for every small project they carry out would be an onerous task and would take valuable resources away from other necessary maintenance work. In addition, they do not have the resources necessary to make sure these inspections would be adequately documented and filed in the project files.

Without adequately documented inspection reports for contracted projects, BSD cannot provide assurance that the appropriate quality and value for money was received. We believe that it is important to provide such assurance for public expenditures; the extent of review and documentation should be commensurate with the risks assumed.

Recommendation 19

We recommend that for contracted work, BSD staff document the fact they have reviewed or inspected a project that has been carried out by contractors to ensure that they are getting the quality indicated in the contract. To support this review, we suggest that a quality report/checklist, appropriate to the size of the project, be completed when carrying out a final inspection on all projects undertaken. This report/checklist should be dated and signed off by the project manager and be included in the project file as evidence that the project was completed within the quality standards expected and agreed to in the contract.

Management Response

The Public Works Department agrees with this recommendation.

An inspection and contract protocol/process will be developed and implemented in conjunction with Recommendation #20.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan****.*

Internal Maintenance Work

To evaluate the control process in place for work that is conducted internally by BSD staff, we reviewed the process undertaken with management. The majority of the work that is undertaken by internal staff is carried out as a result of requests made to Central Control. When a request for maintenance work is made, Central Control generates a work order and electronically sends the work order to the Supervisor for the building group to which the work pertains. The Supervisor then assigns the work to a staff member who will carry out the

work. Work orders are also generated for capital work and work that is carried out for customers other than Civic Accommodations, Community Services and Parks and Open Space. Work orders are closed when the work has been completed.
Internal staff also perform regular day-to-day maintenance work, such as janitorial work; however, work orders are not generated for this type of work.

We were advised that there is no formal inspection process or any documented evidence of inspections for work that is carried out by internal staff. The BSD Manager advised us that inspections do take place but they are done more on an exception basis than through a planned inspection process. He further indicated that they do not maintain any documentation to indicate that internal maintenance work has been inspected. The Superintendent of Building Maintenance advised us that Foremen are expected to undertake spot inspections at their discretion. He noted that they should be checking on jobs that are complicated in nature or have specific safety or other issues that need to be met for completion of the job. These spot inspections are not documented.

Without a formal documented inspection process, there is no way of knowing the extent of the inspections that have been conducted or the outcome of these inspections. As a result, there is no assurance that the appropriate quality of work is being provided to customers or a basis for providing feedback on work performed by internal staff.

Recommendation 20

We recommend that, for work carried out internally by BSD staff, a formal inspection process and checklist be developed to provide documented evidence that the work has been completed satisfactorily. The foreman carrying out the inspections should complete, sign and date the inspection checklist and maintain it in an inspection file. This documentation can also be used for performance management purposes.

Management Response

The Public Works Department agrees with this recommendation.

An inspection and contract protocol/process will be developed and implemented in conjunction with Recommendation #19

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan.***

Client Satisfaction

Civic Accommodations and Parks and Open Space indicated to us that they are generally satisfied with the quality of service provided by BSD. Nevertheless, as previously indicated in our *Report on Performance*, in the BSD annual client survey, several clients expressed dissatisfaction with custodial services, cleanliness and the physical condition in some civic facilities.

Some of this dissatisfaction may be due to changes in how Civic Accommodations is charging for services. Civic Accommodations has passed on some of the responsibility for the esthetic requirements in a facility to the occupying department. In some cases, the users of these facilities are uncertain as to what their responsibility is for funding the work. As a result, some occupants may indicate that they are not satisfied with the physical condition of parts of their facility (i.e. carpets and walls) but not realize that it

is up to their departmental management to have these items addressed.

BSD needs to work with Civic Accommodations to determine an acceptable level of service for their clients as well as to develop a strategy to communicate what is covered in the lease/rent rates that are paid to Civic Accommodations. Where improvements require a higher level of service than is currently available or funded, clients have to be made aware of budget challenges that may limit the ability to increase staff resources to handle increased service levels.

Community Services Department staff have indicated that, overall, they do not feel that the facilities they are working in are properly maintained. The dissatisfaction with levels of service in Community Services facilities, which are often used by the public, can result in a poor civic image and potentially bad publicity. Some of these concerns relate to the question of who "owns" a particular facility and, therefore, who is responsible for funding the maintenance of the facilities. Alternatively, some concerns relate to the lack of resources required to meet the level of service that may be required.

BSD needs to work with Community Services to gain a better understanding of their respective roles in relation to the Service Level Agreement. There appears to be some miscommunication relating to the level of service that is to be provided. If Community Services requires a higher level of service in some of their buildings, then BSD must inform them what the additional costs for this level of service would be. Community Services will have to be prepared to pay the additional costs to receive a higher level of service.

Recommendation 21

a) We recommend that BSD work with Civic Accommodations to clarify with their clients what is and is not covered through their lease/rent payments for the space they occupy.

Management Response

The Public Works Department agrees with this recommendation.

Public Works and Planning, Property and Development recognize that Building Services needs a clear scope of work relative to what services Planning, Property and Development expects. As well, Planning, Property and Development clients need to understand what their lease/rent covers.

The Civic Facilities Integration Initiative (CFII) sponsored by Public Works and Planning, Property and Development is nearing completion and will shed further light on this recommendation.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan****.*

b) We recommend that BSD work with Community Services to gain a better understanding of their respective roles in relation to the Service Level Agreement. If higher levels of service are required, additional costs must be negotiated and accepted.

Management Response

The two departments agree with this recommendation and will work together during the renegotiation of the Service Level Agreement.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan****.*

Succession Planning

Succession planning establishes a process that recruits employees, develops their skills and abilities, and prepares them for advancement, while retaining them to ensure a return on the organization's training investment. Succession planning involves the following:

- Determining requirements – identify key positions and future direction to support business objectives, considering organizational demographics.
- Identifying characteristics necessary to fill key positions – what skill sets are required now and into the future.
- Assessing internal talent and identifying gaps – identify qualified candidates to fill key positions and identify where gaps exist.
- Developing training/mentor program – provide training to qualified candidates and establish necessary mentor program.
- Measuring results – monitor the effectiveness of the program.

In the past, succession planning typically targeted only key leadership positions. In today's organizations, it is important to include key positions in a variety of job categories. With good succession planning, employees are ready for new leadership roles as the need arises, and when someone leaves, a current employee is ready to take on the challenges of the position. In addition, succession planning can help develop a diverse workforce, by enabling decision makers to look at the future make-up of the organization as a whole.

Because BSD has not made it a priority, there is no formal succession plan for BSD although informal succession planning has been taking place with some specific plans to replace key positions. BSD has also upgraded some classification standards, which have resulted in upgrading the skills of existing staff, and provided a better benchmark for selection and promotion. BSD also regularly reviews its organizational structure with a view to building a structure that supports succession.

At the same time, BSD has not assessed the skills possessed by staff or identified gaps in the workforce in order to identify and develop qualified candidates for key positions. Given that 58% of the Public Works Department's staff will be eligible to retire by 2010, the Department and, specifically, BSD may not be able to provide the continuity of knowledge and skills in the future to ensure effective and efficient operations.

Recommendation 22

We recommend that a formal succession plan be developed for the Building Services Division.

Management Response

The Public Works Department agrees with this recommendation.

BSD is re-evaluating each position that becomes vacant and is determining what qualifications are required to improve our service in the future.

Where possible during the months prior to staff members' retirement, knowledge of building systems, access and other pertinent information is gleaned from them and documented.

Implementation of other Audit Recommendations will assist in this process.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan***

Impacts on the Public and Staff

BSD needs to ensure that all maintenance work is performed in accordance with the applicable regulations.

The appropriate procedures should be implemented to ensure the health and safety of the public and staff.

Workplace Safety and Health

Every organization has a legal responsibility to ensure the health and safety of its employees, customers and the local community and to protect the environment. Good environmental, health and safety performance is part of good business in terms of maximizing employee safety and productivity, identifying opportunities for cost savings and reducing overall business risk. One risk that was identified by BSD related to non-compliance with the health and safety laws and regulations, including the *Environmental Health Regulations*. In order to effectively manage the environmental, health and safety risks and to ensure compliance with all the related laws and regulations, it is important that the appropriate processes and practices are implemented.

There are several regulations and codes that BSD is required to comply with in the performance of its responsibilities. However, we limited our review to sections 4(2) and 7.4(5) of the *Workplace Safety and Health Act,* which outline the duties of employers and the content of a workplace safety and health program respectively. We also reviewed the *Environmental Health Regulations* relating to asbestos operations and maintenance.

The *Workplace Safety and Health Act* has been legislated to protect workers and the public from risks to their safety and health arising out of, or in connection with, activities in workplaces. The Act outlines the key duties of the employer which include:

- the provision and maintenance of a workplace, necessary equipment, systems and tools that are safe and without risks to health, so far as is reasonably practicable;
- provision to all workers of such information, instruction, training, supervision and facilities to ensure, so far as is reasonably practicable, the safety, health and welfare at work of all workers;
- ensuring that all workers, and particularly the supervisors and foremen, are acquainted with any safety or health hazards which may be encountered by the workers in the course of their service, and that workers are familiar with the use of all devices or equipment provided for their protection;
- conducting work activities in such a way as to ensure, so far as reasonably practicable, that the public is not exposed to risks to their safety or health arising out of, or in connection with the work activities; and
- ensuring that workers are supervised by a competent, experienced supervisor.

Public Works has a Safety Officer who has the responsibility to see that policies and practices are in place to ensure compliance with the *Workplace Safety and Health Act*.

In accordance with the Act, the Department has developed a Safety Management Program, which is applicable to all departmental employees including those who work for BSD. The

content of the program is outlined in the department's Safety Management Program manual, which includes thirteen elements. Some of the key elements are: a safety statement, hazard assessment, safe work practices and procedures, inspections, accident investigations, training and communication. Audits are conducted every two or three years to determine how each Division or Branch is managing its safety program. The Safety Officer informed us that an audit of BSD is due to be conducted during the first six months of 2006.

In order to gain an understanding of the nature of the safety audits, we reviewed the audit report and audit program for an audit that was conducted in 2003 at one of the branches in Public Works. We noted that the Branch was assessed on the thirteen elements of the Department's Safety Management Program. These elements are in line with Section 7.4(5) of the *Workplace Safety and Health Act,* which outlines the contents that should be included in a workplace safety and health program. We interviewed the Department's Safety Officer and BSD management in order to determine whether the BSD was compliant with all the requirements listed in this section of the Act. We found that there were processes and procedures in place, whether at the overall departmental level or at the divisional level to ensure that there was compliance with the Act. For example, the Public Works Department has issued a safety statement regarding its policy with respect to the protection of the safety and health of workers at the workplace and the responsibilities of management, supervisors and employees.

Workplace Inspections

With regards to the requirement for regular inspections of the workplace, Public Works has implemented the Major Facility Comprehensive Inspection process whereby all major facilities in the Department are inspected quarterly. BSD is responsible for inspecting only the facilities that are occupied by its staff since the various user groups organize the inspections for their respective locations. The inspections are conducted by teams that include a Safety & Health Committee representative.

For the other facilities that are maintained by BSD, we found that the Community Services Department and Planning, Property & Development Department have begun to conduct inspections at some facilities as part of their own safety management programs.

Safety Training and Work Practices

Another requirement of the Act is that all workers should be adequately trained and provided with the relevant safety and health information. Public Works holds annual training sessions which cover areas such as safety standards, equipment training, accident investigation, inspection and other safety related topics. In addition to this annual training, BSD also conducts job specific training and holds bi-weekly tailgate meetings in which topics of workplace health and safety as well as other work related issues are discussed. A record of when the tailgate meetings occurred and what topics were discussed is maintained and reviewed by the Safety Officer. Additional safety training is provided on an ad-hoc basis, where deemed necessary from a review of accident reports and statistics.

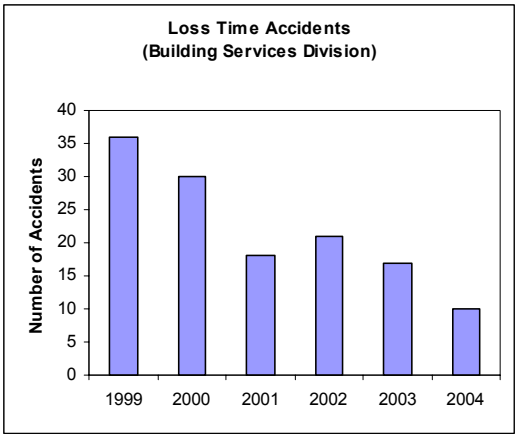
Supervision

Adequate supervision is essential to ensure that there is compliance with the health and safety legislation. The Supervisors and Foremen in BSD are provided with a variety of training sessions that equip them with the required skills to perform their duties in the field. One example is the Foremanship Training program which provides adequate information on the

Foreman's roles and responsibilities and also includes in-depth safety components. Although the *Workplace Safety and Health Act* does not require that a Supervisor be at each work site, the critical requirement is that each worker should have a Supervisor to whom he or she reports and can contact as needed. The role played by the Public Works Safety Branch helps to ensure that the safety practices at work sites are acceptable and in compliance with the legislation.

Our review of BSD's approach to safety on projects that are contracted out found that the contracts contain a clause that the contractor must adhere to the *Workplace Safety and Health Act*. All work tendered that exceeds $250,000 must be awarded to a company that is COR certified or has a qualified safety professional conduct an audit of their safety program to ensure it successfully meets the intent and requirements as outlined in Section 7.4(5) of the Act. If the work in question is considered to be high risk, a safe work plan must also be provided. At the initial site meeting, one of the items that is discussed is site safety; subsequently, it is the contractor's responsibility to ensure that the construction site is safe. For projects that are conducted by BSD staff, safety at the work site is ensured through spot inspections by the Supervisors and Foremen. However, we were informed that these inspections are not documented. Appropriate documentation would help to ensure that any noted safety issues are addressed adequately.

The results of our audit work indicate that Public Works and Building Services Division, specifically, have implemented a safety program that satisfies the requirements of the *Workplace Safety and Health Act*. Although our audit work did not include a detailed assessment of the program contents, it appears that the safety program has had a positive impact in reducing the number of accidents that occur in the workplace. We noted that since the establishment of the Safety Officer position at Public Works, the "loss time accidents" have been significantly reduced over the period of 1999 to 2004 for BSD. A "loss time accident" is defined as an accident that results in a person being away from work 24 hours past the day of the injury.



We commend the Public Works Department on the success of this program.

Recommendation 23

We recommend that all spot inspections conducted at work sites be adequately documented. Safety and work-related issues that are observed should be appropriately resolved.

Management Response

The Public Works Department agrees with this recommendation and will endeavour to develop an appropriate documentation system.

Determining the appropriate level of inspections within the funding and staff complement currently available will be a challenge.

Tracking of safety and work-related issues will be tracked through Maximo Work Orders.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan****.*

Asbestos Management Program

BSD has a well-managed asbestos management program, which takes into account the City of Winnipeg's *Code of Practice for Asbestos Operations and Maintenance* and the *Guidelines for Asbestos Operations and Maintenance Program* issued by the Workplace Safety and Health Branch of the Manitoba Department of Labour. The essential elements of the program include the maintenance of an inventory list of all buildings that have asbestos present, periodic inspections of these locations, labeling of asbestos containing materials, the maintenance of a chronological file system for all asbestos related work and surveys, asbestos abatement procedures and training requirements.

BSD's Asbestos Management Program is applicable only to the facilities that are in its portfolio. BSD has identified 255 buildings that contain asbestos and these are inspected every two years. We reviewed a sample of the files that are maintained for each building and determined that the inspections were conducted as scheduled with appropriate documentation in place. As required by the regulations, the staff receives periodic awareness training on asbestos operation and maintenance; the most recent training session was held in April 2005.

While the Asbestos Management Program is satisfactory and the processes are appropriate to ensure compliance with the regulations, consideration needs to be given to the other City facilities that are not maintained by BSD. The Transit department indicated that they have an asbestos management program in place and they adhere to the City's Code of Practice. The Fire department has addressed their lack of a program by requesting BSD to develop one for the 12 fire halls that have been identified to contain asbestos. Water & Waste has recently implemented an asbestos management program for its facilities and has hired a consultant to conduct asbestos surveys of its major facilities. The current approach to maintaining the City's facilities, which lacks corporate coordination as discussed earlier, increases the likelihood that some critical processes and procedures may not be implemented for some facilities. In addition, the expertise already available within the City is not being utilized to its fullest potential. The expertise to conduct asbestos surveys exists in the BSD Division and it would be more cost effective to have one coordinator responsible for the implementation of the program for all city facilities. Failure to ensure that the environmental and health risks are adequately managed for all the City's facilities could result in the exposure of staff and the public to potential health hazards.

Recommendation 24

We recommend that BSD be given the responsibility to oversee the Asbestos Management Program for all City facilities. This will help to ensure that adequate processes and procedures are implemented to address the environmental and health risks at all City facilities.

Management Response

The Administration will initiate interdepartmental discussions to determine the feasibility of this approach.

Resolution of the issues raised in Recommendation #1 would need to be resolved.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan****.*

Safety Inspections of Key Building Systems

A critical aspect of BSD's operations is ensuring that the required safety inspections of key building systems are carried out in a timely manner. We reviewed the process in place to inspect elevators, fire protection equipment and heating systems. The results of our review revealed that improvement to the process is needed in some areas:

Elevators

BSD's responsibility for elevators pertains only to those buildings that are in its portfolio. Depending on the type of system, the hired contractors are required to conduct monthly, biweekly or weekly inspections. Annual inspections are also conducted by the Provincial inspectors. Evidence of the annual inspection is posted in each elevator. We found that the processes in place were satisfactory to ensure that the required inspections were carried out.

Fire Protection Equipment

A contract exists for the inspection and testing of fire protection equipment, including fire alarms, emergency lighting and sprinkler systems. We found that the contract covers the buildings maintained by BSD with the exception of the Community Centres.

The inspections are conducted annually and inspection reports are provided by the contractor for each location where a test is conducted. When all the noted deficiencies are corrected, inspection certificates are issued as evidence that the systems conform to *The Manitoba Building Code*. The Instrument Technician, who is located at 510 Main Street, coordinates and monitors the annual inspections, with the exception of those at pools and arenas, which are coordinated by the supervisors at these facilities**.**

In addition to the annual inspections, the fire alarms and emergency lighting systems are also tested on a monthly basis by Electrical Shop staff. We found that there were appropriate processes in place to monitor and ensure that both the monthly and annual tests were performed. However, we believe that greater efficiencies would be achieved if both tests were coordinated and monitored by the Electrical Shop. It does not make business sense that for the same facilities and building systems, the annual and monthly inspections are coordinated by different staff groups.

The annual inspection of fire extinguishers is also covered by a City-wide contract. With the exception of Community Centres, this contract pertains to the facilities maintained by BSD, as well as those in the Fire, Transit and Water & Waste departments. Unlike the inspection of fire alarms, no reports are issued for the testing of fire extinguishers and the only evidence of the inspection is a tag which is placed on the fire extinguishers. We were informed that the onus is on the contractor to conduct the inspections since BSD has not assigned the responsibility to any staff member to monitor the process and to ensure that the work is actually performed.

Concerns were expressed by a BSD Foreman who is responsible for approving payment of the contractor's invoices. He indicated that usually he receives only the invoice and there is no other supporting evidence that the contractor had provided the services. Without an established monitoring process, there is no assurance that the contractor is performing the required inspections as scheduled. Currently, the

only way BSD may determine that a fire extinguisher is not tested is if the tenant contacts BSD or if, by chance, during their daily work, staff observe that tags are outdated. Reliance should not be placed solely on the contractors to conduct the inspections in a timely manner. Monitoring of the inspection process by BSD staff is needed.

With regards to Community Centres, we found that they are responsible for making the arrangements to have their systems tested annually. Currently, the Supervisor of Community Centre Maintenance relies on staff from the community centres to submit the inspection reports and certificates as evidence that the inspections were performed. However, they have not all been diligent in submitting the reports and BSD has not established a process to monitor and ensure that the required inspections are performed. We were informed that fire extinguishers are spot checked at the annual facility inspections and, if the tags are outdated, this is identified on the written report which is forwarded to the Community Centre for action. Nevertheless, we believe that BSD should follow up and ensure that the inspections are actually carried out.

Recommendation 25

a) We recommend that the monthly and annual inspections of the fire alarms and emergency lighting systems be coordinated by the Electrical Shop.

Management Response

The Public Works Department agrees with this recommendation.

The monthly inspections are administered and carried out by the branches responsible for specific building groups. The monthly inspections are presently being formalized by the creation of PMs in MAXIMO.

Building Services will review the options to improve workflow and coordination of work that arises from the annual fire system inspections.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan****.*

b) BSD should develop a process to monitor the annual inspections of fire extinguishers to ensure that they are conducted by the external contractor on a timely basis. A process should also be developed to ensure that the Community Centres are fulfilling their responsibilities with regards to the annual inspections of their fire protection systems. Consideration should be given to including Community Centres within the scope of the contract for the annual inspection of City fire extinguishers.

Management Response

The Public Works Department agrees with this recommendation.

Plans are to further incorporate this contract tracking system into Maximo for buildings within our portfolio.

It should be noted that Community Centres are responsible (as per the UFF agreement) for the monthly and annual inspections of fire alarm systems in their buildings. Building Services annually asks for documentation that these inspections were conducted.

The annual fire extinguisher contract, which applies to all departments with buildings, now specifies a method to monitor the progress of the annual inspections and also the monthly inspections by staff on site.

Materials Management, Community Services and GCWCC would need to determine if Community Centres can be provided with the opportunity to piggy back on the annual Fire

Extinguisher contract and if the Community Centres would participate.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan****.*

Heating Systems

The Manitoba Building Code requires that all heating systems be inspected annually to prevent hazardous conditions. A three-year contract exists for the inspection and repair of natural gas fired appliances in arenas. These inspections are coordinated and monitored by the Superintendent of Arenas and Wading Pools. However, the inspections at the other facilities that are under BSD's jurisdiction are conducted by BSD's staff. Copies of the inspection reports are submitted to the Fire Prevention Branch of the Fire Paramedic Service for their review. With regards to the inspections that are conducted by BSD's staff, we found that the process to identify the facilities to be inspected is quite inefficient since there is no inventory listing. The staff basically reviews the stack of reports to determine the facilities that are due for inspection. The Foreman indicated that he had planned to develop a master list of the facilities to be inspected, but this had not yet been done due to time constraints. We were also informed that inspections at some facilities have been long overdue and this is primarily due to a shortage of resources. Considering the risk involved, every effort should be made to ensure that the backlog of inspections is addressed and that a system is developed to facilitate the scheduling and performance of all future inspections.

Recommendation 26

In order to facilitate the inspection process, an inventory listing of the facilities and the gas fired appliances at each location should be developed. Once this is done, all inspections should be documented and tracked to ensure that all the required inspections are taking place.

Management Response

The Public Works Department agrees with this recommendation.

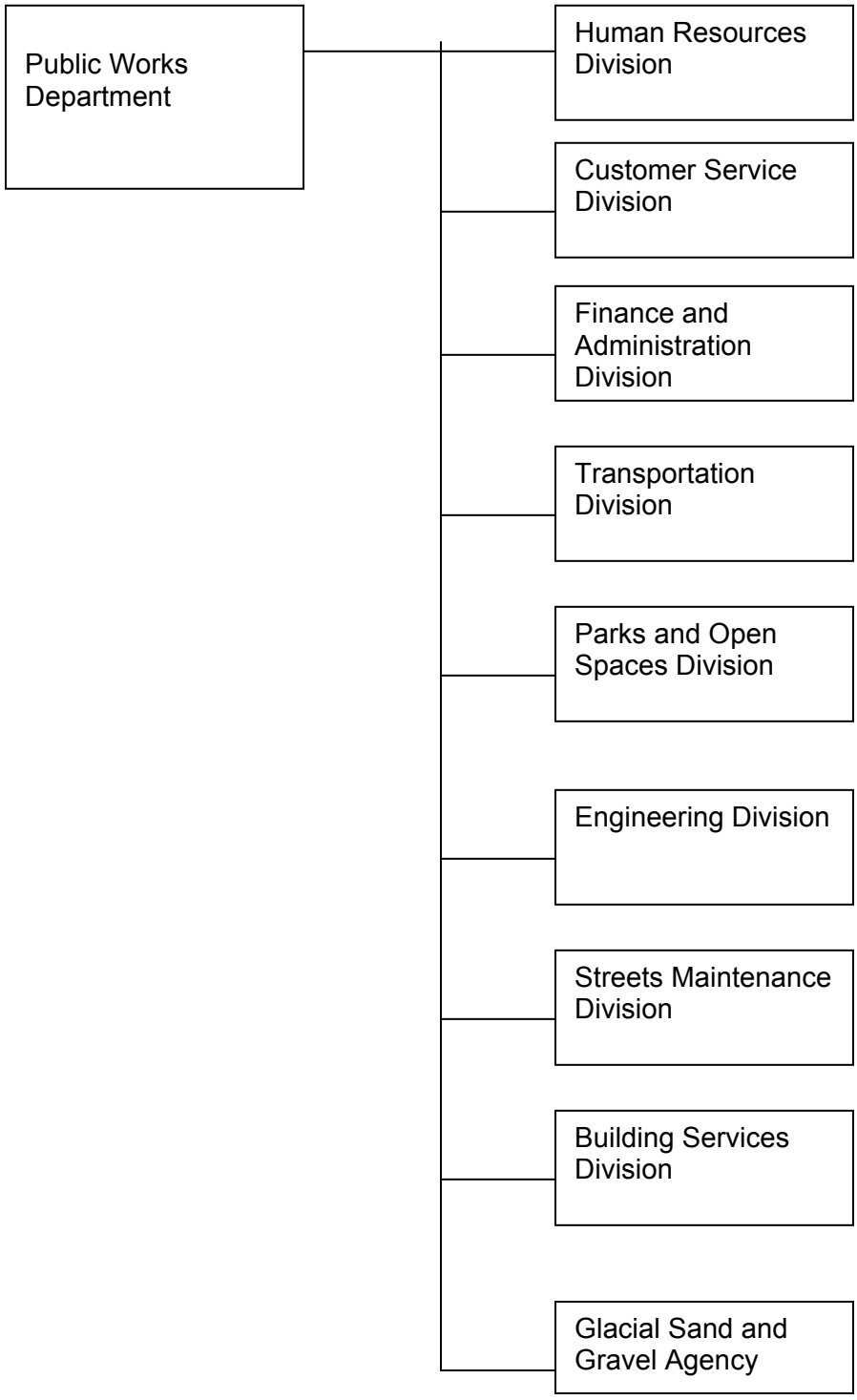
The Preventative Maintenance module is currently being "piloted" for the inspection of gas-fired appliances maintained by BSD.

The inventory of gas-fired equipment has been completed and is currently being scheduled into Maximo in the Preventative Maintenance module.

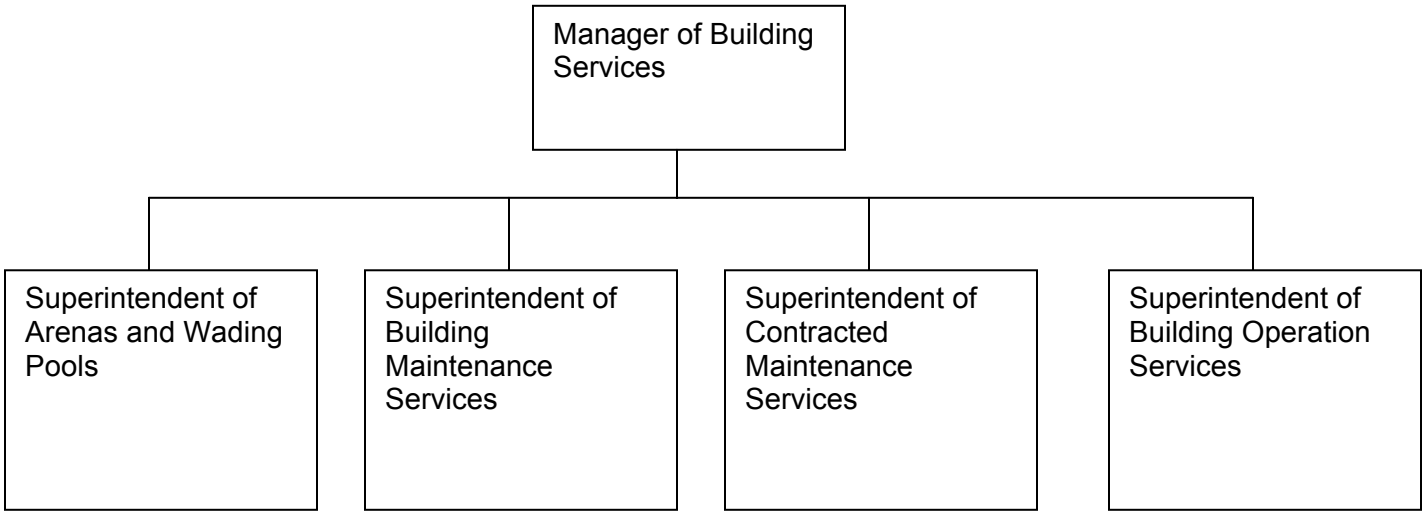
It should be noted that Community Centres are responsible (as per the UFF agreement) for the monthly and annual inspections of fire alarm systems. Building Services annually asks for documentation that these inspections were conducted.

Our progress will be updated in the ***Asset Management Audit Part 2 - Facilities Maintenance Implementation Plan****.*

Appendix 1: Organizational Chart for Public Works



Appendix 2: Organizational Chart for Building Services Division



Appendix 3 Risk Profile

Public Works – Facilities Maintenance

Context Risks

These risks relate to internal and external factors that impact the environment in which the organization operates or business processes are conducted.

Area of Focus	External Environment	Compliance	Organizational Culture	Business Process
Performance of assets	Inadequate building security	Unknown non-compliance with Environmental Health Regulations (Asbestos/Mould/PCBs/Air Quality)	Lack of adequate performance objectives and goals	Inventory and condition assessment process is inadequate
Determining the work to be done		Non-compliance with Environmental Health and Safety Regulations (prioritizing and impact on work requirements)	Unclear roles and responsibilities among City departments	Maintenance project selection process not effective
			Poor communication with other departments/clients	
			Focus on safety maintenance resulting in increased resource requirements over long term	
Controlling costs	Utility rates increasing at a higher rate than total maintenance budget	Contractors fail to comply with terms of contract in terms of costs and completion dates	Focus on safety maintenance resulting in higher costs over long term	Contracting process is inadequate
				Work management/work order system is inadequate (MAXIMO)
		Non-compliance with purchasing policies	Reluctance to close/dispose of buildings that have exceeded their useful life.	Budgeting and charge-back process is not effective
Quality of work		Contractors fail to comply with terms of contract relating to quality standards		Inadequate quality control (standards and inspection process)
				Inadequate maintenance practices of civic departments that perform their own building maintenance.
				Inadequate documentation of operational procedures.
The impact on the public and staff		Non-compliance with laws, bylaws, regulations, etc (Health and safety, building codes) (including contractors).		Significant disruption to tenant's business operations during maintenance work

Public Works – Facilities Maintenance

Resource Risks

These risks relate to the resources used by the organization to accomplish its objectives.

Area of Focus	Human Resources	Financial Resources	Information Resources	Physical Assets
Performance of assets			Lack of performance measures	Aging buildings (a significant portion of the building and equipment inventory is past or approaching the end of their estimated useful life)
			Inadequate integration of information systems re: inventory and condition (Maximo, PeopleSoft, asset mgmt software)	
Determining the work to be done	**Inadequate staff competencies**	Insufficient funding to deliver required level of service.	Lack of adequate information for effective decision-making	
Controlling costs	CUPE agreement restrictions on ability to effectively manage the operation.		Inadequate financial information (PeopleSoft and Maximo)	
			Inadequate security of information systems	
			Inefficient management of information systems resulting in higher costs	
			Accurate and complete work order information not available (Maximo)	
			Lack of integration of information on claims experience (Risk Mgmt)	
			Insufficient and incomplete maintenance work tracking and reporting information	
Quality of work	Inadequate succession planning, training and high turnover			
	Inadequate staff competencies			
	Workload of staff			
The impact on the public and staff				

Legend

- Critical risk
- High risk
- Moderate risk
- Low risk

Appendix 4: The Criteria of Control Model

> "*There is no such thing as perfect control and there is no such thing as free control… the challenge is to find the right balance*."—Michael Hammer

Since the objectives of our audit include assessing the adequacy of the control environment, we need to begin by explaining what we mean by control. Until recently, controllership was seen as the responsibility of financial staff, and was largely concerned with sound financial management. Modern controllership is based upon a much broader concept of control. It defines **controls** as all the elements that support the achievement of an organization's business objectives, and **risks** as obstacles that may inhibit or prevent an organization from achieving those objectives. Modern controllership consists of those aspects of management aimed at ensuring the organization is *in control*. The message is that *control is everybody's business.*

Formal or hard controls

- Regulations
- Policies
- Procedures
- Standards
- Direct supervision
- Duty segregation
- Physical security

But these controls alone do not guarantee organizational success. In the absence of a strong organizational culture, hard controls are not enough. Dramatic business failures in recent years have demonstrated that the best systems and processes are no substitute for an ethical workforce with competent leadership and clear objectives, staffed by people of integrity.

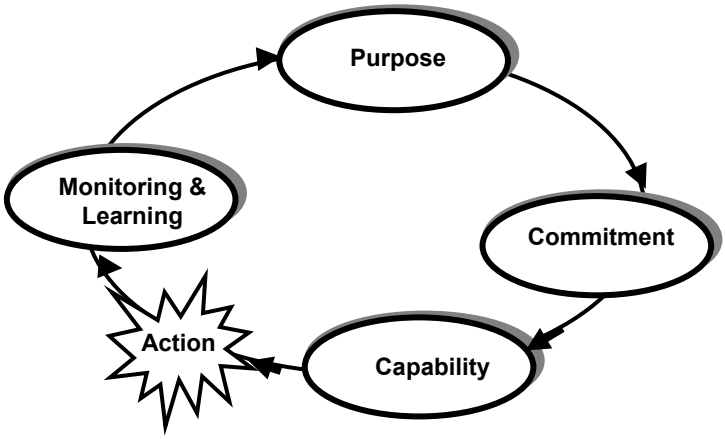
Informal or soft controls

- Ethical values
- Clear objectives
- Leadership
- Competence
- Communication
- Performance measures
- Reward systems

Taken together, the formal and informal controls comprise the main components of a modern management control system.

A *control framework* provides a way of understanding the important elements of control. We used the control framework developed by the Canadian Institute of Chartered Accountants for the purposes of this review. The framework uses the *Criteria of Control (CoCo) Model* that employs twenty criteria and groups these into four essential components of control—*purpose, commitment, capability,* and *monitoring and learning*. The model suggests that effective control over these components is essential to ensure the achievement of business objectives.

The CoCo Model



These control components are found in successful organizations where people

Have a sense of **purpose**

- They know where they are going and how they want to get there.
- They understand risk and opportunity.

Have **commitment**

- They respect and trust each other.
- They share a common vision and sense of what is right and wrong.
- They understand and accept their responsibilities.

Have **capability**

- They know their jobs and have the right skills, tools and systems to get things done.

Monitor what they do and keep **learning**

- They constantly learn from what they do to make things better.

The C*riteria of Control* in the *CoCo Model* can be used as a basis for understanding control in any organization and for making judgments about the effectiveness of control. The twenty detailed C*riteria of Control* follow.

Detailed Criteria of Control

Purpose

A1 Objectives should be established and communicated.

A2 The significant internal and external risks are faced by an organization in the achievement of its objectives are identified and assessed.

A3 Policies designed to support the achievement of an organization's objectives and the management of its risks should be established, communicated and practiced so that people understand what is expected of them and the scope of their freedom to act.

A4 Plans to guide efforts in achieving the organization's objectives should be established and communicated.

A5 Objectives and related plans should include measurable performance targets and indicators.

Commitment

B1 Shared ethical values, including integrity, should be established communicated and practiced throughout an organization.

B2 Human resource policies and practices are consistent with an organization's ethical values and with the achievement of objectives.

B3 Authority, responsibility and accountability should be clearly defined and consistent with an organization's objectives so that decisions and actions are taken by the appropriate people.

B4 An atmosphere of mutual trust should be fostered to support the flow of information between people and their effective performance toward achieving the organization's objectives.

Capability

C1 People should have the necessary knowledge, skills and tools to support the achievement of an organization's objectives.

C2 Communication processes support the organization's values and the achievement of its objectives.

C3 Sufficient and relevant information should be identified and communicated in a timely manner to enable people to perform their assigned responsibilities.

C4 The decisions and actions of the different parts of the organization should be coordinated.

C5 Control activities should be designed as in integral part of the organization, taking into consideration its objectives, the risks to their achievement, and the inter-relatedness of control elements.

Monitoring and Learning

D1 External and internal environments should be monitored to obtain information that may signal a need to reevaluate an organization's objectives or procedures and processes.

D2 Performance should be monitored against the targets and indicators identified in the organization's objectives and business plans.

D3 The assumptions behind an organization's objectives should be periodically challenged.

D4 Information needs and related information systems are reassessed as objectives change or as reporting deficiencies are identified.

D5 Follow-up procedures should be established and performed to ensure appropriate change or action occurs.

0D6 Management should periodically assesses the effectiveness of control in its organization and communicate the results to those to whom it is accountable.