KPMG
cutting through complexity

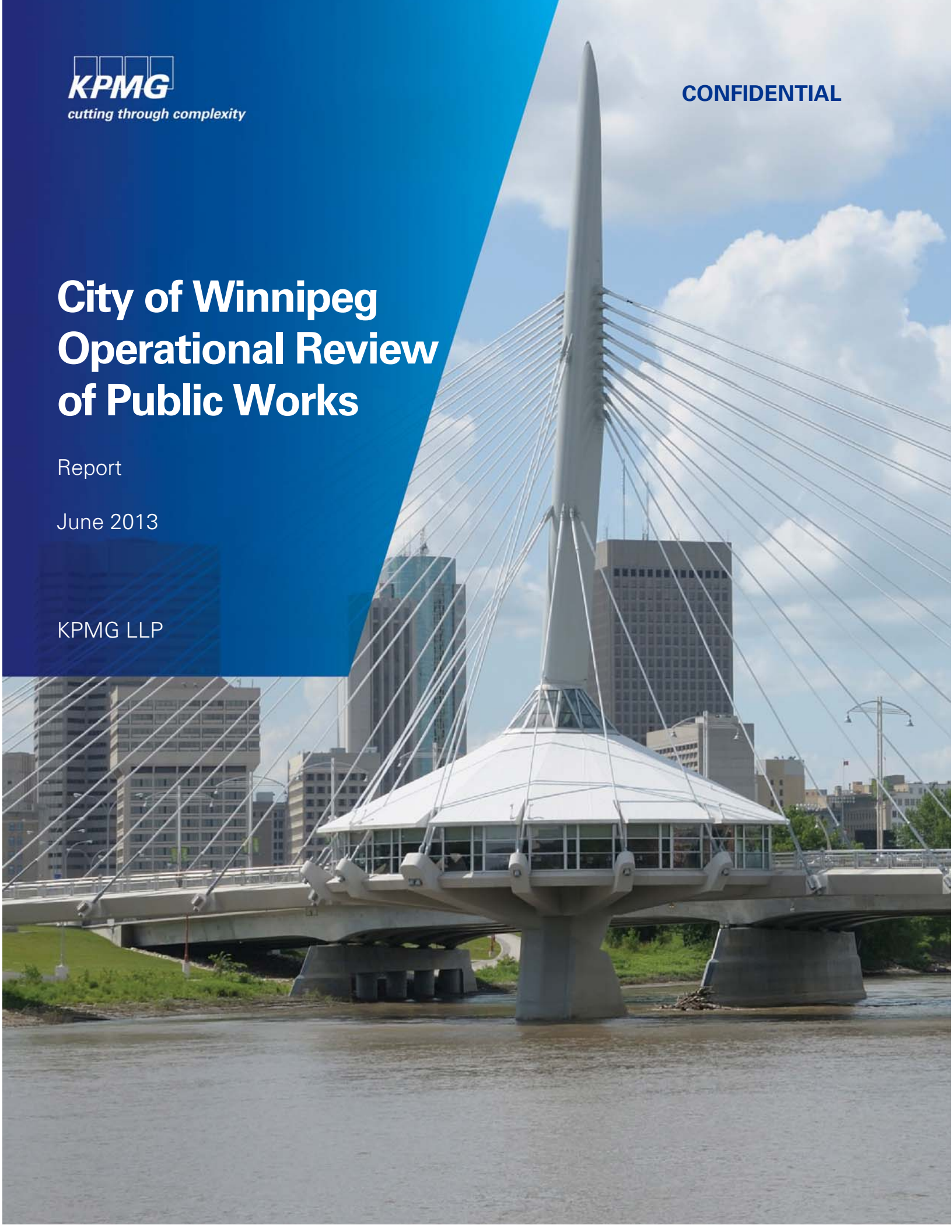
CONFIDENTIAL

City of Winnipeg Operational Review of Public Works

Report

June 2013

KPMG LLP



Notice

This report (the "Report") is provided to The City of Winnipeg (the "City") pursuant to our engagement to conduct an operational review (the "Review") of the City's Public Works Department ("Public Works" or the "Department").

If this Report is received by anyone other than the City, the recipient is placed on notice that the attached Report has been prepared solely for the City for its own internal use and this Report and its contents may not be shared with or disclosed to anyone by the recipient without the express written consent of the City and KPMG LLP ("KPMG"). KPMG does not accept any liability or responsibility to any third party who may use or place reliance on our Report.

Our scope was limited to a review and observations over a five month timeframe. The procedures we performed were limited in nature and extent, and those procedures will not necessarily disclose all matters about the Department's function, policies and operations, or reveal errors in the underlying information.

Our procedures consisted of inquiry, observation, comparison and analysis of City-provided information. In addition, we considered leading practices of and conducted benchmarking comparisons with five other select municipalities. Readers are cautioned that the potential savings outlined in this Report are order of magnitude estimates only. Actual results achieved as a result of implementing recommended opportunities are dependent upon City and Department actions and variations may be material.

The procedures we performed do not constitute an audit, examination or review in accordance with standards established by the Canadian Institute of Chartered Accountants ("CICA"), and we have not otherwise verified the information we obtained or presented in this Report. We express no opinion or any form of assurance on the information presented in our Report, and make no representations concerning its accuracy or completeness. We also express no opinion or any form of assurance on potential savings that the City may realize should it decide to implement the recommendations contained within this Report. The City is responsible for the decisions to implement any recommendations and for considering their impact. Implementation of these recommendations will require the City to plan and test any changes to ensure that the City will realize satisfactory results.

Glossary

$000's or 000's	Thousands of Canadian dollars or Thousands
$ millions	Millions of Canadian dollars
A	Actual results
AASHTO	American Association of State Highway and Transportation Officials
AM	Asset management
AMANDA	Web-based platform that enables business process automation for government agencies
APWA	American Public Works Association
Areas	The Department has three Areas (north, south, east) where City resources are organized to perform various public works functions.
ASD	Alternative Service Delivery
ATIS	Advanced Traveller Information System
B	Budgeted (financial information)
CCTV	Closed-circuit television
Census Metropolitan Area or CMA	A census metropolitan area is formed by one or more adjacent municipalities centred on a population centre (known as the core). A census metropolitan area must have a total population of at least 100,000 of which 50,000 or more must live in the core.
Central Services	Centrally-based resources within the Streets Maintenance Division of the Public Works Department used to perform specialized cuts and restoration, as well as repairs to roads and other construction services
CFM	Canadian Federation of Municipalities
City or the City of Winnipeg	Refers to the City of Winnipeg when City of Winnipeg or the City is capitalized.
CMHC	Canada Mortgage and Housing Corporation
Conference Board	The Conference Board of Canada
Core Services	Core services of the Public Works Department
Corporate Support Services	When capitalized, refers to City's central Corporate Support Services Department.
Council	Winnipeg City Council
CPI	Consumer Price Index
Divisions	Public Works Divisions
EAB	Emerald Ash Borer

EIT	Engineer-in-Training
Envista	One of the City's GIS applications; software for right-of-way management
F	Forecast
FTE	Full-time equivalent
FY 20XX or 20XX	Fiscal year ended December 31, 20XX
GDP	Gross Domestic Product
GFOA	Government Finance Officers Association
GIS	Geographic Information System
HPMA	Highway Pavement Management Application
IDTS	Integrated Development Tracking System (City of San Jose)
Information Request	Citizen request for information, processed through Winnipeg 311
Intergraph	One of the City's GIS applications
IRI	International Roughness Index
IS&T	Public Works Information Systems and Technology Division
IT	Information technology
ITS	Intelligent Transportation System
KPI	Key performance indicator
KPMG	KPMG LLP
Local Street Renewal Reserve	Reserve dedicated to the renewal of local streets, back lanes and sidewalks; equal to 1% property tax increase, added in the City's 2013 Budget
Management	Public Works Management
Materials Management	Materials Management Division of the City's Corporate Finance Department
MMA	Methyl methacrylate
NDOT	Nevada Department of Transportation
OGRA	Ontario Good Roads Association
OMBI	Ontario Municipal Benchmarking Initiative
P3 or PPP	Public-private partnership
PAS 55	British Standards Institution's Publicly Available Specification for the optimized management of physical assets
PP&D	City's Planning, Property and Development Department
P.Eng.	Professional Engineer

Project Management Manual	Manual of Project Administration Practice
PMP	Project Management Professional
Project Team	KPMG project team
Public Works or Department	City's Public Works Department
Report	KPMG Report provided to the City of Winnipeg in connection with our Operational Review of the City of Winnipeg's Public Works Department
Review	Operational review of the City of Winnipeg's Public Works Department
RFP	Request for Proposal
Service Areas	Public Works main areas of service delivery
Service-Based Budget	The City of Winnipeg Service-Based Budget for fiscal 2012, organized by Sub-Service Area
Service Request	Citizen request for service, processed through Winnipeg 311
SFMP	Sports Fields Management Plan (City of Calgary)
SGC	Standard general condition
Snow Reserve	City reserve set aside to handle additional clearing costs associated with high-snowfall winters; currently nil for fiscal 2013
Steering Committee	City Steering Committee overseeing completion of this Review
Sub-Service	A collection of related activities within a Service Area
Support Services	When capitalized, refers to support services divisions in the Public Works Department, namely Finance and Administration, Information Systems and Technology, Human Resources, and Customer Services and Strategic Support.
TKMMS	Time-keeping maintenance management system; a Department IT system/tool used to track time and work orders
TMC	Traffic Management Centre
TRB	Transportation Research Board
VEMA	Province of Manitoba's Vehicle and Equipment Management Agency
Vemax	An asset management and capital planning tool used in Public Works, the Province and within the public works field
VOC	Volatile organic compound
Water and Waste	City's Water and Waste Department
WFMA	Winnipeg Fleet Management Agency

Contents

Notice i

Glossary iii

1 Executive Summary – Key Findings and Recommendations 1

2 Project Objective and Scope 11

2.1 Background 11

2.2 Objective 11

2.3 Scope 11

2.4 Work Plan and Timelines 12

2.5 Understanding This Report 13

3 Approach and Methodology 14

4 Public Works Overview 19

4.1 Introduction 19

4.2 City of Winnipeg Public Works Department Organization 19

4.3 Organizational Structure 21

4.4 Financial Operating Results (Traditional Method) FY 2010-2012 22

4.5 Capital Budgets FY 2010-2013 23

4.6 Core Services Assessment 24

4.7 Strengths of the Department 26

4.8 Trends and Emerging Issues Impacting Public Works 27

4.9 Benchmarking and Analysis 32

4.10 Summary and Introduction to the Following Sections 37

5 Public Works Support Services 38

5.1 Finance and Administration 38

5.2 Human Resources 39

5.3 Information Systems & Technology 40

5.4 Customer Services and Strategic Support 41
5.5 Issues, Opportunities and Recommendations 42

6 Roadway Construction and Maintenance 64
6.1 Financial Operating Results (Traditional Method) FY 2010-2012 64
6.2 Operating Budgets FY 2010-2013 (Service-Based) 67
6.3 Sub-Services and Service Levels 68
6.4 Issues, Opportunities and Recommendations 74

7 Roadway Snow Removal and Ice Control 113
7.1 Operating Budgets FY 2010-2013 (Service-Based) 113
7.2 Sub-Services and Service Levels 114
7.3 Issues, Opportunities and Recommendations 118

8 Transportation Planning and Traffic Management 128
8.1 Financial Operating Results (Traditional Method) FY 2010-2012 128
8.2 Operating Budgets FY 2010-2013 (Service-Based) 130
8.3 Sub-Services and Service Levels 131
8.4 Issues, Opportunities and Recommendations 133

9 Parks and Urban Forestry and Other Services 143
9.1 Financial Operating Results (Traditional Method) FY 2010-2012 143
9.2 Operating Budgets FY 2010-2013 (Service-Based) 145
9.3 Sub-Services and Service Levels 147
9.4 Issues, Opportunities and Recommendations 157

10 Implementation Plan Framework 173

1 Executive Summary – Key Findings and Recommendations

Background and Objectives

The City of Winnipeg is committed to ensuring it explores opportunities to make the most efficient and effective use of taxpayers' funds. The City engaged KPMG to provide an independent operational review of its Public Works Department to: assess performance, productivity, current structure, organization, processes and operations; provide benchmark comparison to other cities and identify leading practices; and identify opportunities for efficiencies and cost savings and an implementation plan framework.

KPMG conducted this work starting in late December over a period of five months. The operational review included: interviews with close to 100 City staff within the Department and in other Departments and Agencies of the City; field visits; assessment of the organization; analysis of financial and operational data; core service and service level assessment; gap analysis; benchmarking comparisons with select mid-sized Canadian cities; examining leading practices in public works; leveraging KPMG experience; identifying key issues and opportunities; and providing recommendations and an implementation plan framework.

KPMG and Public Works and the City Project Management Team worked collaboratively throughout the Review. Public Works provided detailed data and information and responded in a timely manner to requests. In total, over 1,000 documents were reviewed.

We undertook a balanced approach, identifying several areas of strength within the Department, and identifying issues and areas for improvement, in consultation with Public Works.

Public Works

As stated by the American Public Works Association ("APWA"), there is no one ideal structure or operating model for a public works operation. The City of Winnipeg Public Works Department has structured the organization around its mandate for the delivery of municipal public works services related to the planning, development and maintenance of roadway systems, the maintenance of parks and open space, and the maintenance and security of certain civic yards and buildings.

Overall, the Public Works Department had a operating budget of approximately $169 million in fiscal 2012 (approximately $113 million in operating expenditures before debt and finance charges, cash to capital, grants, and transfers). The Department employs approximately 982 full-time equivalents ("FTEs") which includes approximately 800 seasonal staff. Operating expenditures and staff levels have been relatively constant in recent years. The operating budget was increased to $180 million for 2013, primarily due to the addition of the new Local Streets Renewal Reserve. The capital budget for 2013 in Public Works is approximately $117 million.

KPMG utilized our core services assessment filter to classify core services and assess service levels within each Sub-Service area defined by Public Works. The large majority of Public Works' services (Sub-Services representing 96% by operating budget cost) were assessed as core municipal services, ranked as either mandatory or essential to the continued operation of the City. There are relatively few services that could be considered discretionary. Based on information from the Department, the large majority of Public Works services (representing in the range of 90% of the operating budget) are provided "at standard", which is generally the level set by by-laws and/or, in most cases, set by Public Works Management. This is a relatively solid level of service level delivery.

Public Works has many strengths that the Department can continue to build upon. These include, but are not limited to:

- dedicated and collaborative Management that are open to change and continuous improvement with a respected Director providing leadership;
- talented group of engineers, technologists and other professionals;
- qualified, trained crews and front-line staff;
- good safety training program and safety record;
- APWA accreditation;
- generally good cooperation with other City Departments;
- responsive team able to react quickly to emergency and priority situations; and
- workforce that is becoming relatively younger and more diverse with new ideas.

In general, the Public Works Department appears to be effective in deliverying maintenance and core services within its fiscal and human resources. There are a number of areas for improvements. The largest Division is Streets Maintenance and this is where we have identified relatively larger opportunities for more efficiencies and potential cost savings. We identified a number of issues and opportunities, which were discussed and validated with Management and the Steering Committee in Stage 1 of this Project (March 2013).

There are a number of key trends and external factors impacting public works in Winnipeg and across North America. These key factors include:

- macroeconomic growth;
- population growth and land/infrastructure expansion;
- fiscal pressures at all levels of governments, particularly acute since the worldwide recession in 2008-2009;
- demand for accountability and value for money; and
- deteriorating infrastructure and the huge challenge of accumulating infrastructure deficits.

Cities across Canada and much of the industrialized world have deteriorating infrastructure, growing infrastructure deficits, and demands for new or renewed infrastructure that challenge the ability of governments (under strong fiscal pressures and limitations) to meet public expectations.

Benchmarking

Public Works already tracks a number of performance measurement statistics for reporting purposes, and Winnipeg participates in the Ontario Municipal Benchmarking Initiative ("OMBI").

KPMG developed a comprehensive benchmarking survey to compare six mid-size Canadian cities, including Winnipeg, on various aspects of public works functions. While benchmarking focused on these "peer cities", we also examined leading practices and outlined case study examples from select U.S. and Canadian cities. Details are contained throughout the relevant sections of the Report, and also in background analysis. A general summary of benchmarking comparisons indicates the following:

- No two public works departments look the same across cities in Canada; they all contain different component parts. This presents challenges in benchmarking and best efforts were made to provide meaningful comparisons and in some cases, adjust accordingly.
- Overall, Winnipeg benchmarks fairly well to its peer cities in terms of overall operating costs and staffing (full-time equivalents) levels, which are generally in line, or slightly lower per capita. However, capital expenditures per capita are lower than peer cities.
- Street maintenance costs are slightly higher overall. Service level standards are generally similar in most areas. For some areas in other cities (e.g., cut repairs), standards are built into by-laws.
- Costs are higher for snow removal reflecting higher overall service standards.
- Parks and forestry costs are generally in line or slightly better than peers, and efficient overall.
- Overall, Winnipeg Public Works contracts out relatively more than most peer cities, particularly higher for snow removal.
- In terms of average/typical crews, Winnipeg tends to have smaller crews than peer cities for street maintenance and park maintenance. The City uses larger crews for urban forestry services.
- With respect to service levels, Winnipeg is generally similar to peer cities in most areas. A notable exception is higher standards in snow removal for local streets and sidewalks. Although relatively smaller cost items, Winnipeg has substantially more flowers/flower beds and certain types of outdoor recreation facilities such as bowling greens to maintain, as well as a relatively larger graffiti removal program.
- All cities are struggling with measurement of unit costs for key services performed. This can be very difficult to measure, but cities recognize the need to get better productivity measures such as fully-loaded unit cost by key activity and by crew.
- A number of cities are currently conducting reviews – either zero-based budgeting exercises or operational reviews – to manage through fiscal challenges similar to the fiscal pressures that Winnipeg is facing.

Summary of Recommendations

For each of the issues and opportunities identified in Stage 1 of this Project (March 2013), we have outlined our recommendations, including an estimate (where applicable) of any potential savings, revenues or costs, and relative timing for implementation. The following tables summarize each of the recommendations (each with a section number reference corresponding to a section of the Report) within three broad categories: potential efficiencies and cost savings, potential efficiencies and process improvements, and potential investments to gain efficiencies. This is followed by a summary of priority recommendations.

Potential Efficiencies and Cost Savings				
Issue and Section Reference	Recommendation	Potential Benefit / Financial Impact (1)	Timing (2)	Priority
311 Calls Efficiency (S. 5.5.2)	Public Works and Corporate Support Services should invest the time to find better filtering and solutions with the goal of shifting a significant portion of service requests to information requests and to reduce/eliminate duplicate requests.	Information requests are handled by 311. Service requests are often handled by front-line staff at Public Works who would otherwise be supervising or carrying out more value-added work. Reducing the number of service requests and particularly duplicate service requests will reduce costs and improve service delivery.	Short-term	High
Modernizing Construction Permits (S. 5.5.6)	Modernize the Public Works permit system by phasing in the implementation of AMANDA starting in 2013, reducing manual input, and providing an opportunity to increase permit revenues.	Increase efficiency, reduce manual time, improve customer service and free up more staff time for enforcement. Revenue opportunities of approximately $400,000 annually.	Medium-term	High
Ensuring Value for Money for Contracted Services (S. 6.4.2)	Build on the Department's experienced managers to expand contract management capability with a dedicated focus on maximizing overall value for money. Broaden construction project evaluation and processes to include Alternative Service Delivery ("ASD") options starting with design-build. Target an overall 2% savings from the overall level of contracted services.	A conservative 2% reduction in contracted services from the 2012 base would represent potential savings of $1.2 million. ASD methods for larger construction contracts and bundling should generate relatively larger potential savings.	Short to long-term	High
Fleet Management Costs and Utilization (S. 6.4.3 and S. 9.4.1)	Public Works is the largest customer of the Winnipeg Fleet Management Agency, and both should work towards a material reduction in annual fleet costs through a combination of: better rates on certain types of equipment; better utilization; controlling fuel costs; full recovery of MPI claims; and other means. Public Works work with WFMA to identify the range of parks fleet services that should be provided in the field to minimize the impact and cost of vehicle and equipment servicing, including WFMA mobile services.	With targeted efforts and negotiations of new Service Level Agreements and rates, potential savings on annual fleet costs should approach $1 million. Giving customers the option to provide services themselves or buy from other sources would make WFMA more accountable for customer needs – and hence value for money to taxpayers as a whole.	Short to medium-term	High
Summer Weekend Shifts and Overtime Management (S. 6.4.7)	To reduce significant variances in overtime, Public Works should develop stricter overtime approval procedures with the objective of reducing annual overtime costs. Adding a new summer weekend shift for two crews in 2013 should assist better resource allocations and coordination with Water and Waste, utilities and private contractors, and this should be expanded in 2014.	Through better resource allocation, stricter overtime provisioning and manager oversight, reduce overtime by $500,000 to $1 million from 2012 levels.	Short-term	High

Issue and Section Reference	Recommendation	Potential Benefit / Financial Impact (1)	Timing (2)	Priority
Snow Removal Service Level Expectations for Local Streets (S. 7.3.3)	Consider changing the service level standards of curb-to-curb and bare pavement plowing on residential streets after high snowfall accumulations. Opening a narrower travel way plow and aiming for a smoother surface would significantly reduce costs, even if residential road plowing was carried out after each significant snowfall (once PI and PII streets are completed).	This would be a significant change in the way local streets are plowed, more similar to other cities, with potential cost savings estimated at $2 – $3 million. Other benefits include a reduction in annual curb damage and concrete joints and earlier response after storms.	Medium-term	High
Annual Funding for Snow Removal (S. 7.3.2)	The City consider a "Winter Control Surcharge" that will be added to tax bills, when appropriate, when the actual snow and ice control expenditures in a winter period exceed the budget.	Revenue opportunity and option to deal with annual challenges in budgeting for a weather-dependent service. The current budget is unrealistically low given service levels, but it is difficult to budget for a "bad year" when it may not be necessary. An option to consider if not considering S. 7.3.3.	Medium to long-term	Depends on S. 7.3.3
Asset Management and Rationalization (S. 9.4.2)	Continue to develop asset management process for parks and forestry assets, with allocation of sufficient resources to maintain existing assets a priority over adding new assets. Explore the opportunity to expand contracting out of tree planting, pruning and removal through the ASD process.	Business case would need to be developed for potential alternative service delivery of tree planting and pruning, including fully-loaded cost analysis and private sector comparators. Proceeds from any potential sales of surplus assets.	Long-term	High
City Beautification Service Levels (S. 9.4.3)	Consider reducing the range and scale of City maintained public and ornamental gardens, which exceeds the norm of other mid-sized cities.	Some cost savings, but likely less than $100,000 – $200,000 annually.	Medium to long-term	Medium
Graffiti Removal & Festive Lighting (S. 9.4.4)	Consider making graffiti removal on private property the owners' responsibility or shared responsibility and correspondingly reduce costs.	The City accepted this responsibility to ensure a timely response. Other cities establish a bylaw for property owners to respond in a timely way. This could reduce the overall size and cost of the program by potentially $200,000 or more annually, depending upon extent of revised program scope.	Medium-term	Medium

Potential Efficiencies and Process Improvements				
Issue and Section Reference	Recommendation	Potential Benefit / Financial Impact (1)	Timing (2)	Priority
Performance Management, Standards and Measurement (S. 5.5.3)	Public Works should develop a performance management framework and operational performance measures across the Department and all Divisions.	Mission-critical to providing a systemic approach to measuring, tracking and reporting relevant information. Improves accountability, results-focus and communications.	Short-term	High
Sharing Resources Within the Hybrid Centralized-Decentralized Support Services Model (S. 5.5.4)	Rationalize the process for allocating seasonal staff to positions in order to reduce the amount of HR time required and to speed up the hiring/re-hiring process. Better resource sharing is needed from central Corporate Support Services or other departments to assist Public Works Human Resources during peak periods of the summer hiring process. As the hybrid model continues to evolve, explore opportunities for efficiency gains through centralization of certain standard transactional functions that are not unique to any City Department.	Public Works has more summer temporary staff than other City Departments. Sharing some City-wide Corporate Support Services will help alleviate the HR capacity constraints during these peak periods for routine administration and processing. Streamlining the current hiring/re-hiring process for seasonal staff would be helpful.	Short to medium-term	High
Asset Management Framework and Standards (S. 6.4.4)	Further develop the Corporate-wide Asset Management Program Initiative, with attention to following new internal guidelines, integration of condition assessment, planned maintenance and capital investment, service levels, advancing the maturity of the Program, and reporting to Council.	Long-term process; ultimately asset management enables better informed decisions to prioritize capital projects and reduce the overall lifecycle cost of infrastructure spending.	Long-term	High
Reorganization of Streets Maintenance Division Structure (S. 6.4.6)	Reorganize the Streets Maintenance Division with the objective of a relatively flatter structure, more flexibility and accountability within each unit, self-managed work crews and encouraging healthy competition and efficiencies.	Benefits of a relatively flatter structure of the Department's largest Division include more self-managed crews, flexibility and accountability. Change in organizational structure provides an opportunity for the Division to position for future increased volume and to strive for efficiencies and specialization.	Short to medium-term	High

Issue and Section Reference	Recommendation	Potential Benefit / Financial Impact (1)	Timing (2)	Priority
Utility Cuts and Repair (S. 6.4.8)	Improve utility cut repair management through a combination of better tracking, marking and quality control, consistency in completing permanent utility cut repairs with applied service standards across the City, and streamlining the utility cut permitting process.	Better consistency and uniformity in utility cut repairs through standardization, streamlining processes, and crew specialization. Consider a Pavement Degradation Fee in the permit process which could add approximately $200,000 annually.	Medium-term	Medium
Pavement Specification (S. 6.4.9)	Use internal data and expertise to undertake a study into the lifecycle cost of various concrete and asphalt specifications for different road usages.	Potential to reduce overall lifecycle cost of asset ownership and better value for a given road condition service level.	Medium to long-term	Medium
Lane Marking (S. 6.4.10)	Investigate other technical solutions for lane and intersection marking to compare costs and durability, and consider environmental impacts of alternatives.	Potential to improve lane marking program including consideration of safety, financial and environmental impacts.	Medium to long-term	Medium
Approach to Snow Removal Contracting (S. 7.3.1)	Public Works conduct a comprehensive review of its approach to contracting for snow and ice control services.	Opportunity to identify possible areas to change, utilize more technology, and ensure value for money.	Medium-term	Medium
Right-of-Way Management and Processes (S. 8.4.1)	Set up a formal Road Right-of-Way Coordinating Initiative with representation of all agencies with road right-of-way assets above and below ground, and coordinate effective right-of-way asset management and capital planning.	Road right-of-way assets are owned, managed and operated by a range of City departments and external stakeholders. More integrated planning and coordination should improve the quality and timeliness of information for effective decision-making.	Medium to long-term	Medium

Potential Investments to Gain Efficiencies				
Issue and Section Reference	Recommendation	Potential Benefit / Financial Impact (1)	Timing (2)	Priority
Strategic and Analytical Support (S. 5.5.1)	Public Works should consider the addition of three analyst positions – a financial analyst to fill a current vacancy, and an operational analyst and a process improvement analyst in Customer Services and Strategic Support to add to the one current research coordinator position within this Division.	Director and Management require proactive analysis for better indicators on operational efficiency, to assist in decision-making and for monitoring and reporting results.	Short to medium-term	High
Information Technology (S. 5.5.5)	Public Works has insufficient IT systems and a reliance on too many home-grown applications. Management should determine its direction for a workforce management system and performance management reporting and utilize the City's IT/IS business case templates for IT investment decisions.	Streamline the number of home-grown Department applications, reducing risk. Choose an effective workforce management system that supports objectives, and an information analysis and reporting system that managers need to manage with.	Short to medium-term	High
Experienced Project Managers and Engineers (S. 6.4.5)	Develop a strategy with Human Resources to address competition for Project Managers/ Engineers, including collaborating with Water and Waste on their Engineer-in-Training program. Recruit and hire a few additional Project Managers/Engineers as current resources are stretched on capital projects.	Necessary investment to build future capacity and reduce risks as well as to deal with succession planning. Additional Project Managers/Engineers are cost-recoverable in capital budgets as part of capital projects. Relatively minimal impact on operating budgets.	Short to long-term	High
Centralized Traffic Management Centre (S. 8.4.2)	Develop a business plan to implement a centralized Traffic Management System and Centre, phased in over a reasonable time period.	Capital project for consideration in 2014 Budget. Phase-in to smooth out cost impacts. Necessary investment to help get the most out of the existing transportation network in handling traffic capacity.	Medium to long-term	High

*Notes: (1) Please refer to the Notice at the beginning of this Report, and see each section within the Report for more details.
(2) For purposes of the Report, estimated timing is as follows:
(a) Short-term: next 12 to 18 months.
(b) Medium-term: next 18 months to 3-4 years.
(c) Long-term: over 3-4 years.

The following chart is a summary of priority (ranked high) recommendations along with estimates of potential savings, costs, or in a few cases revenues along with associated timing for implementation. The last section of the Report outlines an implementation plan framework for consideration in commencing implementation of the priority recommendations.

Summary of Priority Recommendations		
Priority Areas of Cost Savings	Potential Cost Savings (1)	Timing, Policy Change (if any) (2)
Value for money for contracted services, including Alternative Service Delivery ("ASD") options such as design-build on construction projects	$1.2 million	Medium to long-term. May require policy changes on terms for ASD contracts.
Reducing fleet management costs	$0.7 – $1.0 million	Short to medium-term. May require some policy change but much can be negotiated with WFMA. May consider some elements of competition for certain fleet services.
Adjusting service levels towards norm for residential street snow removal plows (3)	$2.0 – $3.0 million	Medium-term. Requires Council direction and policy change on changing service level standards on local streets.
Overtime management and expanding summer weekend shifts	$0.5 – $1.0 million	Short-term. Continue weekend shift process started in 2013, stricter Departmental overtime policy.
Modernizing construction permitting and adding a pavement degradation fee.	$0.5 million in revenues	Short to medium-term. Phase-in IT system, improve customer service and increase rates moderately.
311 efficiency and better utilization of staff time on service requests	Internal reallocation/more front-line availability	Short-term. Communicate and coordinate with 311.
ASD consideration for tree planting/pruning/removal and consideration of any future asset rationalization in Parks and Open Space	ASD business case – to be determined Requires Council direction	Medium to long-term. Develop business case and full cost analysis in ASD process. If any future asset rationalization, Council approval/policy required to declare and sell any surplus property.
Sub-total	**$3.7 – $5.5 million operating (includes $0.5 million revenues)** **$1.2 million+ capital**	

Notes: (1) Potential cost savings reflect high-level annual estimates from current level, potential costs include high-level estimates of one-time capital costs and high-level annual estimates of potential operating costs from current level.
(2) For purposes of the Report, estimated timing is as follows:
(a) Short-term: next 12 to 18 months; (b) Medium-term: next 18 months to 3-4 years; (c) Long-term: over 3-4 years.
(3) Alternative options include: increasing annual funding or a special levy for residents during a year of high snowfall and associated additional costs for local street snow removal.

(Summary of Priority Recommendations continued on next page)

Summary of Priority Recommendations (continued)		
Priority Process Improvements	Potential Efficiency	Timing, Policy Change (if any) (2)
Asset Management Program Initiative	Mission-critical for capital planning and helps set priorities on a systemic basis, could reduce annual maintenance costs in some areas, increase annual maintenance costs in other areas.	Long-term. Focus on better information on total lifecycle costs of assets, adjusting and prioritizing capital projects, adjusting service levels.
Developing a performance management framework and measurements for Public Works	Mission-critical to better information, analysis and reporting for Management and decision-makers.	Short-term. Continue to build and reinforce in the medium-term.
Reorganization of Streets Maintenance Division	Enabling Director and new Manager to establish a relatively flatter structure, more self-managed work crews and encourage innovation and healthy competition.	Short to medium-term. Internal reorganization led by the Director and Manager.
Improve the hiring/rehiring process for seasonal staff and sharing of resources from City-wide Corporate Support Services during Public Works' summer hiring process	Rationalize the current process for hiring/re-hiring seasonal staff. HR staff does not have resource capacity during this peak and requires support from elsewhere in the system. The enterprise system has limited functionality in generating HR necessary information on seasonal employees.	Short to medium term. Requires dialogue with CUPE to improve the summer hiring process for both the employees and employer. Investigate an additional module of PeopleSoft or software solution that integrates with it; requires corporate-wide decision.
Priority Investments	Potential Cost	Timing, Policy Change (if any) (2)
Addition of specialized strategic resources: (1) 3 analysts – financial, operational and process improvement; and (2) at least two additional Project Managers/Engineers	$0.3 million – One financial analyst to fill a current vacancy, two additional analyst positions. Note that additional Project Managers/ Engineers are cost-recoverable and part of capital project budgets.	Short-term. Analysts' jobs are to identify long-term efficiencies and improvements; Project Managers/Engineers necessary to build capacity and reduce risk.
Information technology – workforce management system, permitting system, performance management reporting	$0.6 – $1.0 million – Depends on decisions taken, some streamlining of home-grown system may create some offset through savings.	Short to medium term. Department to finalize business case and make its decision on appropriate technology solutions.
Phase-in of a centralized Traffic Management Centre	Initial capital project estimated at $1 million, with continuing investments over time depending upon completion of design and phased-in business plan. Some incremental annual operating costs of approximately $0.2 – $0.4 million likely required for utilizing the TMC's capacity and capabilities.	Medium to long-term. Viewed as a good investment to maximize traffic flow within the existing network, and cost effective compared to the infrastructure cost of adding new routes.
Sub-total	**$1.1 – $1.7 million operating and $1 million+ initial capital**	

Notes: (1) Potential cost savings reflect high-level annual estimates from current level; potential costs include high-level estimates of one-time capital costs and high-level annual estimates of potential operating costs from current level.
(2) For purposes of the Report, estimated timing is as follows:
(a) Short-term: next 12 to 18 months; (b) Medium-term: next 18 months to 3-4 years; (c) Long-term: over 3-4 years.

2 Project Objective and Scope

2.1 Background

The City is committed to investing more in its infrastructure and ensuring it explores opportunities to make the most efficient and effective use of taxpayers' funds. Accordingly, the City engaged KPMG to conduct an operational review of its Public Works Department. A key goal of the Review was to identify opportunities and find innovative ways to stretch limited tax dollars, while continuing to provide the quality services citizens need.

2.2 Objective

The overall **objective** of the project was:

> *To provide the City an independent operational review of its Public Works Department to: assess performance, productivity, current structure, organization, processes and operations; provide benchmark comparison to other cities and identify leading practices; and identify opportunities for efficiencies and cost savings and an implementation plan framework.*

2.3 Scope

Working with the City, KPMG conducted the independent Review as follows:

- **Stage 1 (As-Is State)**: Comprehensive Organizational Review – Assessed the overall performance and productivity, and examined the current structure, organization and overall operation of the Public Works Department to identify the operational efficiency and effectiveness of the delivery of services.
- **Stage 2**: Benchmarking Comparisons and Leading Practices – Conducted benchmarking comparisons to select mid-size Canadian cities and examined approaches employed by other municipalities with the intent of comparing Winnipeg to peer cities and identifying leading practices and methods. Identified alternative service delivery ("ASD") models, as well as innovative techniques deployed in other municipalities. Compared the policies and practices in Winnipeg with those municipalities studied, and identified leading practices for issues such as planning, service levels, benchmarking, lifecycle asset management, and other areas. Described different approaches being recommended with their benefits, limitations and challenges.
- **Final Report and Recommendations**: Provided a report which combines the information collected in both stages, and provided recommendations on opportunities identified. Prioritized the recommendations, and included potential estimated savings/costs associated with recommendations, a suggested timeline and an implementation plan framework. Presented to the Steering Committee.

The Review included:

- Interviews with City staff, City Councillors and key stakeholders;
- Field visits;
- High-level assessment of the organization;
- Evaluation of: financial information, existing workloads, activity and performance metrics, service levels, infrastructure management, staffing levels, current collective agreements; and key City reports and information; and
- Benchmark comparison with other select Canadian cities of similar size.

2.4 Work Plan and Timelines

The Review took place over a five month timeframe, commencing in late December 2012 and ending in May 2013, with reporting in June 2013.

We conducted our Review along two stages and six phases.

Stage 1

- Phase 1 – Project Initiation and Confirmation of Areas of Focus (Week 1)
- Phase 2 – Understand Cost Divers & Identify Comparators (Weeks 2 to 10)
- Phase 3 – Assess & Prioritize Performance Gaps and Develop Gap Hypothesis (Weeks 7 to 13)
- End of Stage 1 – Presentation of Preliminary Findings to the Steering Committee (March 19, 2013)

Stage 2

- Phase 4 – Benchmark Comparisons (Weeks 13 to 20)
- Phase 5 – Identify Potential Change Opportunities (Weeks 14 to 21)
- Phase 6 – Develop Recommendations and Implementation Plan Framework (Weeks 19 to 23)
- End of Stage 2 – Draft Report Submitted for Steering Committee Review and Subsequent Final Report

High-Level Work Plan*

Work Phase / Week	Dec 1	2	3	Jan 4	5	6	7	Feb 8	9	10	11	Mar 12	13	14	15	Apr 16	17	18	19	May 20	21	22	23	June 24	25	26
Stage 1																										
1 – Project Initiation and Confirmation of Areas of Focus	■																									
2 – Understand Cost Drivers & Identify Comparators		■		■	■	■	■	■	■	■																
3 – Assess & Prioritize Performance Gaps and Develop Gap Hypothesis							■	■	■	■	■	■	■													
Milestone 1																										
Interim Deliverable - Presentation of Preliminary Findings and Project Status Update to the Steering Committee													■	■												
Stage 2																										
4 – Benchmark Comparisons													■	■		■	■	■	■	■						
5 – Identify Potential Change Opportunities														■		■	■	■	■	■	■					
6 – Develop Recommendations and Implementation Plan Framework																			■	■	■	■	■			
Milestone 2																										
Draft Deliverable – Presentation of Draft Report to the Steering Committee																								■		
Steering Committee Review and Approval																									■	■
Milestone 3																										
Final Deliverable – Final Report																										■

Note: *Subject to adjustments

2.5 Understanding This Report

The purpose of this Report is to provide our key findings and recommendations based on our work on the Operational Review of Public Works.

Our procedures consisted of inquiry, observation, comparison and analysis of City-provided information. In addition, we considered leading practices of and conducted benchmarking comparisons with five other select municipalities. Readers are cautioned that the potential savings outlined in this Report are order of magnitude estimates only. Actual results achieved as a result of implementing recommended opportunities are dependent upon City and Department actions and variations may be material.

The procedures we performed do not constitute an audit, examination or review in accordance with standards established by the Canadian Institute of Chartered Accountants ("CICA"), and we have not otherwise verified the information we obtained or presented in this Report. We express no opinion or any form of assurance on the information presented in our Report, and make no representations concerning its accuracy or completeness. We also express no opinion or any form of assurance on potential savings that the City may realize should it decide to implement the recommendations contained within this Report. The City is responsible for the decisions to implement any recommendations and for considering their impact. Implementation of these recommendations will require the City to plan and test any changes to ensure that the City will realize satisfactory results.

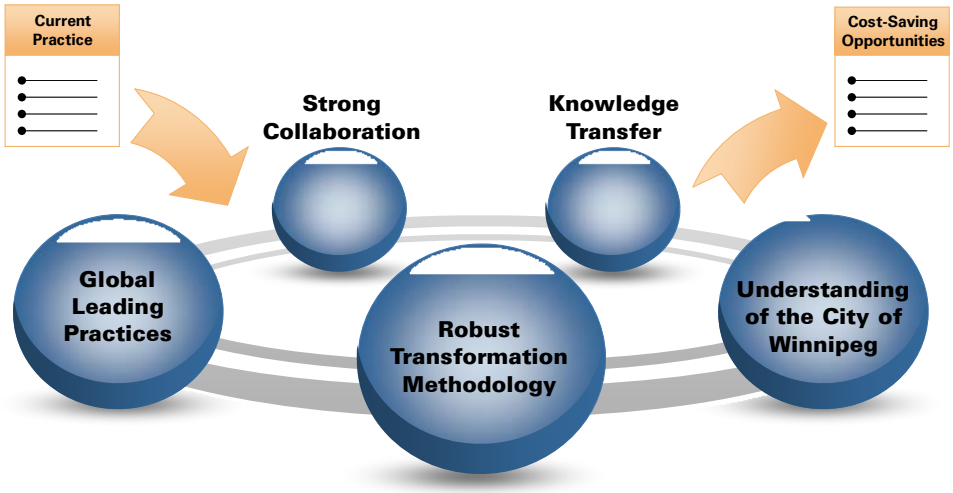
All dollar amounts in this Report are expressed in Canadian dollars, unless otherwise specified.

3 Approach and Methodology

Our approach is rooted in five fundamental elements: strong collaboration, knowledge transfer, leading practices, understanding of the City, and robust methodology.

In formulating our approach, our advisory team worked collaboratively with the City's project management team and Public Works Management. We used the following approach to assist the City through knowledge transfer from the KPMG team:

- Collaborating Through Cooperation – By working closely and continuously interacting with the KPMG project team, project participants acquired knowledge and insight into the analysis performed and the deliverables produced. The City's Project Management Team, including the Public Works Director, saw our process in detail and reviewed our findings and analysis. The Public Works Director could utilize internal processes learned in the context of other Public Works initiatives.
- Using Reusable Content and Documentation – In our interaction, we incorporated efficiency study techniques, such as utilizing KPMG's core service assessment filter which the City can learn from. Project documentation can be used by the City and Public Works Management upon disengagement.
- Leveraging KPMG Knowledge Base – Through constant interaction with the Project Team, we shared an extensive body of knowledge acquired by our firm through previous experience. The City will also be able to leverage information gathered for the project on municipal benchmarking and leading practices.



Work teams worked in parallel with the following Service Areas of Public Works. Note the first four correspond to Service Areas wholly or primarily covered by various divisions of Public Works in the Service-Based Budget. Support Services covers Public Works Divisions of Finance and Administration, Information Systems & Technology, Human Resources, and Customer Services and Strategic Support.

- Roadway Construction and Maintenance
- Roadway Snow Removal and Ice Control
- Transportation Planning and Traffic Management
- Parks and Urban Forestry and Other Services
- Support Services (Finance and Administration, Information Systems & Technology, Human Resources, Customer Services and Strategic Support)

1. Interviews and Site Visits

1. Roadway Construction and Maintenance ■ Conducted interviews with Management and three sessions with staff ■ Site visits – Pacific Yards and Waverley Yards	4. Parks and Urban Forestry and Other Services ■ Conducted interviews with Management and two sessions with staff ■ Site visits – major yards, major parks and some depots
2. Roadway Snow Removal and Ice Control ■ Conducted interviews and meetings with Management, supervisors and staff ■ Site visits – Pacific Yards and Waverley Yards ■ Followed the snow removal process	5. Support Services ■ Conducted interviews and sessions with Management and staff ■ Follow-up conversations and information
3. Transportation Planning and Traffic Management ■ Conducted interviews with Management and staff ■ Follow-up conversations	

We met with over 50 staff in Public Works, plus several more interviews involving over 40 City officials in other departments.

2. Data and Information

KPMG requested and reviewed substantial data and documentation from Public Works. In total, over 1,000 documents were received. Key Public Works data and information reviewed included, but is not limited to:

- detailed financial information 2010-2013;
- internal business plans, reports, business cases and other planning documents;
- organizational structure for the Department and each division;
- collective agreements;
- outsourcing contracts;
- policies and procedures;
- service level information and service delivery;
- performance measurement practices and key performance indicators;
- productivity measures;
- equipment and asset listings; and
- customer satisfaction metrics.

3. Core Services Review

In terms of service levels, we examined this issue in several parts:

- What is the target service level?
- What is the actual service level?
- What is the City's role for each service?
- What service levels do other select municipalities provide?
- What are current staffing/resource levels, and how were they determined?
- How does the cost of service delivery compare to other select municipalities?

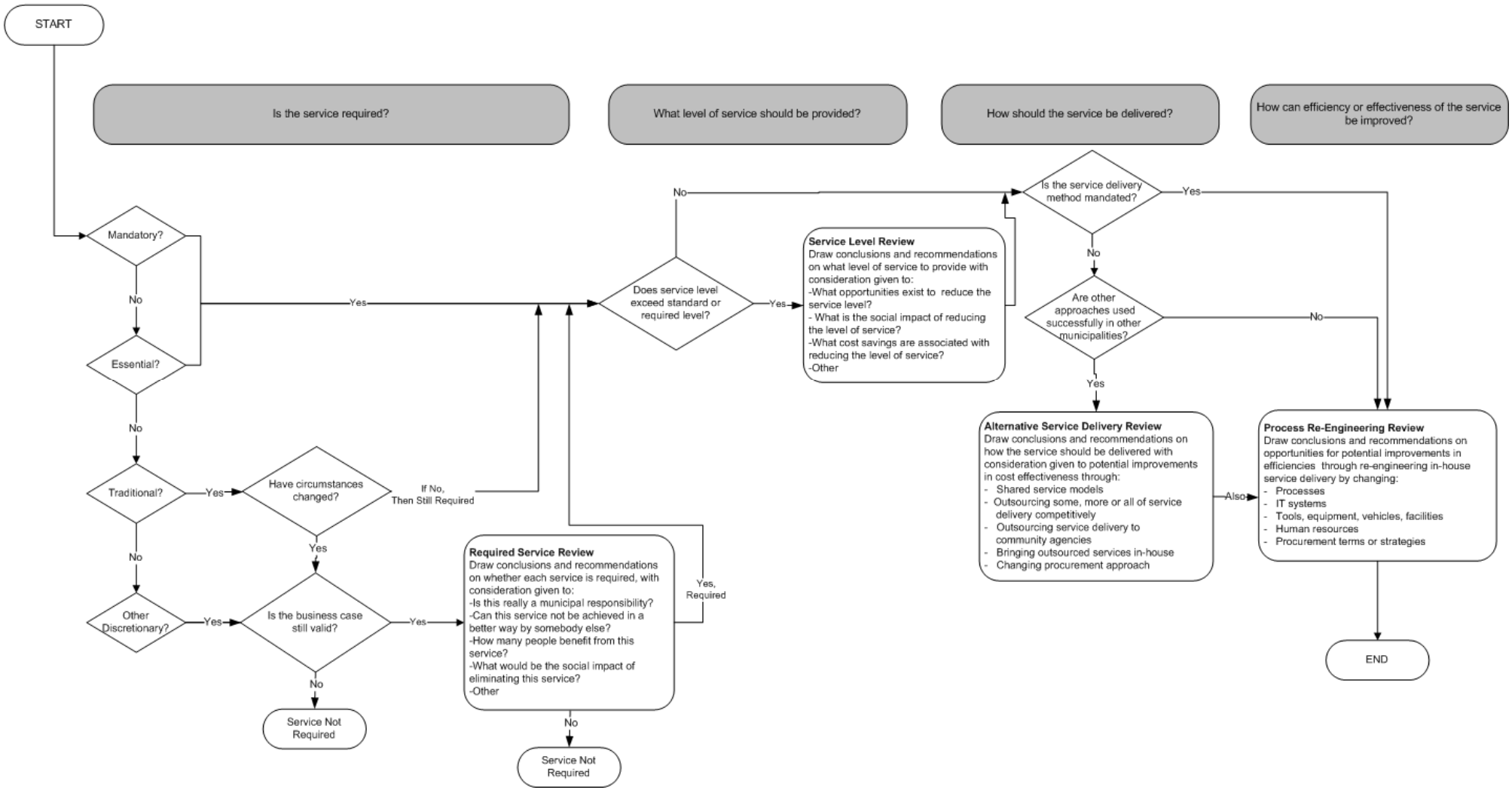
This process led us to identify potential options to change the service level, the implications of these options to support decision-making, and options to change the approach to service delivery.

KPMG employed its core service review methodology to assess service levels by Sub-Service function, primarily based on review, analysis and provision of information from the Public Works Department. We used our proprietary Core Service Assessment Filter process to provide a comprehensive analysis of each service using a systematic series of tests as described below:

Core Service Assessment Filter
Step 1: Is the service required?
This step involves classifying and reviewing each existing service to ensure it is still required and appropriate. This considers whether the City still seeks the objectives the service addresses, and whether the service is still the best way to meet those objectives.
Step 2: What level of service should be provided?
This step considers the appropriate service level, taking into account community needs, the costs and benefits attached to each part of the service levels, and legal and other requirements. Services are noted based on the service level provided.
Step 3: How should the service be delivered?
This step considers whether each service is best provided as a municipal/regional district program, or whether it can be transferred to another level of government or community agency, or delivered by the private sector.
Step 4: Can the efficiency or effectiveness of the service be improved?
This involves review of the facilities, equipment, IT systems, and human resources used, and how the processes are employed to deliver the service with a view to realizing economies and improving service delivery.
Recommendations
We generated a set of conclusions and recommendations after following each of the four steps outlined above. In some cases we identified "quick wins" – actions that the City can initiate in the short-term that could reduce costs or generate additional revenue, and/or improve services. In other cases we recommended changes that may take some time to achieve.

The above process is illustrated on the following page.

Sample Service Assessment Filter



4. City Reports and Information

Several key City reports and other information were reviewed as part of the Review focusing on relevant issues and information with regards to Public Works. These included but are not limited to:

- City of Winnipeg Adopted Operating Budget FY 2012;
- City of Winnipeg Adopted Capital Budget FY 2012;
- City of Winnipeg 2013-2015 Adopted Operating Budget;
- City of Winnipeg Preliminary Operating Budget FY 2013;
- City of Winnipeg Preliminary Capital Budget FY 2013;
- City of Winnipeg By-laws;
- City of Winnipeg organizational structure; and
- City of Winnipeg Audit Reports
  - Public Works Asset Management Phase 1 – Roadway Construction and Maintenance
  - Use of Consultants Audit
  - Capital Project Management Audit
  - Traffic Signals Branch Performance Audit
  - Winnipeg Fleet Management Performance Audit
  - Review of the Hired Equipment Process.

5. Benchmarking and Leading Practices

KPMG conducted benchmarking of the following six comparable mid-size Canadian cities:

- Winnipeg;
- Ottawa;
- Edmonton;
- Calgary;
- Mississauga; and
- Hamilton.

We also reviewed the latest Ontario Municipal Benchmarking Initiative report in detail, as well as select examples of innovation other Canadian and U.S. cities.

KPMG also looked at leading practices, case studies and select reports from various North American sources including the:

- American Public Works Association;
- American Association of State Highway and Transportation Officials ("AASHTO");
- Transportation Research Board ("TRB");
- Ontario Good Roads Association ("OGRA");
- U.S. Department of Transportation;
- Transport Canada;
- National Research Council; and
- Government Finance Officers Association ("GFOA").

4 Public Works Overview

4.1 Introduction

According to the American Public Works Association,

"*Public works is the combination of physical assets, management practices, policies, and personnel necessary for government to provide and sustain structures and services essential to the welfare and acceptable quality of life for its citizens.*"

As stated by the APWA, "in the real world there is no one, ideal structure for a public works operation. Even though some public works services are considered "must haves" in every community, they may not be readily identified on a city organizational chart, or delivered in the same way, or to the same level, from one community to the next. In fact, some municipalities may not even have a department named public works."

There is also no one operating model. The traditional concept of public works is that governmental units provide the services, own the facilities, and are usually funded through taxation. However, the situation often is not that clear-cut today, and other models also exist, which include publicly owned corporations and partial outsourcing. It's also common for a municipal engineering division to plan and design large construction projects, but contract out the actual construction work.

Canada is home to nearly 3,700 municipalities of varying sizes and the United States has approximately 19,400 municipalities of varying sizes.

4.2 City of Winnipeg Public Works Department Organization

The City of Winnipeg Public Works Department is responsible for the delivery of municipal public works services related to the planning, development and maintenance of roadway systems, the maintenance of parks and open space, and the maintenance and security of certain civic yards and buildings.

The Department contains the following divisions:

Streets Maintenance: To provide citizens with access to well-maintained roadways, sidewalks and bridges in order to ensure the safe, efficient movement of people, goods and services. To provide citizens and visitors with cleanliness and graffiti control in order to promote the aesthetic appeal of the City. To undertake effective roadway snow and ice control services in order to provide safe and accessible conditions on City streets and sidewalks during the winter season.

Parks and Open Space: To develop, operate and maintain all neighborhood, community and regional parks, regional areas, boulevards and natural areas. To provide weed control, landscape development, contract administration, park security, and forestry services.

Transportation: To plan and manage the movement of people, goods and services in a cost effective, environmentally responsible manner.

Engineering: To provide engineering services for the Department, in the areas of program development, design, construction and right-of-way services, asset management, bridges and structures.

Customer Services and Strategic Support: To provide information and timely response to public works inquiries and service requests from the public. To provide strategic planning and support to the Department.

Human Resources: To provide human resource, labour relations, employee records, pay and benefits administration to the Department.

Information Systems and Technology: To provide information systems and technology support to the Department.

Finance and Administration: To provide administration, accounting, budget and financial control, information services and staff training support to the Department.

Overall, the Department employs approximately 982 FTEs as of fiscal 2012. Staffing levels have been relatively constant in the past three years. The largest division in terms of staffing is Parks and Open Space, following by Streets Maintenance. These two divisions account for approximately 79% of all FTEs. Public Works has a large number of seasonal staff in Streets Maintenance and Parks and Open Space, which is quite different than most City Departments.

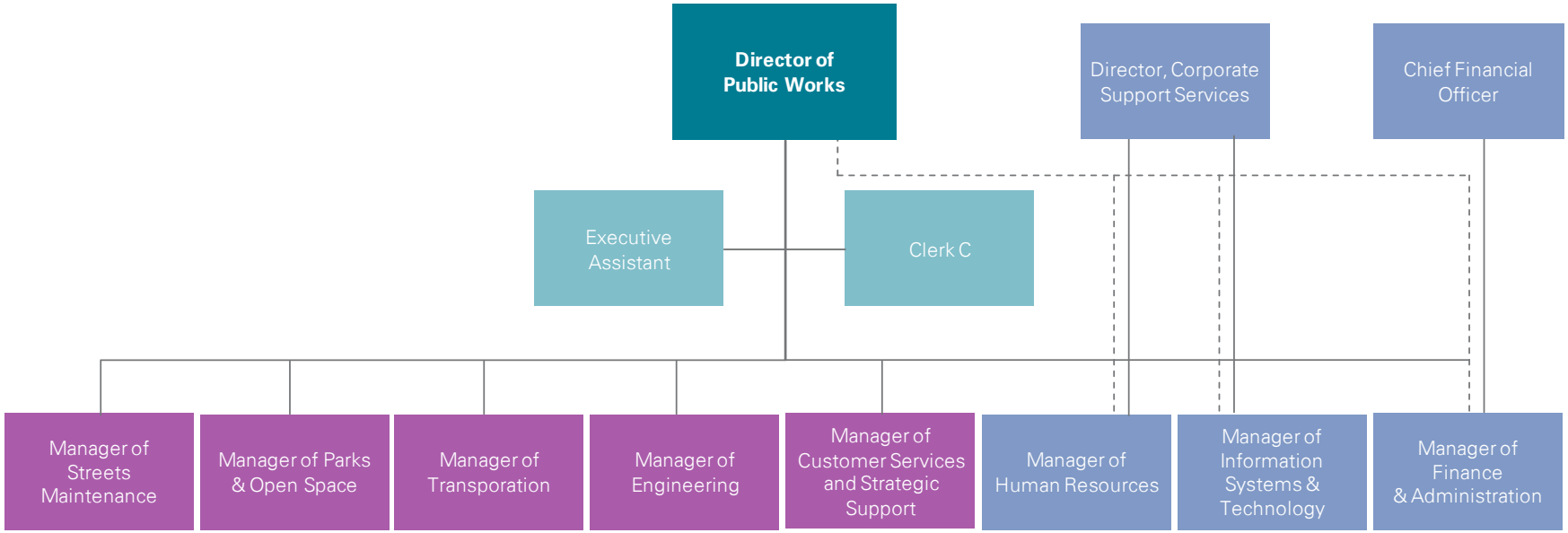
Public Works Staffing

Fiscal 2012 Division	FTEs	%
Streets Maintenance	352	36%
Parks and Open Space	425	43%
Transportation	66	7%
Engineering	68	7%
General	4	0%
Finance and Administration	25	3%
Customer Services	19	2%
Human Resources	23	2%
Total	982	100%

Source: City of Winnipeg Public Works Department

The Department's organization by Divisions is outlined in the following chart. While the support divisions of Finance and Administration, Human Resources ("HR") and Information Systems and Technology ("IS&T") work with Public Works on a day-to-day basis, under the City's model, the Finance Manager technically reports to the City's Chief Financial Officer, and the HR Manager and IS&T Manager technically report to the City's Director of Corporate Support Services, with an indirect reporting relationship to the Director of Public Works. The Finance, HR and IS&T Divisions, including all other staff within those Divisions, report to the Director of Public Works. This is similar to most departments in the City of Winnipeg.

4.3 Organizational Structure



Source: City of Winnipeg Public Works Department

4.4 Financial Operating Results (Traditional Method) FY 2010-2012

The following table summarizes the Department's consolidated financial operating results for fiscal 2010-2012.

- Total operating expenditures increased from approximately $165 million in fiscal 2010 to approximately $183 million in fiscal 2011. We understand a large portion of the increase was attributable to an increase in flood expenditures from approximately $1.1 million in fiscal 2010 to approximately $9.7 million in fiscal 2011. Total operating expenditures were approximately $169 million in fiscal 2012.
- Similar results may be seen in expenditures per FTE. Total operating expenditures/FTE increased from approximately $169,000/FTE in fiscal 2010 to approximately $180,000/FTE in fiscal 2011, before decreasing to approximately $172,000/FTE in fiscal 2012. Total FTEs remained relatively constant over the period.
- Recoveries represent offsets to charges included in other expenditure accounts. Recoveries typically correspond to support costs for services delivered to other City Departments or funds.
- The table also summarizes operating expenditures before debt and finance charges, cash to capital, grants, transfers and other expenditures. These expenditures represent an estimate of day-to-day operating costs, and follow the same trend as noted above.

Total Public Works - Financial Operating Results (Traditional Method)

$000's (unless otherwise stated)				
For the Fiscal Years Ended December 31	**2010A**	**2011A**	**2012 Preliminary Draft**	
Total Public Works				% of total operating expenditures
Operating expenditures				
Salaries and benefits	59,764	70,122	67,053	39.6%
Services				
Real Property Contracts-Const/Mtce	13,529	13,340	11,456	6.8%
Fleet Operating Lease	6,741	6,221	6,303	3.7%
Fleet Capital Lease	7,804	8,631	9,419	5.6%
Equipment Rental-External	11,401	16,243	9,144	5.4%
Other	11,860	11,993	13,111	7.7%
Total services	51,335	56,427	49,433	29.2%
Materials, parts and supplies	15,513	23,287	22,508	13.3%
Equipment, furniture and other purchases	278	257	238	0.1%
Recoveries				
Departmental recoveries	(3,671)	(3,822)	(5,121)	(3.0)%
Inter-fund recoveries	(10,101)	(15,797)	(17,330)	(10.2)%
Other	(2,004)	(4,815)	(3,461)	(2.0)%
Operating expenditures (before noted items)	111,115	125,659	113,319	66.9%
Debt and finance charges	47,434	24,239	24,745	14.6%
Cash to capital	-	23,306	20,307	12.0%
Grants, transfers and other expenditures	6,652	9,661	10,954	6.5%
Total operating expenditures	165,201	182,865	169,324	100.0%
$000's/FTE calculations				
FTE	978	1,014	982	
Operating expenditures (before noted items)/FTE	114	124	115	
Total operating expenditures/FTE	169	180	172	

Notes: (1) River flood expenditures accounted for as separate from divisions as $1.1 million (2010A), $9.7 million (2011A), $0.5 million (2012).
(2) Noted items include debt and finance charges, cash to capital, grants, transfers and other expenditures.
Source: City of Winnipeg Public Works Department

4.5 Capital Budgets FY 2010-2013

The following table summarizes the Department's consolidated capital budgets for fiscal 2010-2013.

- Active Transportation Facilities: Fiscal 2010B included approximately $20.4 million for the Infrastructure Stimulus Fund. This decreased to a contribution of approximately $3.0 million in fiscal 2011B, and was nil in fiscal 2012B-2013B.
- Street Improvements: The increase from approximately $15.8 million in fiscal 2012B to approximately $40.0 million in fiscal 2013B is largely attributable to $30.0 million in infrastructure improvements to Polo Park.
- Regional and Local Street Renewal: Budgets averaged approximately $36.8 million in fiscal 2010B-2012B. Fiscal 2013B introduced a Local Street Renewal Reserve that is dedicated to the renewal of local streets, back lanes and sidewalks (equal to 1% property tax increase), increasing the budget to approximately $50.4 million.
- Waterway Crossings and Grade Separations: Fiscal 2012B included approximately $77 million for the Plessis Road Twinning and Grade Separation at CN Rail. Similar scale projects were not included in fiscal 2013B, resulting in a budget of $7.3 million.
- New Transportation Facilities: Fiscal 2010B and 2011B included approximately $51.3 million and $3.4 million for the Waverley West Arterial Roads Project, respectively. Fiscal 2011B also included approximately $34.2 million for the Chief Peguis Trail expansion from Henderson Highway to Lagimodiere Boulevard. Similar scale projects were not included in fiscal 2012B (nil) or 2013B.
- Other Streets Projects, Parks and Open Space: Budgets have remained relatively constant over the period reviewed.

CoW Public Works - Capital Budgets FY 2010-2013				
$000's (unless otherwise stated)				
For the Fiscal Years Ended December 31	**2010B**	**2011B**	**2012B**	**2013B**
Capital Project Area				
Active Transportation Facilities	22,163	4,708	1,250	1,250
Street Improvements	19,170	10,067	15,816	40,000
Regional and Local Street Renewal	36,578	42,946	30,880	50,427
Waterway Crossings and Grade Separations	56,704	14,933	96,732	7,300
New Transportation Facilities	51,300	37,600	-	9,303
Other Streets Projects	1,550	1,292	5,199	855
Parks and Open Space	4,666	7,695	4,504	7,664
Total Public Works	**192,131**	**119,241**	**154,381**	**116,799**

Sources: (1) City of Winnipeg Adopted Capital Budgets (FY 2010-2012)
(2) City of Winnipeg Preliminary Capital Budget (FY 2013)

As noted in the City's Preliminary Capital Budget, a comparison of average annual capital budgets of eight cities indicated Winnipeg spends the least per capita.

4.6 Core Services Assessment

4.6.1 Core Service Assessment Methodology

For each Sub-Service within each Service Area within Public Works, we utilized our core service assessment filter. Note that support services (e.g., Finance, HR, IT) are not part of a core services assessment. There are 32 Sub-Services in total across Public Works.

Operating costs, both gross and net, are derived from Public Works estimates of Service-Based Budgets for 2012.

The "core ranking" was defined with the following categories:

- Mandatory: mandated or required by legislation from the provincial government or City Council (i.e., *The City of Winnipeg Charter Act, Highway Traffic Act, Health & Safety Act* or City By-Law).
- Essential: critical to the operation of the City. Without the service, the City would stop functioning.
- Traditional: municipal service, provided by virtually all large municipalities for many years.
- Discretionary: service provided by the City to respond to particular community needs, based on City Council direction, business case, or other specialized purposes.

"Service" level items are broad ranging and commonly included activities with different rankings along the "core ranking".

We also outlined the City role in each Sub-Service area (e.g., delivery, manager-contracted, etc.).

To facilitate the assessment, KPMG identified the origin of a service level standard and the role that the City plays in delivering an activity.

Service Level Standard Source

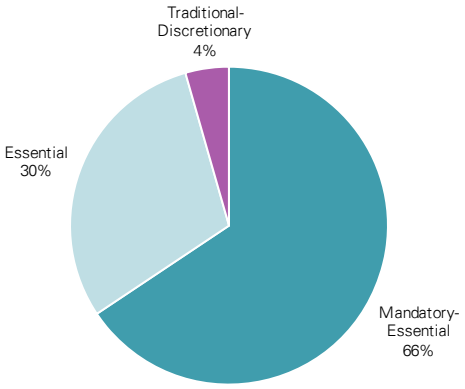
- KPMG reviewed the degree to which the standard was prescribed by Council, Public Works Management, or funding agreement. Management is predominantly the source of service level standards in the Department.
- KPMG also reviewed the appropriateness of the standard with respect to industry institution / association benchmarks, in cases where information was available. For example, the Transportation Branch refers to U.S. Department of Transportation as a guideline rather than a formal standard.

City Role

- Regulator: the City sets regulation/standards, but does not deliver the service.
- Delivery by City staff: City staff delivers the service.
- Funder: the City provides funding / grants for the service.
- Manager – contracted: the City retains services of external vendors and manages contracts.
- Manager – partnership: the City partners with others to deliver the service.

Summary of Core Ranking

The large majority of services that are delivered through the Department are core municipal services, considered either mandatory as a result of legislative requirements/City by-laws or essential to the continued operations of the City. We assessed each of the 32 Sub-Services the Department is responsible for. In total, 27 of the Sub-Services, representing 96% of the operating budget of Public Works were considered mandatory or essential services. Ten of these 27 Sub-Services were considered mandatory/essential representing two-thirds of the operating budget. Five Sub-Services within City Beautification and Parks were considered traditional/discretionary, representing 4% of the operating budget.



Operating budget cost by core ranking

Source: KPMG analysis derived from information received from City of Winnipeg Public Works Department.

In our experience, the large majority of services delivered through public works or transportation departments are core services (e.g., mandatory or essential street maintenance and construction, design, engineering, parks maintenance, urban forestry, transportation planning, traffic signals, etc.). There are relatively few discretionary services in these types of municipal departments.

4.6.2 Service Level Assessment Methodology

In order to assess service level performance, the following scale was used to compare the current service levels of Public Works activities with service level standards:

- Below Standard
- At Standard
- Above Standard

Service level "At Standard" is:

- Consistent with the level required by legislation, or where there is no legislation…
- Consistent with industry standards and practices, and where they are not clear…
- Consistent with service levels set by Management/the Department, and
- Consistent with reasonable expectations.

From the information received, we outlined service level standards within each Sub-Service. The Department checked these service level standards, and provided its assessment of actual service levels.

A service level assessment was averaged across the "Activities" within a Sub-Service.

Summary of Service Levels

The large majority of the services of the Department are considered by the Department to be provided "at standard" which is generally the level required by legislation, by-laws, policy or, in most cases, set by Management. (Source: derived from information received from City of Winnipeg Public Works Department)

Sub-Services that the Department considered at standard represent in the range of 90% of the operating budget. In our experience, this is a relatively solid level of service delivery and most services are being delivered at standard across all core service Divisions. However, we note that while service level standards are clear and straightforward in a number of Sub-Services (such as most Sub-Services within Roadway Maintenance and Snow Removal), service standards in other areas are more of a guideline that can be weather-dependent or soft in terms of measurement (e.g., weed control as practical and as required). Further, practical service level standards do not exist in a few Sub-Services (e.g., Transportation Planning).

Within each Service Area of this Report, outside of Support Services, we outline the service levels and assessment for each Sub-Service. Importantly, service level standards are also compared to other mid-sized cities based on our benchmarking survey. In most areas, Public Works service level standards are similar to other mid-sized Canadian cities. Where there are notable differences, these are discussed in each Service Area section of the Report.

4.7 Strengths of the Department

Public Works has several strengths that are recognized and the Department can continue to build upon. These include:

- Dedicated and collaborative Management.
- Director provides leadership and is respected by Management and staff.
- Qualified and trained staff.
- Respected group of engineers, technologists and other professionals.
- American Public Works Association accreditation, went through fairly detailed process recently.
- General sense of teamwork, people in the Department support each other to get the job done.
- Relatively good collaboration with other departments.
- Standing Committee support and cooperation, Public Works has a champion in the Chair of the Standing Committee.
- Responsive team, ability to react quickly to emergency and priority situations.
- Frontline service is friendly, flexible and wants to do a good job.
- Appears to be a lot of activity and services provided from the Department based on similar year-to-year budgets.
- Work force is becoming relatively younger, with new ideas.
- Workforce diversity.
- Good safety and training program.
- Department policies and procedures are generally well documented.
- The City recognizes that there is a significant infrastructure deficit, and a continual effort to raise this issue with senior levels of government and infrastructure work is seen as a high priority.









Source: Images obtained from the City of Winnipeg Public Works Department website

4.8 Trends and Emerging Issues Impacting Public Works

To provide context for the issues and challenges faced by Public Works and the City of Winnipeg, there are a number of key external trends in the medium-term that impact the Department and the environment in which Public Works operates.

Major external factors include: macroeconomic growth, population and associated land/infrastructure growth, and fiscal positions of senior governments while trying to address infrastructure deficits.

4.8.1 Macroeconomic Growth

Winnipeg has one of the most diversified economies of cities in Canada. The economic outlook in the medium-term for Winnipeg is positive, with a pick up in economic growth similar to the Canadian average. Winnipeg experienced a surge in economic growth in the mid to late 2000s, with real GDP growth exceeding the national average in most years and among the leaders of major cities in economic growth. Winnipeg and Manitoba did not experience the severity of recessions which hit most of Canada in 2009. However, Winnipeg's growth in 2010-2012 slowed considerably and performed below the national average. Economic growth is expected to pick up and be similar to the national average in the medium term and be close to the middle of Canadian cities.

According to the most recent forecast contained in The Conference Board of Canada ("Conference Board") Metropolitan Outlook Spring 2013, the Winnipeg region (Census Metropolitan Area) is expected to have real GDP growth of approximately 2.3% in 2013, and expected to average 2.6% from 2014F to 2017F. Winnipeg's economy is expected to create an additional 30,000 net new jobs over the next five

years, and maintain its unemployment rate near 5.5%, among the lowest unemployment rates in Canada.

Winnipeg CMA Economic Indicators								
	2010	2011	2012	2013F	2014F	2015F	2016F	2017F
Real GDP at basic prices (2007 $ millions)	32,189	32,654	33,169	33,926	34,749	35,812	36,718	37,645
percentage change	2.4%	1.4%	1.6%	2.3%	2.4%	3.1%	2.5%	2.5%
Total employment (000's)	408	409	417	421	428	435	441	447
percentage change	1.9%	0.1%	2.1%	0.9%	1.7%	1.5%	1.5%	1.3%
Unemployment rate (%)	5.7%	5.8%	5.6%	5.5%	5.5%	5.4%	5.2%	5.0%
Personal income per capita ($)	37,207	37,257	38,070	38,918	40,036	41,165	42,445	43,684
percentage change	1.8%	0.1%	2.2%	2.2%	2.9%	2.8%	3.1%	2.9%
Population (000's)	753	766	778	789	799	809	819	828
percentage change	1.5%	1.7%	1.6%	1.4%	1.2%	1.2%	1.2%	1.2%
Total housing starts	3,244	3,331	4,065	3,584	3,766	4,448	4,688	4,749
Retail sales ($ millions)	9,824	9,974	10,100	10,460	10,867	11,230	11,629	12,028
percentage change	5.7%	1.5%	1.3%	3.6%	3.9%	3.3%	3.5%	3.4%
CPI percentage change	0.8%	2.9%	1.6%	2.0%	2.2%	2.1%	2.1%	2.1%

Notes: (1) CMA = Census Metropolitan Area
(2) F = Forecast
(3) GDP = Gross Domestic Product;
(4) 000's = Thousands
(5) CPI = Consumer Price Index
(6) CMHC = Canada Mortgage and Housing Corporation

Sources: (1) Statistics Canada
(2) CMHC Housing Time Series Database
(3) The Conference Board of Canada Metropolitan Outlook Spring 2013

4.8.2 Population and Land/Infrastructure Growth

After decades of slow growth in Winnipeg's population, the City has experienced significant annual increases in population since the mid-2000s. This renewed growth has been led by large increases in international immigration and less people migrating from Winnipeg to other parts of Canada.

According to the Conference Board's Spring 2013 forecast, the Winnipeg Census Metropolitan Area will add approximately 50,000 people over the next five years. This represents an average annual increase of approximately 1.2%, slightly better than the Canadian average. From 2008 to 2012, the City's population increased by approximately 1.3% on an average annual basis, more than double the growth rate of the previous decade.

The City of Winnipeg's population was estimated at 691,800 in 2011, representing over 90% of the Winnipeg Census Metropolitan Area population (estimated at 778,000 in 2012). The City of Winnipeg is expected to grow by approximately 70,000 people in the next ten years.

Total housing starts are expected to be fairly steady around the 3,600 to 4,700 range per year. The strong population and housing growth by historical standards has put increased pressure on the City for new infrastructure and infrastructure maintenance. New large developments such as Waverley West and Sage Creek require infrastructure and maintenance services and further stretch the City's annual funding for maintenance.

4.8.3 Fiscal Positions of Governments

The worldwide recession of 2008-2009 had a huge impact on the fiscal position of governments across Canada. The Government of Canada, and many provinces including the Province of Manitoba, were running operating surpluses before the recession. Since 2008-2009, national governments around the

world have experienced large deficits and relatively large increases in debt. The same problem has occurred for provincial governments in Canada.

The City of Winnipeg has worked hard during these challenging times to increases its capital spending on infrastructure. The Government of Canada and the Province of Manitoba have made efforts to increase infrastructure spending, recognizing its importance to the economy in the short and long-term.

The City is required to maintain balanced budgets. It also receives significant transfers from senior levels of governments. As senior levels of governments work to get back towards balanced budgets in the medium-term, increased pressure on fiscal resources in government is expected to continue.

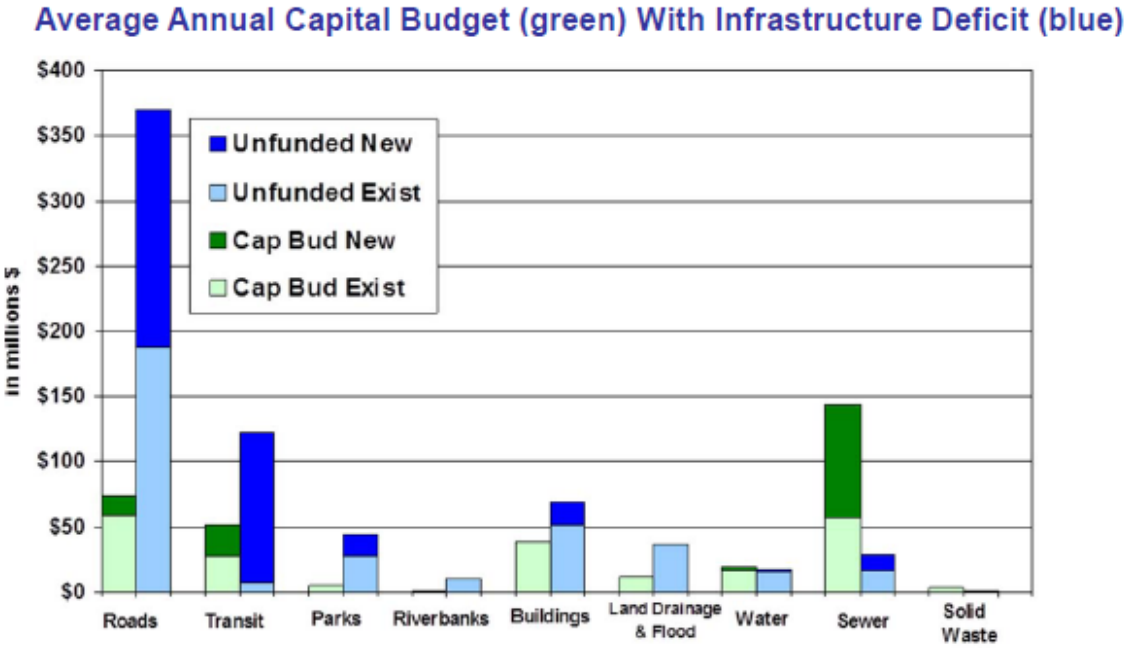
4.8.4 Infrastructure Deficit

Across Canadian cities and much of the industrialized world, aging and deteriorating infrastructure, along with expectations for new or renewed infrastructure, challenge the ability of city governments to meet public expectations.

There has been considerable attention in Canada and in North America on the large and growing infrastructure deficit in our cities. In Canada and in Winnipeg, of particular concern is the deterioration of road infrastructure.

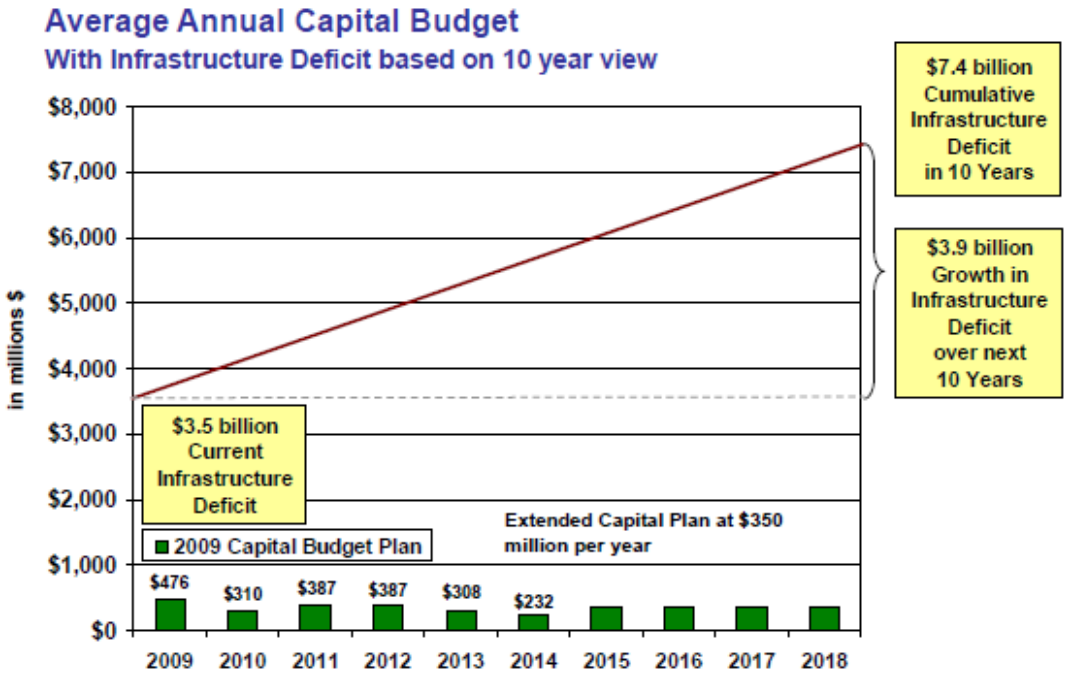
In 2009 the City of Winnipeg Infrastructure Deficit was estimated at $3.5 billion and is expected to grow by $3.9 billion over the next 10 years resulting in an expected shortfall of $7.4 billion by the year 2018. The $7.4 billion Infrastructure Deficit is made up of two parts: $3.8 billion relating to existing/current infrastructure and $3.6 billion related to new additional infrastructure. (Note: replacing an existing fire station with a new fire station is categorized as "existing" infrastructure. Adding a new fire station to an area, such as southeast Winnipeg, is categorized as "new" infrastructure.)

The chart shows the annual spending on infrastructure in green and the needed but unfunded projects in blue.



Source: City of Winnipeg Preliminary Capital Budget (FY 2013)

80% of the new infrastructure is related to transportation; roads, bridges, buses and rapid transit. By far the greatest gap between funded and unfunded need is transportation (roads and transit), although parks and City buildings require significant funding as well.



Source: City of Winnipeg Preliminary Capital Budget (FY 2013)

The Canadian Federation of Municipalities ("CFM") notes that municipalities own approximately 53% of the country's infrastructure but collect just eight cents of every tax dollar paid in Canada. The CFM has continually called for a fully funded, long-term plan to build roads, water systems, community facilities and transportation systems to support quality of life in cities and maintain economic competitiveness in businesses, trade and transporation. Commenting on the federal government's 2013 budget, the CFM stated "by protecting the purchasing power of the gas tax transfer, and by extending program funding for 10 years, this budget entrenches the funding principle of longer-term sustainable infrastructure funding."

The challenge of all governments is addressing the accumulating municipal infrastructure deficits. A CFM survey conducted in 2007 estimated that municipalities in Canada have an accumulated infrastructure debt of some $123 billion for existing infrastructure, and a need for some $115 billion in new infrastructure. The Canadian Infrastructure Report Card (2012) indicated that municipal infrastructure ranked between "fair" and "very poor" and the replacement cost of these assets alone is estimated at over $170 billion nationally. The report indicates municipal roads in Canada require urgent attention, with approximately 53% of roads surveyed being "fair" to "very poor". The replacement cost of these road assets is estimated at over $90 billion nationally.

A recent report from the Canada West Foundation (2013), *At the Intersection*, shows a link in various research studies between public infrastructure investment and productivity and long-term economic growth. While the extent of the impacts is debatable and the impacts depend on the type of infrastructure investments and many factors, there is general consensus of net positive economic impacts. Investments in the transportation network (e.g., roads, bridges) are more likely to improve productivity. A key message of the Canada West Foundation report is that Canada needs to invest in the right infrastructure in the right places.

4.8.5 Capital Planning and Investment

Public Works is greatly impacted by the levels of capital investments in the medium-term. The City of Winnipeg's 2013 Preliminary Capital Budget calls for an investment in infrastructure priorities of $2.5 billion over the 2013-2018 period. This includes over $460 million that is earmarked for streets and bridges. The largest area is nearly $1 billion required for sewage disposal projects.

While the City of Winnipeg, similar to all cities, is challenged by aging infrastructure and a growing infrastructure deficit, efforts are being made to increase capital spending. This is also resulting in an increase in borrowing and net debt. However, Winnipeg is better positioned to take on debt after substantially lowering its debt position in the 2000s, building up reserves, and improving its credit rating. The increased debt forecast over the next five years is below limits set under the City's Debt Strategy approved by City Council in 2011.

One area that has seen relatively rapid growth in capital investment in recent years is active transportation corridors. These new assets require maintenance which is placing further increased pressure on the City's maintenance budgets.

4.8.6 Demand for Accountability and Value for Money

A trend affecting departments across municipal governments is an increasing demand of value for money, accountability and transparency in information.

Along with a changing level of public trust, this trend creates a demand on public works and other departments to provide accountability and performance measures in its decision-making and how tax dollars are spent.

4.8.7 Increasing Regulations, Standards and Associated Costs

A trend towards increasing regulations, standards and their associated costs impacts the ability of public works departments to deliver core services, meet public expectations and maintain the assets that cities already own.

For example, the large capital program in Water and Waste is driven by provincial regulations and requirements to upgrade sewage treatment. Public Works is continually affected when regulations, policies and standards are passed or changed.

Liability or potential liability claims, if any, can also affect a department's ability to manage within existing budgets and resources.

4.9 Benchmarking and Analysis

4.9.1 Current Benchmarking

Public Works already tracks a set of performance measurement statistics for reporting purposes. Part of this process involves reporting statistics to the Ontario Municipal Benchmarking Initiative. OMBI is a co-operative of 16 participating municipalities from Ontario, Alberta and Manitoba committed to continuously improving the way services are delivered to citizens.

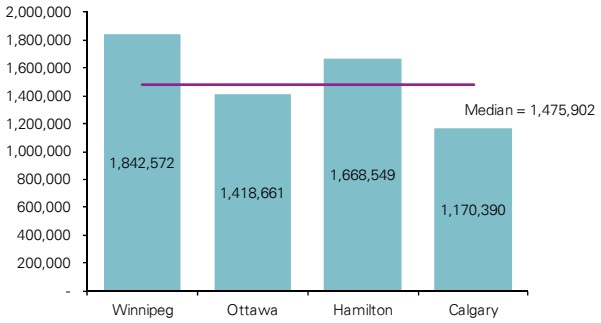
OMBI helps the City of Winnipeg and other participating municipalities increase their operating performance by:

- establishing performance measures for a wide range of municipal program delivery and support areas;
- measuring in a consistent way by all municipalities;
- capturing and reporting performance information;
- analyzing the results and comparing them to one another to create group benchmarks; and
- working together to identify and exchange leading practices.

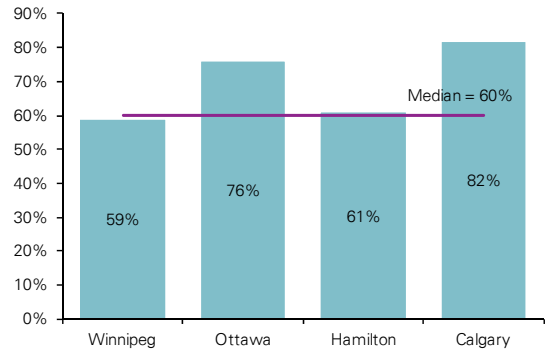
The graphs on the following page summarize a select number of statistics that Public Works currently reports to OMBI, as well as those from other municipalities in Canada. Data was collected from OMBI's *Performance Measurement Report 2011*. Based on these relatively few measures, Winnipeg tends to have somewhat higher operating costs per lane KM than comparable mid-size OMBI cities and the OMBI median. Winnipeg has a relatively lower share of its paved roads where the condition is rated good to very good than other mid-sized OMBI cities. Winnipeg also has a relatively higher number of times that a vehicle travels over each lane kilometre of major roads. Winnipeg's operating cost for winter maintenance per lane KM is higher than comparable peer cities but so are its overall service levels for snow removal and ice control. With respect to Parks, Winnipeg has relatively more parkland than most municipalities and operating costs per hectare are somewhat lower than most mid-size OMBI cities and just below the median.

Roads Services

Vehicle Km Traveled per Lane Km (Major Roads)

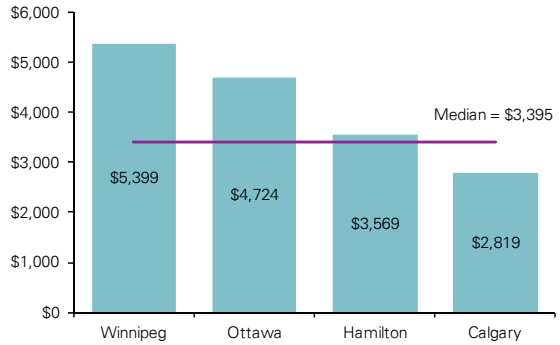


Percent of Paved Lane Km where the Condition is Rated as Good to Very Good

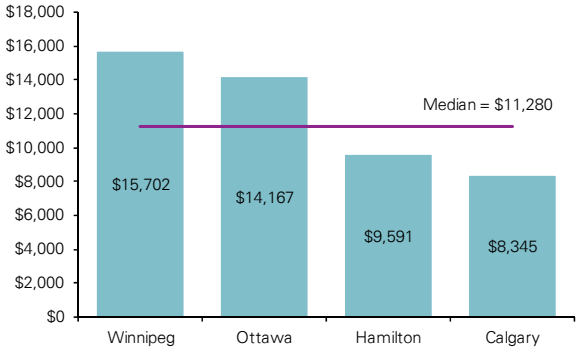


Note: Median is for all municipalities listed in the OMBI Performance Measurement Report 2011
Source: OMBI Performance Measurement Report 2011

Operating Costs for Winter Maintenance of Roadways per Lane Km Maintained in Winter



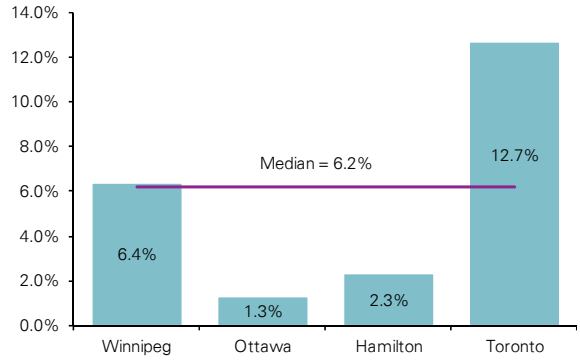
Roads Operating Cost (All Functions) per Lane Km



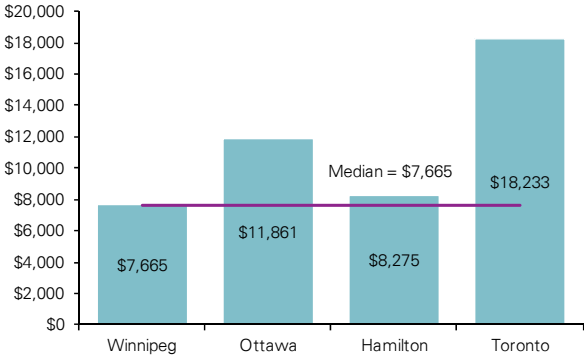
Note: Median is for all municipalities listed in the OMBI Performance Measurement Report 2011
Source: OMBI Performance Measurement Report 2011

Parks Services

All Parkland in Municipality as a Percentage of Total Area of Municipality



Operating Cost per Hectare – Maintained and Natural Parkland



Note: Median is for all municipalities listed in the OMBI Performance Measurement Report 2011
Source: OMBI Performance Measurement Report 2011

4.9.2 KPMG Benchmarking

KPMG developed a comprehensive benchmarking survey which was sent to select mid-sized Canadian cities. While benchmarking focused on comparable mid-sized Canadian cities (also discussed as "peer cities"), we also examined leading practices and case studies from select Canadian and U.S. cities.

The surveys and follow-up interviews followed a balanced approach. They contained a blend of quantitative topics (e.g., operating budgets, FTE counts, performance measurement statistics, etc.) and qualitative topics (e.g., policies and procedures, service levels, workflow, etc.).

We intend to share aggregate benchmarking results with all participants upon completion of this project.

Benchmarking was done on a "best efforts" basis, but there are barriers which impacted comparability between cities and thus the ability to collect several benchmarks. Some high-level barriers include, but are not limited to, the following:

- Performance measurement practices may still be in development.
- Municipalities may differ significantly in their approach to performance measurement.
- Certain data may not be readily accessible, or might not be tracked at all.

Barriers more specific to public works benchmarking include, but are not limited to, the following:

- Publicly available city documents may not disclose enough information to appropriately collect financial information benchmarks across public works service areas.
- Unlike Winnipeg, some cities do not have a dedicated public works department. Instead, they offer public works services across multiple divisions or within a few departments. The table on the following page illustrates this point. For each Service Area within the City of Winnipeg Public Works Department, the table identifies which peer city division or department provides the majority of that Service Area's activities.
  - Edmonton provides the majority of roads, snow and transportation services in its Transportation Services Department, and the majority of parks and urban forestry and other services in its Community Services Department.
  - Ottawa has a dedicated Public Works Department, but provides asset management, design and construction services in its Infrastructure Services Department.
  - Mississauga provides the majority of roads, snow and transportation services in its Roads, Storm Drainage & Watercourses Services Department, and the majority of parks and urban forestry and other services in its Parks and Forestry Department.
  - Calgary provides the majority of roads, snow and transportation services in its Transportation Department, and the majority of parks and urban forestry and other services in its Community Services & Protective Services Department.
  - Hamilton provides all services in its Public Works Department. However, that department also offers services such as Facilities Management, Fleet Management, Transit Services, Solid Waste Management and Storm Water Management.

Comparison of Public Works Organizational Charts (1)					
City of Winnipeg Public Works Service Area	Edmonton	Ottawa	Mississauga	Calgary	Hamilton
Roadway Construction and Maintenance	Transportation Services	Public Works Infrastructure Services	Roads, Storm Drainage & Watercourses	Transportation	Public Works
Roadway Snow Removal and Ice Control	Transportation Services	Public Works	Roads, Storm Drainage & Watercourses	Transportation	Public Works
Transportation Planning and Traffic Management	Transportation Services	Public Works	Roads, Storm Drainage & Watercourses	Transportation	Public Works
Parks and Urban Forestry and Other Services	Community Services	Public Works	Parks and Forestry	Community Services & Protective Services	Public Works

Notes: (1) In this table, the title "Public Works" refers to either:
a) a dedicated public works department (e.g., Ottawa, Hamilton and Winnipeg public works departments); or
b) a collection of departments and/or branches across a city which collectively form a public works operation similar to Winnipeg's Public Works Department.

As part of the Review, we attempted to benchmark unit costs for a select number of services offered across Public Works. All cities appear to have challenges in measuring unit costs. Some of these barriers have already been discussed, but two others are as follows:

- Detailed unit costs are not normally reported in publicly available information, and in most cases were also not available in internal management reporting.
- Direct costs of providing services may include both operating and capital costs. Further, these costs usually only include the direct costs of providing a service (i.e., labour, materials, etc.), but in some cases may include certain corporate expenses, transfers, recoveries and/or other charges. The measurement and recording of these costs may differ across municipalities and within departments.

We were, however, able to collect a fair amount of per unit data on other related items (e.g., revenue/permit, park assets/000's people, etc.). These items will be discussed in their relevant sections.

Notwithstanding these limitations, we collected a fair amount of information on service standards, certain quantitative data as well as qualitative information for benchmarking comparisons. We also adjusted information where possible to improve comparability between cities.

The remainder of this section discusses benchmarking for topics that are more general and not specific to issues and opportunities identified in later sections. Benchmarking that is specific to an issue and opportunity is summarized when the issue and opportunity is introduced.

City Demographics

The following table summarizes demographics for Winnipeg and select benchmark cities. They are all fairly comparable in size and population; however Ottawa has a much larger land area.

Population (Census subdivision) and Land Area						
2011	**Edmonton**	**Ottawa**	**Mississauga**	**Calgary**	**Hamilton**	**Winnipeg**
Population (Census subdivision)	812,201	883,391	713,443	1,096,833	519,949	663,617
Land area (hectares)	68,437	279,022	29,240	82,529	111,723	46,408

Source: Statistics Canada, Focus on Geography Series, 2011 Census

The next table summarizes winter information. This information can impact how public works services are delivered in the winter season, an important matter for a city such as Winnipeg. Further details of the effects of weather conditions will be discussed in later sections.

Seasonal Winter Information

	Edmonton	Ottawa	Mississauga	Calgary	Hamilton	Winnipeg
			(1)			
Average temperature during January (°C)	(11.7)	(10.8)	(4.2)	(8.9)	(6.0)	(17.8)
Average yearly snowfall (cm)	123.5	235.7	133.1	126.7	161.8	110.6
Average days of snowfall of at least 5 cm	7.0	15.6	9.0	6.5	9.9	5.6

Notes: (1) Figures for Toronto are summarized.
Source: Environment Canada

City-Wide Annual Operating and Capital Budgets

The following table summarizes city-wide annual operating and capital budgets. Winnipeg's operating budget is significantly lower than the median of approximately $1.65 billion; however, specific budgets of public works are of more relevance to this Review.

City-Wide Annual Operating and Capital Budgets

Fiscal 2012 $ millions	Edmonton	Ottawa	Mississauga	Calgary	Hamilton	Winnipeg
Operating budget	1,878	2,460	607	2,817	1,427	900
Capital budget	1,205	851	148	1,760	435	393

Source: Annual operating and capital budgets for municipalities

Public Works Annual Operating Budgets

The following table summarizes a high-level comparison of public works operations across select Canadian municipalities. The accompanying notes at the bottom of the table disclose how information has been adjusted to improve comparability between cities.

Public Works performs relatively well on a cost per unit (FTE or capita basis) basis relative to benchmark peer cities. The Department's annual operating budget per FTE is approximately $120,000/FTE (lower than the median of $133,000), and FTEs per capita is also below the median. Its annual operating budget per capita is approximately $176,000 (lower than the median of $201,000).

Public Works Annual Operating Budgets (adjusted) (1), (2), (3)

Fiscal 2012 (unless otherwise stated) $ millions (unless otherwise stated)	Edmonton	Ottawa	Mississauga	Calgary	Hamilton	Winnipeg
					(4)	
Annual operating budget (adjusted)	179	215	104	220	182	118
FTE	1,229	1,799	760	1,657	1,373	982
Annual operating budget ($000's/FTE)	145	120	136	133	132	120
Population (Census subdivision)	812,201	883,391	713,443	1,096,833	519,949	663,617
Annual operating budget ($/capita)	220	244	145	201	not comp.	178
FTEs per '000 population	1.51	2.04	1.07	1.51	not comp.	1.48

Notes: (1) In this table, the title "Public Works" refers to either:
a) a dedicated public works department (e.g., Hamilton and Winnipeg public works departments); or
b) a collection of departments and/or branches across a city which collectively form a public works operation similar to Winnipeg's Public Works Department.

(2) Figures are unaudited and represent estimates of annual operating budgets and FTE counts based on a review of public documents. Where possible:
a) budgets are stated net of recoveries;
b) support services are excluded; and
c) services not offered by Winnipeg's Public Works Department are excluded.
(3) The annual operating budget for Winnipeg's Public Works Department, as stated in the table, does not include debt and finance charges, grants, transfers, and other expenditures. Best efforts were used to exclude similar items from other cities' operating budgets; however that information is not always disclosed. The following adjustments were made with regards to these items:
a) Edmonton does not allocate corporate overhead charges to tax supported programs; therefore adjusting entries were not made. The city's utilities have to pay an allocation of shared services.
b) Ottawa does not track corporate overhead allocations; therefore adjusting entries were not made.
c) Mississauga allocates certain IT, custodial costs and other costs to departments. Data for fiscal 2012 allocations is not available; therefore adjusting entries were not made. Debt and finance charges and transfers to reserves are all captured under the city's Financial Transactions service area, and do not have an impact on public works operating budgets.
d) Calgary's 2012 Operating Budget includes a 12% corporate overhead allocation; therefore 12% of operating expenses were excluded.
e) Hamilton: Details on allocations are not publicly available; therefore adjusting entries were not made.
(4) Notes with regards to Hamilton are as follows:
a) Hamilton's Public Works Department covers services beyond Winnipeg and includes Water and Waste Management and Fleet Management. These types of services were excluded where possible.
b) Hamilton's annual operating budget per capita is a non-meaningful and non-comparable figure because certain services that are not comparable to Winnipeg could not be extracted from the budget amount of $182 million (e.g., Facilities Management, Fleet Management, transit services are part of Hamilton's Transportation Division).
c) FTEs by department were needed for the above calculation. This data was only available for fiscal 2013; therefore the table uses Hamilton's Operating Budget for fiscal 2012 and FTEs for fiscal 2013. Year-over-year FTEs were very similar from 2012-2013.

Sources: (1) Edmonton: Approved Operating Budget (Fiscal 2012)
(2) Ottawa: Draft Operating Budget (Fiscal 2012)
(3) Mississauga: Business Plan and Budget Book (Fiscal 2012-2014); Parks and Forestry Business Plan (Fiscal 2013-2016)
(4) Calgary: Business Plans and Budgets (Fiscal 2012–2014)
(5) Hamilton: Tax Supported Preliminary Operating Budget (Fiscal 2012-2013)
(6) Winnipeg: Public Works Management

4.10 Summary and Introduction to the Following Sections

In general, the Department appears to be effectively doing a good job with its fiscal and human resources. Like any organization, particularly large and complex organizations, a number of issues and opportunities have been identified based on interviews, analysis and experience. These issues were discussed and validated with Management and the Steering Committee in Stage 1 of the Project.

The following sections outline these issues and opportunities within each of the following Service Areas of Public Works:

- Support Services (Finance & Administration, HR, IS&T, Customer Services & Strategic Support);
- Road Construction and Maintenance;
- Roadway Snow Removal and Ice Control;
- Transportation Planning and Traffic Management;
- Parks and Urban Forestry and Other Services.

For each of the five Service Areas identified above, we outline:

- Financial information for the relevant Division(s) and Service Area.
- Core service assessment and service levels (in all areas except Support Services), by each Sub-Service as well as comparison to peer cities from our benchmarking survey.
- Key issues and opportunities.
- Analysis and benchmarking information where relevant and available. Leading practices and case study examples from cities in North America are cited for a number of opportunities.
- Recommendations for each key issue and opportunity, including a high-level estimate of any potential savings/costs, where relevant, relative level of priority, and relative risk and timing for implementation.
- The final section outlines an implementation plan framework for each priority recommendation.

5 Public Works Support Services

5.1 Finance and Administration

5.1.1 Financial Operating Results (Traditional Method) FY 2010-2012

The following table summarizes the Finance and Administration Division's financial operating results for fiscal 2010-2012. Although Information Systems & Technology is now a separate "division", IS&T staff and expenses are included in the Finance and Administration Division data below.

- Total operating expenditures remained relatively constant over the period reviewed, ranging between approximately $2.3 million and $2.4 million. Staff levels have remained at 24 or 25 over this time. Similar results are seen in operating expenditures per FTE.
- Finance and Administration's total operating expenditures represented approximately 1.4% of Public Works consolidated operating expenditures in fiscal 2012.

Finance and Administration Division - Financial Operating Results (Traditional Method)				
$000's (unless otherwise stated)				
For the Fiscal Years Ended December 31	**2010A**	**2011A**	**2012 Preliminary Draft**	
				% of total
Finance and Administration Division				operating
Operating expenditures				expenditures
Salaries and benefits	1,827	1,881	1,762	76.6%
Services				
Real Property Contracts-Const/Mtce	-	0	-	-
Fleet Operating Lease	6	4	4	0.2%
Fleet Capital Lease	11	11	11	0.5%
Equipment Rental-External	-	-	-	-
Other	94	66	66	2.9%
Total services	111	81	81	3.5%
Materials, parts and supplies	(28)	2	8	0.3%
Equipment, furniture and other purchases	14	7	23	1.0%
Recoveries	(23)	(24)	(23)	(1.0)%
Operating expenditures (before noted items)	1,902	1,948	1,851	80.5%
Debt and finance charges	-	-	-	-
Cash to capital	-	-	-	-
Grants, transfers and other expenditures	447	449	449	19.5%
Total operating expenditures	2,349	2,397	2,300	100.0%
$000's/FTE calculations				
FTE	24	24	25	
Operating expenditures (before noted items)/FTE	78	80	73	
Total operating expenditures/FTE	97	99	91	
As percent of Public Works Department				
FTE	2.5%	2.4%	2.6%	
Operating expenditures (before noted items)	1.7%	1.5%	1.6%	
Total operating expenditures	1.4%	1.3%	1.4%	

Note: Noted items include debt and finance charges, cash to capital, grants, transfers and other expenditures.
Source: City of Winnipeg Public Works Department

5.2 Human Resources

5.2.1 Financial Operating Results (Traditional Method) FY 2010-2012

The following table summarizes the Human Resources Division's financial operating results for fiscal 2010-2012. The HR Division includes the Safety and Training Units which provides training to Public Works personnel as well as personnel from other City Departments. Approximately 9 HR Division people work in Safety and Training, and Public Works represents close to one-half of its customer base. Recoveries in the HR Division are largely from the activities of the Safety and Training Unit.

- Total operating expenditures increased from approximately $0.95 million in fiscal 2010 to approximately $1.06 million in fiscal 2012. The increase is primarily attributable to a modest decrease in recoveries from approximately $0.81 million in fiscal 2010 to approximately $0.75 million in fiscal 2012.
- The number of personnel in this Division was constant at 23 in the last two years. Of the total, 14 are in HR services and 9 are in the Training Unit housed in the HR Division.
- Human Resources' total operating expenditures represented approximately 0.6% of Public Works consolidated operating expenditures in fiscal 2012.

Human Resources Division - Financial Operating Results (Traditional Method)

$000's (unless otherwise stated) **For the Fiscal Years Ended December 31**	**2010A**	**2011A**	**2012 Preliminary Draft**	
Human Resources Division				% of total operating expenditures
Operating expenditures				
Salaries and benefits	1,418	1,407	1,433	135.5%
Services				
Real Property Contracts-Const/Mtce	-	-	-	-
Fleet Operating Lease	31	35	35	3.3%
Fleet Capital Lease	48	61	61	5.8%
Equipment Rental-External	-	-	-	-
Other	99	71	96	9.0%
Total services	178	166	191	18.1%
Materials, parts and supplies	46	38	35	3.3%
Equipment, furniture and other purchases	32	11	22	2.1%
Recoveries	(814)	(731)	(751)	(71.0)%
Operating expenditures (before noted items)	860	890	930	87.9%
Debt and finance charges	-	0	-	-
Cash to capital	-	-	-	-
Grants, transfers and other expenditures	91	91	128	12.1%
Total operating expenditures	951	982	1,057	100.0%
$000's/FTE calculations				
FTE	24	23	23	
Operating expenditures (before noted items)/FTE	36	39	41	
Total operating expenditures/FTE	40	43	47	
As percent of Public Works Department				
FTE	2.4%	2.2%	2.3%	
Operating expenditures (before noted items)	0.8%	0.7%	0.8%	
Total operating expenditures	0.6%	0.5%	0.6%	

Note: Noted items include debt and finance charges, cash to capital, grants, transfers and other expenditures.
Source: City of Winnipeg Public Works Department

5.3 Information Systems & Technology

The Information Systems and Technology Division is a new Division, and is responsible for meeting the Department's IT needs. The financial results and FTEs of this group are contained within the Finance and Administration Division for FY 2010-2012.

IS&T's IS branch employs software engineers who develop and maintain several home-grown and off-the-shelf systems. Hardware and desktop support is provided by the IT branch, and infrastructure (LAN and WAN) maintenance and support is provided in conjunction with the Business Technology Services division of the City's central Corporate Support Services Department. The IT branch manages approximately 28 sites, 450 computers and 775 users. IS&T currently has 8 FTE positions.

Public Works makes relatively heavy use of IT to streamline, automate, and manage many aspects of its business and day-to-day operations. Specialized software is used to enable general office automation, manage operations, and perform work management and analytical tasks. Select examples of the Department's tools and software are as follows:

- PeopleSoft is the City's enterprise/financial support system managed by the City's central Corporate Support Services Department. Departmental applications interface with PeopleSoft modules where needed.
- Vemax is an asset management and capital planning tool.
- TKMMS is a tool to track time and for work orders. Data interface exists between Vemax and TKMMS to reduce duplication and data entry efforts. TKMMS feeds maintenance management data to Vemax so that "actuals" can be compared against budgets and plans.
- Envista is software for right-of-way management. The Engineering Division inputs its 5-year projections into Envista and shares them with the Underground Structures Branch. This allows both groups to coordinate with utilities to perform more work at the same time. Envista is web-based and real-time.
- GIS systems: Intergraph is the City's standard GIS system and available to the public through the web. There appears to be different GIS applications in uses among different divisions within the Department; however, we understand that these are for different purposes and are task-specific.
- Public Works is currently implementing a pilot electronic permitting system (AMANDA) in 2013. The Department recognizes that its construction permitting processes need replacing and is considering further implementation using AMANDA.
- Employment of seasonal staff is managed through a system which understands and applies seniority rules.
- Specialized tools are also used by Engineering and Transportation staff.

IS&T manages its priorities in consultation with Public Works Management. All initiatives are discussed with Management before implementation, and may be influenced by certain corporate directives and/or City-wide initatives.

Formally stipulated service levels do not exist for IS&T at this time. However, central Corporate Support Services is currently implementing a service level agreement through each of the IS&T Divisions within the Department which would provide service level guidelines on the delivery of technology support services, and lay the foundation for measuring and reporting on service levels.

5.4 Customer Services and Strategic Support

5.4.1 Financial Operating Results (Traditional Method) FY 2010-2012

The following table summarizes the Customer Services Division's financial operating results for fiscal 2010-2012.

- Total operating expenditures remained relatively constant over the period reviewed, ranging between approximately $1.6 million and $1.7 million. Expenditures per FTE increased due to a decrease in FTEs from 21 in fiscal 2010 to 19 in fiscal 2012. This Division has experienced declines in budgets and staff levels from levels in the 2000s. Revenues are approximately $1.5 million, largely from permits, application fees, and the Underground Structures Branch.
- Customer Services' total operating expenditures represented approximately 1.0% of Public Works consolidated operating expenditures in fiscal 2012.

Customer Services Division - Financial Operating Results (Traditional Method)				
$000's (unless otherwise stated)				
For the Fiscal Years Ended December 31	**2010A**	**2011A**	**2012 Preliminary Draft**	
				% of total operating expenditures
Customer Services Division				
Operating expenditures				
Salaries and benefits	1,347	1,338	1,347	80.3%
Services				
Real Property Contracts-Const/Mtce	-	-	-	-
Fleet Operating Lease	3	2	2	0.1%
Fleet Capital Lease	1	5	5	0.3%
Equipment Rental-External	-	-	-	-
Other	195	186	232	13.8%
Total services	199	192	239	14.3%
Materials, parts and supplies	8	10	7	0.4%
Equipment, furniture and other purchases	9	3	2	0.1%
Recoveries	(116)	(136)	(119)	(7.1)%
Operating expenditures (before noted items)	1,447	1,409	1,475	88.0%
Debt and finance charges	55	20	59	3.5%
Cash to capital	-	-	-	-
Grants, transfers and other expenditures	141	141	141	8.4%
Total operating expenditures	1,643	1,570	1,676	100.0%
$000's/FTE calculations				
FTE	21	19	19	
Operating expenditures (before noted items)/FTE	68	73	77	
Total operating expenditures/FTE	77	81	87	
As percent of Public Works Department				
FTE	2.2%	1.9%	2.0%	
Operating expenditures (before noted items)	1.3%	1.1%	1.3%	
Total operating expenditures	1.0%	0.9%	1.0%	

Note: Noted items include debt and finance charges, cash to capital, grants, transfers and other expenditures.
Source: City of Winnipeg Public Works Department

5.5 Issues, Opportunities and Recommendations

5.5.1 Strategic and Analytical Support

Issue

The Department lacks strategic and business analytics (e.g., internal financial and operational analysis, productivity tracking, process improvement initiatives, strategic communications and management reporting for decision-making).

Findings and Observations

- Understanding is that analytical support resources are quite limited as strategic process improvement and analysts were downsized in previous budget-tightening years, not only in the Department but across departments.
- There is one vacancy for a Financial Analyst within Finance and Administration.
- Managers are too busy responding to workloads to have adequate time for strategic planning and analysis and communications.
- Issues were raised within the Department about communications between divisions – the Department is constantly in reactive and response mode which makes time for proactive communications very limited.

Implications

- The Department needs some additional resources focused on strategic operational and financial analysis, and related issues. Without analysis, it is difficult for Management to fully know and track the efficiency of its operations and to proactively address future issues.
- Part of the Department's challenge is to get the Public Works story out – communicating the Department's achievements and performance can assist all personnel in better connecting to the whole, and also help other departments and stakeholders better understand what Public Works does.

Potential Opportunity Areas	
✓	Business processes
✓	Organizational restructuring
✓	Automation
✓	Service innovation
Barriers	
	Budgetary resources to add some key analytical positions
	Systems need to generate data and information for analysis and management reporting
	Staff physically located in Areas and different locations

RECOMMENDATIONS

- Public Works should consider the addition of three analyst positions within the Department, one within Finance and Administration to fill a current vacancy for a Financial Analyst position, and two positions within Customer Services and Strategic Support – one more focused on detailed operational analysis and benchmarking, and one more focused on process improvement initiatives. Along with the current analyst within Customer Services and Strategic Support, these four personnel would coordinate activities and be directly available to the Director in providing regular reports and undertaking special projects.

Rationale / Benefit

- The Director and Management require analysis to:
  - get better reporting and indicators on the efficiency of operations;
  - assist in decision-making; and
  - proactively address operational and financial issues.
- The Department has a lot of data, but lacks analytics to turn data into meaningful information to help guide decision-making.
- Analysis will help support the Department's activities, and help the Department communicate its achievements within the Department and to Administration and Council.

Priority

- High

Financial Impact

- Estimated budget for 3 positions would be approximately $250,000 to $300,000 annually.
- Analysis and access to better management information will yield financial benefits over time.

Timing

- Short to medium-term

Risk Level

- High

Implementation Factors

- Council/Committee/ Administration approval.
- Developing job descriptions/skills profiles and recruitment time to attract the right candidates.
- Management input into analytic focus and reporting templates.

5.5.2 311 Calls Efficiency

Issue

311's methods of filtering and some strains between Central 311 and the tier 2 call centre in Public Works Customer Services are leading to significantly more resource time in Public Works responding to 311 calls.

Potential Opportunity Areas	
✓	Business processes
✓	Automation
✓	Shared services
Barriers	
■	Communications

Findings and Observations

- Top types of Public Works service requests from 311 calls:
  - Streets Maintenance: lane concerns, paved road repairs, potholes, cut/boulevard restoration, sanding requests, sidewalk repairs, signs (fix, replace, missing), snow removal from sidewalks, snow removal street priority, towing inquiries.
  - Parks and Forestry: park maintenance, park rental, brush pick-up, tree pruning, tree removal – fallen, dangerous, Dutch Elm Disease.
  - Traffic: traffic signal malfunction.

Public Works 311 Requests

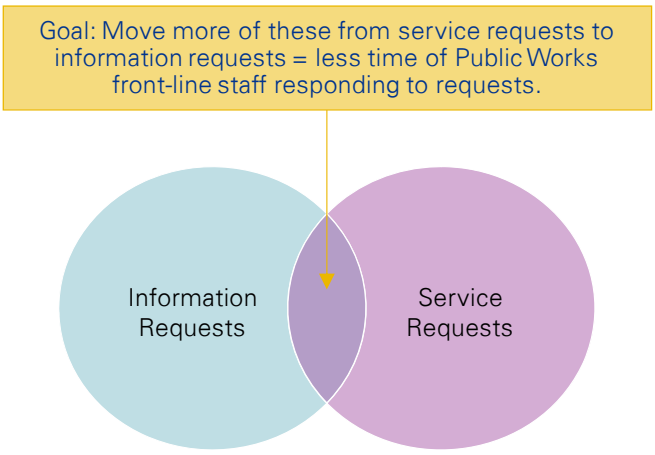
Fiscal 2012 (in thousands of calls)	Information Requests	Service Requests	Total 311
Streets Maintenance	27.9	35.5	63.4
Parks and Forestry	7.9	17.5	25.4
Traffic	-	9.6	9.6
Insect Control	1.0	0.8	1.8
Public Works Total, 2012	36.8	63.4	100.2
311 City-wide	1,205.5	380.6	1,586.1
Public Works % of 311 City-wide	3.1%	16.7%	6.3%

Source: City of Winnipeg Corporate Support Services

- Multiple service requests can be received for a single issue (e.g., two service requests for one pot hole).

Implications

- Communications is the critical issue. Customer Services has some concerns about whether certain calls are classified as Information Requests or Service Requests, and have suggestions for better filtering. At the same time, 311 has designated Knowledge Managers dedicated to trying to improve 311 for departments and to try and solve issues. These dedicated 311 resources need to be made aware of issues by Public Works Customer Services to be able to help develop solutions. Also, Public Works Customer Services can assist 311 by bringing specific items and scripts to 311 and moving towards solving and communication issues.
- 311 provides an important corporate-wide service – if more calls can get filtered and answered through 311 front-line service, less resource time will be required within Public Works for responding to calls.



Solutions

- Starts with open, collaborative communication
- Clear "asks", Service Level Agreement adjustments and Public Works scripting for 311 operators
- Patience, expectations more around "80/20 rule"

Analysis

- Information requests are handled by 311. Service requests frequently require handling from Customer Services at Public Works and front-line operational staff in the Department who would otherwise be supervising or carrying out more value added work.
- There are duplicate service requests that require unnecessary administrative and front-line time.
- Detailed information is provided on monthly 311 calls. We reviewed the latest annual data on 311 calls in Public Works. There is good data and information provided by 311 central services that should be effectively used and analyzed by Public Works.
- Ottawa bundles service requests when they pertain to the same area. Service requests are grouped by clerks and supervisors based on location information. Further, when multiple service requests pertain to the same issue, the city's Lagan system creates a "parent-child" relationship. This groups the service requests together; when the original is closed, the duplicate service requests are closed as well.

RECOMMENDATIONS

- The City's 311 system provides a very important service to citizens, and the system is continually evolving and improving. Public Works (led by Customer Services and Strategic Support) and Corporate Support Services should invest the time to find better solutions and filtering with the objective of shifting a significant portion of service requests to information requests.
- Public Works should also implement a process to handle the redundancy inherent in processing service requests.

Rationale / Benefit

- Key benefit is reducing time spent by Public Works staff on service requests that may have been better handled directly by 311, or on duplicate service requests pertaining to issues that have already been resolved.
- Reducing the number of service requests and particularly duplicate service requests will reduce costs and improve service delivery.
- Better understanding, coordination between 311 and Public Works' Customer Services Division.
- Tangible resource allocation savings for Public Works staff through reductions in time spent responding to customer service requests that could have been avoided at the front end.
- 311 provides detailed reports categorizing calls that should be part of regular analysis within Public Works. This can highlight trends and issues.

Priority

- High

Financial Impact

- Not a hard cost savings, but an important reallocation of time to free up front-line staff for other value-add work.
- If Public Works' average time addressing each service call is 30 minutes, shifting 1,000 service calls per month to information requests may equate to 6,000 person-hours per year in better allocated front-line time (equates to over three FTEs).
- Similarly, if it takes 15 minutes to close off a redundant service request, eliminating 200 redundant service requests per month may equate to 600 person-hours per year in better allocated front-line time.

Timing

- Short-term

Risk Level

- Low

Implementation Factors

- Open, collaborative communications between 311 central and Public Works Customer Services personnel handling tier 2 calls.
- Clear requests from Public Works to 311, provision of better scripting where required.
- System to reduce/eliminate duplicate requests, and a focused effort to shift more calls from service requests to information requests.
- Service Level Agreement adjustments where appropriate.
- Tracking of results and improvements and reporting to Management.

5.5.3 Performance Management, Standards and Measurement

Issue

There may be a lack of clear and consistently communicated service standards, performance measurement and key performance indicators ("KPIs").

Potential Opportunity Areas	
✓	Business processes
✓	Service innovation
Barriers	
■	Lack of a sophisticated system in place for performance measurement and management reporting
■	Risk of not meeting set standards due to hiring and staffing constraints
■	Interdependencies with other departments require a coordinated effort to meet targets

Findings and Observations

- A number of areas have very clearly defined service standards (e.g., snow removal); others do not.
- Some areas have relatively more commitment to performance measures (e.g., Parks and Open Space).
- There are uneven and maybe unrealistic service expectations in some areas.
- Lack of comprehensive management reports on performance.
- Limited ability and resources to estimate and analyze timelines/ volumes/resource needs, cost comparisons, etc.
- *Our Winnipeg*, the City's long-term municipal development plan, calls for action plans with measurement and monitoring tools for public accountability and for effective budgeting and delivery of services.

Implications

- Without KPIs it is difficult to determine and report results and achievements, adjust resources and decision-making accordingly, and benchmark against other municipalities.
- Inability to learn or improve without clear performance standards/targets, measurement and ongoing analysis.

Benchmarking and Analysis

- All cities are challenged to continually improve their performance standards and measurements.
- Some cities have been at this for several years, while for others it is relatively new.
- With limited fiscal resources, City of Winnipeg departments are increasingly pressured to provide meaningful performance indicators as part of accountability and results-based services.
- Cities typically track performance according to units of work accomplished (e.g., number of potholes filled, square meters of base repaired, square meters paved, number of trees pruned, etc.); however, it is not clear whether there are target performance benchmarks for which they are aiming.
- Financially-oriented benchmarks, such as cost per lane kilometer for winter maintenance, differentials between actual costs and budgeted costs for a particular service, unit costs, etc., also comprise part of performance measurement.
- Winnipeg's performance measurement is inconsistent across Divisions.
- While the Public Works Department provides information on service levels, there should be formal reporting of actual service levels achieved and more development and tracking of efficiency and productivity measures.
- Winnipeg's Parks and Open Space Division is relatively more advanced in measuring and tracking performance indicators. Similar results were noted in benchmark surveys (e.g., Edmonton and Ottawa have detailed indicators on parks operations).

- According to the cities' benchmark surveys, Ottawa and Edmonton have a wide range of performance measures that they track.
- Similar to Winnipeg, performance management across public works-related activities in jurisdictions differs. Some cities are further ahead than others in implementing performance management and measurement practices and aptly using business intelligence.
- For example, Ottawa has placed significant effort into develop and using its business intelligence data to manage operations. The city reports regularly on data on spending compared to previous year trends and produces monthly balanced scorecards for public works activities.
- The City of Mississauga has outlined an approach to balanced scorecard metrics in various business plans for service areas. For example, Mississauga's Parks & Forestry Department scorecard includes financial and non-financial measures, such as net operating cost per capita; gross cost per hectare of parks and open space; cost recovery of natural sports fields; service requests resolved; employee work engagement (similar to employee satisfaction); and the total number of new trees planted.
- Overall, the extent of cities' performance measurement practices varies; however, this is an area that most cities are striving toward improving.
- According to leading practice, performance management applies to all areas of public sector business: *"Performance management in the public sector is an ongoing, systematic approach to improving results through evidence-based decision-making, continuous organizational learning, and a focus on accountability for performance. Performance management is integrated into all aspects of an organization's management and policy-making processes, transforming an organization's practices so it is focused on achieving improved results for the public."* (National Performance Management Advisory Commission, *A Performance Management Framework for State and Local Government,* 2010).
- The National Performance Management Advisory Commission's 2010 report outlines leading practices. Some key points outlined in this leading practice study include:
  - Performance management uses evidence from measurement to support governmental planning, funding, and operations. Better information enables elected officials and managers to recognize success, identify problem areas, and respond with appropriate actions – to learn from experience and apply that knowledge to better serve the public.
  - Performance measurement and performance management are distinctly different. Governments have measured outputs and inputs, and, less commonly, efficiency and effectiveness. Performance measurement helps governments monitor performance. Performance management systemically uses measurement and data analysis as well as other tools to facilitate organizational learning and improve results.
  - A performance management framework is a means to an end, not an end in itself. To make real improvements and increase benefits, performance management principles and practices need to become embedded in the organizational culture.
  - Performance management principles (National Performance Management Advisory Commission, 2010, p.8):
    1. A results focus permeates strategies, processes, the organizational culture, and decisions.
    2. Information, measures, goals, priorities, and activities are relevant to the priorities and well-being of the government and the community.
    3. Information related to performance, decisions, regulations, and processes is transparent – easy to access, use, and understand.
    4. Goals, programs, activities, and resources are aligned with priorities and desired results.
    5. Decisions and processes are driven by timely, accurate, and meaningful data.
    6. Practices are sustainable over time and across organizational changes.
- Performance management transforms the organization, its management, and the policy-making process.

Case Study: Los Angeles County Department of Public Works – Performance Management/ Measurement Framework

Challenge

- The Los Angeles County Department of Public Works developed its 2012 Strategic Plan to define its visions, priorities and outline its business strategy. Their emphasis is to address the increasingly complex issues and challenges facing the department in the next three to five years.

Approach

- The department is formally adopting a sustainable business approach, seeking a balanced approach to delivering projects, programs and services in a responsible manner that ensures the long-term well-being of the environment and communities they serve.
- The emphasis requires implementing a value-driven approach to business, and applying core values to emerging business issues and decisions. These core values are: safety, integrity, teamwork, transparency, excellence, their employees, and sustainability.
- They believe a sustainable business approach will enable the department to increase efficiencies, reduce costs and improve effectiveness.
- Their Strategic Plan is serving as a tool to get the public works story out, facilitate communication and decision-making across the organization and promote a culture of performance measurement and transparency.
- A key element of their Strategic Plan is to apply a performance measurement framework/tool designed to target the vital results that the residents care about the most.

Results / Potential Impact

- This is a new plan that demonstrates accountability and transparency. Their approach is to keep performance management simple and meaningful as a key to achieving results. As a culture, they measure many of their activities but the new performance measurement framework focuses on openly stating their key performance indicators.
- Within each of six areas – Transportation, Development Services, Emergency Management, Public Buildings, Waste Management and Water Resources – the plan sets out 3-5 KPIs and a quadrant for reporting. The quadrant includes:
  1. Goal / Desired Results;
  2. Status (recent results);
  3. Analysis and Trends; and
  4. Actions.

Source: Los Angeles County Department of Public Works

Context for Public Works

- There is no one size fits all approach to performance measurement. What is important is for Public Works to build on its results and experience to outline its own performance measurement framework. Development of this framework requires the input of the team and then requires communication across the Department and the City. This would help Public Works develop a department-wide approach and culture focusing on the core services and results that matter most.
- Key to developing a performance measurement framework is consistency in approach, and ongoing tracking, analysis, reporting and utilization by Management and the team.
- Developing a strategic/business plan for the Department with a performance measurement framework will help the Department "get the story out" of the very important work it does. This can improve communications and understanding within Public Works and with City Council and other City Departments.

RECOMMENDATIONS

- Public Works should develop a performance management framework, consisting of financial and operational key performance indicators ("KPIs") across the Department and Divisions.
- The diagram on the following page illustrates a conceptual sample of a performance management framework and examples of KPIs.
- In developing its performance measurement framework and KPIs, metrics should be:
  - Specific;
  - Measurable;
  - Attainable;
  - Relevant; and
  - Timely.

Rationale / Benefit

- A performance measurement framework provides a holistic and systemic approach to measuring and tracking relevant information.
- Provides baseline information on KPIs of importance to Management and the Department.
- Provides greater accountability to Council and Administration and the opportunity to report on achievements and results.
- Enables benchmarking comparisons to other cities through OMBI and other means of select KPIs.
- Encourages a culture throughout the Department of consistently measuring, monitoring, reporting and incorporating results into the decision-making process.

Priority

- High

Financial Impact

- Part of analysts' responsibility in S. 5.5.1

Timing

- Short-term

Risk Level

- Medium

Implementation Factors

- The precise KPIs should involve all Divisions and will depend upon data/information and reporting capability.
- The Director's Office should direct these efforts and approve the framework. Day-to-day coordination and reporting requirements for the Director and Management could be coordinated with the Customer Services and Strategic Support Division.
- Need to develop a performance measurement framework and agree on key performance indicators within the Department, which can be taken to Administration and Council for endorsement.
- Such a framework and KPIs should be flexible for modifications and increasing sophistication as performance measurement becomes embedded across all divisions.

Public Works Performance Management Framework and Reporting (SAMPLE FRAMEWORK)

Key Financial Indicators (select examples)

- Monthly financials
- Budget versus Actual (annual and year to date)
- Variance analysis and explanations
- Trend analysis
- Financial analysis of key projects
- Tracking to key targets set (e.g., fleet cost savings, overtime containment, savings in contracts, etc.)
- Division Budget versus Actual, key variance analysis

Key Operational Indicators (select examples)

- Monthly or quarterly
- Overall labour (e.g., FTEs, productivity, vacancies, turnover, key positions to fill)
- Overall materials and supplies, fleet costs
- Achievement of service standards in all core services

Roads

- Loaded unit costs of key activities
- Snow removal costs
- Cost of contracted services
- Cost of in-house services (central, areas)
- Crew productivity (by Area, by crew)

Engineering/Capital Projects

- Capital projects (track to on-budget, on-schedule, key issues/risks)

Parks

- Continue to build on KPIs currently tracked (e.g., park maintenance, forestry, playgrounds, etc.)
- Crew productivity (by Area, by crew, by service)

Transportation

- Summary of initiatives (cost, delivery)
- Traffic signals (e.g., unit costs of replacement, repair, response times)

Support Services

- Customer surveys (e.g., satisfaction)
- Summary of IT initiatives
- Summary of HR initiatives
- Summary of Finance and Administration initiatives
- Summary of Customer Service and Strategic Support initiatives (e.g., process improvement, call centre efficiencies, permits)

Benchmarking

- Comparison of select indicators with other cities when available
- Internal analysis of OMBI data
- Leading practice information

5.5.4 Sharing Resources Within the Hybrid Centralized-Decentralized Support Services Model

Issue

The current hybrid centralized-decentralized model for support services may result in some overlap of tasks and resources, and create inconsistency across divisions and related departments.

Potential Opportunity Areas	
✓	Business processes
✓	Organizational restructuring
✓	Shared services
Barriers	
■	Corporate support functions may also be stretched in other departments, limiting ability to share resources
■	Collective agreement

Findings and Observations

- Difficult to share / reallocate resources.
- This model has been set for all departments and corporate plans are to work with this model.
- Formal service levels agreements do not currently exist for support services, but some service levels are in the process of development and roll-out.
- With reporting lines, cooperation is significantly dependent upon relationship between the Director and Director, Corporate Support Services. The current relationship appears good, but dual reporting lines can result in different priorities and timeline pressures.
- Four different Divisions provide "Support Services" (i.e., Finance and Administration, Human Resources, IS&T, Customer Services and Strategic Support).

Implications

- The Human Resources Division is too stretched in the spring during the temporary seasonal hiring. Other HR staff in the City system could potentially assist in the "transactional" aspects (e.g., administrative processing, responding to general inquiries on benefits) of this work to alleviate these pressure points. There may be better ways for seasonal call back and the utilization of online contact and application.
- Improve the booking process for the transfer between the seasons to reduce manual time and effort.
- There may be certain transactional functions that could be centralized, freeing up corporate support resources to provide more strategic and analytical support to the Department.
- The finance function has centralized a number of services such as payroll and accounts payable.

Benchmarking and Analysis

- The City of Winnipeg spent considerable time and investment in determining its hybrid model for support services. It is clearly recognized that this is an evolving system with continuous improvement efforts being made.
- Benchmarking support services with the mid-size peer cities was not possible because almost all the peer cities have centralized corporate support services, whereas Public Works has separate Finance and Administration, HR, and IS&T Divisions within the Department.
- For example, Ottawa uses a Centre of Expertise service delivery model. In that model, corporate Human Resources provides a full offering of services including: recruitment & staffing; job evaluation & organizational design; pension & benefits; compensation; occupational health & safety; disability management; employee assistance program; learning & development; client relations; HR systems & reporting; diversity & inclusion; and the HR service centre. In their Centre of Expertise model, central HR identifies performance standards in their service level agreements with all departments. Their

departmental clients identify priorities for the upcoming year and meet on a monthly basis to track progress and revisit resourcing requirements.

- Ottawa also has a centralized Customer Service group called the Client Services Unit. The unit operates the city's client service centres and 311, similar to Winnipeg's centralized 311 system.
- Calgary's centralized Corporate Services Department has Information Technology, Human Resources, and Customer Service & Communications divisions that provide service throughout all city departments. Finance and Administration services are provided by the city's Chief Financial Officer's Department.
- Similar to Calgary, Edmonton has a centralized Corporate Services Department which contains Information Technology, Human Resources, and Customer Information Services divisions to provide service across city departments. As part of its Financial Services and Utilities Department, the city's Client Financial Services division provides strategic and technical advice and direct financial services to all departments. Specifically, this division supports business planning, budgeting, reporting, and accounting processes, and is also responsible for the capital and operating budget process, making recommendations to funding strategies and policies to address infrastructure needs and priorities, and coordinating strategic planning services including corporate performance measurement.
- Hamilton's centralized Corporate Services Department contains Information Services, Finance, and Customer Service divisions which support all city departments. Hamilton's Human Resources Division is part of the City Manager's Office.
- Mississauga's centralized Corporate Services Department has all of the city's Information Technology, Human Resources, Finance, and Customer and Business Services divisions.

Seasonal Employees and Cross-Training

- Winnipeg's Public Works Department has a seasonal staff of approximately 800. The Department has approximately 982 FTEs. Seasonal staff is laid off every year, but approximately 90% of seasonal staff return to work. The Department also has a number of people that work for the City year-round but are not considered permanent, because they want to retain flexibility to move around to different areas.
- Under the Collective Agreement between the City of Winnipeg and CUPE effective January 2011 to December 2014, vacancies shall be filled by the most senior employee who: (i) is able to meet the requirements of the position; and (ii) has the ability to fit himself or herself for further promotion where such ability is essential for the efficient functioning of the service.
- Seasonal employees are placed on a call-back list in seniority order. To fill a vacancy, a Human Resources staff member calls the most senior candidate on the list who is able to meet the requirements of the position. Up to three calls are made if necessary, spaced evenly over time to give candidates time to respond. If no response is received after the third call, the staff member may proceed to the next available and qualified candidate. This process is cumbersome, and it takes additional time to fill a vacancy for front-line seasonal staff.
- A number of other mid-sized Canadian cities have similar types of seasonality and labour arrangements.
  - Edmonton manages its crews in a labour pool which is multi-tasked. A single FTE can be assigned a variety of tasks according to need (e.g., driving a sander in the winter, operating a paver in the summer). Permanent staff is assigned other duties in non-seasonal periods.
  - Ottawa's front-line staff is permanent-seasonal. Each employee moves from one permanent seasonal position to another during seasonal transition.

    Operational staff involved in roadway maintenance is employed in a permanent capacity, but will hold two substantive seasonal positions: summer and winter. The city does not reduce the number of seasonal operational positions in their public works department, and many staff

members remain involved in roadway maintenance year round; however some will work in the city's parks branch in the summer season.

- Ottawa's process of seasonal employee movement is governed by its Master Assignment Board Procedures for the Assignment of Wage Staff, which have been formally agreed upon by the employer and union. Should a situation arise where an employee is displaced from a seasonal assignment, and no temporary assignments are available to accommodate the displaced employee, they would be entitled to Layoff and Recall rights as identified in the current collective agreement.
- Calgary does not have temporary or seasonal employees; however the jobs of the permanent staff change seasonally depending on what is required. Staff movement is based on seniority, shift preference and skills required for operational needs.

  The city's Roads Branch has permanent employees with seasonal work that may need them to move between business units. Staff in maintenance districts work on snow and ice control, and as weather and resources permit work on pot holes and winter sweeping. During summer, staff moves from spring cleanup duty to plants, construction, paving, and permits. Some concrete grind and grouting or asphalt pot hole repair work is done by districts as weather and resources are available. The city's lane grading program begins after spring cleanup has completed.

RECOMMENDATIONS

- Within support services, HR services are constrained during peak periods of hiring, particularly the high level of summer part-time employees, as Public Works has more seasonal employment and fluctuation than almost any other City Department.
- There may be opportunities to share human resources staff from elsewhere in the corporate-wide system to assist the Department during the peak periods. The Human Resources Division is also constrained by procedures required under the collective agreement.
- A more efficient process utilizing technology for seasonal hires may be of interest to both the Human Resources Division and the union, which should be discussed.
- Another related issue to address is problems with the current IT system related to managing seasonal staff, which requires considerable manual time of HR staff.
- It is beyond the scope of this project to review City-wide centralization/decentralization of support services. As the hybrid model continues to evolve, there may be opportunities for more centralization of certain functions that are more standardized and transactional by nature, rather than strategic and Department-specific services requiring Departmental knowledge and expertise. For example, certain finance functions such as payroll and accounts payable, certain IT functions such as supporting standardized IT systems, and certain HR functions such as benefits administration, may be considered for centralization in the future.

Rationale / Benefit

- Support services are critical functions to support the core services delivered by the Department.
- There is no one ideal model. The City has invested considerably in its hybrid model.
- However, as this model continues to evolve, there may be efficiency benefits of centralizing certain support functions. This should be examined on a case-by-case basis, and more likely candidates are those of a standard transactional nature.
- Strategic support functions are critical to retain within the Department as knowledge, analysis and business intelligence specific to Public Works should continue to be focused within the Department.

Priority

- High

Financial Impact

- Reallocations and possible increased support from Corporate Support Services that minimize direct costs to the Department.
- Other than the additional analyst positions, no additional overall resources should be required within the Department's support services functions. Should certain basic Department functions be centralized in the future, there should be a corresponding rationalization within the affected business units or transfer to centralized services.

Timing

- Short to medium-term

Risk Level

- High

Implementation Factors

- Any changes will require decisions from senior Administration.
- Discussions with CUPE to improve the annual re-hiring and call-back process for seasonal staff.
- Balance between in-department support services and central Corporate Support Services is constantly evolving, along with the development of service level standards/targets.

5.5.5 Information Technology

Issue

The current information technology solutions appear to be insufficient to support infrastructure management business processes and information technology requirements.

Findings and Observations

- IS&T Division has experienced personnel in technology support and applications development.
- TKMMS is a tool to track time and for work orders.
- Vemax is an asset management and capital planning tool used in the Department, the Province and within the industry.
- While TKMMS provides a lot of data, it is a tool that should be utilized for information and analysis for productivity monitoring and decision-making purposes.
- Are both TKMMS and Vemax required? Can Vemax provide what is being provided with the home-grown TKMMS tool?
- Appears to be a lot of clerical manual entry. More direct entries and automation will increase efficiency and reduce manual errors.
- Calculations of seasonal/HR benefits and payments consume too much manual time during busy season.
- There appears to be different GIS applications in use among different divisions within the Department; however, we understand that these are for different purposes and are task-specific.

Potential Opportunity Areas	
✓	Business processes
✓	Outsourcing
✓	Automation
✓	Shared services
✓	Service innovation
Barriers	
	Cost/return on investment
	Transitional impacts
	Ability to implement

Implications

- Public Works is viewed as having relatively more "home-grown" software applications than other departments. There should be an opportunity to consolidate/streamline some applications.
- PeopleSoft may need to be upgraded to properly manage transactions for seasonal staff.

Benchmarking and Analysis

- Other cities have successfully used off-the-shelf software to replace a variety of manual and fragmented electronic solutions. For example, refer to the case study for Hamilton on the following page for its workforce management technology system.

Case Study: City of Hamilton – Workforce Management Technology Project

Challenge

- In 2012, the City of Hamilton embarked on an approximately $1 million project to implement a workforce management solution over a 10 month period.
- The senior management team across the city is committed to a long-term workforce technology strategy to provide the tools to support effective management of the city's workforce. The city was using a variety of manual and fragmented electronic solutions to manage its workforce.

Approach

- In 2010, an off-the-shelf workforce software (time, attendance, absence tracking, scheduling) was implemented within two divisions of the city's Public Works Department.
- The key benefits from implementing a workforce management technology solution include:
  - reduced payroll errors;
  - reduced payroll processing time (reduces manual checks, data entry);
  - improved labour reporting and documentation of legislative compliance;
  - automated scheduling;
  - deployment of staff in emergency situations;
  - real time attendance, sick absence data, and reduced unauthorized leave time; and
  - better management reports for oversight.
- The City of Hamilton's approach is corporate-wide with a phase-in to select departments/divisions.
- The total capital cost for corporate-wide implementation is projected to be $4.5 million.

Results / Potential Impact

- Since inception, a section of the Water and Wastewater Operations has experienced benefits such as:
  - improved accuracy: staff now has two fewer entry steps to get timesheet data into PeopleSoft;
  - improved reporting and information: supervisors now have access to daily "real-time" time-in-lieu and vacation balances;
  - improved accountability: forces management to sign off on daily timesheets/overtime approval – reports for the Ministry or Operator in Charge used to take staff a day to prepare and now take about three minutes; and
  - minimal manual calculations: pay entitlements that are calculated manually related to overtime and shift premiums, as well as pay adjustments due to absenteeism are now automated.
- The implementation of a centralized and standard technology solution will provide city management with detailed reports on: attendance analysis; attendance calendar; leave trends and leave hours detail; and pay code daily (absences unexcused, unscheduled shifts, sick and vacation paid and unpaid, overtime paid, unapproved overtime, etc.).

Source: City of Hamilton City Manager's Office, *Workforce Management Technology Project*, March 2012

Context for Public Works

- Public Works is challenged by utilizing a home-grown workforce management system (TKMMS), interfacing with the enterprise system (PeopleSoft), and having parts of other software solutions (Vemax). Public Works recognizes the need to go with a proven technology solution and can investigate Vemax and other potential solutions that can integrate with PeopleSoft.
- Considerable time savings and efficiencies in administrative processing can be made, and administration time could be reallocated to value added work, analysis and management reporting.

RECOMMENDATIONS

- The current IT systems employed within Public Works are insufficient to manage business processes and reporting requirements efficiently, and may be able to also function as a workforce management system. For its workforce management system, the Department should decide on continuing with its home-grown system or going to an external proven system.
- In terms of IT direction, the Department should reduce the number of home-grown applications which present relatively higher risks to the organization and ongoing development, application and support costs.
- The City of Winnipeg's Corporate Support Services Department has an IT/IS Business Case template. The intent of the business case format is to offer cost-effective solutions to assist decision-makers. Any IT solution must tie or link into the City's enterprise system, PeopleSoft.
- To improve efficiency and reduce manual administrative time in HR, Corporate Support Services should investigate the potential of a cost effective solution that integrates with PeopleSoft to accurately track HR requirements for part-time/seasonal staff.

Rationale / Benefit

- Reducing the number of home-grown applications should improve the consistency and quality of data, and enhance standardization of management reporting and analysis across the Department. Fewer applications could also lower development, application and support costs, and reduce risks inherent in having too many system interfaces.
- Utilizing the City's IT/IS Business Case template can help yield several benefits, including, but not limited to:
  - better project outcomes through the matching of project objectives and Department goals;
  - lower long-term costs by encouraging a reduction of redundant systems and/or activities;
  - decreased project risk by requiring the preparation of project impact assessments and risk mitigation plans;
  - greater probabilities of project success by requiring decision-makers to examine similar projects from other cities; and
  - increased stakeholder buy-in by requiring decision-makers to engage stakeholders and document their involvement and advice in the planning and proposal stages.

Priority

- High

Financial Impact

- Potential investment of $0.6 – $1.0 million, depending upon Department decisions and plans on priority IT investments including its workforce management system, permitting system, and performance/ management reporting system.
- Likely to be towards $1.0 million in the short-term for new systems and implementation, and declining thereafter for maintenance and further implementation and adjustments.

Timing

- Short to medium-term

Risk Level

- High

Implementation Factors

- Management decision on direction
- Business case on solutions led by IS&T with direction from Management

5.5.6 Modernizing Construction Permits

Issue

The current IT system used in the construction permits process is outdated which creates inefficiencies and delays in the permitting cycle.

Potential Opportunity Areas	
✓	Business processes
✓	Automation
✓	Potential revenue enhancement
Barriers	
■	Some investment required
■	Dedicated system support

Findings and Observations

- There is a lack of automated work flow in the existing system.
- The system cannot produce tracking and management reports.
- Manual intake, processing and issuance of permit applications.
- Paper-based forms are used (e.g. permit applications).
- Unable to enter data remotely.
- Planning, Property and Development ("PP&D") uses AMANDA software. Some coordination issues exist between Public Works and PP&D on permitting.
- Front-line staff is friendly and customer oriented, and wants to do a good job.

Implications

- Manual procedures create delays in processing time and result in duplication of effort.
- Without a system that tracks all permit related information it is difficult to track key performance indicators to support continuous process improvement.
- Customers are unable to track permits in real time or get estimates on issuance of permits.
- Freeing up manual processing time from front-line staff would enable more time for value-added analysis and enforcement activities which could help generate further revenues.
- Implementing AMANDA for cut permits is planned for 2013.

Benchmarking and Analysis

- Most cities utilize specialized IT systems for their permit processes.
- For example, Calgary uses Hansen software for permits and is currently evaluating their system and looking to move to online e-permits.
- Mississauga uses Hansen as well as Hansen/Infor, an enterprise system within the city which is also used for other areas such as 311, work orders, etc. Mississauga has changed from a manual system with clerical staff processing and approving permits to a new system with little or no input from technical staff, providing an audit trail.
- AMANDA is a permit system used in North American cities including Winnipeg, Ottawa, Vancouver, Austin (Texas) and others.
- According to the following table, other cities' (e.g., Edmonton and Ottawa) permit processing branches operated at full capacity in 2012, whereas Winnipeg's branch operated at approximately one-half capacity. If Public Works operated at 70% of full capacity, there is potential to generate approximately $240,000 in incremental annual revenues (all else equal).

Roadway Maintenance - Permits					
Fiscal 2012	**Edmonton**	**Ottawa**	**Calgary**	**Hamilton**	**Winnipeg**
Permit applications processed (A)	15,000	5,000	10,000	3,200	3,400
Permit applications that can be processed per year (i.e., capacity) (B)	15,000	5,000	n/a	n/a	6,500
Permit applications processed in year (% of capacity) (A ÷ B)	100%	100%	n/a	n/a	52%
Annual revenues for permit service ($) (C)	n/a	(1,946,000)	(7,442,000)	n/a	(714,000)
Revenue per application processed (D = C ÷ A)	n/a	(389)	(744)	n/a	(210)
Additional applications if operating at 70% capacity (E = 70% x B - A)					1,150
Additional revenue potential (D x E)					(241,500)

Note: n/a = not available
Source: KPMG Benchmarking Survey to Select Municipalities

- The above analysis assumes that revenue per application remains constant at approximately $210/permit, which is relatively low when compared to Ottawa and Calgary ($389 and $744, respectively). If Public Works operated at 70% capacity and increased permit rates to an average of $250/permit, there is potential to generate approximately $400,000 in incremental annual revenues. As noted by the Department, additional time for permit enforcement provides additional revenue opportunities.
- According to information on CSDC Systems' (developer of AMANDA) website, the City of St. Paul noted AMANDA saves perhaps 10-15 minutes per permit at the front counter, allowing them to improve customer service. The online system also can issue permits on closed days and after-hours. The City of St. Paul estimated they saved nearly 4,000 hours of work since launching their online site by having clients enter their own data and automatically approving simple permits.

Case Study: San Jose, California – Integrated Development Tracking System

Challenge

- San Jose, a city of over 900,000 people, needed a large enterprise system for handling its huge volume of building projects. The electronic system had to take over the work of the three separate systems the city was currently using for GIS, document management, and permitting, as well as incorporate the permit-tracking databases of five separate departments. The task required a complete organizational re-engineering effort.
- Building Department activity at the time when this system was contemplated (year 2000):
  - Permits: 41,000;
  - Plan reviews: 7,900;
  - Inspections: 228,000.

Approach

- The City of San Jose's Building Division, Planning Division, and Public Works Development Services worked together to prepare a detailed set of requirements for the new enterprise system, named the Integrated Development Tracking System ("IDTS"). After a long and involved selection process, one vendor was hired to build the system and another to manage the system integration effort.
- The project cost was estimated at approximately US $8.3 million.

Results / Potential Impact

- There are three main components of the IDTS project:
  - Permit System: The Permit System integrated the workflow of all departments responsible for development review into one process. Electronic data from legacy computer systems was converted to the new system so that all historical project information was maintained. This project component included integration of the Permit System with the city's Geographic Information System and Document Management Systems.
  - Inspection Request and Result Entry: This component integrated inspection requests from Building and Fire customers with the Permit database to ensure that inspectors are scheduled for construction that is ready for inspection. The new system also automated the city's current process for manually assigning and dispatching inspections based on inspector trade and availability.
  - Internet Permits: The current on-line permit system was redesigned and expanded to issue a greater number of permit types. In addition, on-line query via GIS maps now allows citizens to track projects in their neighbourhoods. Development applicants can now monitor the status of their projects through their own personal account.
- Other improvements include, but are not limited to: universal invoice and receipt documents; the capability for digital plan processing; comprehensive permitting services with digital records of current project permits and inspection notices; centralized fee collection; single property database for the city; and improved compliance.

Sources: (1) U.S. Department of Housing and Urban Development, *Electronic Permitting Systems and How to Implement Them*, 2002
(2) City of San Jose website

Context for Public Works

- The Planning, Property and Development Department already utilizes an electronic permitting system (AMANDA) which is well developed. Public Works is implementing a pilot electronic permitting system (using AMANDA) in 2013. The Department recognizes that its construction permitting processes need replacing and is considering further implementation using AMANDA.

RECOMMENDATIONS

- The Department needs to modernize its construction permit system by investing in technology required to reduce manual time, improve response time and provide better services to permit customers.
  - The Planning, Property and Development Department is involved in permitting for commercial and residential developments and has invested in a system called AMANDA which has proven to provide efficiencies. Public Works is implementing a pilot project in AMANDA in 2013. A plan should be developed for a phased-in implementation of AMANDA for construction permits.
  - The Department should update its current permit policies and procedures to maximize the benefits of a new system.
  - As part of the update, the Department should examine modest increases in permit fees, based on moving towards fees in other cities and to offset the investment in the new system which will benefit customers through better response times and electronic access.

Rationale / Benefit

- The Department has indicated that with more staff time available in permitting and less time for processing, more time will be available for enforcement and revenue collection. The Department estimates permit revenues could be increased by $200,000 annually from current levels. This does not assume modest increases in permit fees which may be introduced in parallel with improving the system for customers.
- A new permit system could integrate the workflow of all City Departments responsible for development review into one process. The system could also be integrated with GIS and document management systems.
- City inspectors could automatically be assigned and dispatched based on inspector trade and availability.
- Current on-line systems could be redesigned and expanded to increase capacity and offer a wider range of permit types.
- On-line query via GIS maps could allow citizens to track projects in their neighbourhoods, and development applicants could monitor the status of their projects through personal accounts.

Priority

- High

Financial Impact

- Investment into AMANDA would be offset from savings in manual time and efficiencies gained.
- The cost of a permit technology solution is recoverable in increased revenue opportunities in the short-term. Depending on functionality of modules, interfaces and other factors, investment in the system would likely be a few hundred thousand dollars and below $50,000 annually for licensing and maintenance fees. This should be part of the overall information technology investment recommended in S. 5.5.5.
- More time from front-line staff to generate revenues in permits.
- After initial investment, additional revenue opportunities for permits in the Department are estimated at approximately $400,000 annually (plus additional revenues if a Pavement Degradation Fee is introduced – see S. 6.4.8).

Timing

- Medium-term

Risk Level

- Medium

Implementation Factors

- Now that pilot project is underway, phase-in implementation of AMANDA for construction permits.
- IT support and training of permit staff will be required.

5.5.7 Summary of Issues, Opportunities and Recommendations

Public Works Support Services – Issues and Opportunities Summary							
Issues \ Opportunities	Business Processes	Organizational Restructuring	Outsourcing	Automation	Shared Services	Service Innovation	Potential Revenue
Strategic and Analytical Support	✓	✓		✓		✓	
311 Calls Efficiency	✓			✓	✓		
Performance Management, Standards and Measurement	✓					✓	
Sharing Resources Within the Hybrid Centralized-Decentralized Support Services Model	✓	✓			✓		
Information Technology	✓		✓	✓	✓	✓	
Modernizing Construction Permits	✓			✓			✓

Summary of Recommendations

- Strategic and Analytical Support: Public Works should consider the addition of three analyst positions – a financial analyst to fill a current vacancy, and an operational analyst and a process improvement analyst in Customer Services and Strategic Support to add to the one current research coordinator position within this Division.
- 311 Calls Efficiency: Public Works and Corporate Support Services should invest the time to find better filtering and solutions with the goal of shifting a significant portion of service requests to information requests and to reduce/eliminate duplicate requests.
- Performance Management, Standards and Measurement: Public Works should develop a performance management framework and operational performance measures across the Department and all Divisions.
- Sharing Resources Within the Hybrid Centralized-Decentralized Support Services Model: Rationalize the process for allocating seasonal staff to positions in order to reduce the amount of HR time required and to speed up the hiring/re-hiring process. Better resource sharing is needed from central Corporate Support Services or other departments to assist Public Works Human Resources during peak periods of the summer hiring process. As the hybrid model continues to evolve, explore opportunities for efficiency gains through centralization of certain standard transactional functions that are not unique to any City Department.
- Information Technology: Public Works has insufficient IT systems and a reliance on too many home-grown applications. Management should determine its direction for a workforce management system and performance management reporting and utilize the City's IT/IS business case templates for IT investment decisions.
- Modernizing Construction Permits: Modernize the Public Works permit system by phasing in the implementation of AMANDA starting in 2013, reducing manual input, and providing an opportunity to increase permit revenues.

6 Roadway Construction and Maintenance

6.1 Financial Operating Results (Traditional Method) FY 2010-2012

6.1.1 Roadway Maintenance – Streets Maintenance Division

The table on the following page summarizes the Streets Maintenance Division's financial operating results for fiscal 2010-2012.

- Total operating expenditures increased from approximately $65.6 million in fiscal 2010 to approximately $69.4 million in fiscal 2011, primarily because Streets Maintenance provided more flood related services in fiscal 2011. Total operating expenditures were approximately $65.3 million in fiscal 2012.
- FTEs increased from 329 in fiscal 2010 to 357 in fiscal 2011, with salaries and benefits increasing from approximately $22.9 million to $26.4 million. FTEs, salaries and benefits decreased slightly in fiscal 2012. Total operating expenditures/FTE are higher than other Divisions, due in large part because a significant portion of the Division's work is contracted out.
- Streets Maintenance's total operating expenditures represented approximately 39% of Public Works consolidated operating expenditures in fiscal 2012. Streets Maintenance is the largest Division within Public Works.

Streets Maintenance Division - Financial Operating Results (Traditional Method)				
$000's (unless otherwise stated)				
For the Fiscal Years Ended December 31	**2010A**	**2011A**	**2012 Preliminary Draft**	
				% of total
Streets Maintenance Division				operating
Operating expenditures				expenditures
Salaries and benefits	22,858	26,397	26,230	40.2%
Services				
Real Property Contracts-Const/Mtce	10,370	9,006	9,071	13.9%
Fleet Operating Lease	4,124	3,704	3,778	5.8%
Fleet Capital Lease	4,835	5,320	5,829	8.9%
Equipment Rental-External	10,770	14,414	8,660	13.3%
Other	5,810	4,974	5,961	9.1%
Total services	35,910	37,419	33,301	51.0%
Materials, parts and supplies	11,715	15,780	16,760	25.7%
Equipment, furniture and other purchases	30	34	28	0.0%
Recoveries				
Departmental recoveries	(2,866)	(2,713)	(4,255)	(6.5)%
Inter-fund recoveries	(3,161)	(8,219)	(9,575)	(14.7)%
Other	(491)	(1,056)	(796)	(1.2)%
Operating expenditures (before noted items)	63,994	67,641	61,693	94.5%
Debt and finance charges	(14)	26	(5)	(0.0)%
Cash to capital	-	-	-	-
Grants, transfers and other expenditures	1,666	1,697	3,599	5.5%
Total operating expenditures	65,646	69,364	65,287	100.0%
$000's/FTE calculations				
FTE	329	357	352	
Operating expenditures (before noted items)/FTE	195	189	175	
Total operating expenditures/FTE	200	194	185	
As percent of Public Works Department				
FTE	33.6%	35.2%	35.8%	
Operating expenditures (before noted items)	57.6%	53.8%	54.4%	
Total operating expenditures	39.7%	37.9%	38.6%	

Note: Noted items include debt and finance charges, cash to capital, grants, transfers and other expenditures.
Source: City of Winnipeg Public Works Department

6.1.2 Roadway Construction – Engineering Division

The following table summarizes the Engineering Division's financial operating results for fiscal 2010-2012.

- Total operating expenditures remained relatively constant over the period reviewed, ranging between approximately $3.2 million and $3.6 million. The Engineering Division provides professional services and personnel costs account for the large majority of expenses. A significant share of these personnel costs are recovered on capital projects.
- FTEs increased from 62 in fiscal 2010 to 68 in fiscal 2012, but salaries and benefits were relatively unchanged. As a result, total operating expenditures/FTE decreased from approximately $57,000/FTE in fiscal 2010 to approximately $51,000/FTE in fiscal 2012.
- Engineering's total operating expenditures represented approximately 2.1% of Public Works consolidated operating expenditures in fiscal 2012.

Engineering Division - Financial Operating Results (Traditional Method)				
$000's (unless otherwise stated)				
For the Fiscal Years Ended December 31	**2010A**	**2011A**	**2012 Preliminary Draft**	
				% of total operating expenditures
Engineering Division				
Operating expenditures				
Salaries and benefits	4,598	4,521	4,686	134.4%
Services				
Real Property Contracts-Const/Mtce	749	570	490	14.0%
Fleet Operating Lease	69	57	60	1.7%
Fleet Capital Lease	120	140	168	4.8%
Equipment Rental-External	17	29	21	0.6%
Other	564	559	658	18.9%
Total services	1,519	1,354	1,397	40.1%
Materials, parts and supplies	246	326	290	8.3%
Equipment, furniture and other purchases	35	17	26	0.7%
Recoveries				
Departmental recoveries	(60)	(49)	(5)	(0.1)%
Inter-fund recoveries	(3,318)	(3,517)	(3,158)	(90.6)%
Other	(32)	(81)	(309)	(8.9)%
Operating expenditures (before noted items)	2,987	2,572	2,927	83.9%
Debt and finance charges	-	0	-	-
Cash to capital	-	-	-	-
Grants, transfers and other expenditures	557	664	561	16.1%
Total operating expenditures	3,544	3,236	3,488	100.0%
$000's/FTE calculations				
FTE	62	68	68	
Operating expenditures (before noted items)/FTE	48	38	43	
Total operating expenditures/FTE	57	48	51	
As percent of Public Works Department				
FTE	6.3%	6.7%	6.9%	
Operating expenditures (before noted items)	2.7%	2.0%	2.6%	
Total operating expenditures	2.1%	1.8%	2.1%	

Note: Noted items include debt and finance charges, cash to capital, grants, transfers and other expenditures.
Source: City of Winnipeg Public Works Department

6.2 Operating Budgets FY 2010-2013 (Service-Based)

The following table summarizes Service-Based budgets for Roadway Construction and Maintenance. Roadway Construction and Maintenance is the largest Service Area of Public Works, and the preliminary operating budget was increased to $72.9 million in 2013 from $66.3 million in 2012, largely related to increased investment in local streets. As the largest Service Area of Public Works, Roadway Construction and Maintenance provides relatively more opportunities for potential efficiencies. Adopted operating budgets are summarized for fiscal 2010-2012, and the preliminary operating budget is summarized for fiscal 2013.

- Budgets for Regional and Local Streets Construction & Maintenance increased by approximately $5.4 million and $5.8 million, respectively, in fiscal 2013.
- Core Roadway Construction and Maintenance Services: total operating expenditures/FTE range from $328,000/FTE to $384,000/FTE, partially due to a relatively high level of contracted services expenditures.

Roadway Construction and Maintenance - Operating Budgets (Service Based)								
$000's (unless otherwise stated)								
For the Fiscal Years Ended December 31	**2010B**	**2011B**		**2012B**			**2013B**	
	Expenditure	Expenditure	Expenditure	Revenue	Net Expenditure	Expenditure	Revenue	Net Expenditure
Core Roadway Construction and Maintenance Services								
Bridge Construction & Maintenance	18,327	17,656	19,350	-	19,350	14,118	-	14,118
Regional Streets Construction & Maintenance	25,959	26,683	25,231	(22,153)	3,078	30,608	(22,264)	8,343
Local Streets Construction & Maintenance	21,727	20,702	18,936	(17,038)	1,898	24,781	(17,122)	7,658
Regional Sidewalk Construction & Maintenance	1,303	1,950	1,368	(1,608)	(240)	1,913	(1,604)	309
Local Sidewalk Construction & Maintenance	1,452	1,478	1,435	(1,070)	365	1,448	(1,072)	376
Total	**68,767**	**68,469**	**66,320**	**(41,869)**	**24,451**	**72,867**	**(42,063)**	**30,804**
FTE	179	206	202			215		
$000's/FTE	384	332	328			339		
Other Services (1)								
Regional Street Cleaning	3,778	3,354	3,380	-	3,380	3,300	-	3,300
Local Street Cleaning	3,514	3,559	3,634	-	3,634	3,649	-	3,649
Total	**7,293**	**6,913**	**7,013**	**-**	**7,013**	**6,950**	**-**	**6,950**
FTE	62	62	57			56		
$000's/FTE	118	112	123			124		
Grand Total								
Total Operating Budget	**76,060**	**75,382**	**73,333**	**(41,869)**	**31,464**	**79,816**	**(42,063)**	**37,754**
FTE	241	268	259			271		
$000's/FTE	316	282	283			295		

Source: City of Winnipeg Public Works Department

6.3 Sub-Services and Service Levels

Sub-Service: Bridge Construction and Maintenance				
Operating Cost 2012B ($ millions)	Core Ranking	Service Level Standard	Actual Service Level	City Role
Total: $19.4 *Net: $19.4*	Mandatory/ Essential Control of streets is a power of the City within *The City of Winnipeg Charter Act*	<u>Engineering – Bridge Inspection</u> If a concern exists about the condition of a bridge, the inspection frequency shall be increased as determined by the Bridge Planning and Operations Engineer to ensure the condition is monitored and a determination is made of the bridge's safety.	At standard Yes, Ongoing (e.g., Disraeli Bridge inspected 4x per year).	Delivery and Manager – Contracted
		Damages to bridges as a result of accidents or natural events shall be inspected for safety as soon as possible.	At standard Yes, immediate inspection.	
		Major bridges shall be inspected annually.	Below standard Major bridges are inspected every two years	
		Minor bridges shall be inspected every 2 years and not more than 5 years.	At standard On average every 3 years, not greater than 5 years.	
		<u>Engineering – Bridge Condition Record</u> Bridge conditions shall be updated as required. All bridge maintenance activities shall be recorded after completion of work.	At standard Information is recorded regularly and reported annually.	
		<u>Engineering – Bridge Inventory</u> The City of Winnipeg bridge inventory shall be maintained and updated on an annual basis.	At standard Inventory is added and updated on a day-to-day basis as it occurs.	
		Newly constructed bridges or changes to existing structures shall be noted in the inventory as required.	At standard Inventory is added and updated on a day-to-day basis as it occurs.	

Note: Net operating cost = operating cost – revenue
Source: Derived from information from City of Winnipeg Public Works.

Comparison to Peer City Service Levels

- In Edmonton, the city's bridge inventory is inspected and rated on a 1 year, 3 year and 5 year cycle. Inspection practices are generally similar to those of Winnipeg.
  - 1-year applies to major river crossings and major truck routes; 3-year applies to grade separations and pedestrian structures; 5-year applies to culvert systems.
- In Ottawa, damages to bridges that pose an immediate safety hazard to the users (missing or severely cracked/damaged grates/ironworks and misaligned catch basin grates) are marked as hazard within 4 hours. From the information received, Winnipeg does not set a specific time target for inspection.
  - Timelines for hard and treated bridge surfaces include: highest priority roads – 2 days (30 days for cracks); most arterials – 2-4 days (30 days for cracks); most collectors – 7 days (60-180 days for cracks).

Sub-Service: Regional and Local Streets Construction & Maintenance				
Operating Cost 2012B ($ millions)	Core Ranking	Service Level Standard	Actual Service Level	City Role
Regional Streets Construction & Maintenance: Total: $25.2 *Net: $3.1*	Mandatory/ Essential Control of streets is a power of the City within *The City of Winnipeg Charter Act*	<u>Streets Maintenance Division – Asset Management Condition Rating</u> Assessment Management Condition Ratings shall be completed for roadways and sidewalks. These ratings shall be conducted on a 3 year cycle, and more frequently if conditions warrant as determined by the Asset Management Engineer. Service level standard also applies to Local Streets Construction & Maintenance, Regional Sidewalk Construction & Maintenance, and Local Sidewalk Construction & Maintenance.	At standard Regionals Streets – annually Local Streets – every 3 years Walks (safety only) – every 5 years	Delivery and Manager – Contracted
		<u>Streets Maintenance Division – Street Inspection</u> Priority 1 streets shall be inspected weekly.	At standard	
		<u>Streets Maintenance Division – Cut Restoration</u> Completion dates for cut restorations shall be estimated on a case by case basis.	<u>Sod Cuts</u> Winter cuts – July 15th (90%) Summer cuts – October 31st (85%) <u>Pavement Cuts</u> by October 31st – (85%)	
		Where an excavation or opening is made in a paved portion of a street, the excavation shall be backfilled to within three (3") inches of the top of the existing pavement.	At standard	
		Where an excavation or opening is made in a graded roadway or adjacent roadside ditches, excavated material shall be restored to grade using a final lift of crushed stone six (6") inches in depth.	At standard	
		<u>Pot Holes Repairs (Nov 1 – March 31)</u> Priority 1 Assess priority – 1 day Repair complete – 2 days	At standard	
		Priority 2 Assess priority – 2 days Repair complete – 5 days	At standard	
		Priority 3 Assess priority – 5 days Repair complete – 10 days	At standard	
		<u>Pot Holes Repairs (Apr 1 – May 15)</u> Priority 1 Assess priority – 2 days Repair complete – 5 days	At standard	
		Priority 2 Assess priority – 2 days Repair complete – 14 days	At standard	

Sub-Service: Regional and Local Streets Construction & Maintenance				
Operating Cost 2012B ($ millions)	Core Ranking	Service Level Standard	Actual Service Level	City Role
		Priority 3 Assess priority – 5 days Repair complete – 2 months <u>Pot Holes Repairs</u> <u>(May 16 – Oct 31)</u> Priority 1 Assess priority – 2 days Repair complete – 3 days Priority 2 Assess priority – 2 days Repair complete – 5 days Priority 3 Assess priority – 2 days Repair complete – 3 months	At standard At standard At standard At standard	
Local Streets Construction & Maintenance: Total: $18.9 *Net: $1.9*	Mandatory/ Essential Control of streets is a power of the City within *The City of Winnipeg Charter Act*	<u>Streets Maintenance Division – Street Inspection</u> Priority 3 streets shall be inspected after spring and before winter (2 times per year).	At standard	Delivery and Manager – Contracted

Source: Derived from information from City of Winnipeg Public Works.

Comparison to Peer City Service Levels

Regional Streets Construction and Maintenance

- In Edmonton, pothole repair is conducted in-house and has no associated time standards as part of its policies.
  - Freeways are first priority for pothole repair, whereas arterials are second priority and collectors third.
- In Ottawa, road patrols to uphold safe and passable regional roads occur more frequently than in Winnipeg.
  - highest priority roads – 4 times per week; most arterials – 3 times per week; most major collectors – once per week.
- The target timeline for repairing hard and treated regional roads in Ottawa is more condensed than in Winnipeg.
  - highest priority roads – 2 days (30 days for cracks); most arterials – 2-4 days (30 days for cracks); most collectors – 7 days (60-180 days for cracks).
- In Mississauga, city staff repair approximately 90% of pot holes, and time standards vary depending on the type of street and surface area and depth of each hole.
  - arterials – surface area 800 sq.cm., depth 8 cm (4 days); collectors – surface area 1,000 sq.cm., depth 8 cm (7 days); downtown area streets – surface area 1,000 sq.cm., depth 8 cm (7 days); residential or local streets – surface area 1,000 sq.cm., depth 8 cm (14 days). This methodology is

consistent with Ontario's Minimum Maintenance Standards for Municipal Highways (Ontario Regulation 230/02).

- Winnipeg does not appear to have a complete set of service level standards for cut repairs. Select examples of standards from other Canadian cities (e.g., Edmonton, Ottawa, and Calgary) are listed below. This topic is also revisited in the case study entitled "Toronto, Ontario – Improvements to the Utility Cut Management Process" on page 103.
  - Target service level for completing a repair (i.e., time):
    - Edmonton: depends on road classification: arterial – 24 hours; collector II – 72 hours; residential – 7 or more days. Cut repairs generally occur within the season they are received; post-September 1, cut repairs are scheduled for the following season. Labour and supervision is supplied in-house, while equipment and material supplies are contracted.
    - Ottawa: final reinstatement shall be made within 30 days of backfilling. The permit holder has 60 days from permit issue date to begin work and 30 days upon completion of project to have final reinstatement complete.
    - Calgary: weather dependant but within one week.
  - Target service level for completing an inspection on a repair (i.e., time):
    - Edmonton: once a permit is received by an inspector, the cut should be inspected within 24-48 hours.
    - Ottawa: within 30 days following completion of a project.
    - Calgary: not outlined.
  - Target service level for the quality of a repair:
    - Hamilton (Source: City of Hamilton Streets By-Law No. 9329)
      - Cut in boulevard: "where a sodded or planted boulevard is cut, top soil to a depth of at least six inches shall be placed over the required back filling, and the sod or other planting restored to as good condition as before: but in the case of a pavement cut, the entire section of pavement shall be replaced for its full length and width, and the paving restored to as good condition as before."
      - Cut in sidewalk or vehicle approach ramp: "where a cut is made in a sidewalk or vehicle approach ramp, the entire section which is cut shall be replaced in conformity with the concrete specifications and other requirements of the City Corporation."
      - Cut in roadway: "where a cut is made in an unpaved roadway, it shall be backfilled with suitable granular material properly tamped, except the top twelve inches which shall be backfilled with crushed stone graded in size from three-eighths of an inch to dust, properly tamped; but where the cut is in an asphalt pavement, whether it is asphalt on macadam or asphalt on concrete, the pavement shall be replaced by three inches of hot-mix asphalt on an eight-inch concrete base over suitable granular material properly tamped."
      - Where any drain connections, etc., disturbed: "where a sewer or catch-basin connection or other service or facility of the City Corporation is broken or disturbed, the person in control of the work shall at once notify the Commissioner of Engineering who shall perform all necessary work of restoration at such person's expense, and where a private drain connection is broken or disturbed, such person shall at once cause the same to be repaired by a bonded sewer contractor."

Local Streets Construction and Maintenance

- In Edmonton, pothole repair is conducted in-house and has no associated time standards as part of its policies.
  - Residential or local streets are fourth priority; sidewalks and paths are fifth priority (final).
  - A quarter of the local streets network is inspected through the Road Visual Condition Index ("VCI") every year.
- In Ottawa, road patrols to uphold safe and passable local roads occur more frequently than in Winnipeg, according to these timeline standards.
  - Most minor collectors – once every 2 weeks; residential roads and lanes – once per month.

Sub-Service: Regional and Local Sidewalk Construction & Maintenance

Operating Cost 2012B ($ millions)	Core Ranking	Service Level Standard	Actual Service Level	City Role
Regional Sidewalk Construction & Maintenance: Total: $1.4 *Net:* ($0.2)	Mandatory/ Essential Control of streets is a power of the City within *The City of Winnipeg Charter Act*	Streets Maintenance Division – Sidewalks Inspection Other than condition assessment, sidewalks shall be inspected on a complaint basis when a request is received for a potential problem.	At standard	Delivery and Manager – Contracted
Local Sidewalk Construction & Maintenance: Total: $1.4 *Net: $0.4*	Mandatory/ Essential Control of streets is a power of the City within *The City of Winnipeg Charter Act*	Refer to Regional Sidewalk Construction & Maintenance	At standard	Delivery and Manager – Contracted

Source: Derived from information from City of Winnipeg Public Works.

Comparison to Peer City Service Levels

- In Edmonton, the sidewalk condition assessment collection cycle occurs at regular intervals as noted below. These standards appear more formal than Winnipeg inspection standards.
  - Residential walks – a quarter of the network is assessed every year; collector walks – assessed during odd years (i.e. 2011, 2013); arterial walks – assessed during even years (i.e., 2010, 2012).
- In Ottawa, all sidewalks and pathways are to be inspected annually in the spring prior to June 15th. These standards appear more formal than Winnipeg inspection standards.
- Sidewalk repairs in Ottawa are prioritized by damage and uphold standard timelines for resolution. These standards seem more explicit than Winnipeg's.
  - When there are vertical discontinuities or cracks of 3 cm, damaged bollards or other devices that restrict vehicle access that represent a potential hazard (public liability), the location must be identified as hazardous within 8 hours and made safe with a repair within 7 days.
  - When there is damage that impairs functions but is not a hazard (vertical discontinuities or cracks between 1.5 cm and 3 cm), the repair is scheduled into planned maintenance as practicable and prioritized based on severity.

– When there is damage that contributes to the long-term decline of the infrastructure (cracks less than 1.5 cm and spalling of the surface), the repair is identified as part of infrastructure rehabilitation programs and prioritized based on condition assessment.

Sub-Service: Regional and Local Street Cleaning				
Operating Cost 2012B ($ millions)	Core Ranking	Service Level Standard	Actual Service Level	City Role
Regional Street Cleaning: Total: $3.4 *Net: $3.4*	Essential	<u>Streets Maintenance Division – Spring Cleanup</u> All streets are to be swept once. Streets that generally have more debris than the others, such as the Regional Streets system, may be swept twice pending the results of inspection. Regional sidewalks are to be swept once. <u>Streets Maintenance Division – Summer Sweeping/ Regular Clean-Up</u> Regional streets in Downtown Square are to be flushed once a week and swept 3 times a week. Regional streets are to be swept once per week in non-downtown areas. From June to October, sidewalks in Downtown Square shall be flushed once a week.	At standard At standard At standard At standard At standard At standard	Delivery
Local Street Cleaning: Total: $3.6 *Net: $3.6*	Essential	<u>Streets Maintenance Division – Spring Cleanup</u> All streets are to be swept once. Note: Residential sidewalks are not swept. <u>Streets Maintenance Division – Back Lane Sweeping</u> Paved back lanes are to be swept once a year. Otherwise, lanes/alleys are to be swept on a complaint/ inspection basis. <u>Streets Maintenance Division – Fall Leaf Cleanup</u> This program concentrates on Priority 2 and Priority 3 streets in heavily treed areas to remove leaf debris that might clog catch basins and make driving surfaces safer. Service levels are not available for the streets. Note: No sidewalks are swept.	At standard At standard Not available	Delivery

Source: Derived from information from City of Winnipeg Public Works.

Comparison to Peer City Service Levels

- Spring cleanup kicks off at different times across jurisdictions, given weather patterns.
- Ottawa's spring cleanup is to be completed by May 31; regular street cleaning operations take place during the months of June to October, inclusively. Meanwhile, Calgary's spring cleanup begins April 15 (weather permitting) and is completed by July 1.
- Street Cleaning frequency by road classification broadly mirrors Winnipeg standards, with the exception of the highly touristed areas of Ottawa.
  - Confederation Boulevard, Byward Market, Elgin and Bank Streets (sections with restaurants and bars) are swept daily.
  - Central business area is swept 2-4 times per week.
  - Other roads: Class 2A and 2B roads – every 1-2 weeks; Class 3A and 4A roads – every 3-8 weeks.

6.4 Issues, Opportunities and Recommendations

6.4.1 Large Infrastructure Deficit

Issue

Similar to many cities, the City of Winnipeg has a large infrastructure deficit and constant funding challenges. The reality is limited revenues are available for road infrastructure, yet infrastructure is consistently the top priority issue of municipal taxpayers.

Findings and Observations

- The City's 2013 Preliminary Capital Budget highlights the infrastructure deficit and challenge.
- In 2009, the City of Winnipeg infrastructure deficit was estimated at $3.5 billion and is expected to grow by $3.9 billion over the next 10 years resulting in an expected shortfall of $7.4 billion by 2018. The largest portion is roads with a deficit approaching $300 million annually.
- Public Works has a capital plan budget for approximately $120 million in 2013, predominantly for streets, of which state of good repair is the major focus of infrastructure management.

Issue in Context

- The Canadian Federation of Municipalities and other organizations have outlined these serious challenges and issues in reports.
- Infrastructure deficits and limited fiscal revenues for roads is a pressing problem across Canada. The City of Winnipeg has increased funding to road infrastructure, and continues to press senior levels of government on this issue.
- There have been a number of City and Provincial reports on infrastructure. The latest report prepared by the Infrastructure Funding Council in May 2011 developed recommendations to support a funding strategy to address Manitoba's growing infrastructure deficit.
- The Infrastructure Funding Council stated (p. 44): "The current revenue streams available to municipalities are inadequate to tackle the infrastructure challenges. Municipalities have little room left in the existing realty tax base. They have little, if any, access to growth revenues."
- This is a top priority issue for municipal governments, outside the scope of an operational review of the Public Works Department, but very important to note because of its overarching context for a Department that constructs and maintains roads, bridges, traffic signals, parks and other infrastructure.

Potential Opportunity Areas	
✓	Business processes
✓	Organizational restructuring
✓	Automation
✓	Service innovation
✓	Future sources of new revenues which is an ongoing challenge (e.g., share of federal and/or provincial growth tax, new infrastructure programs)
Barriers	
■	Governments at all levels are under fiscal pressures
■	Complex stakeholder environment
■	Significant capital program to be managed
■	Policy changes and resource shifts may be required
■	Aging infrastructure is going to impact and increase the state of good repair backlog

Implications

- Difficult work environment when constantly trying to repair aging infrastructure and public attention is high on the state of regional and local roads.
- Without new revenue streams, the large infrastructure deficit will continue to grow.
- A "disciplined" capital program can yield efficiency; undisciplined capital works compromises state of good repair.
- Dedicated new revenue stream (1% property tax increase) for New Local Street Renewal Reserve added in 2013 Budget; consideration of a dedicated revenue stream for Regional Streets in the future.
- Preventative maintenance plan with dedicated funding should be part of the overall plan.

6.4.2 Ensuring Value for Money for Contracted Services

Issue

The Public Works Department contracts out a significant number of services, particularly in the Streets Maintenance and Engineering Divisions. A focus on good "contract management" is essential to ensure value for money for contracted out services is realized. Project management practices require updated documentation, and capital project delivery methods are limited.

Potential Opportunity Areas	
✓	Outsourcing
✓	Service innovation
Barriers	
■	Collective agreement
■	Analytical resources
■	Constrained time of project managers

Findings and Observations

- In 2012, Public Works contracted out well over $60 million in services, with the majority being construction services, maintenance products and services, and consulting engineering.

Approximate Value of Contracted Services	
Fiscal 2012 (in $ millions)	**Nearest $ millions**
Construction services	31.0
Road maintenance	13.0
Consulting engineering	9.0
Forestry and park services	6.0
Traffic	2.0
Other	0.5
Fiscal 2012 estimate	61.5

Note: Does not include snow removal hourly call list, and other services may not be in this data.
Source: Derived from Materials Management information.

- Construction contracts are predominantly based on traditional design-bid-build procurement, with the notable exception of two major P3 projects that have been recently completed by the City. A full range of project delivery methods are neither considered nor implemented (e.g., design-build, construction management at risk, alliance contracting, and hybrid models).
- In 2008, a City Audit was published which made the recommendation to revise and update the City's Draft Manual of Project Administration Practice. We understand that this recommendation is now being addressed at a corporate level with the assistance of an external contractor.

Implications

- There are efficiencies in contracting out many services, and external resources are needed for the City to fulfill its workload. The level of contracting out and value for money should be reviewed periodically by Management.
- The traditional design-bid-build contract strategy (also known as the project delivery method) is unlikely to be the most effective project delivery method for all applications.
- There may be an opportunity to bundle streets and maintenance contracts for better economies of scale, covering a focused area to increase response times, potential value, and less administrative costs of managing contracts.
- Efficiency of summer crews versus private contractors could be explored.
- The lack of comprehensive and up-to-date project management processes and procedures in the form of a Project Management Manual may lead to increased commercial risk exposure on projects through implementation of project management practices which lack effective controls or are sub-optimal relative to leading practices.

- Lack of evaluation of a full range of project delivery options in order to identify and implement the optimal project delivery method for a given project is likely to result in the City achieving sub-optimal value for money from the Department's capital projects.

Benchmarking and Analysis

- Overall, Winnipeg Public Works contracts out relatively more than most peer cities in the benchmarking survey, particularly higher for snow removal. Public Works has experience and comfort with contracting services to support and complement in-house work. Public sector organizations are challenged to continually strive to ensure value for money.
- KPMG is currently working with a number of clients on initiatives directly related to the objective of obtaining value for money from contracts. Two current examples are the City of Calgary and the Regional Municipality of Wood Buffalo.
- The City of Calgary recently undertook a contract management project as part of the Corporate Project Management Framework. The city recognized the need to improve awareness of contract management as distinct from project management – the term contract management better reflects the reality of the city's role in delivering capital projects, and highlights the fundamental importance of contract documents and the contract strategy to delivering value. One of the key findings was the need to train Project Managers in contract law so that they could better understand the contracts they are managing. The project also put emphasis on the need for Project Managers to consider the full range of contract strategies available to them, and to work together with the procurement and legal departments to develop standard forms of contract and standard general conditions that support project delivery through non-traditional procurement.
- The Regional Municipality of Wood Buffalo is currently procuring a bridge project with a new and innovative contract strategy that is a hybrid of alliance contracting and progressive design-build. The municipality has chosen this contract strategy in order to eliminate the contractual inefficiencies that can be inherent in traditional contracting due to the adversarial culture it imposes – they would rather spend the cost of these inefficiencies on contractual incentives to align the objectives of the contractor with those of the municipality and improve the chances of project success.

Alternative Service Delivery in Construction Contracting

- Many other cities across North America utilize a full range of project delivery methods and evaluate alternative options on a case-by-case basis.
- There are a range of non-financed contract strategies available to the City, including:
  - Traditional Design-Bid-Build;
  - Design-Build;
  - Progressive Design-Build;
  - Construction Management (as Agent);
  - Construction Management (at Risk); and
  - Partnering (e.g., Alliance Contracting).
- Deciding upon the most appropriate contract strategy for a given project is not straightforward – there is an element of subjectivity, but the decision will be based in large part on consideration of project risks and priorities such as:
  - In terms of risks, it is crucial to consider the extent to which it is reasonable to expect contractors to offer a fixed price, fixed duration bid without having to price excessive unknowns; it is also key to consider whether the City actually knows precisely what it wants, or if the City is likely to issue scope variations at a later date.
  - In terms of priorities, every organization wants a good quality product delivered on time and on budget, but this is to over simplify – it is key to understand the relative importance of project priorities such as:

  - Is it more important that the project is delivered by a certain date, or that it is delivered in the shortest duration possible?
  - Is cost surety more important than lowest cost?
  - How important is it that we specify exactly what the end product looks like, or is it sufficient to specify the function of the end product?

- Design-build opportunities are for construction projects; they are not readily applicable to maintenance contracts. Smaller construction firms are unlikely to have design-build capability; they need to carry design managers, have a methodology and systems in place. The difficulty of attracting larger construction firms to bid can be a constraint; however, well structured design-build opportunities in the tens of millions of dollars and upwards are likely to generate interest and competition in the market. Projects can be bundled to get to a reasonable threshold for design-build alternative delivery. Design-build projects work best when there is scope for innovation, or in other words, where there is a range of possible design solutions, (e.g., a bridge or bus corridor or interchange and associated road work and facilities).
- The value of design-build comes from the fact that the contractor doesn't have to follow every aspect of a prescriptive and detailed design. They have control over the design and sequencing of the works and can leverage their supply chain (i.e., subcontractors, designers and suppliers) to deliver an end product that meets the performance and technical requirements at a lower cost and within a shorter time frame. Use of design-build also reduces the resource demands on the City, as it is the contractor who must procure and manage the design and deal with design issues through construction.
- Use of design-build is perhaps the most obvious opportunity in terms of non-traditional contracting. Many large projects are procured this way, either as stand-alone design-build projects, or within the context of a P3 framework, but that does not mean that this contract strategy is not suited to smaller projects, and it is notable that design-build is the preferred contract strategy in many jurisdictions for delivering road construction projects, as it enables the client to deliver value by transferring risk ownership.
  - The key to risk transfer is that a risk should be transferred to the party that is better able to manage that risk, and in this way the cost of risk transfer should, in theory, be lower than the cost of retaining and managing the risk. By transferring design risk to the contractor, the contractor is able to specify design details that are quicker, cheaper and safer to build, but which still meet the project requirements.
  - To really take advantage of this concept, it is necessary to understand and be able to apply the concept of performance specification – the City pays a premium to own the design (i.e., for being able to specify every last detail of how the works should be constructed), so if there are problems with that design, the contractor will request a contract variation for extension of time and cost. If the requirements of the contractor can be specified at a higher level (i.e., what they need to achieve rather than how they are to achieve it), then the design risk shifts to the contractor, and surety of time and cost will increase. A compromise is to develop the design to a concept or preliminary level before entering into a design-build agreement – this is known as a progressive design-build.
- The other key benefit of the design-build contract strategy is the concept of fast-tracking (i.e., overlapping design and construction activities such that the design is produced as it is required on the job site). This is difficult to achieve unless responsibility for both design and construction is with one party. There is also the added benefit of a reduced workload for Project Managers with design-build as there is only one contract, and this is a fixed price lump sum contract which requires relatively little administration.
- Bundling of contracts is used in many jurisdictions to improve overall value – this is achieved through economies of scale, reduced contract management administrative workload, and by combining commercially attractive projects with less attractive opportunities.

- In terms of getting the best value from a Request for Proposal ("RFP") process, the initial approach to the private sector is very important – engage the private sector for dialogue on how they may be able to best help the City in lowering overall costs and/or augmenting service before issuing a bid/proposal. Advance work before a RFP may engage the private sector in helping the City get better potential value for money. There may be certain ways or ideas that make sense and could be a win-win for both parties. The City should carefully consider the type of contract structure (e.g., scope, scale, terms, duration) that achieves the results it is expecting.
- The City recognizes that private contractors are responding to meeting City terms and conditions. The terms and conditions in the City's *General Conditions for Supply and Services* such as indemnity and liability risk and responsibility, warranty work, liquidation damages and other clauses resulting in more risk, and consequently some costs, which are built into pricing. The requirement for commercial general liability insurance and performance bonds also has associated costs, and factors into pricing. These types of terms and conditions are standard in city contracts; however, the level and extent should be commensurate and appropriate to the service and contract being delivered. Onerous or excess coverage effectively transfers more risk and cost to private contractors. Materials Management and Risk Management has expertise to deal with these issues in consultation with the Department and Legal.
- To deliver a project successfully, the Project Manager should be experienced in the project delivery method employed so as to understand the balance of risk transfer and be able to manage the project accordingly, and requires support from procurement (i.e., Materials Management, Risk Management, and Legal) in terms of an approved standard Form of Contract and modified Standard General Conditions ("SGCs").

Case Study: Kansas City, Missouri – Shift to More Design-Build

Challenge

- Kansas City, Missouri is the heart of the Midwest U.S. with a city population of approximately 500,000 at the centre of a metropolitan area of over 2 million. Kansas City has an approximately $20 million annual budget to maintain local streets and monitors approximately 6,200 lane-miles of roadways.
- In 2004, the City Charter established the ability for alternative construction delivery. Public works staff had no experience with roadway design-build projects.
- In 2010, the City Council passed a resolution to fund $33 million of street reconstruction with waterline replacements and identified 12 streets to reconstruct.

Approach

- Public works determined design-build could be a good option to meet the desired construction timeframe.
- The city split projects into two separate request for proposals, and developed:
  - its general conditions and single step procurement process;
  - defined work for each project;
  - engineering estimates;
  - technical requirements and specifications; and
  - a selection and scoring system.
- A consultant assisted the city staff and scoring was completed by a committee. Projects were awarded and had to be approved by ordinance, which was fast-tracked. A post-bid forum was held to provide feedback and respond to questions.
- Lessons learned and feedback went into the next design-build package for four more street reconstruction projects. This included: clarifications on scoring; further right-of-way details; changes to specifications including pavement type choice on all projects; and other changes.

Results / Potential Impact

- The city feels the design-build program is a total success. It shortens the typical design-bid-build timeline by months, allows for additional improvements to be done within or under budget, reduces conflicts between design and construction, and decreases the number of change orders and schedule delays.
- Detailed right-of-way information allows design-build teams to understand the "sand box" to work within.
- The program received an APWA Management and Innovation Award.

Source: Transportation Engineers Association of Missouri, *Innovative Road Maintenance Strategy: A Proven Direction for Kansas City*

Context for Public Works

- These were not large-scale projects, rather fairly standard street reconstruction projects. While the city team did not have the initial design-build project management experience, they gained experience through knowledge transfer and experience in going through the first series of projects. The end result is that street reconstruction projects were done under budget and in significantly less time.
- This type of approach may help enable more projects to be done faster under the Local Street Renewal program approved in the 2013 Budget along with select regional street projects. Each project or a package of projects should be looked at case-by-case to see if design-build, typical design-bid-build, or other alternative approaches are suited to the City's needs and objectives.

RECOMMENDATIONS

- The Department has experienced Project Managers and is well versed and capable in managing traditional construction contracts and measuring supplies and services. To build on this capability and encourage innovation and value for money, we recommend expanding contract management capabilities with a focus on maximizing overall value for money. Associated actions include:
  - Pending adoption of the updated Project Management Manual being undertaken at a corporate level, the Department should take ownership of ensuring that an updated Project Management Manual and complementary materials are in place for Public Works projects, and that it reflects leading practices in project management.
  - Ensure that the Project Management Manual incorporates a requirement to evaluate project delivery methods prior to embarking on any given contract strategy.
  - Develop guidance/training materials for Project Managers and other staff to raise awareness of the availability of other project delivery methods, and their key features.
  - An exercise should be undertaken to help the Department develop a framework for contract strategy evaluation.
  - Contract management skills of Project Managers should be evaluated.
  - Forms of Contract and Standard General Conditions should be developed for non-traditional contract strategies starting with design-builds – this could be a corporate initiative.
  - A pilot project should be delivered for each new contract strategy implemented, starting with a design-build with outside support as necessary. Lessons learned can be captured from pilot projects and incorporated into future projects.
  - The Department should be provided flexibility to select and bundle contracts together for procurement.

Rationale / Benefit

- Better value procurement through evaluation and selection of the most appropriate project delivery method.
- Evaluation of the contract management skills of Project Managers will help determine whether there is an opportunity to improve their understanding of contract law and ability to effectively manage contracts to deliver value, ensure compliance with terms and not leave money on the table.
- Forms of Contract and Standard General Conditions for non-traditional contract strategies would give Winnipeg the necessary legal and procurement tools to deliver a wider range of contract strategies and ultimately improve value to the City.
- A framework for contract strategy evaluation would help chose the most appropriate contract strategy for each project.
- Where bundling of contracts is appropriate, it could reduce City efforts to manage and administer contracts as well as deliver a better overall price through economies of scale.

Priority

- High

Financial Impact

- Targeting a potential $1.2 million reduction in annual contracting costs from the current base should be achievable by improving the way in which contracts are managed through targeted effort.
- This represents only 2% from the overall level of contracted services. Some types of contracts are more likely to have the potential for higher relative savings, while others are standard and likely to remain close to the same.

Timing

- Short to long-term

Risk Level

- High

Implementation Factors

- Directional support from Council.
- Completion of the updated Project Management Manual and associated materials.
- Public Works, Materials Management and Legal support and resources to develop Forms of Contract and modifications to Standard General Conditions.
- Resources to support pilot projects for new project delivery methods.
- It can be difficult to quantify savings as each project is unique. Sometimes non-cost factors such as timing, minimal disruption and delivery ahead of schedule are more important.

6.4.3 Fleet Management Costs and Utilization

Issue

Across the Department and Divisions, questions were raised about fleet management costs, equipment utilization, level of service availability, and turnaround times.

Potential Opportunity Areas	
✓	Business processes
✓	Service innovation, better rates
Barriers	
■	WFMA is a special operating agency for all City Departments except Police, Fire and Transit. Would need to negotiate a new deal and perhaps accept lower annual dividends to the City as a whole.

Findings and Observations

- Fleet management represents a substantial annual cost for Public Works, estimated around $25 million in 2012. This represents 15% of Public Works' total operating budget and a higher proportion of operating costs in the Streets Division in particular.
- Public Works represents over one-half of the Winnipeg Fleet Management Agency's ("WFMA") business (special operating agency of the City).
- Public Works has a large fleet of approximately 1,000 units (vehicles and specialty equipment).
- Public Works does not receive invoices detailing work from WFMA.
- A Traffic Signals Branch Performance Audit completed by the City Audit Department in 2010 noted potentially available dollars with Department attention to managing, processing and recovering Manitoba Public Insurance ("MPI") damage claims. As fleet equipment is expected to be a main source of damage claims, along with traffic signals, this represents potential dollars that are not being fully recovered by Public Works.

Implications

- Time delays in repairs and slow turnaround times result in inefficiencies and sub-optimal asset utilization and increased operating costs for Public Works.
- There may be opportunities for significant cost savings to the Department from better capital and operating lease rates and effective asset utilization with WFMA.
- As the largest customer of WFMA, Public Works should expect and demand transparency and accountability to the substantial fleet costs it pays annually.
- A formalized service level agreement may be necessary.

Benchmarking and Analysis

- Overall, Edmonton's and Calgary's streets maintenance fleets are ready for work or in use approximately 80% and 90% of the time, respectively. A comparable figure was not available for Winnipeg.

- The following table summarizes the approximate Public Works fleet profile in Roadway Maintenance only (i.e., this does not include fleet units for snow removal, parks and forestry, etc.).

Roadway Maintenance - Approximate Public Works Fleet Profile			
	City Owned	**Hired**	**Total**
Units	(1)	(2)	
Truck Pick-Up 6000 GVW 4WD	51	-	51
Con Road Patcher Self Propelled	6	-	6
Ind Tractor Wheeled Loader 180 HP 4WD (3)	7	7	14
Body Cement Mixer 8 Cubic Yards	8	-	8
Specialty Street Sweepers 3 and 4 Wheel (4)	7	Varies	7
Planer	1	-	1
Grader	14	-	14
Asphalt Transporters	3	-	3
Mainline Paver (5)	2	-	2
Chipsealer	1	-	1
Tandems	30	12	42
Other (6)	24	15	39
Total	154	34+	188+

Notes: (1) Refers to equipment that Public Works leases from Winnipeg Fleet Management Agency.
(2) Refers to hired hourly equipment.
(3) Hired: Includes 7 loaders with breakers.
(4) Hired: 32 sweepers are hired for spring and fall; 6 are used in regular sweeping; 2 are used in Road Construction - 1 for cold planing, and 1 for chip-seal.
(5) City-owned: Includes 1 large and 1 small.
(6) Other includes mowers, drotts, water trucks, truck/air compressors, rollers, joint sealers, etc.
Source: Derived from information from City of Winnipeg Public Works.

- As per note (4) above, Public Works uses hired hourly equipment for the majority of its cleanup activities. Other peer cities utilize contracted equipment as well. For example, in Ottawa, approximately three-quarters of the units used for the city's 2013 spring sweeping program are expected to be leased or contracted. In Edmonton, approximately one-half of the city's streets inventory is contracted out for spring cleanup, including 20-30 mechanical street sweepers.
- Detailed information is not available on fleet costs and utilization. With fleet equipment being the major expenditure category for the Department outside of personnel costs, fleet charges and costs should be further investigated. With a monopoly position on fleet acquisition, disposal, insurance and licensing for all City Departments and for all Departments except Police, Fire, and Transit for fleet maintenance services, WFMA is not subject to market competition. They do set repair shop rates based on their assessment of market rates. WFMA sets the price for all leases, fuel and other services. However, City Departments are price takers on all fleet services. Some element of competition for certain types of fleet equipment and services may help improve rates and customer service for Public Works.
- Anecdotal comments and informal comparison with local private sector rates for basic light duty trucks indicate the WFMA rates for light and medium-duty trucks may be somewhat higher than market.
- Departments also pay a fuel surcharge to WFMA and are limited to fuelling at certain locations, which can lead to inefficiencies in logistics and effective time use of vehicle operations. Also, maintenance and repairs require extra time and cost to transport vehicles to WFMA facilities as well as employee downtime waiting for a vehicle.
- There was a large discrepancy in annual unit costs for vehicles and heavy equipment across the benchmark group, large enough to render the data non-meaningful. Several reasons may account for the variance, including but not limited to the following:

- Some cities may record only operating costs, whereas others may include both operating and capital costs. Cities may also differ in how they record operating costs. For example, some may record only costs such as fuel and basic maintenance, whereas others may also include large repairs and certain corporate expenses.
- When unit costs for two separate units of the same type are being examined (e.g., two similar graders), several characteristics of the units would have to be the same in order to have a proper comparison (e.g., same make, model and age, similar condition and maintenance programs, etc.). This type of information was not available from other cities during the Review.
- On average, Public Works pays total annual lease costs of approximately $7,800 to WFMA for a medium-duty pick-up truck. However, a breakdown of model, age, etc. was not available to enable direct comparisons between peer cities.

- Better lease rates and effective asset utilization are only two ways for the Department to realize fleet cost savings. Under a rebuild program, certain types of equipment that has reached or exceeded replacement criteria could be rebuilt to like-new condition for considerably less than the cost of purchasing new equipment.
- Another area is managing and ensuring full recovery of MPI claims which may be in the low hundreds of thousands of dollars annually.
- The Department could conduct full usage assessments to reduce fleet size. Other considerations in working with WFMA could include adjusting age criterion for certain classes of equipment, policy controls for equipment replacement, and better reporting required from WFMA.

Comparison of City of Winnipeg Fleet Management Agency and Province of Manitoba Vehicle and Equipment Management Agency

- In 1992, the Province of Manitoba established the first special operating agency for fleet services at a provincial level in Canada. The provincial agency primarily provided light duty vehicles and equipment services, adding ambulance in 2001 and radio services in 2003. The provincial agency provides an interesting model for comparison to the City's fleet agency, as described below.
- Effective 2009, the Fleet Vehicles Agency and the Mechanical Equipment Services branch within the Province's Transportation Department were augmented in the Province of Manitoba Vehicle and Equipment Management Agency ("VEMA"). The expanded agency combines the acquisition, management and disposal of both light duty and heavy duty vehicles and equipment. VEMA is financed through the Special Operating Agencies Financing Authority, which holds title to VEMA's assets, provides financing for operations, and is responsible for liabilities.
- VEMA's fleet consists of over 5,300 units, including light duty vehicles and equipment (56%), heavy duty vehicles and equipment (39%), and other (5%). VEMA has a total of 205 FTEs in 2011/12.
- VEMA reports on a number of financial indicators and operational statistics. In its 2011/12 Annual Report, VEMA indicated that the average purchase price for light duty vehicles was approximately $29,800, and average purchase price for heavy vehicles was approximately $76,700. It reports on its annual acquisitions and disposals by category, fuel costs, and utilization.
- The Department of Infrastructure and Transportation is the largest customer of VEMA, followed by the Department of Conservation and Health-Emergency Services.
- Winnipeg Fleet Management Agency commenced operations as a Special Operating Agency of the City of Winnipeg in 2003. Previously, fleet was the Equipment and Materials Operations of the Public Works Department. WFMA averages a fleet of some 1,700 vehicles. Staffing is approximately 120 FTEs. WFMA has successfully reduced the overall size of its fleet and increased standardization.
- WFMA has two maintenance facilities, 1 fabrication shop and 6 fuelling stations across the city. Approximately 42% of units are light duty vehicles, 16% are heavy duty trucks, 18% is specialty equipment, and 23% is other equipment.

- WFMA appears to lack performance measurement, and does not publicly report on the types of operational indicators that VEMA reports on. The 2010 Audit Report on WFMA noted the lack of performance measurement. The IT system appears to be lacking in that Public Works is not able to receive proper invoices and reports providing a breakdown of fleet maintenance services rendered to the Department, WFMA's largest customer.
- A comparison of key financial information between WFMA and VEMA is outlined on the following table. VEMA has approximately double the revenues of WFMA but its annual surplus in fiscal 2011/12 of $3.7 million (less a $2.5 million transfer to the Province) was comparable to WFMA ($3.3 million). Accumulated surpluses and retained earnings for WFMA were over $20 million after fiscal 2011 compared to $27 million for VEMA in fiscal 2011/12.

Comparison of Provincial and City Fleet Management Agencies Financial Information

$ millions, rounded For the fiscal year ended	City of Winnipeg Fleet Management Agency (Special Operating Agency) December 31, 2011	Province of Manitoba Vehicle and Equipment Management Agency (Special Operating Agency) March 31, 2012
Revenues		
Fleet leases/utilization	24.2	49.9
Fuel sales	8.7	22.8
Other	10.7	15.1
Total revenues	43.6	87.8
Expenses		
Salaries and benefits	8.2	9.1
Amortization	12.2	19.5
Supplies, services and other	19.9	55.5
Total expenses	40.3	84.1
Surplus	3.3	3.7
Transfers to the Province during the year		2.5
Accumulated surplus, end of year	20.7	27.5

Source: Derived from City of Winnipeg Fleet Management Agency financial statements for fiscal 2011 and VEMA 2011/12 Annual Report.

RECOMMENDATIONS

- Public Works is the largest customer of the Winnipeg Fleet Management Agency and has concerns about lease rates and service received from WFMA as its primary customer.
- Public Works Management and WFMA Management to negotiate a service level agreement and both work towards a material reduction in fleet costs to Public Works through a combination of: better rates on certain types of equipment; better utilization within the Department; controlling fuel costs; full recovery of MPI claims; a rebuild program; exploring flexibility and competitive options for certain types of services; and other means.
- The Department should target a reduction of at least 3-4% from current annual fleet costs of $25 million annually, equating to approximately $750,000 to $1,000,000 annually.

Rationale / Benefit

- Direct cost savings should potentially approach $1 million.
- Better fleet utilization.
- Controlling fuel costs and reducing vehicle idle time.
- A two-way commitment to reduce fleet costs.
- Better working relationship between Public Works and WFMA.
- A reduction in significant direct time spent by Public Works Streets Maintenance Division staff managing WFMA related issues.
- As its largest customer, Public Works should demand accountability and transparency from WFMA in services provided and value for money.

Priority

- High

Financial Impact

- Target savings of $750,000 to $1,000,000 from current annual costs through a combination of: better rates and services from WFMA; controlling fuel costs; improved management of MPI claims recoveries; a rebuild program; exploring flexibility and competitive options for certain types of services; and better utilization of fleet requirements.

Timing

- Short to medium-term

Risk Level

- Medium

Implementation Factors

- Commitment to reducing overall fleet costs
- Negotiate arrangement and/or new service level agreement between Public Works and WFMA.
- Possibly allow for some competition with WFMA for certain types of equipment if VEMA or the private sector can provide significantly better rates and service. This would require policy changes and Council and Administration approval.

6.4.4 Asset Management Framework and Standards

Issue

Asset management ("AM") is the practice of managing capital assets over their lifecycle to minimize the total cost of achieving specified service levels. The City has made progress towards development of an AM program, but still has much work to do before real benefits can be delivered in terms of being able to make truly informed decisions that deliver demonstrable value to the City.

Potential Opportunity Areas	
✓	Business processes
✓	Organizational restructuring
✓	Automation
✓	Service innovation
Barriers	
■	Training and education
■	Ownership of the responsibility to provide Council with the necessary information to determine service levels
■	Coordination between divisions and departments

Findings and Observations

- There is broad support for further developing the AM program.
- Council directed or sanctioned service levels are not established across Public Works.
- Despite work to date, there is inconsistency across the Department in terms of investment prioritization, inventory management, business cases and investment planning.
- AM is a corporate initiative; however, the interface and integration of Public Works projects with Water and Waste is not currently formalized in a way which ensures coordination across the asset base.
- Public Works and its Streets Maintenance, Engineering, Transportation, and Parks and Open Space Divisions are relatively advanced in the understanding of AM.
- There is no commitment to achieve certification to PAS 55 (or the anticipated ISO 55001), due to the perceived value of certification versus broad compliance with asset management principles.
- There is no direct link between an increased asset inventory (e.g., a new road) and maintenance funding.
- The full level of funding required to maintain the asset base at current service levels is not widely known or acknowledged.

Implications

- Currently, there is an expectation that Council should determine the service levels that the Department is expected to meet. In order for Council to make service level decisions, the Department must first provide Council with the necessary information. This is a function of asset management; it is intended to inform strategic direction by identifying the full lifecycle cost of delivering services to a range of alternative service levels over the lifecycle of the asset base.
- The current worldwide industry standard for AM is PAS 55, expected to be replaced by ISO 55001 in late 2013. The maturity of the Department's AM function can be monitored and reported against this standard, with or without the cost of certification, and this would improve confidence levels in the AM outputs and decision making process.
- Closing the infrastructure deficit is necessary to reduce the growing liability to the City which in 2009 was estimated at $3.5 billion, but this is likely to require investment in the short to medium term. To obtain support, complex issues need to be clearly communicated and credible – this cannot be achieved unless there is total confidence in the City's AM program.
- The Department continually makes decisions regarding the technical solutions adopted, and how and when to invest in maintaining the asset base. These decisions need to be identified and challenged with rigour to ensure that they result in the most cost-effective solutions over the long term.

- The impact of a deteriorating asset base which increasingly fails to meet the growing and evolving needs of its citizens is ultimately a reduction in the City's competitiveness.
- Public support depends on a clear communication of the importance and implications of asset management. Metrics and communication on an appropriate level are instrumental in receiving approval and endorsement for further development.

Benchmarking and Analysis

- The City of Calgary has a Corporate Asset Management Program that is widely acknowledged as one of the most well developed of major Canadian cities. As an example, the program is able to demonstrate that current levels of annualized funding for roads is less than half that which is required as a long term average – this is powerful information only because it is based on a mature asset management framework that has the confidence of senior management. In a recent example, Calgary's Parks Department received public support from residents for their plan to close a community park instead of upgrading it upon presenting a full lifecycle plan and cost figure.
- The Ontario government fully recognizes the importance of asset management, and now requires any municipality seeking provincial capital funding to prepare a detailed asset management plan, and to show how the proposed project fits within that plan. These plans are required to include an information strategy, financial long-term planning and AM decision capability.
- The City of Hamilton has implemented asset management across different asset classes, including bridges, pavement, facilities and water and wastewater. Hamilton has developed communications around the state and replacement cost of infrastructure in relation to the number of households and has secured support from Hamilton City Council in progressing AM practices.
- Service Nova Scotia and Municipal Relations have developed a Life Cycle Costing Analysis Tool that is available to all and incorporates life cycle costs into capital investment decisions. The integration of operation and maintenance costs in the project decision reinforces the link between operating and maintenance budgets and capital budgets, and strengthens the case for long-term funding commitments.

RECOMMENDATIONS

- With respect to further development of the Asset Management Program Initiative, we recommend the following:
  - Follow the principles and guidance of PAS 55 or upcoming ISO 55001 in order to develop the AM maturity at both a corporate and departmental level.
  - Encourage corporate assessment and reporting on the level of asset management maturity to Council to raise confidence in the outputs of asset management.
  - Continue efforts to integrate condition assessment, planned maintenance and capital investment within the Department as well as between Public Works and Water and Waste.
  - Ensure Council has the necessary AM outputs in terms of the cost of achieving a range of service levels across the Department's services. Once Council has been provided with the information necessary to make informed decisions, seek a service level directive and associated budget.
  - Translate AM outputs into metrics that are meaningful to the public, expressed by household, property or taxpayer. Demonstrate long-term impacts and asset service scenarios through appropriate communication.
  - Continually seek to evaluate new and alternative technical and technological solutions to improve the value of achieving Council mandated service levels.

Rationale / Benefit

- Prioritization of capital projects based on lifecycle cost information and rigorous analysis. Better information/ management will enable the City to better prioritize projects and coordinate investment.
- Improved Council confidence in Public Works and in the AM program in particular. Reporting to Council on AM maturity will help build trust and raise confidence in the outputs of the AM program. This confidence and endorsement is vitally important if the infrastructure deficit is to be tackled.
- Acknowledgement of the true lifecycle cost of achieving a defined service level.
- Transparent decision-making based on lifecycle cost evaluation. Transparency in decision making will improve as decisions are based on robust and rational analysis of quality information.
- Standardization of business processes, policies and procedures around asset management.
- Reduced overall cost of asset ownership; improved taxpayer value.
- Better allocation of scarce financial resources based on robust risk management principles.
- Clear service levels will drive accountability and alignment of the City's objectives with its expenditure.

Priority

- High

Financial Impact

- Ultimately asset management enables better informed decisions to reduce the overall lifecycle cost of infrastructure spending. The anticipated cost savings are therefore unlikely to be delivered in the short term.
- For illustration purposes only: at current annual levels of approximately $100 million for street projects (2013 Preliminary Capital Budget), every 1% improvement in lifecycle cost effectiveness would represent an average annual saving of approximately $1 million annually.

Timing

- The recommendation should be incorporated into the existing AM initiative at this stage.
- Long-term

Risk Level

- High

Implementation Factors

- Asset management is a corporate initiative; decisions may not be within the Department's control.
- Reducing the infrastructure deficit (and thus overall liability) will require incremental funding in the short, medium and long-term, which is largely dependent upon commitments from senior levels of government.

6.4.5 Experienced Project Managers and Engineers

Issue

Project management and engineering resources are stretched, and recruitment, retention and succession planning are particular issues in the Department.

Potential Opportunity Areas	
✓	Business processes
✓	Adding some more project managers and engineers
Barriers	
	Recruiting and retaining experienced Project Managers
	Availability of mentors with time to participate in EIT program
	Competition with the private sector for Engineers and Project Managers

Findings and Observations

- Public Works has a number of experienced engineers and project managers dedicated to serving the City, but there is a trend towards a less experienced staff overall as relatively more junior resources replace experienced engineers taking retirement. There is a gap at mid-experience level which creates succession planning issues.
- Project management resources are stretched with current number of capital projects, particularly with the planned local roads initiative, which may increase project risks.
- The requirement for a dedicated project manager for projects over $10 million does not necessarily ensure that resources are most efficiently deployed – risk is not just a function of project value.
- The Engineering Division is finding it harder to recruit experienced project managers and engineers. Some project managers may be leading larger, complex projects because of resource limitations before they are fully ready.
- There is no formal Engineer-in-Training ("EIT") program to attract and train engineering graduates.

Implications

- Efficiency of project planning and delivery has direct impact on cost of delivery and value for money; effective project management is a key imperative.
- Project Manager resources could get burned out without more support.
- Project risk is increased to the City without adequate Project Manager resources – in terms of both time and experience – and this may ultimately lead to rising costs and delayed schedules.
- The experience and ability of a Project Manager should be matched to the complexity of the project – and complexity is a function of a number of factors, generally including the nature of the project, the cost, time available to complete the project, and the risk profile. Allocation of project management resources purely on the basis of project value may lead to under-staffing on other complex projects.
- If a project is under-staffed, either in terms of the Project Manager's experience and capability, or the time that the Project Manager is able to spend on the project, risk to the City may be significantly impacted. This increase in risk may manifest itself in any number of areas, including poor project planning, inadequate contract supervision, avoidable cost, completion delays, and increased claims.
- To a certain extent, experience and capability can mitigate organizational weakness in terms of established policy, process and procedure. The less experienced the project management team, the more essential it is to have comprehensive, well-defined and up-to-date policies, processes and procedures to form and guide project management practice.

Benchmarking and Analysis

- Public Works currently has eight Project Managers (including project management from management staff for major projects) with project managers overseeing several different projects.

- A Project Manager does not necessarily need to be an Engineer. A Professional Engineer ("P.Eng.") does give a level of assurance, but there are many excellent Project Managers with alternative qualifications such as Project Management Professional ("PMP"), combined with years of solid experience. The City also has a substantial in-house design function, for example, which needs professionally qualified Engineers.
- The lack of an EIT program is recognized as an issue that needs to be addressed. A key reason for Public Works currently not having an EIT program is the fact that such a program requires mentors – who are already "overstretched" to invest time.
- A feature of successful EIT Programs in other municipalities is the concept of rotation between departments, so that EITs get a broad project experience across all areas of municipal infrastructure (roads, buildings, water and waste, etc.). The City of Calgary has implemented this model and provides a good example. Such an initiative does require corporate support to co-ordinate, but adds an extra dimension to the EIT program to attract recent graduates. There is a possibility to leverage the existing EIT program operated by the Water and Waste Department to implement a corporate program.
- Right across Canada, Project Managers and Engineers are in high demand, and the City cannot compete with the private sector in terms of financial compensation. Therefore, attracting and retaining talent is a challenge, and other measures outside compensation become part of the package to attract and retain talent.
- The City could draw from talent development and retention practices in other organizations. Most major private engineering and construction firms (as well as the City's Water and Waste Department) have Engineer-in-Training programs to provide engineering graduates with the structured training, mentoring and work experience necessary to enable them to become professionally qualified within the first four years of graduation. This is one of the key factors influencing engineering graduates in their choice of employer. Historically, municipalities have been a well-respected training ground for Engineers, as they provide attractive and challenging opportunities across a diverse range of complex engineering projects, and often Engineers who joined as graduates have chosen to stay in the municipal work environment for their careers.
- It is more difficult to attract experienced and qualified professional Engineers from the private sector to work for a municipality due to differences in organizational culture as well as salary expectations, but those that have developed their careers in a municipal or government organization often become attached to the notion of public service and will prefer to remain. For these reasons, it is important to establish an EIT program or, perhaps more efficiently, leverage and coordinate with Water and Waste's EIT program.

RECOMMENDATIONS

- A strategy should be developed in conjunction with Human Resources to address competition with the private sector and other levels of government for Engineers and Project Managers. The Department's Project Managers are stretched and covering several projects per manager. A few additional Project Managers/Engineers should be a necessary investment in the short-term and into the long-term. Related recommended actions include:
  - The existing requirement for all projects over $10 million to have a dedicated Project Manager should be revisited.
  - Under-investment in training, recruitment and retention of Project Managers will lead to a disproportionate cost in terms of project performance – this is a false economy and funding models that ensure an adequate project management capability should be explored.
  - Implement an EIT program in Public Works aligned with the existing program in Water and Waste.

Rationale / Benefit

- More effective management of project risk.
- Improved retention of staff.
- Improved morale.
- More Project Manager time available for exploring a full range of alternative project delivery methods.

Priority

- High

Financial Impact

- This issue is more complex than a simple $ or % saving. The capability of the Project Manager can make the difference between a successful project and one that fails.
- Additional Project Managers would require a small investment; however, these are recoverable project costs that are part of the associated capital budget. Additional Project Managers should not add significant expenses to the operating budget.

Timing

- Short to long-term

Risk Level

- High

Implementation Factors

- Would-be mentors may struggle finding time to support EITs.
- Recognition through funding of the need to invest in project management capability.
- Recruitment efforts to add in at least two Project Managers/ Engineers in 2013-2014.

6.4.6 Reorganization of Streets Maintenance Division Structure

Issue

Explore the current Streets Maintenance Division structure and efficiency of in-house Central Services versus in-house Area crews versus contractors for a range of services.

Potential Opportunity Areas	
✓	Business processes
✓	Outsourcing, internal competition
✓	Service innovation
Barriers	
■	Collective agreement
■	Traditional ways and structure within Areas

Findings and Observations

- The City retains in-house capacity in Central Services and in the three Areas (north, south, and east) to perform specialized cuts and restoration, as well as minor repairs to roads and other construction services.
- The time keeping maintenance management system ("TKMMS") or Vemax should be utilized to track and analyze time and materials, for productivity measurement and decision-making purposes.
- There is a lack of analysis on efficiency of different crews for different types of jobs.
- There is an opportunity to move to more self-managed work crews.
- Areas have a traditional way of doing things.
- The repair and maintenance of concrete roadways is a quite a specialist activity compared to the repair of asphalt – the private sector may not be structured to provide this service in a cost-effective manner.

Implications

- Healthy internal competitions for crew work could lead to increased overall efficiency and improved cost recovery for jobs and ability to expand number of jobs completed.
- Opportunity to flatten structure and improve clarity on responsibilities of foremen, supervisors and crews.
- Increased clarity on services better performed by Central Services versus Area crews.
- A study could be conducted to evaluate the options, costs and risks for achieving the efficient balance of work between Central Services, Area crews and contractors. This should include engagement with the contracting community on issues such as type of contract, pricing structure, duration of contract, etc.

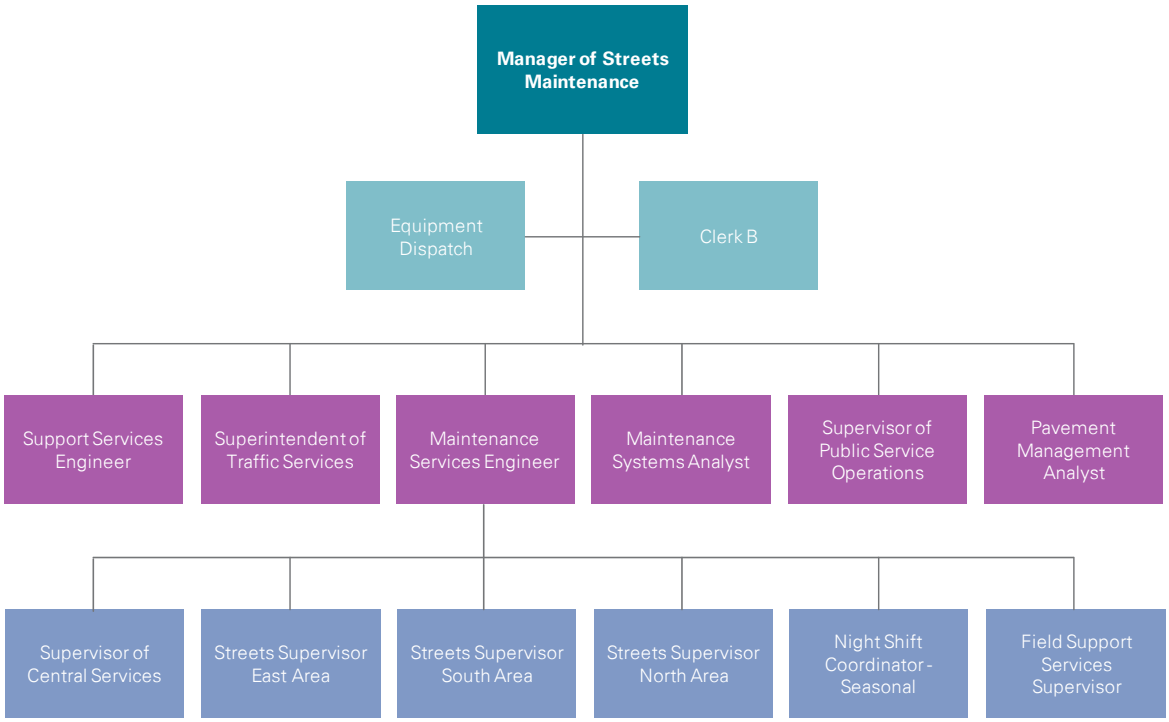
Benchmarking and Analysis

- Jurisdictions have varied approaches to contracting across service areas. For example, in Edmonton, the labour and supervision for concrete road maintenance is supplied internally, and equipment and material is contracted. Meanwhile, in Calgary, maintenance concrete repairs and utility permit repairs (concrete) are approximately 35% contracted out.
- In general, it appears as though some jurisdictions are making efforts to more efficiently employ staff according to the need at hand. In Edmonton, for example, maintenance crews are managed in a multi-tasked labour pool. A single FTE can be assigned a variety of tasks according to need (e.g., driving a sander in the winter, operating a paver in the summer).
- Though they are affiliated with a specific district that has its own independent structure, Calgary maintenance staff migrates across districts according to need. At times where one district requires more support, it can request extra help from another district (i.e., District NW asks District SW for extra staff to complete their spring clean-up).
- Similarly, in Ottawa, each district creates a specific budget to ensure adequate funds and equipment for its operational needs. However, districts will lend certain equipment to one another based on operational needs and if it is feasible.
- In addition, some other cities are carefully analyzing the utilization rates of various equipment to better optimize crews and resources. In Mississauga, select city-owned Grass Cutting Units and Street Sweeper Units are equipped with GPS technology that provides position and operational data. This data is easily accessed by road supervisors in real-time to collect key information on the operations being conducted. In addition to real-time data, the supervisors can use information compiled at the end of a shift, week and season to improve the efficiency of service delivery.
- The table on the following page summarizes crews that select peer cities use for streets maintenance activities. Details on how services are delivered are summarized below:
  - Concrete road maintenance: Winnipeg conducts a range of concrete road maintenance activities in-house, and contracts out approximately 40% of pavement restoration and 75% of pavement raising, as well as some concrete sealing. Edmonton's in-house staff provides labour and supervision for all concrete road maintenance activities, but the city contracts out equipment and material supply. Mississauga contracts out its concrete road maintenance activities. Winnipeg utilizes 4-6 person crews, smaller than or equal to Edmonton (6) and Ottawa (8).
  - Asphalt road maintenance: Winnipeg contracts out approximately 65% of paving activities, and approximately 25% of resurfacing and surface overlays on regional streets. Edmonton's in-house staff carries out all asphalt road maintenance activities. Calgary staff complete surface overlays, but the city contracts out milling (approximately 33% of total budget). Mississauga contracts out approximately 90% of asphalt road maintenance activities. Winnipeg's large asphalt crew (10) is just slightly larger than Ottawa's average crew (8-9).
  - Pot hole repair: Similar to Edmonton and Calgary, Winnipeg provides services in-house. Central Services operates road patchers, and Areas provide hand patching crews. Winnipeg utilizes 4 person crews, smaller than or equal to Edmonton (4) and Ottawa (5-6).
  - Gravel resurfacing: In Winnipeg, Area crews provide the majority of service to gravel roads, including ditch and culvert maintenance. Central Services may provide specialty equipment support. Dust control is contracted out. Calgary utilizes contracted trucks and trailers from its gravel supplier. Winnipeg's average crew (3) is smaller than Ottawa's (5+ contractors).

Comparison of Streets Maintenance Crew Profiles				
Activity	Edmonton	Ottawa	Calgary	Winnipeg
Concrete road maintenance	1 leader 4 concrete workers 1 truck driver	1 crew leader 2 concrete finishers 2 heavy equipment operators 1 rubber tired backhoe with operator 1 dump truck 1 crew cab	The make-up of an average crew is not available. The city has the following staff for this service: 11 foremen; 1 supervisor; 70 summer staff; 58 staff This staff makes up five separate crews: 2 excavation; 1 form-setting; 1 pouring; 1 rehabilitation. 1 foreman runs each crew with senior foreman overseeing all. 1 foreman confirms marking and permits.	Patching: 2 rakers 1 labourer 1 truck driver Pavement restoration and curb maintenance: 2 finishers 2 truck drivers 2 labourers Joint and crack sealing: 2 joint sealers 1 random saw operator 1 air hose man to blow out saw cuts
Asphalt road maintenance	Varies according to activity, Activity-based crew information is not available.	1 crew leader 2 asphalt finishers 2-3 heavy equipment operators 1 dual drum vibratory asphalt roller 1 dump truck 1 crew cab c/w roller trailer	Paving: The make-up of an average crew is not available. The city has the following staff for this service: 1 foreman 17 paving staff 6 tandem drivers 20 hired trucks Cleanup: 4 staff 1 sweeper operator 3 labourers	Large asphalt crew 1 paver operator 3 asphalt roller operators 2 screed operators 2 rakers 2 labourers
Pot hole repair	1 Leader 3 Labourers	1 crew leader 3 heavy equipment operators 1-1.5 ton truck complete with hotbox trailer and driver 1 blocker truck and driver as required	1 foreman 4-5 crew members 3 Labourers	Pothole crew: 2 truck drivers 2 labourers Road patching crew: 1 operator
Gravel resurfacing	n/a	1 crew leader 2 graders 1 water truck 1 steel drum vibratory roller Contracted trucks/trailers from gravel supplier (6-8 varies depending on distance from quarry)	n/a	1 grader operator 1 road compactor operator 1 water truck operator

Note: n/a = not available
Source: KPMG Benchmarking Survey to Select Municipalities

- The following chart illustrates the current structure of Streets Maintenance, the largest division within Public Works. The Department may choose to make a few changes within this structure, such as consideration of moving Traffic Services in with Traffic Signals of the Transportation Division, where there may be some synergies of being in the same division. However, one of the issues within this current structure relates to levels below management and supervisory positions on the chart. There may be an opportunity to flatten the structure in each of the three Areas and Central Services. A reorganization of structure also provides an opportunity to better harmonize work activities across the system.



Source: City of Winnipeg Public Works Department

RECOMMENDATIONS

- The Director and new Manager should explore options to adjust the organizational structure within the Streets Maintenance Division with the objective of establishing a relatively flatter structure with more clarity of roles and responsibilities, relatively more flexibility and accountability within each unit, more self-managed work crews, and creating healthy internal competition and efficiencies in street maintenance work.
- A revised structure and clarity should also help the Division determine more optimal levels of resource allocation and work among Central Services and Areas as well as which specialized services may be more efficient and effective to contract out.

Rationale / Benefit

- Change in structure provides an opportunity for the Division to position itself for increased volume of work in the future and to strive for efficiencies and specialization.
- Benefits of a relatively flatter structure include:
  - more autonomy, flexibility and accountability for crews and front-line workers;
  - clarity in roles and responsibilities;
  - reduced hierarchy and relatively easier access to supervisors;
  - opportunity for self-managed crews to increase their efficiency and increase results;
- These changes, along with internal analysis, will help Management and supervisors identify efficiencies, utilization and specialization between Central Services and the three Areas and contracted services.

Priority

- High

Financial Impact

- Through gained efficiencies from more specialization, potential efficiency gains to be determined.

Timing

- Short to medium-term

Risk Level

- High

Implementation Factors

- Time for a change, but change has to be identified and articulated in a plan.
- Need to address collective agreement issues, if restructuring plan has any impact on positions/ classifications.
- Incorporate support from staff.

6.4.7 Summer Weekend Shifts and Overtime Management

Issue

Public Works currently has no presence on the weekend in the summer and overtime management is an ongoing issue.

Potential Opportunity Areas	
✓	Business processes
✓	Service innovation
Barriers	
■	Collective agreement
■	Traditional hours

Findings and Observations

- In 2012, overtime was approximately $1.6 million over budget for the Streets Division.
- Public Works summer shifts are 10 hour days, 4 days a week, Monday to Thursday or Tuesday to Friday, depending on the area.
- There is no coordination with shifts at private contractors or with Water and Waste.
- Understanding is that Central Services is planning two large crews running weekend shifts starting in summer 2013 (5 days on, 5 days off).
- If a service request occurs on the weekend, it is forwarded to Water and Waste. Water and Waste installs a temporary fix on the weekend, and then Public Works performs a complete repair on the following Monday.

Implications

- Having Public Works crews on weekends in the summer should increase efficiency through better coordination with Water and Waste crews and private contracting crews and more efficient use of equipment.

Benchmarking and Analysis

- Most cities have weekend shifts with city crews working on public works projects.
- Public Works' Human Resources staff regularly track and review salaries and benefits; however they believe more can be done to better manage overtime across the Department. Besides weekend shifts, another way to manage this issue is to ensure effective controls are in place for the proper assignment, approval, payment and accounting of certain types of pay, including overtime.
- According to Preliminary 2012 results, the overtime expense for the Department was $4.1 million compared to a budget for overtime of $2.4 million. Overtime expense for the year exceeded budget by $1.7 million, and in assessing detailed expenses by division, Streets Maintenance represented nearly the entire overrun, with overtime expenses exceeding budget by $1.6 million.
- The overtime expense for 2012 within the Streets Maintenance Division represented approximately 13% of the Division's salaries budget. For the Department as a whole, overtime expense in 2012 represented approximately 7% of the Department's salaries budget. In the Preliminary 2013 Budget, the Department's overtime is budgeted at over $3.1 million, approximately 5% of the salaries budget. This was up modestly from the 2012 budget but down nearly $1 million from 2012 actual estimates.
- The case study on the following page demonstrates some methods that Hamilton uses to manage standby, call in/out hours and control overtime expenditures.

Case Study: Hamilton, Ontario – Use of Standby, Call In/Out and Overtime in Public Works

Challenge

- During 2007, considerable funds were expended by Hamilton in the use of standby, call in/out hours and overtime options ($980,000, $568,000, and $9.6 million, respectively). Hamilton's Public Works Department accounted for the greatest percentage of city totals in three expenditure areas: 74% of standby; 90% of call in/out hours; and 65% of overtime. The city needed ideas to decrease Public Works' expenditures in these areas.

Approach

- Through an internal audit, Hamilton reviewed current Public Works processes to ensure compliance with relevant legislation, city policies and collective agreements, and to assess whether the controls in place adequately provided for the proper assignment, approval, payment and accounting of standby, call in/out hours and overtime occurrences. Two select examples of findings and recommendations from The City of Hamilton 2008-02 Internal Audit Report are summarized below.
- Authorization of Supervisors' Hours
  - Finding: Overtime and call in/out timesheets of supervisors from the Water & Wastewater Division of the City of Hamilton's Public Works Department were emailed directly to Finance & Administration for processing without being approved by their superintendents or managers. As a result, inaccurate reporting of call in/out or overtime hours actually worked may have been inaccurate.
  - Recommendation: Superintendents or managers should review and approve (either in paper or electronically) supervisors' timesheets before they are sent to Finance and Administration.
- Finance and Administration Procedures
  - Finding: There were no written Finance and Administration procedures with respect to the process of recording standby, call in/out & overtime hours in some of the divisions in Public Works.
  - Recommendation: Procedures pertaining to the process of recording standby, call in/out and overtime should be documented and retained in Finance and Administration. These procedures should be reviewed annually to ensure that they remain current and are appropriately and consistently applied.

Results / Potential Impact

- Detailed historical financial statements for Hamilton's Public Works Department are not available.
- From City of Hamilton financial reports, Hamilton's salaries, wages and benefits as a percentage of total operating expenditures rose from fiscal 2003-2007, and then dropped significantly from fiscal 2007-2008, where they remained relatively stable until 2011. Effective internal controls and targeted efforts to reduce overtime costs are among several factors in containing operational and staff costs.

Sources: (1) City of Hamilton, City Manager's Office, Audit Services Branch, *Use of Standby, Call In/Out & Overtime (Public Works) – Audit Report 2008-02,* November 3, 2008
(2) City of Hamilton Unaudited Financial Reports (fiscal 2007-2011)

Context for Public Works

- In 2012, overtime costs in the City of Winnipeg's Public Works Department were approximately $4.1 million, and were $1.6 million over budget in the Streets Division. Internal controls, improved resource allocation and other methods of controlling overtime should be considered.

RECOMMENDATIONS

- After considerable effort and negotiations, Public Works is adding two large crews for weekend shifts in the summer of 2013. The results of this addition on resource allocation, overtime and utilization of equipment should be carefully monitored and reported to Management.
- To better coordinate with Water and Waste, utilities and private contractors on City work, further enhancement of weekend shifts should be planned for 2014.
- To reduce the significant variances from projected annual overtimes and achieve real cost savings, Management, in collaboration with Human Resources and Division Managers should develop stricter overtime and approval procedures, with the objective of reducing annual overtime costs by $500,000 to $1 million annually.

Rationale / Benefit

- Greater variability in hours provides Streets Maintenance more opportunities to:
  - coordinate work on City projects with other departments such as Water and Waste, utilities and private contractors;
  - improve utilization of equipment and materials by spreading out usage and decreasing idle time for equipment; and
  - improve resource allocation and scheduling of projects.
- Overtime is necessary for emergency and urgent projects, but tighter operating and approval controls and targeted efforts can lead to real cost savings for the Department.

Priority

- High

Financial Impact

- Should aim to reduce overtime by $500,000 to $1 million from 2012 levels, through better resource allocation, stricter overtime provisioning and dedicated efforts of managers and supervisors to reduce these overruns.

Timing

- Short-term

Risk Level

- Medium

Implementation Factors

- The issue is recognized and ready for a targeted effort to reduce overtime.
- Assisted in 2013 by adding two large crews on weekends.
- Formal procedures requiring justification and approvals for all overtime, and monthly tracking and reporting of results by Division and unit.
- Provide Finance the responsibility to report on all overtime and variances and to conduct trend analysis. Investigate material overruns for the Director.

6.4.8 Utility Cuts and Repair

Issue

The business processes, systems and coordination of cut repairs should be examined.

Potential Opportunity Areas	
✓	Business processes
✓	Automation
✓	Shared services
✓	Potential revenue
Barriers	
■	Clarity on process flow and responsibilities
■	Decision coordination and cost of IT system

Findings and Observations

- Paper based forms are manually entered into system.
- The process flow and hand-offs from initial permit and cut to full restoration should be clear.
- Appears to be an area for better coordination.
- Reported that cut permits are sometimes applied for after the cut.
- An issue is different shifts and available work crews between Water and Waste and Public Works.
- Public Works may consider which crews are more suited for cut repairs and increase crew specialization in handling cut repairs for greater consistency.
- There is a backlog of road cut repairs.
- It is unclear which Geographic Information Systems ("GIS") application should be used (Envista, Intergraph) and who updates the information.
- No coordinated 'one window' to access different reports / logs (e.g., patrol logs).

Implications

- There is no single point for accessing reliable data which creates processing delays.
- Resource time consumed on non-value add tasks (e.g., duplicate entries, duplicate reviews).
- Backlog of cut repairs is frequently an issue which needs to be dealt with.

Benchmarking and Analysis

- Winnipeg completes approximately 70% of cut repairs in-house; 30% are contracted out. Edmonton provides in-house labour and supervision, but contracts out equipment and material supply. Mississauga contracts out its cut repairs.
- Winnipeg does not have analysis of comparing in-house and contractor costs, or comparing cut repair costs between Area crews and Central Services crews. The Department has noted that contractors are more set up to handle construction and rehabilitation projects, and may not have flexibility to offer competitive pricing on basic cut repairs.
- Winnipeg's average cut repair crew consists of 2 finishers, 2 labourers, and 2 truck drivers. In contrast, Edmonton's crew consists of 1 leader, 4 concrete workers, and 1 truck driver.
- Select examples of leading practices in utility cut management are as follows:
  - Using mechanisms to track the utility company that is responsible for each cut (e.g., a colour code mechanism that tracks utility cuts by type – hydro, gas, etc.). A tracking mechanism can reduce time spent tracking utility cuts, increase efficiency in billing utility companies and resolving issues to damaged/unsafe cuts, and reallocate time to other utility cut activities.
  - Utilizing technology to track the coordinates of all cuts. For example, radiofrequency microchips can be inserted in each utility cut to identify which cut belongs to which utility company.
  - Applying a rigorous and consistent approach to complete permanent utility cut repairs using standardized service standards.

  - Tracking the age of a permanent utility cut permit to ensure that permanent repairs are finished on time (e.g., within "x" months of the initial cut). An exception may occur when an upcoming utility activity is planned for an area that is already cut. In that case, a repair could be delayed (if possible) to help reduce duplicate repair work.
  - Capturing permanent repairs in an asset management system to inform decision-makers on the state of assets and their subsequent maintenance needs.
- There are opportunities to streamline Winnipeg's utility cut permitting process. Some of these were previously discussed in Section 5. In addition, the following leading practices may be relevant in enhancing the City's process:
  - When verifying dimensions of a cut at the beginning of the permanent restoration process, the City's infrastructure management data should be consulted to make more informed decisions before filtering to tender and obtaining confirmation from the utility company.
  - The utility revision and confirmation process may be streamlined by using a utility cut marking system to record more accurate cut measurements and reduce the number of oversized measurements.
  - Digitizing cost sheets could reduce the amount of paper handling.
  - The number of approvals required for monthly progress payments could be reduced.
  - Utilizing photographic or video technology to capture evidence of field investigator site visits could help provide more detailed evidence of site visits and support the random sample audit process.
  - Mobile technology could allow maintenance inspectors to enter cost sheets into internal systems to eliminate manual data entry.
  - Standard and pre-populated templates for cost sheets can reduce re-entry of data.
  - Permit-related information should be available to cut examiners in the field.
  - Online utility cut application submission and permit submission should be used for short stream applications. A business portal could be used to allow utility companies to submit applications and receive their permit online.
- Public Works may consider specialization of cut repairs crews within the Department to increase efficiency and consistency.
- Establish standards for cut repairs and an efficient inspection process. Other cities have set target times for completing a repair (e.g., Edmonton: arterial – 24 hours; collector II – 72 hours; residential – 7 or more days) and for inspecting a repair (e.g., Ottawa: within 30 days following completion of a project). Other cities have detailed standards for the quality of a repair (e.g., Hamilton).
- While most cut repairs are likely to continue to be performed in-house, may consider contracting out in certain locations to reduce the ongoing backlog.
- Other cities have made attempts to improve their business processes, systems and coordination with regards to utility cuts and repair. For example, consider the case study for Toronto on the following page.

Case Study: Toronto, Ontario – Improvements to the Utility Cut Management Process

Challenge

- In 2010, the City of Toronto noted that complaints from residents and businesses with respect to the condition of roads were not typically related to the structural integrity of pavement, but more so on comfort and look of roads. Comfort and look are influenced by several factors, a major one being the frequency and nature of utility cut repairs.
- To decrease complaints related to cut repairs, Toronto undertook a review of its utility cut management process, including standards, requirements, levels of inspection and enforcement, and other components.

Approach

- Toronto proposed several changes to its utility cut management process, a few of which are applicable to the issues and opportunities that Winnipeg faces. Examples are listed below.
- Communications, administration and service level standards
  - Past process: expectations with respect to communications, administration and service level standards were not clearly documented.
  - Proposed process: communications, administration and service level standards to be clearly identified in the City of Toronto's "Municipal Consent Requirements" document (publicly available on the city's website).
- Utility cut permit applications
  - Past process: utility companies were permitted to undertake emergency work without permit, notify the city of this work and apply for permit within 24 hours.
  - Proposed process: utility companies must notify city staff immediately of emergency by email and then follow up with a permit application within 24 hours.
- Coordination of 'one window' to access different reports
  - Past process: utility cut permit applications were processed on a district-by-district basis.
  - Proposed process: centralize the utility cut permit application process to achieve consistency in processes and reporting.

Results / Potential Impact

- The above improvements are important, but their potential financial impact can be difficult to measure. Other components of the strategy, such as Toronto's new "Pavement Degradation Fee", are more easily measurable. The new fee will allow the city to recover the costs that it incurs due to a reduction in the pavement service-life. Annual fees are expected to average $4 million (based on an average fee of $20/sq.m. and a total of 200,000 sq.m. of utility cuts).
- Toronto's new program is expected to generate other benefits such as: better quality of utility cut repairs; quicker response to fix deficiencies; enhanced coordination of capital programs and less disruption; improved and modernized ways for citizens to receive information on utility cuts; and safer roads and better overall visual condition of roads.

Source: City of Toronto, *Staff Report: Improvements to the Utility Cut Management Process,* February 9, 2010

Context for Public Works

- The City of Winnipeg repaired approximately 12,000 sq.m. of pavement and sidewalk cuts in 2012. If the City considered a Pavement Degradation Fee similar to Toronto, assuming an average fee of $16/sq.m. (20% lower than Toronto's fee), this type of fee has the potential to generate nearly $200,000 in additional revenue for the City annually.
- Winnipeg encounters issues related to communications and service level standards for utility cut repairs and utilities conducting repairs without immediate notification.

RECOMMENDATIONS

- Improve utility cut repair management through a combination of better tracking, marking and quality control, consistency in completing permanent utility cut repairs with applied service standards across the City, and streamlining the utility cut permitting process.
  - Track the age of permanent utility cut permits to ensure compliance with service level standards. Track exceptions in case repairs coincide with future utility repair work.
  - Capture permanent repairs in an asset management system to inform Management on the state of assets and their subsequent maintenance needs.
  - Require utility companies to notify staff immediately of emergency repair work, and require them to follow up with permit applications within 24 hours of initial contact.
  - Centralize the utility cut permit application process to achieve consistency in processes and reporting.
  - Compare unit costs of cut repairs between crews and between in-house and contracted services as part of ongoing efforts to improve efficiencies.
  - Consider the introduction of a Pavement Degradation Fee, which would allow the City to recover the costs that it incurs due to a reduction in pavement service-life.

Rationale / Benefit

- Tracking mechanisms reduce manual time spent tracking utility cuts, increase efficiency in billing utility companies and resolving issues to damaged / unsafe cuts, and reallocate time to other utility cut activities. Better information would also help management work towards identifying opportunities to improve the permanent repair process.
- Consistently applied service standards should help improve the timeliness and quality of repairs.
- Identifying cut repair exceptions could help reduce any duplicate repair work.
- Better information on the state of assets and their subsequent maintenance needs.
- Reduced unauthorized work in the case of emergencies.
- Consistency in processes and reporting.
- Potential revenue from the introduction of a Pavement Degradation Fee.

Priority

- Medium

Financial Impact

- Better tracking systems may require an initial investment, which is largely reflected in modernizing the permitting process (S. 5.5.6). Projected operational savings are estimated at up to 10% of service costs.
- A Pavement Degradation Fee has the potential to generate nearly $200,000 in additional revenue for the City annually.

Timing

- Medium-term

Risk Level

- Medium

Implementation Factors

- Lack of continuous process improvement can result in inefficiencies, increased cost to the City and frustrated stakeholders.
- Investment in technology which is necessary to modernize the permitting process.
- Training for staff and utility companies may be required prior to the rollout of new processes.
- Need to procure an external vendor to fully assess the process and recommend further improvements.

6.4.9 Pavement Specification

Issue

There is a lack of consensus on whether concrete or asphalt pavement results in lower lifecycle costs to the City. Without definitive guidance based on robust analysis, decisions will continue to be made on a project-by-project basis without giving due consideration to the cost of maintaining the assets.

Potential Opportunity Areas
✓ Service innovation
Barriers
Lobbying from groups aligned to the concrete or asphalt industry
Ground and soil conditions in areas of the City may influence the specification of paving
Difficulties related to securing long term funding commitment

Findings and Observations

- Historically, the City has opted for a concrete road specification over asphalt, and some of the reasons for this preference may no longer apply.
- New road construction tends to incorporate asphalt paving, from residential streets to the new P3 projects.
- Public Works has data going back several years on the performance and cost of asphalt as well as concrete.
- A detailed and definitive lifecycle costing exercise to evaluate the lifecycle cost of concrete versus asphalt paving for a range of road types has not been carried out.
- Reactive concrete repair is a specialized task which is performed in-house, and there is a perception that the private sector is not well-positioned to provide this service cost-effectively.
- Industry lobby groups are known to exist and exert pressure in favour of one specification or another.

Implications

- It is difficult to determine if the City is spending more than is strictly necessary on the provision and maintenance of its roads, due to pavement preferences and specifications.
- Significant lifecycle cost savings could potentially be identified from a detailed study.

Benchmarking and Analysis

- Most Canadian roads are paved with asphalt rather than concrete with some estimates putting the percentage at close to 90%.
- The economics of concrete versus asphalt are dependent upon many factors, including, but not limited to the following:
  - commodity prices;
  - transport costs;
  - climatic and soil conditions; and
  - road usage patterns.
- In addition to the basic economics, there are also local political factors to consider, such as public perception and the ability to rely on future funding streams for major rehabilitation works.
- Without strict adherence to a major maintenance intervention program, the useful life of concrete paving will rapidly decrease, whereas asphalt maintenance regimes are generally more flexible.
- The fact that P3 contractors selected asphalt over concrete for heavily traffic stretches of road may be significant.

- There are a number of compelling advantages to using asphalt, including, but not limited to the following:
  - Concrete paving is usually not continuous and tends to exhibit joint defects over time.
  - Reactive asphalt repairs can generally be performed more quickly and with minimal traffic disruption.
  - If correctly designed and constructed, asphalt roads can be maintained in a very good condition indefinitely with periodic surface planing and resurfacing.
- On the other hand, there are a number of advantages to using concrete, including, but not limited to the following:
  - Concrete can provide a very strong pavement suitable for very heavy traffic.
  - Due to its strength and durability, a concrete pavement can last longer between maintenance intervals.
  - As it better distributes point loads, it doesn't tend to exhibit ruts or grooves.
  - Due to having a lighter colour than asphalt, it better reflects street lighting at night.
- This issue is an ongoing debate across North America and there does not appear to be a definitive independent study. Industry associations have their own studies and there are merits for both concrete and asphalt.

RECOMMENDATIONS

- A detailed study into the lifecycle cost of various concrete and asphalt specifications for the City of Winnipeg should be conducted. Public Works has its own internal data and expertise to help prepare a study.
  - It is important to perform alternative analyses for different road usage levels (e.g., regional streets, residential roads, etc.).
  - In addition to new road construction, conversion from one paving specification to another should also be considered.
  - Care should be taken to ensure that the analysis is not influenced unduly by industry lobby groups.
  - For credibility, the study should be seen as independent.
- A secondary decision could be formed by analysis of various asphalt or concrete specifications and mixes.
- Indirect benefits should also be considered (e.g., bonding of lane marking paints on asphalt or concrete substrates).

Rationale / Benefit

- Reduced overall lifecycle cost of asset ownership and potentially better value for a given road condition service level.
- Performing the recommended study will support the City's commitment to good asset management practice.
- Reduced lifecycle cost should result in better use of available funds and ultimately a better public perception of road condition.

Priority

- Medium

Financial Impact

- There is not sufficient information to indicate potential cost savings, if any, from changes in pavement specification, but this should be investigated internally by the Department and on a case-by-case basis for major new roads construction and reconstruction projects.
- For illustration purposes only: at current annual levels of approximately $100 million for street projects (2013 Preliminary Capital Budget), every 1% improvement in lifecycle cost effectiveness would represent an average annual saving of approximately $1 million annually.

Timing

- Medium to long-term
- Non-urgent but important

Risk Level

- Medium

Implementation Factors

- Reliability and usefulness of existing capital and maintenance cost data.
- Long-term asset management planning and funding commitments are necessary to minimize forecast lifecycle costs, particularly for concrete paving.
- The structure and focus of crew activities of Streets Maintenance may be impacted by any major change in pavement specifications.

6.4.10 Lane Marking

Issue

There may be a better value approach to the maintenance of lane and intersection markings through evaluation of alternative techniques which are more resistant to the impact of snow and ice control operations.

Potential Opportunity Areas	
✓	Outsourcing
✓	Service innovation
Barriers	
	An alternative solution may not provide the benefit of balancing seasonal availability of labour
	Collective agreement constraints
	The full cost of the service may not be known currently
	Cost of alternatives may be too high
	Performance of alternatives may be unproven
	Longer drying time of other solutions

Findings and Observations

- A complete remarking of the lines and intersections of all of the City's streets is carried out annually by an in-house crew.
- Some regional streets are remarked up to three times a year.
- The City uses a three-person crew, and its own equipment and materials.
- The City's website states that lane and intersection marking takes between 32 and 34 weeks per year and states the annual cost. It is not clear whether this cost reflects the full cost of providing this service in-house (e.g., management and corporate overheads, etc.).
- It is understood that the City currently uses alkyd (solvent) paint which is relatively inexpensive in terms of the product, but is considered the least durable solution. It typically has a very short life on high use roads, does not adhere particularly well to concrete substrates, and is subject to damage from sand and other abrasives.
- Alkyd paint also releases higher concentrations of volatile organic compounds during application which are considered hazardous.
- A trial of inlayed line markings has been conducted on Kenaston.

Implications

- Reliance on a single in-house crew that takes up to 34 weeks to re-mark the City's streets implies that many roads are left unmarked for much of this time.
- The alkyd paint used to mark lanes and intersections is largely scrapped away during winter snow and ice control operations.
- Durable pavement marking systems rather than paint-based systems may be more expensive in terms of material and/or application but may not need to be renewed annually.
- Retaining an in-house crew each summer to reinstate the City's lane and intersection markings may not necessarily be cost effective if a technical solution were found that does not have an annual replacement cycle.

Benchmarking and Analysis

- There are various alternative technical options available for lane and intersection marking.
- The technical solution employed (alkyd paint) does not appear ideally compatible either with the City's concrete streets or with the need for snow plowing and the use of abrasives for snow and ice control.
- Some other jurisdictions:
  - specify different technical solutions depending upon the classification of the road and the type of lane or intersection marking (e.g., arterial roads and stop lines to be in-laid plastic; collector roads to be surface-applied plastic; residential roads to be either surface plastic or spray applied).

  - set performance levels for lane marking maintenance (e.g., reinstate when 50% worn-out, or based on reflectivity values and establish a monitoring regime rather than a blanket replacement program).

- While a water-based paint could address the environmental issues with alkyd paint, durability will be comparable. In order to increase renewal periods, a durable pavement marking system would be required (e.g., methyl methacrylate ("MMA"), thermoplastics, pre-formed tape, epoxy (regular and polymer)).
- Edmonton uses inlayed line markings and thermoplastics on all new installations. Methyl methacrylate and acetone-based paint are currently used as maintenance tools.
- Ottawa is evaluating the durability of low volatile organic compound ("VOC") paint.
- Calgary constantly searches for better and more durable products, considering not just durability but also application and maintenance cost. The city has tried many different products (e.g., thermoplastic (inlaid and surface applied), MMA (inlaid and surface applied), tape, epoxy, polyurea, latex paint, low VOC paint, etc.). An ideal solution may be durable markings, but the process is slower, significantly expensive, and labour intensive. In transverse markings, unless they are inlaid, the city has to paint them every year. The city applies epoxy to its arterial roads.
- Mississauga contracts out approximately 60% of lane marking. In Mississauga, re-application of white pavement markings is undertaken twice per year on all streets. Re-application of all yellow pavement markings is undertaken once per year on all streets.
- The table below compares the number of times cities conduct lane marking, by road classification. Winnipeg conducts lane marking on some regional streets up to three (3) times per year, which is on the high end in comparison to Edmonton (2), Ottawa (2) and Calgary (3).

Lane Marking by Road Classification - Number of Times per Year

	Edmonton	Ottawa	Calgary	Winnipeg
Freeways	2	2	3	not appl.
Arterials	2	2	3	2-3
Collectors	2	1	1	1
Downtown area streets	2-3	2	1	1
Bridges (1)	2	2	1	1
Residential or local streets	2	1	1	1

Note: (1) Calgary: bridges are marked once per year unless they are on arterial roads.
not appl. = not applicable
Source: KPMG Benchmarking Survey to Select Municipalities

- Winnipeg provides a high level of service for snow and ice control, which places a high amount of stress on lane markings. This is one reason why the City needs to mark regional streets up to three times per year.

RECOMMENDATIONS

- Other technical solutions should be investigated for lane and intersection marking (e.g., thermoplastic paint and grinding of the substrate to inlay the paint).
- A detailed cost analysis should be performed to compare alternative technical solutions with the current alkyd option, for a range of different road types (regional through to residential).
- The evaluation of alternatives should not preclude the use of contracted-out services, nor should it be unduly influenced by the status quo (e.g., the availability of an existing crew and equipment in the summer).
- The evaluation should also account for any variation in performance and be performed over a duration long enough to amortize the cost of any new equipment.
- The Department should verify compliance with environmental law including federal regulatory requirements limiting VOC concentration limits.

Rationale / Benefit

- Improvement in the average visibility or reflectivity of lane and intersection markings.
- Improved road safety.
- Reduced environmental impact of the tens of thousands of litres of potentially toxic alkyd paint currently being used each year.
- Potential to reduce costs, depending upon results of the evaluation.

Priority

- Medium

Financial Impact

- To be determined by detailed cost analysis

Timing

- Medium to long-term
- Non-urgent

Risk Level

- Low

Implementation Factors

- Developing terms of a cost analysis study and either finding resources in-house to conduct the analysis or contract out.
- Existing equipment may need to be replaced or modified.
- Existing crew may not be fully utilized with an alternative technical solution.

6.4.11 Summary of Issues, Opportunities and Recommendations

Roadway Construction and Maintenance – Issues and Opportunities Summary							
Issues \ Opportunities	Business Processes	Organizational Restructuring	Outsourcing	Automation	Shared Services	Service Innovation	Potential Revenue
Large Infrastructure Deficit	✓	✓		✓		✓	✓
Ensuring Value for Money for Contracted Services			✓			✓	
Fleet Management Costs and Utilization	✓					✓	
Asset Management Framework and Standards	✓	✓		✓		✓	
Experienced Project Managers and Engineers	✓						
Reorganization of Streets Maintenance Division Structure	✓		✓			✓	
Summer Weekend Shifts and Overtime Management	✓					✓	
Utility Cuts and Repair	✓			✓	✓		✓
Pavement Specification						✓	
Lane Marking			✓			✓	

Summary of Recommendations

- Ensuring Value for Money for Contracted Services: Build on the Department's experienced managers to expand contract management capability with a dedicated focus on maximizing overall value for money. Broaden construction project evaluation and processes to include ASD options starting with design-build. Target a overall 2% savings from the overall level of contracted services.
- Fleet Management Costs and Utilization: Public Works is the largest customer of the Winnipeg Fleet Management Agency, and both should work towards a material reduction in annual fleet costs through a combination of: better rates on certain types of equipment; better utilization; controlling fuel costs; full recovery of MPI claims; and other means.
- Asset Management Framework and Standards: Further develop the Corporate-wide Asset Management Program Initiative, with attention to following new internal guidelines, integration of condition assessment, planned maintenance and capital investment, service levels, advancing the maturity of the Program, and reporting to Council.
- Experienced Project Managers and Engineers: Develop a strategy with Human Resources to address competition for Project Managers/Engineers, including collaborating with Water and Waste on their Engineer-in-Training program. Recruit and hire a few additional Project Managers/Engineers as current resources are stretched on capital projects.

- Reorganization of Streets Maintenance Division Structure: Reorganize the Streets Maintenance Division with the objective of a relatively flatter structure, more flexibility and accountability within each unit, self-managed work crews and encouraging healthy competition and efficiencies.
- Summer Weekend Shifts and Overtime Management: To reduce significant variances in overtime, Public Works should develop stricter overtime approval procedures with the objective of reducing annual overtime costs. Adding a new summer weekend shift for two crews in 2013 should assist better resource allocations and coordination with Water and Waste, utilities and private contractors, and this should be expanded in 2014.
- Utility Cuts and Repair: Improve utility cut repair management through a combination of better tracking, marking and quality control, consistency in completing permanent utility cut repairs with applied service standards across the City, and streamlining the utility cut permitting process.
- Pavement Specification: Use internal data and expertise to undertake a study into the lifecycle cost of various concrete and asphalt specifications for different road usages.
- Lane Marking: Investigate other technical solutions for lane and intersection marking to compare costs and durability, and consider environmental impacts of alternatives.

7 Roadway Snow Removal and Ice Control

7.1 Operating Budgets FY 2010-2013 (Service-Based)

The following table summarizes Service-Based budgets for Roadway Snow Removal and Ice Control. Adopted operating budgets are summarized for fiscal 2010-2012, and the preliminary operating budget is summarized for fiscal 2013.

- Total operating budget expenditures/FTE range close to $140,000/FTE over the past few years.
- However, this reflects the City's budget for snow removal for a relatively below average snowfall year.
  - Actual expenditures can vary significantly from budget due to weather factors. City officials indicate this is a recognized risk and the City reallocates funds from elsewhere in the system during years of higher than average snow conditions.

Roadway Snow Removal and Ice Control - Operating Budgets (Service Based)								
$000's (unless otherwise stated)								
For the Fiscal Years Ended December 31	**2010B**	**2011B**		**2012B**			**2013B**	
	Expenditure	Expenditure	Expenditure	Revenue	Net Exp.	Expenditure	Revenue	Net Exp.
Regional Streets Snow/Ice Removal	11,901	11,906	12,027	(6)	12,021	12,549	(6)	12,542
Local Streets Snow/Ice Removal	13,984	14,209	14,657	(14)	14,643	14,251	(16)	14,235
Sidewalk Snow/Ice Removal	2,070	2,126	2,398	(7)	2,390	2,674	(6)	2,668
Parks, Facility Snow/Ice Removal	2,703	976	1,011	-	1,011	1,072	-	1,072
Snow Disposal Sites	625	660	663	-	663	488	-	488
Total	**31,283**	**29,877**	**30,756**	**(27)**	**30,729**	**31,033**	**(28)**	**31,005**
FTE	159	143	140			141		
$000's/FTE	197	209	220			220		

Source: City of Winnipeg Public Works Department

7.2 Sub-Services and Service Levels

Sub-Service: Regional and Local Snow/Ice Removal				
Operating Cost 2012B ($ millions)	Core Ranking	Service Level Standard	Actual Service Level	City Role
Regional Streets Snow/Ice Removal: Total: $12.0 *Net: $12.0*	Mandatory/ Essential Policy on Snow Removal and Ice Control	<u>Plowing of Streets</u> Priority I streets shall normally be maintained to bare pavement over the full pavement width. Generally, snow accumulating beyond a depth of 3 cm shall be removed through the use of de-icing chemicals and/or by plowing. Snow plowing operations shall be completed within 36 hours following the end of an average storm.	At standard At standard At standard	Delivery and Manager – Contracted
Local Streets Snow/Ice Removal: Total: $14.7 *Net: $14.6*	Mandatory/ Essential Policy on Snow Removal and Ice Control	<u>Plowing of Streets</u> Priority III streets shall normally be maintained to a compacted snow surface. A plowing operation shall normally be initiated when the snow has accumulated beyond a depth of 10 cm. Priority III streets plowing operations shall normally be completed within 5 working days following the commencement time of the plowing effort. <u>Plowing of Back Lanes</u> Back lanes shall normally be maintained to a compacted snow surface as opposed to bare pavement. Plowing of back lanes shall commence after an inspection warrants a clearing operation, usually following a 5 cm snowfall accumulation or equivalent local drifting conditions. Back lanes plowing operations shall normally be completed within 2 days following the end of an average storm. <u>Plowing of Windrows</u> Windrows of snow shall normally be removed on Priority I and II streets where criteria are met. Windrows of plowed snow in excess of 20 cm high shall normally be removed from all front street driveway approaches in conjunction with the street plowing operation. Note: Windrows of snow plowed across private approaches and/or walks and resulting from sidewalk clearing operations shall not be removed.	At standard At standard At standard At standard At standard Below standard (2.5 days normally to achieve)	Delivery and Manager – Contracted

Source: Derived from information from City of Winnipeg Public Works.

Comparison to Peer City Service Levels

Regional Streets Snow/Ice Removal

- Service standards for regional roads or main arteries in other jurisdictions are largely similar to those of Winnipeg.
- In Winnipeg, approximately 55% of street plowing is under Area contracts (70% of regional streets, and 52% of other streets), one of the highest levels of contracting out among the peer cities (Mississauga contracts out approximately 90% of street plowing).

- In Edmonton, plowing on freeways, arterials, bridges, and collectors begins 24/7 after 3 cm of snow accumulation, similar to Winnipeg standards. Approximately 60% of plowing is delivered in-house, while 40% is contracted.
- When extreme winter storm conditions (i.e., those that exceed normal conditions) occur in Ottawa, snow and ice control operations are carried out in as continuous a manner as practicable according to road classification. In comparison to Winnipeg, Ottawa appears to have relatively more explicit standards for initiating snow clearing, as described below:
  - High priority roads – bare pavement within 2 hours as accumulation begins; arterials – bare pavement within 3 hours as accumulation begins; major collectors – bare pavement within 4 hours as accumulation begins. Operations continue on these roads on the cycle times indicated until a complete cycle is carried out after the end of the snowfall; then resources are transferred to the residential streets.
- Salting and sanding in Edmonton occur within the following timeline standards according to road classifications, and are conducted in-house:
  - Freeways – within 4 hours regular conditions (2 hours storm conditions); arterials – within 8 hours regular conditions (4 hours storm conditions); bridges – within 4 hours regular conditions (2 hours storm conditions); collectors – within 8 hours regular conditions (4 hours storm conditions).
- Calgary begins plowing of Priority 1 roads as soon as the snowfall starts and completes it within a day, similar to Winnipeg. Priority 2 through lanes begin one day after snowfall and are completed by day 2, which is slightly later than Winnipeg. Priority 1 and 2 roads are completed within three days.
- For an average winter storm, Mississauga's standard is to clear major arterial and collector roads within 12 hours after the end of the storm.
- In contrast to Edmonton, Winnipeg does not appear to set time-related standards for salting and sanding. Instead, Winnipeg summarizes policies and procedures by road classification (e.g., when and how materials are used, application rates, etc.).

Local Streets Snow/Ice Removal

- As in Winnipeg, residential roads and lanes in Ottawa are maintained at a snow-packed standard after 7-10 cm of accumulation (depending on the road classification).
  - The time standard for plowing these roads is faster in Ottawa than in Winnipeg. Residential roads and lanes in Ottawa should be cleared within 10-16 hours (generally 8 hour beats that commence after arterials and collectors are completed).
  - Winnipeg will not always complete conduct a plow run on residential streets after a snow fall. However, Winnipeg's standard for local streets is curb-to-curb and to pavement. Its concept of "all-out" plowing with notification in advance of the plow runs is different. No other peer city has this level of standard for snow removal of streets.
- Winnipeg also clears all windrows after plowing residentials. Ottawa does not plow windrows of individual/private driveways. However, windrows remaining after road plowing across sidewalks at intersections and at pedestrian crossings are removed within 16 hours after the end of the storm.
- In Edmonton, on residential and local streets, snow is windrowed to both sides unless parking restrictions and/or open boulevard areas exist. Windrows are removed from cul-de-sacs only, or if they are larger than 30 cm after an initial plowing. A city-wide residential blading program is initiated (including alleys) immediately after the arterial and collector road network has been plowed and considered to be in safe condition. Residential roads are bladed to a 5 cm snow pack condition. Residential blading is completed within 5 days, commencing within 48 hours following the end of the snowfall.
- In Calgary, clearing of residential roads begins about three days after plowing efforts commence and concludes after 6 days. This standard is slightly lower than Winnipeg's. Calgary citizens are responsible for clearing windrows in front of their own property.

Sub-Service: Sidewalk Snow/Ice Removal				
Operating Cost 2012B ($ millions)	Core Ranking	Service Level Standard	Actual Service Level	City Role
Total: $2.4 *Net: $2.4*	Mandatory/ Essential Policy on Snow Removal and Ice Control	<u>Plowing of Sidewalks – Priority I Streets Outside of Downtown</u> Sidewalks on Priority I streets shall normally be maintained to a compacted snow surface.	At standard	Delivery and Manager – Contracted
		Plowing shall commence when an inspection, following a 5 cm snowfall accumulation or equivalent local drifting conditions, indicates a necessity for a clearing operation.	At standard	
		The snow plowing operations shall be completed within 36 hours following the end of an average storm.	At standard	
		<u>Plowing of Sidewalks – Priority I Streets Within Downtown</u> Sidewalks on Priority I streets within the Downtown shall generally be plowed to a paved surface whenever conditions allow.	At standard	
		A plowing operation shall be initiated when the snow has accumulated beyond a depth of 5 cm.	At standard	
		The snow plowing operations shall be completed within 36 hours following the end of an average storm.	At standard	
		<u>Plowing of Sidewalks – Priority III Streets</u> Sidewalks on Priority III streets shall normally be maintained to a compacted snow surface.	At standard	
		Plowing shall normally commence when an inspection, following an 8 cm snowfall accumulation or equivalent local drifting conditions, indicates a necessity for a clearing operation.	At standard	
		The snow plowing operations shall normally be completed within 5 working days following the commencement of work.	At standard	

Source: Derived from information from City of Winnipeg Public Works.

Comparison to Peer City Service Levels

- Winnipeg's sidewalk snow clearing standards appear to rival the nation's capital.
- As in Winnipeg, in Ottawa, most sidewalks are maintained to a snow-packed clearing standard. Sidewalk standards for downtown business district and tourism sites, as well as those that are directly adjacent to arterial roads, are maintained to a bare surface standard.
- In Calgary, in accordance with the city's Street By-law No. 20M88, the owner or occupant of a private parcel of land must remove ice and snow from any adjacent sidewalk or pathway, subject to fines. Hamilton and Edmonton have similar requirements.

Sub-Service: Parks, Facility Snow/Ice Removal and Snow Disposal Sites				
Operating Cost 2012B ($ millions)	Core Ranking	Service Level Standard	Actual Service Level	City Role
Parks, Facility Snow/Ice Removal: Total: $1.0 *Net: $1.0*	Essential	Plowing of Park Pathways Designated park pathways within community and neighbourhood parks shall normally be maintained to a compacted snow surface. Generally, plowing shall commence when an inspection, following an 8 cm snowfall accumulation or equivalent local drifting conditions, indicates a necessity for a clearing operation. The park pathway snow clearing operations shall be considered as a Priority IV undertaking and shall commence following completion of the City's public sidewalk network.	At standard	Delivery
Snow Disposal Sites: Total: $0.7 *Net: $0.7*	Essential	Snow Disposal Sites during a normal winter shall be checked at least 1 time per day. Note: Snow Disposal Sites are to be operational by October 31st. If wet or soft conditions exist, making snow dump operation impossible, a public notice will be issued by the Maintenance Services Engineer.	At standard	Delivery

Source: Derived from information from City of Winnipeg Public Works.

7.3 Issues, Opportunities and Recommendations

7.3.1 Approach to Snow Removal Contracting

Issue

A significant portion of snow and ice control expenditures is spent on contracted services. The scope of contracting activities and the approach to purchasing contracted services has not been reviewed in many years.

Potential Opportunity Areas	
✓	Business processes
✓	Outsourcing
✓	Shared services
✓	Service innovation
Barriers	
■	Desire for Area autonomy
■	Existing contracts
■	Collective agreement constraints
■	Traditional contracting methods

Findings and Observations

- Areas contract different services to third parties.
- The City of Winnipeg uses two types of outsourcing:
  - Contracts for specific Areas with minimum guarantees (almost always met). These are generally two-year contracts for services from October 15 to April 15th. The contractor has responsibility for snow clearing (plowing) on all roads and sidewalks within a defined zone and for snow removal on regional roads within the Area.
  - Hourly hired equipment (generally coming with an operator) is used in conjunction with City forces.
- City forces are used to conduct salting/sanding operations throughout the city, including the contracted areas. The City also retains the right to carry out plowing and snow removal services in the contracted Areas when it chooses to, generally an option used to deal with small issues not warranting a contractor call out.
- Certain services remain in-house in at least some yards without an articulated evidence-based rationale.
- There appears to be a general comfort with contracting. A relatively high level of snow removal is contracted out: approximately 70-80% of regional streets and approximately 50% of residential streets. Contracts have not been reviewed for several years in terms of value for money.
- A recent City Audit Department report reviewed the hired equipment process. It recommended improved preventative controls in TKMMS, review of the overtime premium and age of equipment bonuses paid on hired equipment.

Implications

- Cost reductions may be possible through economies of scale, minimizing stand-by and overtime costs, Areas' review of hourly hired equipment, and selection of lowest-cost approach.
- In-house staff may not have the capacity to continue service delivery at current levels of service going forward.

Benchmarking and Analysis

- Most jurisdictions appear to conduct the majority of winter maintenance activities in-house. Salting and sanding in particular tends to be conducted in-house, while other services (plowing, storage) are conducted in-house with varied contractor support. Snow removal tends to be carried out largely with contracted equipment.
- Most jurisdictions engage the private sector through "hired equipment", as Winnipeg does to supplement its in-house services. Winnipeg's Area snow clearing contracts are relatively unusual.

- Toronto is an exception, where salting and sanding on arterial and collector roads is contracted to a series of "depot" operators. They are required to initiate a response within five minutes of the direction to do so, so the depots have some live-in workers ready to activate salting runs very quickly in response to precipitation or temperature changes. This is a relatively inexpensive approach to maintaining 24/7 availability.
- In order to optimize the duties of contracted and in-house staff, Calgary has developed a central control room for winter maintenance activities to monitor weather and oversee operations 24/7. All peer cities, including Winnipeg, use a combination of free and paid weather forecasters and have expanded their Road Weather Information System networks in recent years to support deployment decision-making.
- Currently in Winnipeg, hired equipment all shows up in the main yards to receive assignments and goes out as teams. The City may consider utilizing GPS technology so it knows where every piece of equipment/operator is located; as a result, hired equipment could potentially meet teams at designated assignments, rather than requiring all equipment to meet at the central yards. This could save some time and simplify logistics. Also, it would enable the City to know where every piece of equipment/operator is and keep track of progress and errors or damages.
- As indicated in the following fleet equipment profile for Roadway Snow and Ice Control, most of the 488 units are hired equipment and contracted out. The City owns over 100 units (leased by Public Works from the Winnipeg Fleet Management Agency), including the large majority of sanders/salters and all trackless sidewalk plows and blowers. All snow removal dump trucks and most trucks with front plows are hired equipment. The large majority of graders and front-end loaders are contracted.

Roadway Snow and Ice Control - Approximate Public Works Fleet Profile

	City Owned	Hired	Contracted	Total
Units	(1)	(2)	(3)	
Truck with front plows	1	30	24	55
Sander/salter with front plow	42	6	-	48
Graders	10	41	78	129
Sidewalk plow/trackless	29	-	-	29
Front end loaders (on streets/sidewalks)	14	41	99	154
Blowers (removal) (4)	8	-	-	8
Bulldozers/front end loaders (snow storage areas) (4)	-	9	-	9
Dump trucks (removal) (4)	-	56	-	56
Total	104	183	201	488

Notes: (1) Refers to equipment that Public Works leases from Winnipeg Fleet Management Agency.
(2) Refers to hired hourly equipment.
(3) Refers to equipment hired under global contract.
(4) The City owns blowers. Bulldozers, front end loaders and dump trucks are all hired.
Source: Derived from information from City of Winnipeg Public Works.

RECOMMENDATIONS

- Public Works should conduct a comprehensive review of its approach to contracting for snow and ice control services. The review should include the following:
  - Determining the comparative costs of services delivered by Area contractors verses the same services delivered by City forces.
  - Determining the cost of hired equipment (with labour) compared to the cost of City equipment (and labour) in various circumstances.
  - Consultation with hired equipment suppliers, Area contractors and City staff.
  - Evaluation of options to:
    - retain the status quo;
    - institute a depot contract similar to the City of Toronto to provide standby labour for salting/sanding/plowing major roads;
    - enlarge the size of the Area contracts;
    - utilize GPS technology to track operators/equipment;
    - change pricing of the Area contracts to have it consider the volume of snow fall as well as the lane miles or linear miles served;
    - eliminate "overtime", weekend bonuses and equipment age bonuses from the hired equipment contracts (providers can use more than one operator on a piece of equipment if they choose); and
    - expand or reduce the range and volume of hired equipment.

Rationale / Benefit

- Winnipeg uses a good variety of contracted services. Over the years it has adjusted the detailed terms of its contracts from time to time, based on issues or ideas that have emerged. However, the City has not examined the underlying structure of its contracting approach for many years, nor has it done financial analysis to determine which activities it is, or could be, saving money by contracting, and which it is, or could be, saving money by doing with City vehicles and staff.

Priority

- Medium

Financial Impact

- To be determined as a result of review which can largely be conducted internally, but may require the cooperation of outside sources.

Timing

- Medium-term

Risk Level

- Medium

Implementation Factors

- Gather available data internally.
- Internal resources to conduct study and undertake much of the cost analysis.
- Consultation with suppliers, Area contractors, Materials Management.

7.3.2 Annual Funding for Snow Removal

Issue

There is inadequate funding allocated for snow removal annually, leading to a deficit most years, and a relatively large deficit in years with many weather events.

Potential Opportunity Areas	
✓	Revenue (some offset of costs)
Barriers	
	Citizen perception and acceptance

Findings and Observations

- The Department estimates that in a typical year, the snow removal and ice control budget should be $5-6 million higher than the current level of $30-31 million.
- Funds in the Snow Reserve are depleted.

Implications

- The City understands there is a weather-related risk each year, and the corporate decision is to accept the risk and deal with snow removal requirements each year.
- Residents also understand the weather variability and the related volatility of expenditures.
- Given the high service level expectations and the precedent set in a new garbage diversion fee, an option, among others, exists to add a small snow removal fee to the tax bill in years where there are more winter weather events and the snow removal budget is exceeded, thus removing this as a constant pressure from budget discussions on other issues.

Benchmarking and Analysis

- A number of cities have established snow reserves with the idea of averaging out expenditures between years – but then used the reserve for other purposes when budgets were tight.
- Other cities have also committed more funds to snow and ice control in recent years. Reductions in service level have generally not proven sustainable.
- In Calgary, funding for snow and ice control has been increased by $10 million to offer enhanced snow clearing services in residential areas (there formerly were none) and achieve compliance with the city's snow and ice control policy.
- Edmonton's snow and ice control budget for 2013 increased to over $50 million from $43 million in 2011.
- Likewise, after a complex year of weather in 2005, Ottawa added $4.5 million to its 2006 Operating Budget for winter road and sidewalk maintenance in order to provide supplementary measures to respond to extreme weather conditions.
- As indicated in S. 4.9.1, data from OMBI indicates that Winnipeg and Ottawa have higher operating costs for winter maintenance of roadways per lane kilometer, compared to the city median. Associated with these higher costs, Winnipeg and Ottawa have higher snow removal and ice control service standards. Hamilton and Mississauga are close to the average, while Calgary is below average and has lower service standards, but has been increasing its snow removal budget and standards.
- Milwaukee, Wisconsin charges user-based service fees for select services, including snow and ice control. Refer to the case study on the following page for details.

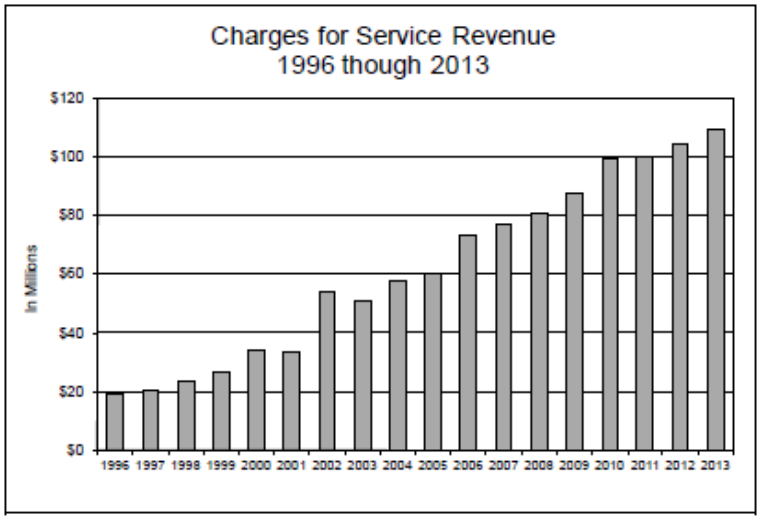
Case Study: Milwaukee, Wisconsin – Snow and Ice Fee

Challenge

- The City of Milwaukee needs to balance the quality of service delivery with costs in order to achieve value for citizens.

Approach

- One way Milwaukee manages this problem is by charging user-based service fees for select services, including snow and ice control. The chart to the right illustrates the increased city reliance on these fees. Charges for service revenues increased from approximately $19 million in 1996 to $112 million in 2013.
- Milwaukee's long-term objective is to increase the level of non-property tax, non-municipal service fee revenues as a proportion of the city's General Fund budget by 2% annually.



Results / Potential Impact

- The city's Snow and Ice Control Fee recovers a large portion of the city's cost for snow and ice operations. The 2013 budget includes a Snow and Ice Fee of $7.9 million or an average of $33.23 per typical property with 40 feet of street frontage. The fee is charged based on the estimated street frontage for all properties.

Source: City of Milwaukee Plan and Budget Summary FY 2013

Context for Public Works

- Recovering even a small portion of the City's Snow Removal and Ice Control budget (approximately $31.0 million in the Preliminary Operating Budget FY 2013) would result in a large sum of cost savings for Public Works.
- The City introduced a service fee of approximately $50 per household for garbage diversion while introducing a new residential system. A small snow and ice control fee may be a consideration, particularly if tied to a year of above average snowfall. However, metrics would have to be clear and this would heighten citizens' already high expectations of higher service standards for snow removal.

RECOMMENDATIONS

- Should the City continue the policy of budgeting snow and ice control costs based on expected expenditures in a below average winter, while maintaining or enhancing high service level standards, the City may consider establishing a "Winter Control Surcharge" that could be added to tax bills, when appropriate, based on the actual snow and ice control expenditures each winter period.

Rationale / Benefit

- The decision can be taken late winter/early spring before the tax bill is finalized annually in May.
- The adjustment may be better understood based upon resident perceptions of the winter just passed.
- The impact of weather changes on annual tax discussions and adjustments will be removed.

Priority

- Depends on S. 7.3.3

Financial Impact

- $0 to $10,000,000 depending upon weather; approximately equivalent to approximately $0 to $60 per single-family home. Assumes that very high service standards would continue to be maintained or enhanced.

Timing

- Medium to long-term

Risk Level

- High
- Depends on S. 7.3.3

Implementation Factors

- Requires Council direction and policy change.
- Effective communication and easy-to-understand impacts.
- Citizens' high expectations and demands for high service levels would be further heightened.
- Establishing the collection mechanism and transfer of funds to the Department.
- Establishing clear parameters, thresholds, and formula for determining and applying a surcharge.

7.3.3 Snow Removal Service Level Expectations for Local Streets

Issue

The snow and ice control service levels exceed those in other cities, increasing costs.

Potential Opportunity Areas	
✓	Business processes
✓	Service innovation
✓	Potential revenue
Barriers	
■	Citizen expectations are very high and high level of service is difficult to trim back

Findings and Observations

- Winnipeg provides a high level of snow removal and ice control service among cities in Canada and across North America, particularly for residential areas.
- Some aspects of this service exceed standards in other cities:
  - the level of sidewalk clearing;
  - curb-to-curb, bare pavement clearing on residential streets;
  - clearing driveway windrows after plowing residentials.

Implications

- Potential to re-examine some of the service level standards.
- Service levels are high, resulting in higher costs. Are residents and Council comfortable with the trade-off?
- There may be opportunities for potential revenues (e.g., user pay) for "extra" services.
- Increasing demand for snow removal on active transportation corridors where significant additions have been made in recent years.

Benchmarking and Analysis

- Sidewalks: As previously discussed, some western cities (e.g., Calgary, Edmonton) do not take responsibility for sidewalk clearance (except in front of city properties) and make sidewalk shovelling a responsibility of the adjacent property owners. However, they tend to experience inconsistent levels of sidewalk clearance, making walking even more of a challenge in winter. Enforcement efforts can be increased to maintain By-law adherence, but at a cost. These cities still require a sidewalk cleaning capacity to handle the sidewalks in front of parks, city buildings, etc.
- Residentials: Winnipeg's approach is both a higher service standard and a lower service standard than what Edmonton and Ottawa do. The City plows residentials after each snow (at least each one 8-10 cm or more), while the snow is still generally soft and most of it is removed – although a snow pack will remain. Winnipeg allows the snow to pack until the packed snow reaches 8-10 cm, then deploys a fleet of three graders to the residential areas that scrape the road to bare pavement and widen the road back to the curb lines. This process results in very large windrows, often made up of quite large chunks of snow that are difficult for residents to remove. As a consequence, the City sends out three front end loaders with the graders so they can clear the windrows from the driveways – something Ottawa and Edmonton do not do. There are two approaches that could be used to reduce costs:
  - Winnipeg's process could be continued, but with a smaller crew, perhaps two graders to open the road and one loader to remove windrows from intersections. This would result in roads being a little less wide and/or with some snow remaining. Windrows would be a little smaller, but still include large chunks of packed snow.
  - Switch to a process more like Edmonton and Ottawa that provides for a grader run at the end of each snow event, which would minimize the build up of packed and rutted snow, giving more frequent plowing, but also leave residents to clear their own windrows.
- Cities have become more focused on supporting walking, and transit (which includes walking). Walking depends upon passable sidewalks, and the City sidewalk plowing program is an important

element of that. No city has been known to abandon sidewalk plowing after having started it. This would not seem to be worth pursuing.

- Changing the approach to residential street plowing would also be difficult. Clearing windrows manually is hard work, and it would be hard for people to accept they had to go back to that, even if in the Edmonton/Calgary model they were shovelling fresher snow not large chunks of hard packed snow and ice. It would create some new business opportunities for people to sell driveway clearing services. But considering the economies of scale, it is obviously more efficient for one group – the City – to use large scale equipment to clear all the driveways on a street than it is for everyone to use shovels or their own contractors to do the same work.

Case Study: Mississauga – Driveway Windrow Snow Clearing Pilot Program

Challenge

- Mississauga needed a cost-effective method to improve snow clearing service for citizens.
- Any new program required high participation to warrant permanent use.

Approach

- Mississauga implemented a Driveway Windrow Snow Clearing Pilot Program starting in the 2009/10 winter to clear snow windrows from driveways for residents 65 years of age or older, and those who are physically disabled.
- In October 2012, to increase participation and snow clearing revenues, Mississauga City Council approved making the Driveway Windrow Pilot Program eligible to all residents, provided the available 300 spots are not filled by older adults or residents with disabilities, who will have first priority.
- Participation is either free or $200 depending on the applicant's financial capabilities and physical health.

Results / Potential Impact

- The city budgeted $50,000 for the 2012/13 winter to offer this service. During the 2011/12 winter, 52 residents were eligible for the program and 44 registered to pay. Assuming the same enrolment (52) for 2012/13, we estimate a cost of approximately $1,000/person to provide this service.

Sources: (1) Mississauga.com, *Windrow clearing service looks likely this winter,* October 4, 2012
(2) City of Mississauga website, *Driveway Windrow Pilot Program*

Context for Public Works

- Public Works already provides windrow snow clearing for all citizens; however there may be an opportunity to charge user-fees to offset the cost. On the other hand, the Mississauga program shows the challenges involved in a program based on enrolment. Only doing selected driveways – those who pay – would result in the need to accept payment, track those who pay, and set up a system to provide the service only to those residents who paid. Even if it were most residents in Winnipeg, it would not be all and the costs of tracking the participants and non-participants would be created. Thus, some of the economies of scale that result from serving everyone would be lost.
- However, this concept could be married with the "Winter Control Surcharge" to apply a special fee to cover the costs of driveway windrow removal and apply it based on the number of driveways to the property.
- Retaining windrow removal would keep the economies of scale and level of service residents enjoy, and charging a user fee to retain this premium service would likely be preferable to residents than eliminating the service. The program could incorporate an opportunity to "opt out" as long as it put the onus on the property owner to provide adequate visible notice (signage) that they had chosen not to pay for (and receive) the service.

RECOMMENDATIONS

- Consider changing the service level standards of curb-to-curb and bare pavement plowing on residential streets during high snowfall events to narrower street plows and smoothing surfaces. Also consider changing the residential road plowing process to one that would see a plow run after each significant snowfall (once PI and PII streets are completed).

Rationale / Benefit

- This approach would provide more frequent residential plows, but would not aim to achieve bare pavement or curb-to-curb coverage. Areas with significant street parking would require a second run to widen the surface in some cases.
- Reduced amount of annual curb damage and repair.

Priority

- High

Financial Impact

- The Department estimates that changing the service level standard for residential street plowing from curb-to-curb and bare pavement to narrower plowing and smoother surfaces could save approximately $2 to $3 million annually in a typical year of 2 – 3 city-wide residential plows, even assuming 1 – 2 more plows that are substantially less intensive than the current standard.

Timing

- Medium-term

Risk Level

- High

Implementation Factors

- Requires change in Council policy and standards for residential streets.
- Outsourcing contracts are typically 2 years, so would need time to adjust and phase-in such a change.
- Cost savings are estimated to be significant but would need to be confirmed and tracked. A portion of savings could be offset by more frequent but much less-intensive residential plows.

7.3.4 Summary of Issues, Opportunities and Recommendations

Roadway Snow Removal and Ice Control – Issues and Opportunities Summary							
Opportunities / Issues	Business Processes	Organizational Restructuring	Outsourcing	Automation	Shared Services	Service Innovation	Potential Revenue
Approach to Snow Removal Contracting	✓		✓		✓	✓	
Annual Funding for Snow Removal							✓
Snow Removal Service Level Expectations for Local Streets	✓					✓	✓

Summary of Recommendations

- Approach to Snow Removal Contracting: Public Works conduct a comprehensive review of its approach to contracting for snow and ice control services.
- Annual Funding for Snow Removal: The City consider a "Winter Control Surcharge" that will be added to tax bills, when appropriate, when the actual snow and ice control expenditures in a winter period exceed the budget.
- Snow Removal Service Level Expectations for Local Streets: Consider changing the service level standards of curb-to-curb and bare pavement plowing on residential streets after high snowfall accumulations. Opening a narrower travel way plow and aiming for a smoother surface would significantly reduce costs, even if residential road plowing was carried out after each significant snowfall (once PI and PII streets are completed).

8 Transportation Planning and Traffic Management

8.1 Financial Operating Results (Traditional Method) FY 2010-2012

The table on the following page summarizes the Transportation Division's financial operating results for fiscal 2010-2012.

- Total operating expenditures have remained relatively constant over the period reviewed, ranging between approximately $5.2 million and $5.7 million.
- FTEs remained constant over the period, but salaries and benefits increased from approximately $5.2 million in fiscal 2010 to approximately $5.9 million in fiscal 2012. This increase was largely offset by an increase in inter-fund recoveries.
- Transportation's total operating expenditures represented approximately 3.2% of Public Works consolidated operating expenditures in fiscal 2012.

Transportation Division - Financial Operating Results (Traditional Method)				
$000's (unless otherwise stated)				
For the Fiscal Years Ended December 31	**2010A**	**2011A**	**2012 Preliminary Draft**	
				% of total
Transportation Division				operating
Operating expenditures				expenditures
Salaries and benefits	5,254	5,816	5,930	109.6%
Services				
Real Property Contracts-Const/Mtce	279	306	143	2.6%
Fleet Operating Lease	208	175	182	3.4%
Fleet Capital Lease	271	271	300	5.5%
Equipment Rental-External	-	-	-	-
Other	930	964	952	17.6%
Total services	1,687	1,716	1,577	29.1%
Materials, parts and supplies	541	1,120	1,086	20.1%
Equipment, furniture and other purchases	19	29	13	0.2%
Recoveries				
Departmental recoveries	(70)	(62)	(5)	(0.1)%
Inter-fund recoveries	(1,753)	(2,230)	(2,480)	(45.8)%
Other	(1,003)	(1,706)	(1,055)	(19.5)%
Operating expenditures (before noted items)	4,675	4,684	5,066	93.6%
Debt and finance charges	1	1	1	0.0%
Cash to capital	-	-	-	-
Grants, transfers and other expenditures	545	972	346	6.4%
Total operating expenditures	5,221	5,657	5,413	100.0%
$000's/FTE calculations				
FTE	66	66	66	
Operating expenditures (before noted items)/FTE	71	71	77	
Total operating expenditures/FTE	80	86	82	
As percent of Public Works Department				
FTE	6.7%	6.5%	6.7%	
Operating expenditures (before noted items)	4.2%	3.7%	4.5%	
Total operating expenditures	3.2%	3.1%	3.2%	

Note: Noted items include debt and finance charges, cash to capital, grants, transfers and other expenditures.
Source: City of Winnipeg Public Works Department

8.2 Operating Budgets FY 2010-2013 (Service-Based)

The following table summarizes Service-Based budgets for Transportation Planning and Traffic Management. Adopted operating budgets are summarized for fiscal 2010-2012, and the preliminary operating budget is summarized for fiscal 2013.

- Traffic/Right-of-way Management: Approximately $7.0 million of the fiscal 2012 budget of $12.0 million is attributable to traffic signal asset management and traffic services/operations.
- Total operating expenditures/FTE range were approximately $90,000/FTE in 2010 and 2011, increasing to $104,000/FTE in the 2013 Budget primarily related to increased budget allocated for transportation planning and design.

Transportation Planning and Traffic Management - Operating Budgets (Service Based)								
$000's (unless otherwise stated)								
For the Fiscal Years Ended December 31	**2010B**	**2011B**	**2012B**			**2013B**		
	Expenditure	Expenditure	Expenditure	Revenue	Net Expenditure	Expenditure	Revenue	Net Expenditure
Transportation Plan & Design	1,901	1,966	1,537	(32)	1,506	3,562	(32)	3,529
Traffic/Right-of-way Management	11,032	11,481	12,012	(1,390)	10,622	11,782	(1,785)	9,998
Total	**12,933**	**13,448**	**13,549**	**(1,422)**	**12,128**	**15,344**	**(1,817)**	**13,527**
FTE	143	147	148			148		
$000's/FTE	90	91	92			104		

Source: City of Winnipeg Public Works Department

8.3 Sub-Services and Service Levels

Sub-Service: Transportation Plan & Design				
Operating Cost 2012B ($ millions)	Core Ranking	Service Level Standard	Actual Service Level	City Role
Total: $1.5 *Net: $1.5*	Mandatory/ Essential *Highway Traffic Act* Winnipeg Transportation Master Plan	Not available	Not available	Delivery

Source: Derived from information from City of Winnipeg Public Works.

Comparison to Peer City Service Levels

- There are no service standards for Transportation Planning and Design in Winnipeg or other cities surveyed.

Sub-Service: Traffic/Right-of-way Management				
Operating Cost 2012B ($ millions)	Core Ranking	Service Level Standard	Actual Service Level	City Role
Total: $12.0 *Net: $10.6*	Mandatory/ Essential City is traffic authority under *The City of Winnipeg Charter Act* *Highway Traffic Act*	<u>Traffic Signal Outage/Failure – Response (Guidelines)</u> 311 shall contact the Traffic Signal Trouble Dispatch Service to initiate response of the on-duty First Responder, and may dispatch a Winnipeg Police Service unit to investigate the call.	311 contacts the Traffic Signal First Responders crew to initiate response. This is done within 2 minutes of a call being made.	Delivery
	Highway Traffic Act *Health & Safety Act*	A Traffic Signals Duty Trouble Technician shall attend the scene of the outage/failure within 1 hour and determine if the First Responder can fix the problem and restore the signals to normal operation.	The First Responders crew attends the scene to fix the problem or make sure the site is electrically safe in the case of equipment damage. This is done within 1-4 hours.	
	Highway Traffic Act	If further help is required to restore the signals to normal operation, the First Responder will call for a Traffic Signals electrical crew or other assistance as required.	If further help is required to restore the signals to normal operation (usually in a case of damage), the First Responders crew will call for a Traffic Signals electrical crew or other assistance as required. This is done 100% of the time.	

Sub-Service: Traffic/Right-of-way Management				
Operating Cost 2012B ($ millions)	Core Ranking	Service Level Standard	Actual Service Level	City Role
	Highway Traffic Act	The United States Department of Transportation ("US DOT") recommends response time for signal failures of within 1 hour during business hours and within 2 hours during non-business hours.	Below standard The following breakdown was provided for all times of the day and week: 40% is responded within 1hr 25% is responded within 2hr 15% is responded within 3-4hr 10% is responded within 5-8hr** 10% is responded within 8hr and more** **normally deferred response as per deferral practice (e.g., burnt out single green light is deferred to the next available working day)	

Source: Derived from information from City of Winnipeg Public Works.

Comparison to Peer City Service Levels

- In its Traffic Signal Operations and Maintenance Staffing Guidelines, the United States Department of Transportation recommends that systems in excess of 400 intersections should detect 70% of all traffic signal failures using the traffic signal agency. Winnipeg currently has little active monitoring or detection for traffic signal failures. All calls are being reported by users through 311.
- Similar to Winnipeg, peer cities did not appear to have formal service level standards but they utilize internal guidelines.
- Winnipeg is similar to peer cities in conducting signal/traffic monitoring, sign maintenance and design of signal system maintenance in-house.
- In Ottawa, the Traffic and Parking Operations Branch manages visual problems with traffic control signals and damaged streetlights. All signal/camera and traffic monitoring and signal maintenance activities are conducted in-house.
- Edmonton contracts out most of its signal maintenance field work and street lighting construction, while other cities including Winnipeg handle signal maintenance in-house, although Winnipeg contracts out the underground and signal base construction. In Winnipeg, street lighting is designed, constructed and maintained by Manitoba Hydro.
- In Calgary, all signal/camera and traffic monitoring is conducted in-house through the Traffic Management Centre.
- Mississauga uses a blend of in-house and contracted resources for its traffic management services.
  - Approximately 30% of signal/camera and traffic monitoring is performed in-house, including operation of the city's Traffic Control System and Intelligent Transportation System. The remainder is contracted out, including maintenance of these systems and operation and maintenance of traffic signal communications.
  - Approximately 20% of signal maintenance is performed in house, including operation of the city's traffic control signal network. Contractors maintain the network.
  - All sign-related activities are performed in-house.
  - Repairs and/or replacements are made within the times specified in Ontario's Minimum Maintenance Standards for Municipal Highways, where applicable.

8.4 Issues, Opportunities and Recommendations

8.4.1 Right-of-Way Management and Processes

Issue

The road right-of-way accommodates many essential services – the roads themselves, water, sewer and storm sewer pipes and pumps, phone, cable and optical communication conduits and switches, natural gas and electricity distribution, and, in addition, has less essential uses such as encroachments for restaurant patios, etc.

Asset management, capital coordination, and optimizing the use of limited capital resources in the context of a large infrastructure deficit requires good coordination and cooperation between the various entities responsible for these systems.

At present the responsibility for coordination of the right-of-way lies with the Transportation Division, and the roads are their prime concern and interest. The separation of the Engineering group from right-of-way management has created yet another stakeholder with a strong involvement in right-of-way capital management, with no strong coordination mechanism in place. The management of corporate capital assets, and those of the independent utilities, depends upon very large volumes of data, and the practices of many stakeholders that are sometimes inconsistent, largely not integrated, and require manual processes and coordination.

Potential Opportunity Areas	
✓	Organizational restructuring
✓	Service innovation
Barriers	
■	Complex stakeholder environment
■	Existing processes and systems

Findings and Observations

- Public Works has a shared infrastructure asset base (bridges, regional roads, local roads, sidewalks) built above a wide range of utility assets, each with its own lifecycle and upgrading requirements, as a result of which infrastructure management and capital plan coordination is complex.
- Transportation infrastructure assets (linear) are integrated tightly with Water and Waste assets (specifically structures) below the ground; transit infrastructure assets overlap and intersect with transportation assets on the ground; traffic, facilities and development are somewhat integrated above the ground.
- Water and Waste as a separate City Department from Public Works and its Engineering and Transportation Divisions increases the coordination challenge, perhaps pointing towards a corporate asset management solution.
- Transportation, Transit and Water and Waste are working to improve coordination, and there are some challenges and constraints shaping integration with transit, utility and telecommunication stakeholders.
- Activities which are directly related to other stakeholders' assets (on shared transportation assets) can have negative impacts on the transportation asset portfolio; unplanned activities increase negative impact.
- Transportation is the "gatekeeper" of the City-wide long-term Transportation Master Plan issued in 2011, and the "owner" of the road right-of-way.
- Within Public Works, the business processes involved in planning and coordinating transportation infrastructure asset management involve large volumes of data and manual activities.
- The Departments of Public Works, Water and Waste, Planning, Property and Development, and Corporate Support Services in partnership with Manitoba Hydro and Manitoba Telecom Services form the Underground Structures Committee. This is coordinated within the Customer Services and

Strategic Support Division of Public Works. The Underground Structures Committee provides a forum for discussing matters, information sharing, and resolving issues, and is a resource for records management of facilities and structures placed on or beneath the right-of-way. The Underground Structures Committee employs Envista map-based right-of-way solutions to coordinate data and information on the public right-of-way.

- Co-ordination of utility and transit planned works is manual, inconsistent and may be leading to potential inefficiencies.
- Data management, extraction and analysis are interconnected with manual processes to support the current level of automation in the business process for planning and coordinating capital projects.

Implications

- Road and underground right-of-way and coordination is a challenge – leading to the involvement of many different stakeholders, resources, systems, budget areas, etc.
- Staff resources are spent on managing manual processes and analyzing large volumes of data.
- Potential for inconsistent application of processes and standards leading to re-work, public disruption, missed improvement opportunities, increased risk and/or inefficient use of capital funds.
- Capital spending may not be fully optimized as a result.

Benchmarking and Analysis

- Edmonton has invested significantly in improving its asset management system and coordinating repairs. Some examples are below:
  - Edmonton created a Geographic Information System (Oracle spatial) based Spatial Land Inventory Management system that includes roadway related geometry and other attributes that other municipal systems can use for pavement/asset management, routing (waste, emergency), etc.
  - The city's Transportation Services Department uses Stantec's Pavement Management System (including its Municipal Pavement Management System and Highway Pavement Management Application) to provide condition and renewal needs assessments and lifecycle cost analysis to produce prioritized renewal lists for various budget scenarios to optimize network performance.
  - Since 2010, Edmonton has employed an Envista map-based right-of-way solution (same system as Winnipeg Public Works) on the web to proactively manage utility projects, public works, permitting, incidents, traffic, and events to optimize street performance, reduce costs, and minimize environmental impact. The application will now expand to all area utilities in 2013, further improving communication and coordination. Edmonton also issues On-Street Construction and Maintenance (road use) permits by way of a computer program which manages conflicts during construction season. Staff uses this software to identify conflicts and coordinate usage and space occupancy on freeways, arterials, and collectors.
- For arterial and collector roadways Edmonton uses Automatic Road Analyzer vans to collect (visually and via laser) the following data sets in a single pass simultaneously: longitudinal profile and roughness (e.g., International Roughness Index ("IRI")); transverse profile and rut depth; surface distress (post) rating (e.g., cracking, potholes, etc.).
- Toronto has established a corporate asset management office responsible for coordinating capital requirements and projects of all departments and agencies with a view to eliminating potential waste from conflicting priorities, uncoordinated projects, and to ensure all needs are identified and considered in resource allocation decisions.
- Ottawa has created corporate units responsible for all capital projects: a planning unit responsible for identifying new needs/requirements; an asset management group responsible for assessing condition of all existing assets and prioritizing investments; and an engineering/project management group responsible for carrying out all capital projects. This approach ensures coordination of the needs of all departments, although outside utilities still rely on cooperation and coordination.

Case Study: Charlotte, North Carolina – Creating a Right-of-Way Management Program

Challenge

- In the early 2000s, the City of Charlotte recognized the abundance of recurring utility problems within the public right-of-way. The city and utilities were incurring infrastructure damage, and citizens were being inconvenienced by frequent construction projects.
- The city, in cooperation with key stakeholders, needed to develop a new right-of-way management program to safeguard infrastructure, improve coordination among utilities, minimize traffic disruptions, maintain safety, and improve the permitting process.

Approach

- The city started its Utility Right-of-Way Management Initiative in April 2006. City staff invited the utility industry, both public and private, to participate in a stakeholder process. The purpose of the process was to engage the utility companies in a collaborative dialogue about problems in the right-of-way and possible solutions. During the meetings, staff and stakeholders identified issues and jointly designed solutions that all parties could accept.
- Charlotte City Council passed the Utility Right-of-Way Use Ordinance in October 2007, which provides for the reasonable regulation of the owners of public and private utility facilities located in the public right-of-way, and the time, place and manner in which such utility facilities are located and worked upon.

Results / Potential Impact

- The program provided many benefits for the public and private sectors. The major benefits for the utility companies are:
  - one city permit which replaced three separate permitting processes (i.e., encroachment agreement, a right-of-way use permit, and a street cut permit);
  - more opportunities for partnerships between the utility companies to share construction costs;
  - fewer mandated relocations by the city because of conflicting improvement projects;
  - reduction of accidental utility damage;
  - greater probability of identifying parties responsible for utility cuts;
  - fewer scheduling conflicts; and
  - faster review times by city staff.
- The public benefits of the program are:
  - longer pavement life;
  - less damage to public infrastructure (both utility and non-utility);
  - fewer traffic delays;
  - safer right-of-way for pedestrians; and
  - more systemic/strategic use of the public right-of-way.

Sources: (1) APWA Reporter, *Creating a Right-of-Way Management Program*, 2010
(2) City of Charlotte Utility Right-of-Way Use Ordinance, 2007

Context for Public Works

- City of Winnipeg Departments are increasingly coordinated in capital works and work cooperatively with the utilities. An effective coordination framework is a key requirement to effectively manage the right-of-way, lower infrastructure costs, and improve value for citizens. The Underground Structures Committee provides coordination on issues, records and information. However, a long-term planning process to formally coordinate capital budgeting/improvements and asset management in the right-of-way would be beneficial.

RECOMMENDATIONS

- That the City of Winnipeg consider the directions and scope of the corporate asset management program it will undertake.
- Assuming the City leaves the road right-of-way responsibility with Public Works, that Public Works be tasked with managing a Road Right-of-Way Coordinating Initiative with representatives of all agencies with major assets in the road right-of-way. This may build upon the foundations already in place through the Underground Structures Committee. The Initiative will have responsibility for coordinating all capital improvements in the right-of-way, and for all City departments and agencies, ensuring the collection and use of appropriate asset condition indicators and the identification for budget submissions of the highest priority areas for asset renewal and lifecycle investments.
- The Initiative (or the city asset management function) identify the strategy and priority information requirements and IT investments required to support effective asset management. The Envista GIS system is an effective tool that can continue to be built upon as part of capital planning and asset management.

Rationale / Benefit

- Cities around the world are focusing on the challenges of asset management as the major investments in city building made in the 1950's through the 1970's begin reaching the end of their useful life. The need to invest in replacement or renewal to ensure the continued availability of assets and the services they support is essential to the continued functioning of the City.
- The assets involved are owned, managed and operated by a wide range of stakeholders both within the city and external to it. While it can work for Public Works to have the roads needs drive the renewal process, more integrated planning that takes into account the needs and abilities of the various stakeholders will produce better results.
- Better information for decision-making will also improve the effectiveness of the city's capital investments, resulting in more result for the dollar spent.

Priority

- Medium

Financial Impact

- Process improvement through better coordination, formalizing a number of relationships already taking place.

Timing

- Medium to long-term

Risk Level

- Low

Implementation Factors

- Establishment of a formal Right-of-Way Initiative led by Public Works.
- Right-of-Way Initiative to identify the strategy and priority information and IT requirements to support effective right-of-way asset management.

8.4.2 Centralized Traffic Management Centre

Issue

There is no centralized traffic management control system.

Potential Opportunity Areas	
✓	Business processes
✓	Automation
✓	Service innovation
Barriers	
■	Not viewed as a priority within the Budget process

Findings and Observations

- The Traffic Signals Branch is responsible for the operation and maintenance of 611 traffic signals, 155 pedestrian corridors, and 50 hazard flashers, as well as new signal development and installation.
- Since 2008, the City's Enhanced Traffic Signals Management Project capital program has replaced many of the antiquated signals, but the system lacks a central coordination function and the ability to adjust traffic timing based on events as they unfold on the street. There are also few video feeds that would provide information on what is actually happening, and few resources for developing timing plans.
- Winnipeg is a city without freeways, thus, traffic planning and management is a critical function and the least expensive way to improve road capacity and travel times.

Implications

- Traffic signal timing is set based on a best estimate of "normal" traffic conditions at each signalized intersection. Winnipeg has limited ability to respond to poor weather, unplanned street closures (fires, accidents), and it is more difficult to respond to planned or expected changes in travel patterns such as sporting events or other large public gatherings. A centrally controlled traffic control system, particularly one supported by closed-circuit television ("CCTV") images on major intersections and thoroughfares, and the opportunity to communicate with drivers through radio and/or variable signage provides real time control, enabling quick response and troubleshooting to improve traffic flows and reduce delays, among other benefits. A centrally controlled, computerized system also allows more sophisticated signal timing for "normal" or predictable events, with more signal timing schemes to reflect different requirements for morning and evening rush hours, weekend shopping, etc.
- A central control system, with a Traffic Management Centre ("TMC") can also provide assistance with other emergency conditions, giving emergency responders, for instance, access to more information on actual conditions during unusual events.
- Perhaps requires a vision and separate business case from the annual Budget process, communicating and articulating the business case benefits and necessity, tied to the City's Transportation Master Plan and gathering wider internal City support.

Benchmarking and Analysis

- Several cities have instituted Traffic Management Centres and this appears to be an important investment for effective traffic management.
- For example, Edmonton's TMC is actively monitored Monday through Friday, from 6:00 am to 6:30 pm. It houses a traffic signal system, a video traffic management system, and an event traffic management system (for dynamic message signs). This centre enables the city to conduct real-time monitoring, to coordinate between service areas and groups, and to manage incidents. Approximately 60% of the city's signals and all of the cameras are connected to the TMC.
- Ottawa has a TMC that operates 13 hours per day, Monday through Friday from 6:00 am to 7:00 pm. It was built in 1976 to promote traffic coordination, monitor intersection operation, and correct the drifting of controller clocks. Approximately 1,122 signals and 200 cameras are connected to the TMC. The Ottawa TMC is not resourced with staff on a regular basis, leaving the computer to adjust signal timing most of the time. However, several traffic timing and traffic studies staff are trained to operate

the centre and resource the facility when required, and the centre contains seating for many other agencies (transit, police, fire, ambulance, etc.) who use the centre and the camera images in particular to help manage unusual events, major fires, bomb threats, accidents, etc.

- Mississauga is planning implementation of a new Traffic Management Centre and a complementary Intelligent Transportation System ("ITS") to maximize existing roadway capacity and ensure integration with future light rail transit and bus rapid transit initiatives. Capital funding for these components have been approved and all projects are currently underway.

  Capital investment of approximately $2 million is expected to be phased in over four years, broken down as follows (Source: City of Mississauga Roads, Storm Drainage & Watercourses 2013-2016 Business Plan):

  - Fiscal 2013: Design and construction of space-works $900,000
  - Fiscal 2014: Phase 1 – Initial hardware, software and furniture $500,000
  - Fiscal 2015: Phase 2 – Hardware and software expansion $300,000
  - Fiscal 2016: Phase 3 – Hardware and software expansion $300,000

  After fiscal 2016, sustaining capital expenditures of approximately $300,000 are expected.

  New staff positions will be required to support the city's TMC. The positions are expected to be phased in as follows:

  - Fiscal 2014: 2 positions required to support regional traffic signal service delivery model
  - Fiscal 2015: 2 positions required for proactive traffic management and ITS initiatives
  - Fiscal 2016: 2 positions required for proactive traffic management and ITS initiatives

  By end of fiscal 2016, gross annual operating expenditures of approximately $500,000 are expected for these six FTEs.

- Calgary also has a TMC, which is outlined in a case study near the end of this section.
- The Federal Highway Administration in the United States suggests the creation of a business plan for TMCs, noting the need for long term goals and a staged implementation process (Source: *Transportation Management Centre Business Planning and Plans Handbook*, 2005). This facilitates the long term view on benefits (e.g., road requirements foregone) as well as the short term benefits (e.g., improved traffic flow, shorter travel times) and can assist in producing the clear fiscal business case for a TMC.
- The long term view also recognizes the continued evolution in technological capacity and the large cost of replacing everything at once. If individual elements can be changed over time while still building a system where all elements will work together as they are changed out or added, an effective system can be built.
- One interesting observation from the U.S. examples and recent discussions in Ottawa revolves around the scope of the TMC – is it a Traffic Management Centre, a "Transportation Management Centre" or a Transportation and Emergency Management Centre? Controlling traffic signals is always a core component, but controlling public transit also requires a control centre – with some overlap in the capacity required, and as transit priority gains attention, an increasing need for coordination with traffic signals. Some U.S. examples also include multiple jurisdictions, in Winnipeg's case this might involve City and provincial traffic management initiatives in the same centre, perhaps co-located with the public transit control centre.
- Including emergency management capacity can also be a useful addition. When there are major events that require coordination of several agencies, perhaps a large accident, a major fire, even a threat of a terrorist attack, a large demonstration, a flood event, a major infrastructure failure (e.g., water pipe, bridge etc.), there is often a need to use video resources to gain an understanding of the situation, divert traffic, divert public transit, coordinate emergency response teams, provide transit vehicles to support operations, provide media updates and briefings, etc. Many emergency

management centres are empty rooms activated at the time of crisis. Adding the capability to use a TMC (particularly one that already co-locates traffic and transit management) for coordinating emergency response can improve effectiveness and reduce the disruption of operations caused by standing up a separate facility. No TMCs that were examined are known to include 311, police, fire or ambulance dispatch on a co-located basis, although some allow for dedicated workstations with direct connections to the emergency dispatch functions. The need for back-up and contingency does suggest the need for two centres that can each carry on a full range of functions if one is disabled in some way.

- The Federal Highway Administration document discussed above identifies the key issues related to the business model of a TMC as:
  - Functions or services provided (traffic management is the essential function, but will the centre, over time, incorporate transit control centre functions, event and/or emergency management and/or support – either on site, or by providing virtual support to independent control centres?).
  - Geographic area covered (presumably at least the City of Winnipeg if the focus is just on traffic and snow and ice management, but could involve provincial highways and/or other municipalities especially as emergency services more involved).
  - Number and types of agencies involved (Winnipeg Public Works could operate as a one-agency centre, or transit operations, emergency planning, fire, police and ambulance, snow and ice control, and emergency agencies could be involved in various ways).
  - Operating mechanism (most are a combination of city staffing with some contractor support, particularly for IT support and evolution – although the options range from entirely in-house to fully contracted. A 24/7 staff presence in the TMC is generally not required given the high levels of automation, and cross-training staff in transportation planning, including those doing signal timing studies, to work the TMC when required is generally appropriate. Providing information to motorists is an effective part of traffic management and links to open data applications and media outlets are used in some locations.)

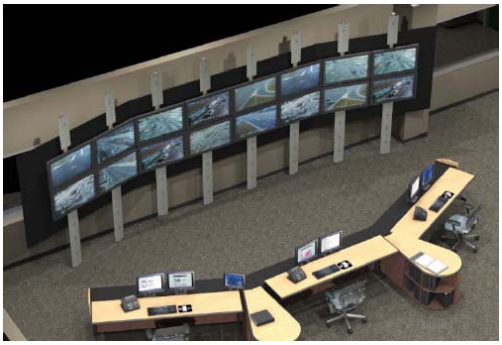
Case Study: Calgary, Alberta – Traffic Management Centre

Challenge

- Calgary has experienced an extensive period of high growth since the early 2000s, which has placed the city's transportation infrastructure under added strain. Several initiatives are underway to address this problem, including large-scale infrastructure construction, but the cost of meeting demand solely through additional infrastructure exceeds the city's funding capability. The city needs less costly approaches to traffic management.

Approach

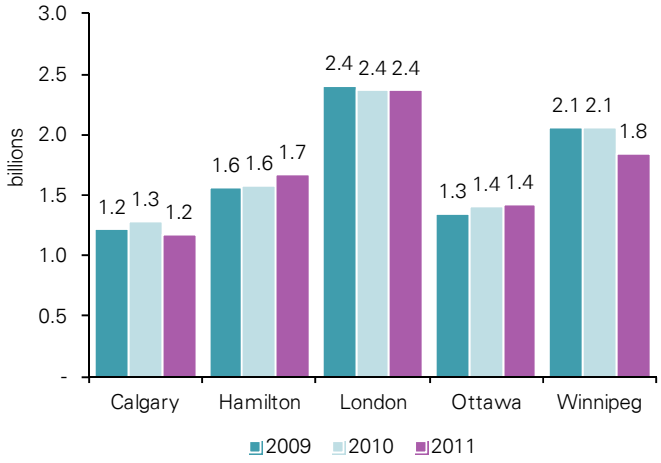
- As one response, the city opened its new Traffic Management Centre in 2005. The TMC included new technology such as its Advanced Traveller Information System ("ATIS"), and the installation of five consoles and a custom LCD display array.
- PB Farradyne Inc. of Rockville, Maryland provided planning assistance in connection with this project. The initial cost of the nerve centre was estimated at approximately $500,000.



Results / Potential Impact

- The TMC uses traffic monitoring cameras, automatic incident detection and an advanced traffic signal control system to gather real-time traffic information. These tools allow TMC personnel to respond to abnormal traffic conditions by notifying trouble trucks or emergency services, revising signal timing or posting limited information for motorists on message signs along major roadways.
- The user-friendly ATIS web site provides information on planned detours and lane closures for construction or major events, collision and incident reports, weather conditions from Environment Canada, road reports from the Alberta Motor Association, and camera images from the TMC.

Annual Vehicle Km Traveled per Lane Km (Major Roads)



Source: OMBI Performance Measurement Report 2011

- A key indicator of traffic management performance is Vehicle Km traveled per Lane Km (major roads). The measure indicates the number of times that a vehicle travels over each lane kilometre of road and demonstrates road congestion. The graph above shows that Winnipeg scores relatively higher than select benchmark cities in this KPI for 2009-2011. This suggests Winnipeg has a larger challenge to move traffic than Calgary or Ottawa, which both have active Traffic Management Centres.

Sources: (1) Adaptaspace website
(2) City of Calgary Newsroom, *City Showcases New High-Tech Traffic Management Tools*, June 2005

Context for Public Works

- The cost of satisfying Winnipeg's increased traffic demand solely through additional infrastructure well exceeds the City's funding capability. Efficiencies gained through a Traffic Management Centre/ System can mitigate the extent of additional new road infrastructure required.

RECOMMENDATIONS

- Develop a business plan for the evolution of the traffic control system in Winnipeg establishing:
  - Including short, medium and long-term features of a Traffic Management Centre with direct communication to high priority traffic lights, CCTV cameras, motorist informational signage and providing automated control with manual intervention capacity.
  - Determining whether the TMC should be co-located with Transit's control centre at any point in time and/or whether the two centres should serve as back-ups to each other.
  - Determining whether the TMC should be co-located with the emergency management facility and/or whether the two centres should serve as back-ups to each other.
  - Determining the extent to which the Traffic Management Centre should accommodate emergency services and media relations to support incident/event management functions.
- Focus first on building the centralized Traffic Management Centre, getting the right hardware and software, implementing, and testing initial connections and communications between the traffic signals and centre. Then gradually link more signals to the control centre and continue implementation, including cross-training personnel in managing/operating the software. The City has modernized/computerized over 80% of its traffic signal controllers and has installed several CCTV cameras – the key missing element is the centralized "nerve centre". Also, as part of the asset management process, should consider the advantages of planned operational maintenance of traffic signals to support TMC operations and to minimize costs of traffic signal failures.

Rationale / Benefit

- With the urban road system entirely based on arterial roads (rather than freeways), every trip of any length is regulated by the traffic control system throughout its length. Effective traffic control system management is a key factor to reducing trip length and increasing roadway capacity. The other available option is increasing road capacity through adding new roads, road widening, adding turning lanes, etc., generally a very expensive option. Improving the effectiveness of traffic controls is a more cost-effective option, and with the improved communications now possible between various remote locations and a central control facility the City can gain the benefits of real time centralized control.

Priority

- High

Financial Impact

- Department estimates a centralized Traffic Management Centre could be in the range of $1 – $1.5 million in capital costs. Implementation could be phased-in. Associated with operating a fully functional TMC, would likely require incremental operating costs through some additional positions, and software expansions which could be approximately $0.2 – $0.4 million annually.
- Other City Departments that benefit from and are involved with the system also contribute through staff time and cross-training.

Timing

- Medium to long-term

Risk Level

- Medium

Implementation Factors

- Develop the TMC business plan, focused on the centralized Traffic Management Centre with a phase-in of capital costs over a reasonable period of time. The plan should also consider more pro-active operational maintenance and associated operational costs to support the TMC operations and to minimize downtime or unplanned failures.

- There are efficiencies to combining transit and traffic control – in building the network, sharing the information, co-ordinating incident response. Similarly, the information available at the TMC and the ability to respond to changing events is helpful in the management of events and emergencies. Building one centre with multi-purpose capacity can also reduce costs by eliminating duplication – both of facilities and staffing. However, the existing infrastructure and investments in place may have useful life remaining, and the need for a back-up control centre argues against complete centralization. Need to determine the optimal process for creating a combined centre, in terms of phasing, timing and eventual scope.

- Request capital budget starting with design in 2014, and focus on getting the centralized "nerve centre" built.
- Procure equipment, materials and systems accordingly.
- Phase-in implementation to support TMC operations.

8.4.3 Summary of Issues, Opportunities and Recommendations

Transportation Planning and Traffic Management – Issues and Opportunities Summary							
Issues \ Opportunities	Business Processes	Organizational Restructuring	Outsourcing	Automation	Shared Services	Service Innovation	Potential Revenue
Right-of-Way Management and Processes		✓				✓	
Centralized Traffic Management Centre	✓			✓		✓	

Summary of Recommendations

- Right-of-Way Management and Processes: Set up a formal Road Right-of-Way Coordinating Initiative with representation of all agencies with road right-of-way assets above and below ground, and coordinate effective right-of-way asset management and capital planning.
- Centralized Traffic Management Centre: Develop a business plan to implement a centralized Traffic Management System and Centre, phased in over a reasonable time period.

9 Parks and Urban Forestry and Other Services

9.1 Financial Operating Results (Traditional Method) FY 2010-2012

The table on the following page summarizes the Parks and Open Space Division's financial operating results for fiscal 2010-2012.

- Total operating expenditures increased from approximately $36.6 million in fiscal 2010 to approximately $43.9 million in fiscal 2012. We understand the increase is primarily attributable to increasing City park inventories and expansion of Provincial-City funding for the Dutch Elm Disease program which has expanded again in the 2013 budget.
- Total operating expenditures/FTE increased from approximately $82,000 in fiscal 2010 to approximately $103,000 in fiscal 2012. This is related to an overall decrease in the number of FTEs from 453 in 2011 to 425 in 2012 due to the transfer of maintenance responsibility for Assiniboine Park to the Assiniboine Park Conservancy.
- Parks and Open Space's total operating expenditures represented approximately 26% of Public Works consolidated operating expenditures in fiscal 2012.

Parks and Open Space Division - Financial Operating Results (Traditional Method)				
$000's (unless otherwise stated)				
For the Fiscal Years Ended December 31	**2010A**	**2011A**	**2012 Preliminary Draft**	
				% of total operating expenditures
Parks and Open Space Division				
Operating expenditures				
Salaries and benefits	21,729	24,522	25,174	57.3%
Services				
Real Property Contracts-Const/Mtce	1,310	949	1,369	3.1%
Fleet Operating Lease	2,297	2,243	2,239	5.1%
Fleet Capital Lease	2,509	2,792	3,005	6.8%
Equipment Rental-External	574	565	453	1.0%
Other	4,008	4,847	5,014	11.4%
Total services	10,698	11,396	12,080	27.5%
Materials, parts and supplies	2,937	4,119	4,315	9.8%
Equipment, furniture and other purchases	115	152	122	0.3%
Recoveries				
Departmental recoveries	(645)	(961)	(805)	(1.8)%
Inter-fund recoveries	(981)	(1,103)	(1,372)	(3.1)%
Other	(317)	(1,848)	(1,205)	(2.7)%
Operating expenditures (before noted items)	33,536	36,276	38,310	87.3%
Debt and finance charges	6	10	12	0.0%
Cash to capital	-	-	-	-
Grants, transfers and other expenditures	3,060	5,498	5,584	12.7%
Total operating expenditures	36,602	41,784	43,906	100.0%
$000's/FTE calculations				
FTE	448	453	425	
Operating expenditures (before noted items)/FTE	75	80	90	
Total operating expenditures/FTE	82	92	103	
As percent of Public Works Department				
FTE	45.8%	44.7%	43.3%	
Operating expenditures (before noted items)	30.2%	28.9%	33.8%	
Total operating expenditures	22.2%	22.8%	25.9%	

Note: Noted items include debt and finance charges, cash to capital, grants, transfers and other expenditures.
Source: City of Winnipeg Public Works Department

9.2 Operating Budgets FY 2010-2013 (Service-Based)

The table on the following page summarizes Service-Based budgets for Park and Urban Forestry and Other Services. Adopted operating budgets are summarized for fiscal 2010-2012, and the preliminary operating budget is summarized for fiscal 2013.

- Parks and Urban Forestry: Operating budgets have increased from approximately $29-30 million in fiscal 2010 and 2011 to approximately $33 million in fiscal 2012 and approximately $36 million in fiscal 2013. The primary areas of increased funding are for park amenity maintenance and the Dutch Elm Disease program (joint Provincial-City funding). Funding in other areas has remained relatively unchanged. Total operating expenditures/FTE have increased from approximately $99,000/FTE in fiscal 2010 to approximately $118,000/FTE in fiscal 2013.
- Other Services (i.e., litter collection, public gardens/landscaping, ornamental lighting/flags/banners/art, graffiti control, insect control, park policing): Operating budgets were approximately $17 million in fiscal 2011 and 2012 and have been increased to approximately $18.3 million in fiscal 2013, primarily increased funding for insect control. Total operating expenditures/FTE have remained relatively constant over the period reviewed.
- The number of FTEs on a service-based budget basis has been relatively constant in the 300 FTE range for Parks and Urban Forestry (except for a decrease in 2012 associated with a transfer of maintenance responsibilities at Assiniboine Park), and approximately 130-135 FTEs for Other Services.

Parks and Urban Forestry and Other Services - Operating Budgets (Service Based)								
$000's (unless otherwise stated)								
For the Fiscal Years Ended December 31	**2010B**	**2011B**		**2012B**			**2013B**	
	Expenditure	Expenditure	Expenditure	Revenue	Net Expenditure	Expenditure	Revenue	Net Expenditure
Parks and Urban Forestry								
Parks Grass Maintenance	6,128	6,434	6,521	-	6,521	6,806	-	6,806
Park Amenity Maintenance	1,738	2,997	3,578	(49)	3,529	4,471	(52)	4,420
Athletic Field Maintenance	1,717	1,761	1,651	(376)	1,275	1,839	(391)	1,448
Park Pathway Maintenance	456	439	428	-	428	592	-	592
Park Planning/Development	1,674	1,659	2,139	(16)	2,123	1,790	(13)	1,777
Tree Planting	1,855	1,803	1,581	(1)	1,581	1,629	(1)	1,629
Tree Pruning & Removal	4,282	4,188	4,851	(2)	4,849	4,881	(2)	4,878
Dutch Elm Disease Control	4,167	4,125	4,191	(1,001)	3,190	5,582	(1,551)	4,031
Weed Control	890	817	824	(80)	745	873	(82)	792
Natural Areas Management	854	816	885	(46)	839	914	(46)	868
Playground Management	1,983	1,733	2,235	-	2,235	2,282	-	2,282
Winter Amenity Maintenance	1,085	1,215	1,391	-	1,391	1,460	-	1,460
Boulevard Maintenance	2,456	2,868	2,919	-	2,919	3,079	-	3,079
Total	**29,285**	**30,855**	**33,194**	**(1,570)**	**31,624**	**36,198**	**(2,137)**	**34,061**
FTE	296	311	299			308		
$000's/FTE	99	99	111			118		
Other Services								
Litter Collection (loose litter, streets, parks & open space) (1)	3,452	3,649	3,743	-	3,743	3,896	-	3,896
Public Gardens/Landscaping (1)	3,992	3,831	3,929	(11)	3,918	4,096	(12)	4,084
Ornamental Light/Flags/Banners/Art (1)	825	635	654	-	654	677	-	677
Graffiti Control (1)	1,192	1,205	1,254	-	1,254	1,267	(0)	1,267
Insect Control (2)	5,778	6,779	6,348	(3,414)	2,934	7,388	(3,614)	3,774
Park Policing (3)	1,159	1,156	965	-	965	975	-	975
Total	**16,398**	**17,255**	**16,893**	**(3,425)**	**13,469**	**18,299**	**(3,626)**	**14,673**
FTE	130	135	128			138		
$000's/FTE	126	128	132			133		
Grand Total								
Total Operating Budget	**45,684**	**48,111**	**50,087**	**(4,995)**	**45,093**	**54,498**	**(5,763)**	**48,735**
FTE	426	446	427			446		
$000's/FTE	107	108	117			122		

Note: (1) FTEs for these Sub-Services were estimated for each fiscal year using the following procedure:
(a) Calculated the Sub-Service's budget as a percentage of the total City Beautification Service Area budget; (b) Multiplied the figure in (a) by the total FTEs for the City Beautification Service Area.
(2) FTEs for this Sub-Service are actual.
(3) FTEs for this Sub-Service are not available.

Source: City of Winnipeg Public Works Department

9.3 Sub-Services and Service Levels

Sub-Service: Parks Grass Maintenance, Boulevard Maintenance, Athletic Field Maintenance, Weed Control, Natural Areas Management				
Operating Cost 2012B ($ millions)	Core Ranking	Service Level Standard	Actual Service Level	City Role
Parks Grass Maintenance: Total: $6.5 *Net: $6.5*	Essential	Classification — Frequency Regional — 20 Community — 15 Neighbourhood — 10 Regional (P1) Boulevard — 15 Other Boulevards & Parks — 10 Functioning as Boulevards	 At standard At standard At standard At standard At standard	Delivery
Boulevard Maintenance: Total: $2.9 *Net: $2.9*	Essential	Refer to "Parks Grass Maintenance"	At standard	Delivery
Athletic Field Maintenance: Total: $1.7 *Net: $1.3*	Essential	All Types of Fields Weed, turf, and general field condition assessments shall be completed 1 time per year. Mowing Refer to "Parks and Boulevard Grass Maintenance"	At standard At standard	Delivery
Weed Control: Total: $0.8 *Net: $0.7*	Essential	All Types of Parks Turf herbicide applications shall be done as required.	At standard	Delivery
Natural Areas Management: Total: $0.9 *Net: $0.8*	Essential	Burning, mowing, weed control & watering shall be practiced as required.	At standard	Delivery

Source: Derived from information from City of Winnipeg Public Works.

Comparison to Peer City Service Levels

- Overall, Winnipeg's service standards for mowing and trimming parks and fields appear to be align with or slightly higher than other jurisdictions. Although not shown here, the City of Winnipeg also specifies the length to which grass should be cut (by type of asset) in its service standards.
- In Edmonton, power mowing also includes sanitation (e.g., litter pick during mowing).
  - For higher priority areas (A1 and A2 classifications), grass is cut 12-18 times per season to 5 cm; for other areas (B1 and B2 classifications), grass is cut 7-10 times per season to 5 cm; for less trafficked areas (C classification), grass is cut 2 times per season to 10 cm.
- In Ottawa, mowing and trimming are normally prescheduled activities between the months of May and October, subject to weather conditions.
  - Mowing and trimming of Parks occurs to a height of 60-75 mm with a maximum height of 100 mm every 5 to 14 days, depending on classification.

- Meanwhile, sports fields are mowed to a height of 60 mm with a maximum height of 80-90mm every 3 to 7 days, depending on their classification.
- In naturalized areas, mowing is a tool used to define sight lines along vehicular and pedestrian corridors. In order to reduce the number of mowed areas, un-mown edge condition areas and designated un-mown areas are maintained.

- In Mississauga, regional parks are mowed every 5 working days, community parks every 10 days, and fields every 3-5 days.
  - Natural areas maintenance is performed as needed, and may be conducted in-house or by Forestry contractors.
  - Boulevard maintenance, including grass cutting and horticulture, is all contracted out.
- The following table summarizes crews that select peer cities use for select activities. Details on how services are delivered are summarized below:
  - Parks grass maintenance: cities conduct the majority of this service's activities in-house, with some assistance from contractors on select areas (e.g., Mississauga contracts out boulevard maintenance, including grass cutting and horticulture).
  - Natural areas maintenance: Ottawa and Mississauga use a blend of in-house and contracted labour. In Mississauga, in-house staff complete restoration events and initiatives, and maintenance is traditionally performed by contractors. Winnipeg uses in-house staff for all activities.
  - Winnipeg appears to utilize smaller 1-2 person crews (e.g., Ottawa and Mississauga use 2 or 3 person crews). Similar to Edmonton, Winnipeg uses a mobile crew of up to 4 for trimming.

Comparison of Parks Maintenance Crews

Activity	Edmonton	Ottawa	Mississauga	Winnipeg
Parks grass maintenance	Varies, 4-5 machines and 4 person trim crew	3 person crew	2-3 seasonal staff per grass crew, including one full time grass crew leader Horticulture crews typically led by Parks Person I, who provides functional guidance to Parks Person II and various seasonal staff.	If mower dispatched from satellite location, 1 person on mower. If single trailer mobile mowing crew, 1 to drive vehicle and mow. If dual trailer mobile mowing crew, 2 crews in total. Mobile trim crew up to 4 trimmers in one vehicle with one driver.

Source: KPMG Benchmarking Survey to Select Municipalities

Sub-Service: Park Amenity Maintenance, Playground Management, Winter Amenity Maintenance, Park Pathway Maintenance				
Operating Cost 2012B ($ millions)	Core Ranking	Service Level Standard	Actual Service Level	City Role
Park Amenity Maintenance: Total: $3.6 *Net: $3.5*	Essential	Picnic tables, benches, waste receptacles, and park lights shall be repaired and replaced as required. <u>Lawn Bowling Greens</u> Grass shall be maintained to a height of 1/4 inch (regular) and 1/8 inch (tournament). Grass shall be cut 2 – 3 times per week in season and watered 50 – 80 times per season.	At standard At standard	Delivery
Playground Management: Total: $2.2 *Net: $2.2*	Essential	Routine safety inspection of playground equipment shall occur on a minimum monthly visit with minor repairs done on-site immediately. Any structure or items assessed dangerous shall be locked out and/or removed and immediate remedial action instituted. Sand for sand boxes shall be replenished as required.	At standard At standard At standard	Delivery
Winter Amenity Maintenance: Total: $1.4 *Net: $1.4*	Traditional/ Discretionary	<u>Knockdown Hockey Pens</u> Installation and removal shall be completed 1 time per year as required. <u>Speed Skating Oval</u> Flooding shall be completed 100 times per season (weather dependent). <u>Skating Ponds/Trails</u> Flooding shall be completed as required. Cleaning shall be completed daily as required. Shelters shall be checked daily in season. <u>Pleasure Rinks</u> Flooding and cleaning shall be completed 1 – 2 times per week as required. <u>Slides/Hills</u> Safety checks shall be completed weekly through the season. <u>Cross Country Ski Trails</u> Trail grooming shall be completed 1 – 2 times per week as required.	At standard At standard At standard At standard At standard At standard	Delivery
Park Pathway Maintenance: Total: $0.4 *Net: $0.4*	Essential	A condition assessment shall be completed 1 time per year. Note: Fix and repair as required.	At standard	Delivery

Source: Derived from information from City of Winnipeg Public Works.

Comparison to Peer City Service Levels

Playground Management

- Service level standards for playground maintenance in select jurisdictions generally appear similar to Winnipeg, except Edmonton has more frequent inspections.
- In Edmonton, playground inspection occurs every 11 calendar days between April – October and monthly between November – March. Maintenance includes playground safety checks, light sanitation, equipment repair or adjustment, weeding of sand and relocation of sand in low and 'impact point' areas, reporting of all damages to Parks Inventory.
  - Playground major servicing occurs 3 times per year.
- In Ottawa, service level standards follow the Canadian Safety Association current edition of *A Guideline on Children's Play Spaces and Equipment, A National Standard of Canada*. A general visual inspection occurs during routine maintenance, while a detailed inspection occurs once per month, similar to Winnipeg. For playground repairs, the following standards are upheld:
  - Where damage/condition presents a hazard (public liability) (e.g., hate graffiti, broken glass, splintered bench, discarded IV needles), play structure should be repaired within 4 hours;
  - Where damage/condition impairs functions and/or operations of equipment (e.g., broken gate hinge), play structure should be repaired within 5 working days;
  - Where damage/condition contributes to long-term decline of the infrastructure (e.g., worn paint that allows for rot or rust) or is unsightly (e.g., graffiti), play structure should be repaired as soon as practical.
- Mississauga's inspection for all playgrounds occurs monthly, similar to Winnipeg; tilling occurs 5 times per season (once every 5 weeks).
- Ottawa, Mississauga and Winnipeg offer all services with in-house staff. For park amenity maintenance, Winnipeg crews are 1 to 3 depending upon the activity. For playground maintenance, Winnipeg has one person for inspection and two for repair depending upon the work required. Other cities tend to use a three person crew.
- Winnipeg maintains a relatively high number (12) of lawn bowling greens, which is not typical with other cities.

Sub-Service: Tree Planting, Tree Pruning & Removal, Dutch Elm Disease Control				
Operating Cost 2012B ($ millions)	Core Ranking	Service Level Standard	Actual Service Level	City Role
Tree Planting: Total: $1.6 *Net: $1.6*	Essential	The Urban Forestry Branch shall plant trees on boulevards, as well as in Parks and Community Centres as replacements for trees that have been removed. The timeline for tree replacements is 1 to 2 years from the tree removal.	At standard	Delivery
Tree Pruning & Removal: Total: $4.9 *Net: $4.8*	Essential	<u>Tree Pruning</u> Priority Rating – High Definition: High risk of injury to people or damage to property or vehicle. Work should be carried out as soon as operationally possible. Priority Rating – Low Definition: Not an immediate safety concern or risk of injury or damage but may become so in the future. Work should be completed within 2 to 3 years. Priority Rating – General Pruning Definition: Low risk of injury or damage. Trees will be pruned according to the current tree pruning cycle. <u>Tree Removal</u> Note: Timelines for tree removal appear to be case-specific. Tree removal requests are inspected by the Urban Forestry Branch. Urban Forestry determines whether or not to remove a tree and will take action accordingly. <u>Tree Stump Removal</u> The Urban Forestry Branch is responsible for tree stump removals on City boulevards and parks property only. Stump removal shall occur within 1 year of actual tree removal. Stumps on the boulevards are removed by City crews in spring and summer. Priority is given to elm tree stumps. <u>Tree Stump Removal</u> Stumps shall be removed to approximately 6 inches below grade and removal shall include buttress roots. Excess wood chips shall be removed so that a 4 inch layer of soil (tamped) fills the remainder of the hole. Grass seed shall be applied to the tamped soil surface.	At standard At standard At standard At standard At standard	Delivery and Manager – Contracted
Dutch Elm Disease Control: Total: $4.2 *Net: $3.2*	Essential Also under Province-City agreements	Surveillance of elm trees shall be done by seasonal staff every year. They shall spray pesticide on the base of trees to protect them, with a focus on trees on riverbanks. Staff is considering a new pilot project over the next 5 years called "Rapid Removal", which would increase surveillance in June. Surveillance of all boulevard and other accessible properties would be completed by mid-July with removal by end of August. Historically, the bulk of removals have occurred in the fall and winter.	At standard Planned 2013	Delivery and Manager – Contracted

Source: Derived from information from City of Winnipeg Public Works.

Comparison to Peer City Service Levels

Tree Planting, Pruning and Removal

- Overall, Winnipeg's service standards related to trees generally reflects those of other jurisdictions. Other jurisdictions' standards seem to vary quite a bit, and Winnipeg seems generally in the middle of the standards reported.
- Tree inspection occurs on a 1 year cycle in Ottawa, planting occurs on a 7 year cycle, and tree pruning occurs on a 3 year cycle. Emergencies related to trees are managed within 24 hours, according to service level standards. The total cost of tree management has been reported at $14.5 million.
  - In 2012, 3,967 trees were planted, 2309 ash trees were injected with biological insecticide, 2,604 trees were removed, and 24,000 trees were pruned.
- Mississauga appears to have more aggressive timeline standards for tree planting and removal than Winnipeg. In Mississauga, trees must be planted during the next temperate season after stump removal. Removals and maintenance are prioritized: Priority 1 must be completed within 24 hours; Priority 2 should be completed within 3 months; Priority 3 should be completed within 6 months. The capital cost of tree management has been reported at $8.1 million, while the operating costs reached $6.4 million in 2012.
- In addition, Mississauga has outlined explicit parameters around tree size, type, and spacing for street and boulevard plantings. For example:
  - Street tree plantings should not exceed 60 mm for a caliper tree and 200 cm for a coniferous tree.
  - Boulevard plantings must be deciduous. No one species should exceed 30% of all trees planted within a development. All deciduous street trees must have a branching height of 1.8 m from the ground.
  - Spacing procedures forbid a tree to be planted closer than 3 m to a street light, 15.2 m from stop signs, and 1.2 m from driveway edge.
- In Edmonton, trees are replaced as resources permit. The pruning cycle occurs every 4 years for elm trees and every 7 years for other trees. Tree and stump removal occurs as required. The total costs of tree management have been reported at $9.6 million.
- Hamilton has a 5 year city grid tree pruning cycle target (currently behind target at 12.5 years), and has the following standards for tree stump removal and tree planting:
  - Tree stumps shall be removed to a maximum depth of 12 inches. Wood chips shall be removed and soil shall be placed in the hole. A new tree should generally be planted a minimum of 1 meter away from the old stump location.

Dutch Elm Disease and Tree Pest Management

- In Winnipeg, surveillance of elm trees is done by seasonal staff every year. Diseased tree removal is provided in-house and by contractors. Ottawa contracts out its Dutch Elm Disease program.
- While Mississauga is not dealing with Dutch Elm Disease, it faces the issue of Emerald Ash Borer ("EAB") control. Trees deemed Priority 1 are removed within 24 hours. Trees deemed a Priority 2 must be removed within 6 months; trees deemed a Priority 3 are part of the long-term EAB Management Plan and will be removed in the course of the next few years.
  - The EAB program is just beginning as part of the 10-year EAB Management Plan, budgeted at $52 million. This plan seeks to treat trees not showing any signs of infestation and to remove those that are based on the severity of infestation.
- Ottawa budgeted approximately $400,000 for Emerald Ash Borer control, though its service levels do not appear to be documented.
- Edmonton budgeted approximately $280,000 for largely managing tree pests. These pests are monitored through Tree Pest Monitoring program, which includes all Dutch Elm Disease monitoring.

  - The city partners with other organizations to manage pest problems. For example, the Society to Prevent Dutch Elm Disease, a non-profit organization whose mandate is to preserve and protect Alberta's elm trees from Dutch Elm Disease, provided 16 of 600 elm bark beetle traps.
- Winnipeg is recognized as having the largest urban collection of elm trees and a leading practice Dutch Elm Disease program.

Sub-Service: Litter Collection				
Operating Cost 2012B ($ millions)	Core Ranking	Service Level Standard	Actual Service Level	City Role
Total: $3.7 *Net: $3.7*	Essential	<u>Streets Maintenance Division – Emptying of Litter Containers</u> Litter containers shall be emptied on a cycle frequency depending on its filling/use characteristics based on the determination of the foreman/supervisor of the authority responsible for collection. Complaints regarding full litter receptacles shall be addressed within 1 working day. <u>Parks and Open Space Division – Emptying of Litter Containers</u> Litter containers shall be emptied on a cycle frequency depending on its filling/use characteristics based on the determination of the foreman/ supervisor of the authority responsible for collection. <u>Streets Maintenance Division – Litter Pickup</u> Loose litter pickup shall be performed both manually and by machines on regional streets. Note: Litter is not normally collected on residential streets. <u>Parks and Open Space Division – Litter Pickup</u> Loose litter pick up shall be completed daily from spring to fall and as required in winter. Biz Groups shall augment this work under contract. Parks staff shall pick up loose litter during the grass cutting operations. <u>Streets Maintenance Division – Debris Pickup</u> Debris shall not be allowed to accumulate on rights-of-way or to obstruct drainage ways. When a report of large debris in the right of way is received, a crew shall be dispatched to remove the obstruction and dispose of it as soon as possible.	At standard Below standard At standard At standard At standard At standard At standard	Delivery and Manager – Contracted

Source: Derived from information from City of Winnipeg Public Works.

Comparison to Peer City Service Levels

- Comparator cities tend to have prescribed frequency standards for litter collection in parks and fields, whereas the emptying of litter containers in Winnipeg appears to be at the determination of the foreman/supervisor.
- Similarly to Winnipeg, in Edmonton, grass mowing in parks also entails picking up loose litter. All litter collection is conducted in-house.
- Like Winnipeg, the frequency of garbage collection in Ottawa reflects park usage and profile: Parks in core areas generally receive more visitors and therefore require more frequent garbage collection.
  - In the summer, litter containers are collected at city level parks and fields on a daily basis; at community level parks 1-3 times per week, and at neighbourhood level parks once per week. In the winter, the number of litter containers is reduced.
- Mississauga conducts daily litter and garbage pickup in destination parkland, while community parkland has pickup just once weekly.

- Hamilton empties downtown space containers twice per day. Non-downtown space containers are emptied once per day.

Sub-Service: Public Gardens/Landscaping, Ornamental Light/Flags/Banners/Art, Park Policing				
Operating Cost 2012B ($ millions)	Core Ranking	Service Level Standard	Actual Service Level	City Role
Public Gardens/ Landscaping: Total: $3.9 *Net: $3.9*	Traditional/ Discretionary	<u>Flower Beds</u> Flower beds and pots in all types of parks shall be watered 30 times per season. Weeding and debris removed shall be 15 times per season. Fertilization is as required. <u>Shrubs</u> Weeding, pruning, mulching shall be completed 1 time per season.	At standard Below Standard	Delivery
Ornamental Light/Flags/ Banners/Art: Total: $0.7 *Net: $0.7*	Traditional/ Discretionary	Flags raised, lowered, and replaced as required.	At standard	Delivery
Park Policing: Total: $1.0 *Net: $1.0*	Traditional/ Discretionary	No known Canadian Industry Standards.	n/a	Delivery and Manager – Contracted

Note: n/a = not available
Source: Derived from information from City of Winnipeg Public Works.

Comparison to Peer City Service Levels

- Based on benchmarking survey data, Winnipeg has substantially more flowers/flower beds to maintain than peer cities.

Sub-Service: Graffiti Control				
Operating Cost 2012B ($ millions)	Core Ranking	Service Level Standard	Actual Service Level	City Role
Total: $1.3 *Net: $1.3*	Traditional/ Discretionary	Removal of graffiti shall occur on an as needed basis. The priority is removal from City property. <u>Hate Messages</u> Inspection: 1 day Removal: 1 day <u>City Facilities</u> Inspection: 3 days Removal: 10 days <u>Business Properties</u> Inspection: 5 days Removal: 20 days	 Above standard (normally removed same day) Above standard (normally removed same week) At standard	Delivery

Source: Derived from information from City of Winnipeg Public Works.

Comparison to Peer City Service Levels

- Winnipeg standards for graffiti removal appear in line with other cities, and more explicit in providing timeframes and priority buildings for removal. However, other cities have alternative service delivery methods for graffiti removal. For example, in Ottawa and Edmonton property owners are responsible for removal of graffiti on private property. Ottawa has a by-law requiring removal by property owners and enforces the by-law as part of an aggressive program to minimize graffiti by ensuring prompt removal.
- In Ottawa, hate or violent graffiti should be removed within 24 hours. "Tagging" and other forms of graffiti are to be removed subject to availability of resources. City Council has approved a "zero-tolerance" graffiti zone, where graffiti should be removed in accordance with its directive.

Sub-Service: Insect Control

Operating Cost 2012B ($ millions)	Core Ranking	Service Level Standard	Actual Service Level	City Role
Total: $6.3 *Net: $2.9*	Essential Both the Province and the City cooperate related to health aspects	follow "Adulticiding Factor Analysis Policy"	At standard	Delivery

Source: Derived from information from City of Winnipeg Public Works.

Comparison to Peer City Service Levels

- Winnipeg's insect control program is much more extensive than the other cities reported.
- In Mississauga, in-house staff gathers Gypsy Moth data and completes trapping of Gyspy Moth. The current treatment program is being completed by contractors and involves spraying on individual trees and a portion of trees being treated with TreeAzin. It is not clear what the service level standard is.
  - Some insects (e.g., Mosquitoes) are monitored by Mississauga in partnership with the Peel Region.
- Approximately $1 million was spent by Edmonton on mosquito control. The service standard entails treating as many larval development habitats as possible during the period that larvae are being produced.
  - Temporary and semi-permanent ponds in rural areas around the city comprise 85% of the time and priority for mosquito control efforts.
  - The remainder of effort is largely spent on treating temporary and dry-pond habitats in residential areas, as well as ravines and forested areas.
- Adulticiding is rare in Edmonton. It is only used in conjunction with major events in large parks to provide a barrier along discrete, secure perimeters and to limit mosquito activity at that specific event.
- Winnipeg operates four helicopters throughout the summer as part of its mosquito control program. Helicopters are not from WFMA; they are from an independent service provider. Ground larvaciding crews apply biological larvicides to water bodies that are too small for helicopter treatment or near built-up areas. Ground crews include the following:
  - All terrain vehicles – 1 or 2 person crews;
  - Back pack – 1, 2 or 3 person crews;
  - Granny Gun – 2 person crews;

- Argo amphibious all-terrain vehicles – 2 person crews;
- Portable sprayers – 2 person crews;
- Tree sprayers – 1 truck driver and 1 tree sprayer to spray the canopy of leaves;
- Crews also exist for ultra-low volume spraying, insect surveillance, structural pest control and service requests.

- Edmonton conducts all mosquito control activities in-house, but contracts out its operation of helicopters. Approximately 50% of the city's mosquito control budget is spent on aerial-based larvaciding.
- The City of Winnipeg is recognized for leading practice approaches to insect control. According to the Insect Control Branch's 2011 Annual Report on Mosquito Surveillance & Control, the Branch has undertaken the following initiatives, among others:
  - Insect Control Strategy: City Council approved a phased-in biological based larvaciding program in March 2005. This Integrated Pest Management strategy is expected to:
    - reduce the City's reliance on residential fogging (adulticiding);
    - respond to public concern regarding the use of chemical pesticides; and
    - prepare the City for the anticipated Federal Pesticide Management Regulatory Agency's de-registration of Dursban (Chlorpyrifos) for the purposes of larvaciding by the end of 2014.

    Winnipeg currently uses a 60% biorational/40% chemical program. Other cities still use a predominantly chemical program (e.g., Edmonton uses Dursban for 85% of its program).
  - Public Education Strategy: This Strategy involves educating citizens with respect to important Insect Control Branch activities, and encourages all citizens to take part in helping to reduce mosquitoes. These initiatives included, among others:
    - a website (winnipeg.ca/bugline) which provides 24/7 access to Insect Control Branch information (e.g., daily adult trap counts, daily public service announcements, buffer zone registrants, fogging maps, etc.);
    - public access to Insect Control Branch information via the 311 call centre;
    - weekly media briefings during the mosquito control season; and
    - paid advertising to engage the citizens of Winnipeg to participate in source reduction strategies on their own property.
  - Mosquito Listing Priority Rating: The Insect Control Branch began using a mosquito listing priority rating system in 2008 to dispatch its ground listings. All mosquito larval listings were analyzed prior to the 2008 season to determine the frequency of standing water and mosquito larvae being present. These ratings are reviewed periodically to reflect the current condition of the listing. The objective was to create a rating system to alleviate the requirement to visit all active mosquito listings each week, and instead target sites statistically rated as having a higher probability of holding water and having larval development.
  - West Nile Virus Surveillance: The City of Winnipeg conducts West surveillance activities as part of a contractual agreement with Manitoba Health.

9.4 Issues, Opportunities and Recommendations

9.4.1 Parks Fleet Management Costs and Utilization

Issue

Across the Department and divisions, questions were raised about fleet management costs, equipment utilization, level of service availability, and turnaround times.

Potential Opportunity Areas	
✓	Business processes
✓	Service innovation
✓	Better rates
Barriers	
■	WFMA is a special operating agency for all City Departments except Police, Fire and Transit. Would need to negotiate a new deal and accept lower annual dividends to the City as a whole.

Findings and Observations

- As previously discussed, fleet management represents a substantial annual cost for Public Works, estimated around $25 million in 2012, and Public Works represents over one-half of WFMA's business.
- Fleet costs to the Parks Division are approximately $7 million annually. The nature of many repairs of Parks' equipment is relatively small and straightforward (e.g., tire repairs, pins) that could be more effectively replaced on-site.
- Public Works does not receive invoices detailing work from WFMA.
- The Parks Division has only one of its 40 locations/depots co-located with WFMA.

Implications

- Slow turnaround times result in inefficiencies and sub-optimal asset utilization.
- There may be opportunities for significant cost savings to the Department from better lease rates and effective asset utilization with WFMA, as well as ability to self-deliver minor repairs to relatively low-cost equipment.

Benchmarking and Analysis

- In Mississauga, Fleet Management staff service large engine vehicle and equipment used for parks and open space, along with most small engine equipment. Small engine equipment is also serviced by outside contractors; however contractor repairs cost approximately 30% more than in-house repairs. At this point, the city does not complete repairs in the field.
- Ottawa relies on Fleet for more significant equipment repairs. For example, blade changes and minor maintenance items are not the responsibility of Fleet. Flat tires are repaired in the field.
- Edmonton's Parks staff conduct blade exchanges, repair minor flats and equipment adjustments, and complete the fueling and lubricating of equipment. Staff is required to bring equipment to Fleet Management for repair.
- Cities are also experimenting with centralizing forestry services to better utilize equipment. The City of Mississauga uses one centralized location for all Urban Forestry staff and equipment/vehicle storage, as well as one storage facility for logs and wood debris. Services are coordinated from one centralized location and work is allocated geographically across the 11 Wards (not based on specific boundaries) to work more efficiently.
- Edmonton also recently started using Android smartphones to mark locations for staff work orders and interventions, and to gather information in the field. According to the City of Edmonton, it has improved efficiency, efficacy, communications and speed of response.
- As indicated in the fleet profile below, Parks and Urban Forestry has a relatively large volume of City-owned equipment (leased by Public Works from the Winnipeg Fleet Management Agency). This includes 122 tractors in Parks and a wide range of specialized equipment.

Parks and Urban Forestry - Approximate Public Works Fleet Profile	
	City Owned
Parks Units	(1)
Agg Tractor 20 PTO HP 4WD (304 Series) Out Front Mower	102
Agg Tractor 40 PTO HP 4WD (312 Series) Out Front Mower	20
Ind Tractor Wheeled Loader 80 HP 4WD (352 Series)	19
Attachment Turf Aerator PTO (459 Series)	5
Other	587
Total	733
Urban Forestry Units	
Chainsaws	118
Trailer Brush Chipper	10
Trailer Stump Grinder	4
Other	54
Total	186
Total Parks and Urban Forestry Units	919

Notes: (1) Refers to equipment that Public Works leases from Winnipeg Fleet Management Agency.
Source: Derived from information from City of Winnipeg Public Works.

- Calgary requires Fleet Services to satisfy customers, or gives them the option to source services elsewhere. This has resulted in more customization of Fleet Services to particular department requirements. For example, some staff and services are dedicated to particular customers, with customers absorbing any costs that result. This has led to a single-site serving as the focus of Fleet Services to Parks, but with a number of mobile units that service most equipment in the field throughout the summer.

RECOMMENDATIONS

- Public Works should work with the Winnipeg Fleet Management Agency to identify the range of fleet services that should be provided in the field in order to minimize the impact of vehicle and equipment servicing on Public Works operations such as grass cutting. Mobile services should be provided by Fleet if suitable arrangements can be negotiated, or by Public Works or contractor staff as determined to be the lowest cost option (taking into account the cost impact on Public Works operations).

Rationale / Benefit

- Centralized fleet services tend to see cost issues based on the cost of delivering the fleet service, without full consideration of the cost impact on the customer services they support.
- Giving customers the option to provide services themselves or buy from other sources would make WFMA more accountable for customer needs – and hence for value for money to taxpayers as a whole.
- Parks operations, and lawn mowing in particular are particularly sensitive to WFMA service levels as the work is very dependent on equipment, the work is at multiple locations throughout the entire city, the equipment is not easily transported to servicing locations, and the staff using the equipment is not easily redeployed to other productive operations.

Priority

- High

Financial Impact

- Part of overall fleet management cost savings as outlined in S. 6.4.3. Some different issues in Parks because of the inefficiencies in the logistics of sending all small equipment to WFMA for repair.

Timing

- Short to medium-term

Risk Level

- Medium

Implementation Factors

- Part of the same process as outlined in S. 6.4.3, with special considerations to developing rational steps to reduce/eliminate unnecessary trips to WFMA for small repairs, including changing some requirements to allow Parks to do a number of their own on-site repairs.

9.4.2 Asset Management and Rationalization

Issue

The asset management program for Parks and Open Space has particular challenges due to the large numbers of assets and the continuing growth in the asset base as the City expands without corresponding budget increases.

Potential Opportunity Areas	
✓	Potential proceeds from sale of select assets
Barriers	
■	Local neighbourhood resistance

Findings and Observations

- Maintenance resources may be stretched over too large of an asset base to continue to maintain current service levels.
- Significant additions of inventory such as corridors in recent years require maintenance budgets and standards.
- There have been some efforts to rationalize assets (e.g., reducing the number of small neighbourhood parks and playground structures, equipment and buildings) in the past, but all assets have defenders, making reductions difficult.

Implications

- May require another look at asset rationalization.
- Balance required between the number of assets that can be maintained, the existing service levels, and the budget levels. Some trimming of the total asset portfolio would assist in achieving appropriate service levels for higher priority parks and open space.

Benchmarking and Analysis

- Cities continue to work on determining an appropriate system for managing assets. The City of Calgary recently initiated a new asset management system for its Parks assets. It is currently migrating data to the system and aligning asset categories to its Tangible Capital Assets procedures.
- The City of Winnipeg is demonstrating leadership in its initial asset management efforts of Parks and Urban Forestry assets.
- Mississauga is leveraging technology to optimize its asset management. The city's front-line Parks staff currently uses an in-field mobile solution to input work completion information against Park assets wirelessly. Information entered by staff is automatically entered into an asset management system, where data is used to monitor work performed, identify efficiencies and review maintenance costs of parks and associated assets.
  - Tablets connected to an in-house database are used in the field to track the status of trees infected with the Emerald Ash Borer. Work orders are recorded on the tablet to develop a specific treatment, removal and replacement plan for infected trees.
- Some cities are actively trying to grow certain assets. For example, Calgary intends to grow its tree canopy from 7% in 1998 to 14-20% in 2058. Mississauga has counted one million city-owned trees among its assets (2.1 million trees in total).
- The table below summarizes select Canadian statistics on regional, community and neighbourhood parks. The following is observed with respect to the estimated number of hectares per thousands of people:
  - Regional parks: Winnipeg (1.05) is lower than Edmonton (2.22), and higher than Ottawa (0.85) and Mississauga (0.80).
  - Community parks: Winnipeg (1.27) is higher than Edmonton (0.62) and Ottawa (0.97), and lower than Mississauga (1.76).

- Neighbourhood parks: There was not consistent information but Winnipeg (1.51) is lower than Edmonton (2.53) and Ottawa (1.73).
- Total parks: Winnipeg (3.84) is higher than Ottawa (3.55) and Mississauga (2.56), and lower than Edmonton (5.37).

Regional, Community and Neighbourhood Parks				
Fiscal 2012 (or most recent)	**Edmonton**	**Ottawa**	**Mississauga**	**Winnipeg**
Regional parks				
Estimated number of hectares	1,800	750	570	696
per 000's people	2.22	0.85	0.80	1.05
Community parks				
Estimated number of hectares	506	856	1,257	845
per 000's people	0.62	0.97	1.76	1.27
Neighbourhood parks				
Estimated number of hectares	2,055	1,530	n/a	1,004
per 000's people	2.53	1.73	n/a	1.51
Total parks				
Estimated number of hectares	4,361	3,136	1,828	2,545
per 000's people	5.37	3.55	2.56	3.84

Note: n/a = not available
Source: KPMG Benchmarking Survey to Select Municipalities

- The table below summarizes select statistics on city-owned amenities. The following is observed:
  - Fields (per 000's people): Winnipeg (0.91) is higher than Mississauga (0.43) and lower than Edmonton (2.13) and Ottawa (1.10).
  - Playgrounds (per 000's people): Winnipeg (0.74) is higher than the average of 0.53 (excluding Ottawa which is an outlier).
  - Lawn bowling greens: Winnipeg (12) is higher than other cities.
  - Pleasure rinks: Winnipeg (40) is less than Ottawa (67) and Mississauga (72).

Amenities					
Fiscal 2012 (or most recent)	**Edmonton**	**Ottawa**	**Mississauga**	**Hamilton**	**Winnipeg**
Fields					
Estimated number of sites	1,732	970	304	n/a	604
per 000's people	2.13	1.10	0.43	n/a	0.91
Playgrounds					
Estimated number of sites	405	1,800	262	262	493
per 000's people	0.50	2.04	0.37	0.50	0.74
Lawn bowling greens					
Estimated number of sites	1	6	4	n/a	12
Pleasure rinks					
Number of sites	n/a	67	72	n/a	40

Note: n/a = not available
Source: KPMG Benchmarking Survey to Select Municipalities

- The table below summarizes select statistics on city-owned trees. The following is observed:
  - Trees (per 000's people): Winnipeg (422) appears to a similar number of trees per capita compared to peer cities.
  - Trees pruned in year (% of total): Winnipeg (6%) does not appear to prune as much of its asset base each year as Ottawa (7%) and Edmonton (13%), but prunes more of its asset base than Mississauga (3%, but has a very large number of trees).

Trees					
Fiscal 2012 (or most recent)	**Edmonton**	**Ottawa**	**Mississauga**	**Hamilton**	**Winnipeg**
Number of trees	306,547	340,000	1,000,000	290,200	280,000
Number of trees per 000's people	377	385	1,402	558	422
Number of trees pruned in year	40,000	24,000	25,100	n/a	15,600
Number of trees pruned in year (% of total)	13%	7%	3%	n/a	6%

Note: n/a = not available
Source: KPMG Benchmarking Survey to Select Municipalities

- The following table summarizes crews that select peer cities use for urban forestry activities. Details on how services are delivered are summarized below:
  - Ottawa contracts out approximately 90% of tree planting, 60% of tree pruning and 80% of stump removal.
  - Edmonton contracts out approximately 40% of tree planting and approximately 30% of tree pruning, and 20% of stump removal.
  - Mississauga contracts out all tree planting, while tree pruning and stump removal is in-house.

- Winnipeg contracts out approximately 40% of tree planting, pruning and removal. The City is currently examining ASD options.
- Winnipeg appears to use larger crews for urban forestry services, as it tends to conduct more urban forestry activities in-house than other cities.

Comparison of Urban Forestry Crews

Activity	Ottawa	Mississauga	Winnipeg
Tree planting	2 to 3 tree workers with one crew leader	Crew information not applicable because contracted.	Boulevard crew: 1 person for backhoe 1 person for tandem and trailer 1 person for loader 2 staff for manual labour handy dump and traffic control, 1 staff for water truck
Tree pruning	2 to 3 tree workers with one crew leader	3 person crew for aerial work (one Arborist 1 and two Arborist 2s typically)	Boulevard tree pruning crew: 2 people for aerial truck 2 people for chipper, traffic control and worksite security
Tree and tree stump removal	2 to 3 tree workers with one crew leader	2 person crew for climbing work (usually two Arborist 2s or an Arborist 1 and an Arborist 2)	Boulevard tree removal crew: 2 people for aerial truck 1 person for tandem 1 person for loader 2 people for chipper, traffic control and worksite security Boulevard tree stump removal as standalone procedure (not directly associated with tree planting or tree removal operations): 1 person on stump grinder 2 people on soil, seed and worksite security

Source: KPMG Benchmarking Survey to Select Municipalities

- In terms of city beautification assets, the following is observed:
  - Flower beds (sq.m. per 000's people): Winnipeg (41.22) appears to have substantially more flowers than other cities. A reduction in flower beds also was discussed during interviews.
  - Litter containers – in park sites and on streets (per 000's people): Winnipeg (6.78) appears to have more containers than other mid-sized cities.
- Note: The analyses above are based on limited data sets, and only examine the number of inventories that each city has. Other factors should be considered when balancing service level standards against asset rationalization, notably asset utilization. Data on asset utilization across Canada is not available; however refer to the case study for Calgary on the following page with regards to the city's sports fields.

Case Study: Calgary, Alberta – Distribution of Better, More Useful Sports Fields

Challenge

- Many cities struggle to maintain service level standards due to rapidly expanding asset inventories and modest increases in budgets. One potential solution is asset rationalization (e.g., reducing the number of city inventories), but that may not be politically acceptable. Cities are looking at other ways to solve this ongoing challenge.
- Calgary, in particular, discovered an issue with its sports fields. The city's Sports Fields Study, unveiled in 1997, indicated that the asset base of community and district level fields was not keeping pace with the demand in the short season of prime booking. However, there appeared to be sufficient play fields in the city to accommodate the needs of users at some minimum level. The issue seemed to be more related to the distribution of better, more useful fields, than to a need for additional fields.

Approach

- The City of Calgary is currently developing its Sports Fields Management Plan ("SFMP") as a framework to increase use of the city's existing inventory of lands, develop the GIS inventory and analysis tools to run a greater cost-recovery program, manage fields more efficiently, undertake a comprehensive life-cycle and retrofit program, and reclassify fields. The SFMP is expected to incorporate the following components, among others:
  1. Purpose, objectives and underlying principles of sports fields and sports facilities.
  2. Data collection and analysis of: field inventory and evaluation; field user profiles, leasing arrangements, needs, satisfaction etc.; trends; and use of fields by non-traditional groups.
  3. Revisions to the sports fields classification system: purpose; underlying principles; field types; field classes; user allocation priorities; general development standards; maintenance guidelines, etc.
  4. Analysis of current and future supply and demand.
  5. Retrofits, upgrading and development priorities for ball fields and soccer fields: capital project prioritization; quantitative deficiency; qualitative deficiency; etc.
  6. The implementation plan: the approval process; budgeting; ongoing monitoring and system management; intradepartmental responsibilities and communication.

Results / Potential Impact

- Calgary completed a full inventory of all fields in 2012, and is currently implementing a new GIS system that will allow city staff to search playfields by areas, communities, etc. The city is also rearranging its field booking system to connect with the GIS system. These steps should help the city better understand utilization and why some fields haven't been used.
- Calgary expects to lower costs by creating another classification of low-use, low-maintenance fields, reclassifying low-use, higher maintenance parks into low-maintenance natural areas, and other means.
- In addition, Calgary expects to improve customer service by enabling citizens to view and book available fields over the internet.

Source: City of Calgary Open Space Plan

Context for Public Works

- Winnipeg also struggles to maintain service level standards due to expanding asset inventories and relatively flat budgets in Parks. Asset rationalization should be re-examined, and the City should also consider:
  - defining more stringent requirements including allocation of maintenance budgets for the additions of assets City-wide (the City already requires complete business plans for major projects);

- reclassifying under-utilized, higher maintenance assets as lower maintenance assets with correspondingly lower service levels and lower costs; and
- improving the utilization, distribution and functionality of existing parks and open space assets, which should consider some rationalization of certain assets.

RECOMMENDATIONS

- The asset management process for park and arboreal assets should be continued and integrated with the maintenance and replacement process.
- Allocating sufficient resources to maintain existing assets should generally come ahead of adding new assets.
- All asset additions where Public Works is responsible for maintenance should result in corresponding increases operating budgets.
- Asset management data should include, where appropriate, usage data, to facilitate for asset rationalization discussions if asset additions are made without additional operating funds.
- The opportunities to expand contracting of tree planting, pruning, and removal should examined though the ASD process. The current service-based operating budget for tree planting, pruning and removal is approximately $6.5 million.
- The rate of recovery for athletic fields should be increased to compare with the cost recovery ratio of arenas. This can be accomplished by increasing the fees for field use, reducing the level of service for grass cutting or transferring maintenance responsibilities to more user groups.
- Consider reclassifying under-utilized, higher maintenance assets as lower maintenance assets with correspondingly lower service levels and lower costs.
- There are a series of opportunities to reduce certain service levels to compare with other cities. The higher service levels may reflect unique circumstances and values in Winnipeg, but the City should confirm that it does in fact want to provide higher than standard services in these areas:
  - Mosquito control;
  - Urban forestry;
  - Park grass cutting.

Priority

- High

Financial Impact

- To be determined.
- Business case would need to be developed for potential alternative service delivery of tree planting, pruning and removal, including fully-loaded cost analysis and private sector comparators.
- Any sales of surplus assets requires Council approval.

Timing

- Long-term

Risk Level

- High

Implementation Factors

- The Department has previously brought forward the concept of rationalization with regards to the number of playgrounds; which was rejected by Council.
- The Department and the Standing Committee could meet on possible Parks assets for consideration.
- The Department would have to bring forward a sound business case, on a case-by-case basis, for disposal of any Parks assets and/or transfer of assets.
- Requires Council approval and any related policy change. The Department would manage implementation.

Rationale / Benefit

- Parks and the urban forestry program contain a large number of assets that are small and easy to overlook (the park bench, slides, swings, etc.) or relatively inexpensive to establish but increasingly valuable (and expensive to maintain) as time goes on (street trees). The Department recognizes this and is well on the way to an effective asset management program. The program needs continued support, and needs to be used to identify the extent of the asset deficit – the amount by which lifecycle costs (major repairs, replacement) exceed available funds, and used to ensure the deficit does not grow. Preventing growth in the deficit is the key to ensuring assets do not deteriorate and become liabilities rather than useful contributors. Ensuring new assets, particularly expansion of parklands and improvements, come with the required funding is part of this process.
- While it would generate cost savings to eliminate some assets that do not contribute proportionally to their cost, this is politically difficult as someone will likely come to the defence of almost any asset. Historical records of the use of various assets, where such information is available, could assist in this process should it become more necessary in the future.
- Based on the jurisdictional review, the key urban forestry programs appear to be the area where other cities contract out a greater proportion of the work than does Winnipeg. Tree planting and pruning was one particular area where peer cities mostly contract out. A decision on how much more to contract, balance between in-house and contracted activities, and in what way, should be based on thorough evaluation of the fully-loaded unit costs, and this comparison should be completed as part of the ASD process.
- Athletic fields have traditionally just been considered as empty space and the fees charged have tended to reflect the cost of booking the space. However, the expectations of an acceptable field for competitive athletic undertakings even among children and youth have been increasing over the years, and the level of care and attention has grown, particularly with restrictions on the use of herbicides and pesticides. As a result, the provision of fields recovers little of the costs involved, generally much less than, say arenas, where the costs are more obvious and the fees have tended to move towards cost recovery.
- There are a number of approaches the City could follow to reduce the net cost of providing fields. It has already made some creative arrangements with community and sports user groups that take responsibility for particularly facilities and maintain them to whatever standard they want (as long as it meets minimums). This can allow groups that want quality facilities to achieve them, provided they are willing to put in the effort (or fees) required. This is the preferred approach, but is not widely attractive when the City is willing to look after fields at relatively low cost. Some combination of reducing the frequency of grass cutting and other maintenance on City fields and increasing the rental rates for the fields would help decrease the costs, improve the recovery rates, and encourage more groups to take responsibility for their own facilities. Field rental rates were increased in the 2013 Budget and this should continue to be considered as one part of the overall approach.
- As noted above, Winnipeg has high levels of service in some specific areas. These areas do add specific value to the community and may reflect community values. However, given the indication that they exceed the municipal "norm", it is worth confirming that the City wishes to continue all these services, at the high service levels, knowing they are high service levels.

9.4.3 City Beautification Service Levels

Issue

The City provides a range of services including litter collection, public gardens/landscaping, ornamental lighting, graffiti control, and street cleaning.

Potential Opportunity Areas	
✓	Outsourcing
✓	Service innovation
Barriers	
■	Collective agreement
■	Service expectations

Findings and Observations

- Most of the services are traditional services provided in most cities.
- Department perspective is that Winnipeg provides less of these types of services than most Canadian cities.
- Service levels are clear in some areas (e.g., street cleaning), less clear or non-existent in other areas (e.g., landscaping).

Implications

- While important services, some of these areas may be considered less "core" and some more discretionary.
- Should explore what is done in comparable cities in these areas. It may be possible for the community and/or volunteer groups to deliver certain activities (e.g., Business Improvement Zones).

Benchmarking and Analysis

- In Winnipeg, local business improvement zones and neighbourhood groups contribute to City beautification. Public Works partners with a number of these groups.
- Edmonton promotes community involvement in city beautification through its Partners in Parks program, which enables individuals, families, schools or community groups to participate in planting annuals, maintain shrub beds, and remove weeds and litter from public green areas.
- Edmonton also has over 30 community garden groups, each of which operates independently. These gardens comprise part of several citizen-engaging beautification programs including the "Ride the Wave" petunia barrels, Front Yards in Bloom, and naturalization plantings.
- Mississauga engages residents in community cleanups. It also promotes the involvement of corporate parties, local schools, stewardship groups and other volunteers in city beautification activities.
  - It also contracts out some beautification services, such as for graffiti cleanups. Parks staff only perform small cleanups for graffiti located in Parks, whereas contractors clean the majority of graffiti.
- Calgary runs a number of tree planting initiatives for residents to contribute to the city's urban forest. These include a Planting Incentive Program, where the city shares the cost of planting, watering and pruning a tree on public property in front of a resident's house; the NeighbourWoods Program, which enables communities to become stewards of specific trees on city boulevards; and others.
- Calgary also depends on community residents to organize and volunteer for a Community Clean-up Program. This program is available to communities once annually and provides a partnership with the Waste & Recycling Services and Animal & By-law Services to support community garbage collection days. The community association is responsible for meeting all guidelines, organizing volunteers and providing advertising of the event.
- Edmonton, Ottawa, Mississauga and Winnipeg perform loose litter collection on streets and in parks with in-house staff, although Mississauga outsources litter pickup on boulevards. Similarly, city staff empties containers on streets and in parks in Edmonton, Mississauga and Winnipeg.

RECOMMENDATIONS

- Consider reducing the range and scale of City maintained public and ornamental gardens, which exceeds the norm in other mid-size cities. This could be combined with a program to support and encourage volunteer involvement.

Rationale / Benefit

- City beautification services differ from city-to-city, and are typically more discretionary services than essential or mandated core services of public works departments.
- The difficulty in reducing any city beautification services is identifying a responsible and accountable party to fill in if the City does not provide the service.
- Given that the City provides an exceptional level of public and ornamental gardens, the level of those assets and associated service standards could be scaled back over a period of time. There may be some opportunity for a community group to take control of certain city beautification services (e.g., local business improvement zones).

Priority

- Medium

Financial Impact

- Some cost savings, but likely less than $100,000 – $200,000 annually.

Timing

- Medium to long-term

Risk Level

- Medium

Implementation Factors

- Department develops a plan to reduce the range and scale of City maintained gardens and associated impacts.
- Seek Council direction on the plan.
- Phase-in-implementation of any changes.
- Seek opportunities to partner or transfer responsibility to interested groups.

9.4.4 Graffiti Removal & Festive Lighting

Issue

In addition to removal of graffiti from City property, the City also provides a 'free' graffiti removal service to both the general public and commercial enterprises.

Potential Opportunity Areas	
✓	Outsourcing
✓	Potential revenue
Barriers	
■	The balancing of seasonal resources may prove a barrier to realization of cost efficiencies
■	Graffiti removal has been a priority of Council, and there may be no desire to re-focus less resources to seasonal only and find cost savings

Findings and Observations

- The City spends over $1 million annually on graffiti removal.
- Graffiti removal is a service provided year-round; however, in practice, it is much more prevalent in the summer months and is effectively a seasonal service. Balancing of seasonal labour appears to be the reason why the graffiti service is managed in conjunction with festive lighting.
- The festive lighting service reportedly costs the City $200,000 annually.
- Transportation Branch is considering a pilot project to put wrap coverings over traffic signal boxes to discourage graffiti.

Implications

- Consideration should be given to the savings that an alternative level of service could deliver – this evaluation should take account of the full cost of service provision, including all applicable overheads.
- In some other municipalities, the onus is on private business owners to clean up graffiti tags on their property.
- In conjunction with the evaluation of graffiti service levels, consideration should also be given to the option of out-sourcing the festive lighting service, or to alternative sources of funding (e.g., sponsorship), to potentially reduce overall costs.

Benchmarking and Analysis

- In Mississauga, contractors are retained to clean the majority of graffiti; in-house crews perform minor graffiti cleanups in Parks.
- In Ottawa, graffiti control consists of crews of 2 staff and a graffiti removal truck and costs the city approximately $1 million annually. Ottawa and Edmonton make property owners responsible for graffiti on private property.
- Winnipeg provides all services with City staff. The graffiti team consists of 4 permanent staff members, with 4-5 seasonal staff. This program is significantly larger with more in-house staff than programs in peer cities.
- The following case study describes Edmonton's Graffiti Management Program and policies related to graffiti removal.

Case Study: Edmonton, Alberta – Graffiti Management Program

Challenge

- Graffiti vandalism is a property vandalism crime that results in significant clean-up efforts and remediation costs in all large municipalities. All major municipalities, including Edmonton, are looking at creative, lower-cost methods to manage this ongoing problem.

Approach

- The City of Edmonton is using a combination of legislation, community programs and graffiti audits, among other methods, to manage graffiti vandalism.

Legislation/By-Law

- Due to increased public concern and awareness, the City of Edmonton's Community Standards By-law 14600, section 9, was amended effective April 1, 2008, requiring owners to remove graffiti from their properties upon notification. Community Standards by-law enforcement provides for the issuing of a $250 ticket in the event of non-compliance.
- The City of Edmonton can also cause a forced cleaning to be implemented under the *Municipal Standards Act*, with municipal assets conducting the cleanup. These costs are transferred back to the property owner by adding the cost to the tax roll for the specific property.

Community Programs

- To help reduce graffiti and create cleaner safer communities, the City of Edmonton's Capital City Clean Up Program has created the Graffiti Management Program ("GMP"). One way that the GMP is assisting the community is through supporting community graffiti wipe-out events. A wipe-out is a community event where individuals or groups contact local property owners and volunteer to paint over graffiti on their property. The average group of 40 volunteers can paint about 1500 total square feet of graffiti located on 10 different locations in one six-hour day.
- Edmonton's Mural Program encourages property owners to celebrate their city with a Giants of Edmonton mural on their buildings, and help fight graffiti vandalism at the same time. The property owner supplies a wall with at least 400 sq. ft. space, promises to keep the mural on the wall for a minimum of three years, and maintain it after that time. The program has had success because graffiti vandals generally leave outdoor artwork alone.

Graffiti Audits

- In October 2010, the City of Edmonton and an external service provider developed and implemented a method for auditing the occurrence of graffiti vandalism in selected neighbourhoods. Using these audit techniques the city is now able to compare graffiti vandalism intensity from one year to the next.

Results / Potential Impact

- According to Edmonton's 2012 Graffiti Audit, the number of graffiti tags decreased from approximately 1,978 in 2010 to 1,116 in 2012 (a 44% decrease) in the 20 neighbourhoods examined. The majority of the reduction occurred between 2010 and 2011.

Source: (1) City of Edmonton website
(2) City of Edmonton Graffiti Vandalism Audit 2012

Context for Public Works

- The City does not have legislation or a by-law requiring owners to remove graffiti from their properties, and Public Works currently handles all graffiti incidents in-house. Using a combination of the above or similar programs would lower overall costs and could enhance service levels.

RECOMMENDATIONS

- Consider making graffiti removal on private property the owners' responsibility or shared responsibility and correspondingly reduce costs.

Rationale / Benefit

- Removal of graffiti from private property is not a City responsibility and in fact requires the consent and agreement of the owner. However, rapid removal of graffiti is required to reduce the value to the "artist" and discourage this form of vandalism. The approach in Ottawa and Edmonton makes it clear that owners must act quickly and gives by law enforcement personnel the power to act, while allowing the city to focus its efforts and resources on the fastest possible reaction to graffiti on public property.

Priority

- Medium

Financial Impact

- Winnipeg's graffiti removal program stands out as larger than other cities in Canada. While the program is quite effective, there should be ways to reduce the overall size and cost of the program by sharing some responsibility with property owners.
- Potentially $200,000 or more annually in savings on a program that costs over $1 million annually, depending upon extent of revised program scope, which should require less direct resources in graffiti removal but additional City by-law enforcement.

Timing

- Medium-term

Risk Level

- Medium

Implementation Factors

- Any movement to sharing graffiti removal with property owners would require a change in City policy and Council direction and approval.

9.4.5 Summary of Issues, Opportunities and Recommendations

Parks and Urban Forestry and Other Services – Issues and Opportunities Summary							
Issues \ Opportunities	Business Processes	Organizational Restructuring	Outsourcing	Automation	Shared Services	Service Innovation	Potential Revenue
Parks Fleet Management Costs and Utilization	✓					✓	
Asset Management and Rationalization							✓
City Beautification Service Levels			✓			✓	
Graffiti Removal & Festive Lighting			✓				✓

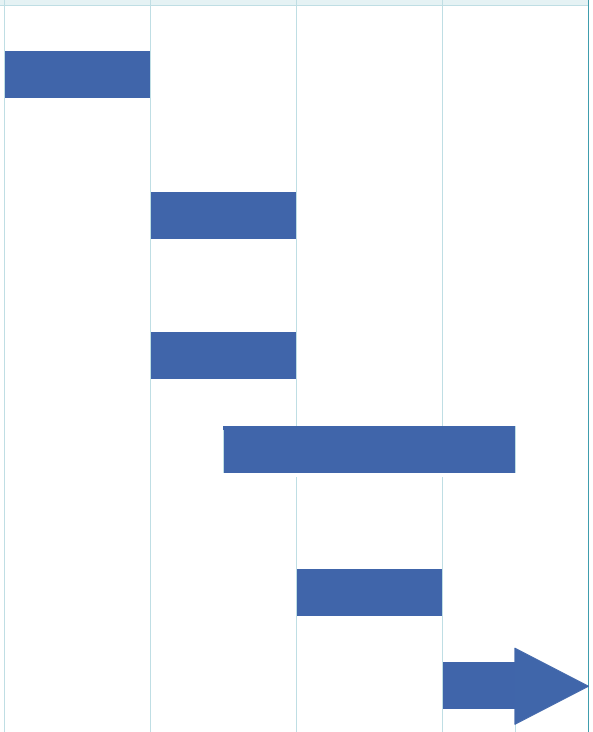
Summary of Recommendations

- Parks Fleet Management Costs and Utilization: Public Works work with WFMA to identify the range of fleet services that should be provided in the field to minimize the impact and cost of vehicle and equipment servicing, including WFMA mobile services.
- Asset Management and Rationalization: Continue to develop asset management process for parks and forestry assets, with allocation of sufficient resources to maintain existing assets a priority over adding new assets. Explore the opportunity to expand contracting out of tree planting, pruning and removal through the ASD process.
- City Beautification Service Levels: Consider reducing the range and scale of City maintained public and ornamental gardens, which exceeds the norm of other mid-sized cities.
- Graffiti Removal & Festive Lighting: Consider making graffiti removal on private property the owners' responsibility or shared responsibility and correspondingly reduce costs.

10 Implementation Plan Framework

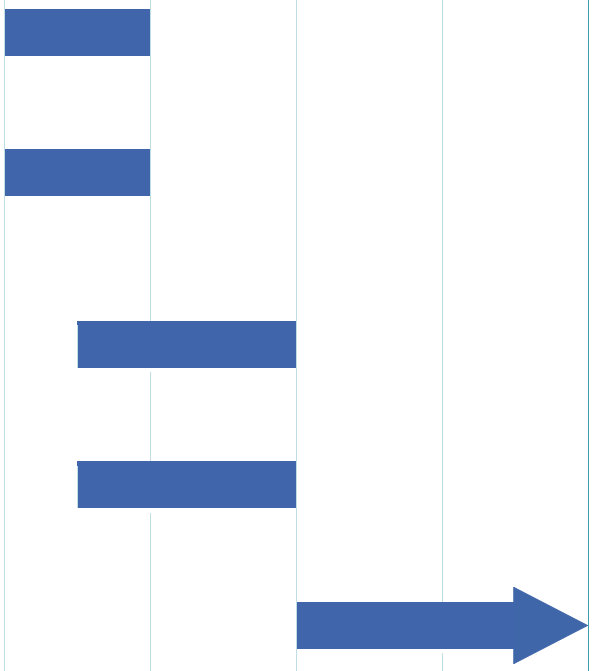
This section outlines an implementation plan framework for consideration in commencing implementation of the priority recommendations. Most of these can be developed in parallel; some are longer-term. Opportunities for larger cost savings as well as investments are listed first. Those areas that require or may require a change in Council policy as well as Council approval are noted. The recommendations are for consideration and may or may not occur depending on Council direction and decisions.

Implementation Plan Framework

Priority Recommendations	Key Tasks	Resources Required	Target Timeframe
			2013 Q3/Q4 | 2014 Q1/Q2 | 2014 Q3/Q4 | 2015
Value for money for contracted services, including ASD options on construction projects	1. Approval in principle from Council and Administration.	■ Internal team: – Engineering and Streets Divisions – Led by Engineering – Materials Management and Legal ■ Target potential savings of $1.2 million, mostly on capital projects. ■ Support from Corporate Finance (Asset Management Program Initiative). ■ Contract management training assistance. ■ Changes to General Conditions for select ASD methods and risk-sharing between the City and the Contractor.	
	2. Department team establish plan, objectives and targets.		
	3. Contract management training workshops for Project Managers.		
	4. Materials Management and Legal to develop standard Forms of Contract and modifications to Standard General Conditions for select ASD methods, starting with design-build.		
	5. Select pilot projects.		
	6. Measure, track, monitor.		

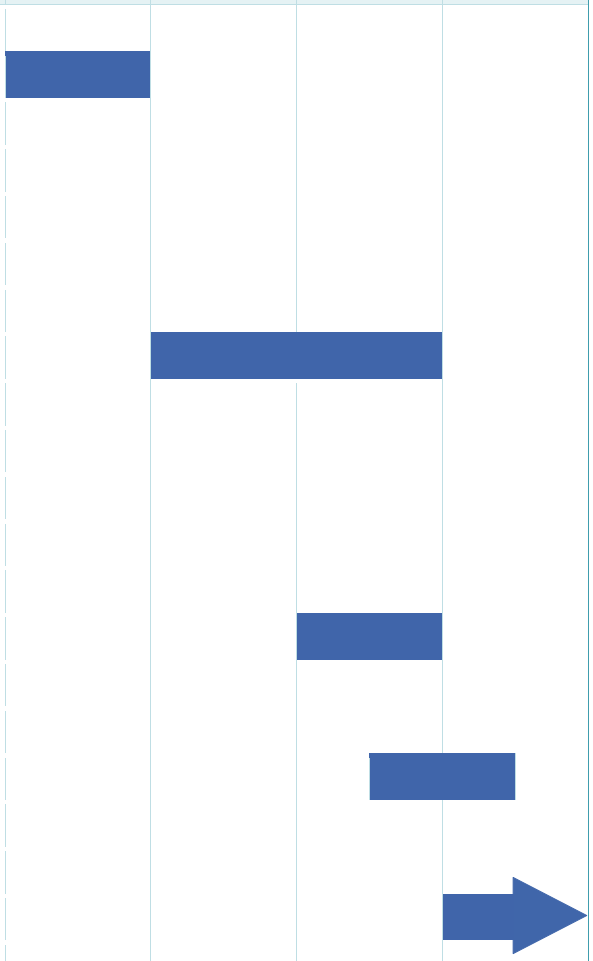
Implementation Plan Framework

Priority Recommendations	Key Tasks	Resources Required	Target Timeframe
Reducing fleet management costs	1. Council and Administration support to reduce overall fleet costs from WFMA and set target for 2014 and 2015. 2. Establish Departmental team and identify areas for improvement/examination. Could be areas to reduce fleet costs and could be changes in WFMA services to allow reduction in Public Works costs. 3. Conduct further cost analysis; request detailed information from WFMA and market comparators. 4. Negotiate new arrangements between Public Works and WFMA. 5. Obtain necessary approvals if any policy change is required.	■ Internal team: – Director (Lead) – Manager, Finance – Manager, Streets – Fleet Supervisor, Streets – Manager, Parks and Open Space – Support staff ■ WFMA cooperation ■ External advisor to assist with negotiation strategy and cost analysis. ■ CEO/COO support ■ Internal Audit advice ■ Target potential savings of $0.7 – $1 million. ■ Amendments, if any, to WFMA's operating environment and exclusivity of fleet services to the Department, would require Council approval.	2013 Q3/Q4 | 2014 Q1/Q2 | 2014 Q3/Q4 | 2015



Implementation Plan Framework

Priority Recommendations	Key Tasks	Resources Required	Target Timeframe
			2013 Q3/Q4 | 2014 Q1/Q2 | 2014 Q3/Q4 | 2015
Adjusting service levels towards norm for residential street snow removal	1. Seek Council direction to explore this option during 2014 Budget process.	■ Internal team: – Director (oversight) – Manager, Streets (Lead) – Supervisors, Streets	
	2. Develop plan to move from curb-to-curb and pavement for residential streets to narrower plows and smooth surfaces. Consider impacts on: – snow removal policy and clarity on changes; – current obligations on typical 2-year agreements with contractors, including advance notice of change, timing for new contracts; – reduced damages to curbs; – more frequent, less intensive plows; and – snow removal equipment mix.	■ Department potential savings estimated at $2 – $3 million, depending on number of significant weather events in a year. ■ Input from Materials Management and Legal on contracting obligations during transition. ■ This is a policy change that would require Council approval. The Public Works Department would bring forward for Council consideration, including implications on existing contracts for snow removal for residential streets. ■ Department would work with Materials Management, and consult with Legal, on developing new contract scope and terms in accordance with changes in Council policy for snow removal on local residential streets.	
	3. Submission to Steering Committee and Council of required policy changes and timing.		
	4. Communications plan.		
	5. Implementation of new snow removal standards for residential streets.		



Implementation Plan Framework

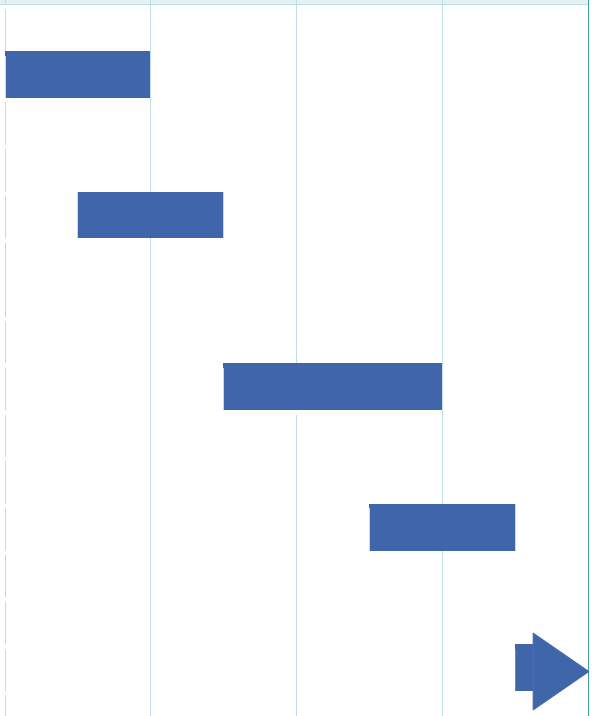
Priority Recommendations	Key Tasks	Resources Required	Target Timeframe
			2013 Q3/Q4 | 2014 Q1/Q2 | 2014 Q3/Q4 | 2015
Overtime management and expanding summer weekend shifts	1. Management meet to set direction and targets on overtime.	■ Internal team: – Director – Manager, Streets – Manager, Parks – Manager, Human Resources – Supervisors, Streets – Manager, Finance ■ Target potential savings of $0.5 – $1 million.	
	2. Management to develop stricter overtime provisioning and approval process, utilizing technology and real time approvals.		
	3. Expand weekend shift program in 2014.		
	4. Track, monitor and report overtime costs and hold managers/supervisors accountable.		

Implementation Plan Framework

Priority Recommendations	Key Tasks	Resources Required	Target Timeframe
Modernizing construction permitting	1. Customer Services and Strategic Support develop business case for phase-in of AMANDA and include case for moderate increase in permit fees.	■ Internal team: – Manager, Customer Services and Strategic Support (Lead) – Manager, IS&T and/or designate Project Manager – Supervisors, Customer Services – Coordinator, Research and Process Improvement ■ Target potential revenue opportunities of $0.5 million.	2013 Q3/Q4 – 2014 Q1/Q2
	2. Input and communication with Customer Services and Permits staff.		2013 Q3/Q4 – 2014 Q1/Q2
	3. IT support and training of Permit staff.		2014 Q1/Q2 – 2014 Q3/Q4
	4. Shift more responsibility towards reducing permit processing and increasing revenue and permit enforcement.		2014 Q3/Q4 – 2015
	5. Monitoring and reporting of permit revenues and customer service metrics (i.e., improved response times, online, etc.).		2014 Q3/Q4 – 2015

Implementation Plan Framework

Priority Recommendations	Key Tasks	Resources Required	Target Timeframe
			2013 Q3/Q4 | 2014 Q1/Q2 | 2014 Q3/Q4 | 2015
Phase-in of a centralized Traffic Management Centre	1. Update business case focused on a submission of the centralized TMC only for 2014 Preliminary Capital Budget.	■ Internal team: – Director (oversight) – Manager, Transportation (Lead) – Transportation Division resources ■ Gather inputs and support from other City Departments. ■ External consulting engineers to assist on design. ■ Department to bring forward as part of the Budget process; requires Council approval. Business plan to be developed, potential range of $1 million for initial capital costs plus incremental operating costs.	
	2. Develop fulsome business plan, including updated cost estimates and implementation plan. The business plan should include a multi-year implementation and phase-in process.		
	3. IT system selection, design and implementation.		
	4. Continued implementation of traffic signal and communications upgrades and establish a centralized Traffic Management Centre.		
	5. Implementation of TMC operations.		

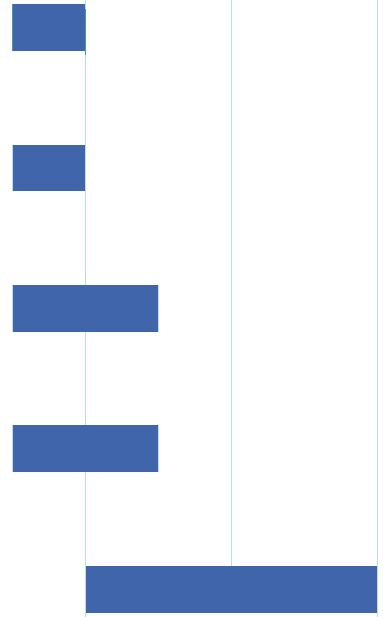


Implementation Plan Framework

Priority Recommendations	Key Tasks	Resources Required	Target Timeframe: 2013 Q3/Q4	2014 Q1/Q2	2014 Q3/Q4	2015
Developing a performance management framework and measurements for Public Works	1. Management sessions and input.	■ Internal team: – Director with all Managers – Project management from Customer Service and Strategic Support Analyst and Performance Management Analyst in Parks ■ Consultation with Central Corporate Finance and Corporate Support Services ■ May require outside assistance to help facilitate and advise.				
	2. Develop performance management framework.					
	3. Determine KPIs and Management reporting, as well as IT assistance.					
	4. Communicate new framework and its importance across the system.					
	5. Evolve every year, measure, track, monitor, report, communicate results and achievements.					

Implementation Plan Framework

Priority Recommendations	Key Tasks	Resources Required	Target Timeframe
Addition of specialized strategic resources: (1) 3 analysts – financial, operational and process improvement; and (2) at least two additional Project Managers/ Engineers.	1. Obtain approval in principle. 2. Forward as part of 2014 Budget, partially offset by reallocation of non-critical vacancies if possible. 3. Work with Human Resources to develop job descriptions, required skill sets, and appropriate communication level. 4. Develop and implement recruitment strategy. 5. Interview and hire.	■ Internal team: – Director – Manager, Human Resources (Lead) – Manager, Finance – Manager, Customer Services and Strategic Support – Coordinator, Research and Process Improvement – Manager, Engineering ■ Internal team can determine if (limited) advice is required on roles, responsibilities and skill sets, as well as Human Resources search process. ■ Requires Council approval as part of 2014 Budget process. Estimated potential operating cost of $0.3 million for analysts. Project Managers/Engineers are cost-recoverable and part of the capital budget.	2013 Q3/Q4 | 2014 Q1/Q2 | 2014 Q3/Q4 | 2015



Implementation Plan Framework

Priority Recommendations	Key Tasks	Resources Required	Target Timeframe
ASD consideration for tree planting/pruning/ removal. Also, consider any future asset rationalization and first seek Council direction and approval.*	1. Internal cost analysis of fully-loaded costs to provide tree planting, pruning and removal.	■ Internal team: – Manager, Parks and Open Space (Lead) – Manager, Finance – Supervisors, Parks – Support from Corporate Finance (ASD initiatives) ■ External check on City's internal cost analysis and private sector approach ■ Department would prepare ASD case and bring forward to ASD Committee. This would include consultation with stakeholders. ASD initiative would require Council approval.	2013 Q3/Q4 | 2014 Q1/Q2 | 2014 Q3/Q4 | 2015
	2. Department plan to consider ASD and potential extent of contracting out while maintaining a level of in-house capacity.		
	3. Advance notification of consideration to the union as per collective agreement, discussions of alternatives.		
	4. Strategy to approach the private sector on potential contracting opportunities, including obtaining comparisons of competitive costs through a Request for Proposal process, retaining the City's right to not proceed further if costs are not competitive with in-house.		
	5. Submission to ASD Committee. Decision to proceed or not, and if proceeding, at what scale and scope, before forwarding to Council for consideration.		

Note: *Any future asset rationalization must require Council direction and approval. If involving the sale or transfer of any surplus property, must follow City policy and Council approval.

Implementation Plan Framework

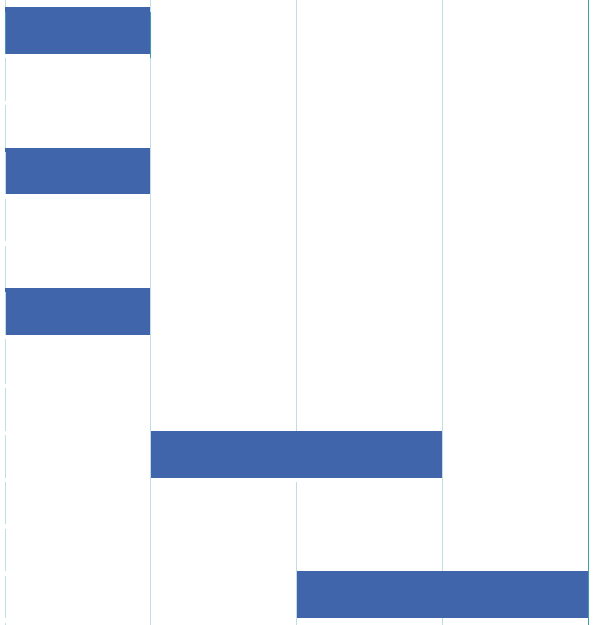
Priority Recommendations	Key Tasks	Resources Required	Target Timeframe: 2013 Q3/Q4	2014 Q1/Q2	2014 Q3/Q4	2015
Sharing of resources from City-wide Corporate Support Services during Public Works' summer hiring process	1. Discussions with Senior Administration, CFO and Director, Corporate Support Services. Diagnosis to identify the current processes, peak resource requirements, PeopleSoft limitations, hiring/re-hiring models in other Departments and related issues.	■ Internal team: – Director – Manager, Finance – Manager, Human Resources – Manager, IS&T				
	2. Discussions with CUPE to improve re-hiring process and call-backs for summer employment.	■ CFO ■ Director, Corporate Support Services ■ CUPE				
	3. Planning and allocation of HR staff from other City Departments as required to assist Human Resources in Public Works' peak workload starting in spring 2014 and adjusted for 2015. 4. In parallel, investigate the issue of PeopleSoft not providing the accuracy and functionality required for Human Resources staff to manage temporary seasonal employees.					
	5. Track and report on changes and improvements.					

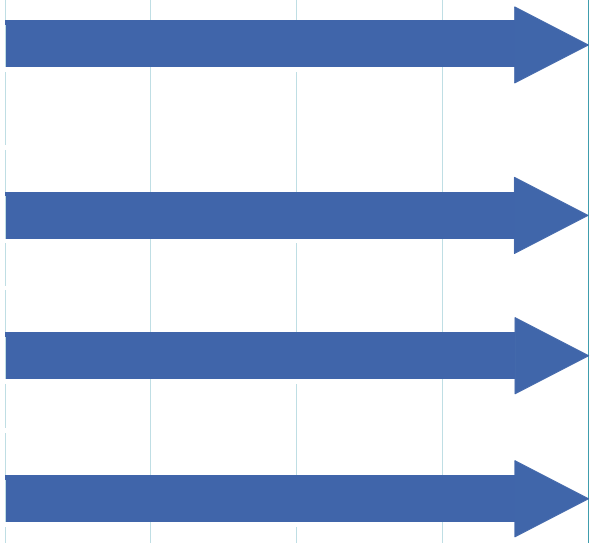
Implementation Plan Framework

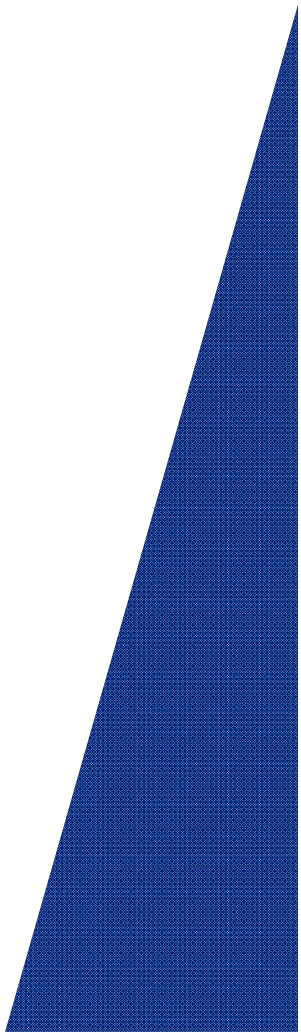
Priority Recommendations	Key Tasks	Resources Required	Target Timeframe: 2013 Q3/Q4	2014 Q1/Q2	2014 Q3/Q4	2015
311 efficiency and better utilization of staff time on service requests	1. Establish internal team led by Manager, Customer Services and Strategic Support.	■ Internal team: – Manager, Customer Services and Strategic Support (Lead) – Public Works tier 2 call centre staff – 311 Service Knowledge Managers assigned to Public Works – Coordinator, Research and Process Improvement ■ Consult with Divisions ■ Consult with Director, Public Works and Director, Corporate Support Services				
	2. Develop clear requests from Public Works to 311, including scripting when required.					
	3. Meet with 311 Service Coordinators.					
	4. Service Level Agreement adjustments if required.					
	5. Track results, improvements and report to Management.					

Implementation Plan Framework						
Priority Recommendations	Key Tasks	Resources Required	Target Timeframe			
			2013 Q3/Q4	2014 Q1/Q2	2014 Q3/Q4	2015
Reorganization of Streets Maintenance Division	1. Determine the plan and new structure.	■ Decisions of Director and Manager, Streets ■ Director and Manager consult with Supervisors and Manager, Human Resources ■ Communications with stakeholders				
	2. Communicate changes with the union.					
	3. Communicate changes to all staff in the Division and articulate rationale.					
	4. Adjust based on feedback and as required.					

Implementation Plan Framework

Priority Recommendations	Key Tasks	Resources Required	Target Timeframe
			2013 Q3/Q4 | 2014 Q1/Q2 | 2014 Q3/Q4 | 2015
Information technology – workforce management system, permit system and performance management reporting	1. Management to meet and develop consensus on direction and high-level budget. 2. Manager, IS&T to take Management direction and complete the business case, gathering input from key users. 3. Manager, IS&T and a small committee to oversee procurement process, consulting with Corporate Support Services and Materials Management. 4. Phase-out select home-grown IT systems as required. 5. IS&T purchase and oversee implementation of any new system selected.	■ Internal team: – Director and Management to determine direction. – Manager, IS&T – Other staff involved with IT systems. ■ Director, Corporate Support Services and IT resources in Corporate Support Services ■ Consult with Materials Management on any RFP and/or procurement. ■ If required, external support. ■ IT plan and investments estimated at potentially $0.6 – $1 million can be part of 2014 and 2015 Budget process. Budget requires Council approval.	

Implementation Plan Framework						
Priority Recommendations	Key Tasks	Resources Required	Target Timeframe			
			2013 Q3/Q4	2014 Q1/Q2	2014 Q3/Q4	2015
Asset Management Program Initiative	1. Public Works continue to play a major role in the scope of the corporate-wide Asset Management Program Initiative and the associated Department activities and responsibilities.	■ Internal team: – Director (oversight) – Asset Management Engineer (Lead) – Manager, Streets – Manager, Engineering – Manager, Transportation – Manager, Parks – Manager, Finance – Manager, IS&T ■ Corporate Finance is overseeing the Asset Management Program Initiative for the City, and is currently employing external contractors to assist in the Program's development.				
	2. Follow the principles and guidance of PAS 55 to develop the maturity level of the AM program and Council confidence.					
	3. Continue to integrate condition assessment, planned maintenance and capital investment within the Department and with Water and Waste.					
	4. Improve the level of Asset Management information and reporting. Determine appropriate priorities, service level changes and associated budgetary changes, where appropriate, to assist Council in making informed decisions.					



KPMG CONFIDENTIAL

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavour to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.

© 2013 KPMG LLP, a Canadian limited liability partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved.

The KPMG name, logo and "cutting through complexity" are registered trademarks or trademarks of KPMG International Cooperative ("KPMG International").

KPMG