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EXECUTIVE SUMMARY

1.0 INTRODUCTION

The City of St. Albert's Public Works Department (PW) has developed a Long Term Plan (LTP) that describes our vision for the next 10 years. The LTP identifies the department's seven core functions and attendant service levels we must meet to achieve our vision. The plan also identifies the resources required to maintain these service levels, and in so doing, bears significance for our department's structure and functions. Hence, the LTP is integral to the future development of Public Works.

1.1-1.2 Influences and Key Assumptions

Public Works has conducted a rigorous process to ensure that our long term plan integrates with the City's corporate planning framework, specifically the Municipal Development Plan (MDP), the Transportation Master Plan (TMP), the Utilities Master Plan (UMP) and the Infrastructure Reviews.

Public Works developed the LTP working from the following key assumptions:

- Our primary objective in service delivery is to provide quality of life for the people of St. Albert.
- We will continue to place major emphasis and priority on maintaining existing infrastructure.
- We will continue to rely on existing agreements with recreation groups and societies.
- Annual population growth will be 0.75% – 1.5% (based on 2008 municipal census and Capital Region Board scenarios for population growth).
- Assessment growth will be modest for the first three years of this plan: 1.22% in 2010; 1.5% in 2011; and 1.75% in 2012.
- Growth will be contained within those lands that are currently within our boundaries.
- Recommendations from the Transportation and Utilities Master Plans will be carried out over the next 10 years.
- There will be no major changes to the current organizational structure of the Public Works department.
- There will be no major changes to the current operational requirements as set by federal and provincial legislation.
- We will maintain current service levels for all Public Works activities as described in this plan and approved by Council through budget and policy.
- We will continue to adopt the latest technology and equipment to operate in the most efficient and cost effective manner.

2.0 PUBLIC WORKS' VISION FOR THE FUTURE

2.1 – 2.3 Mission, Values, Vision

Our **mission** is: *“To ensure the integrity and reliability of the City’s infrastructure which balances safety, environmental, and operational needs through our Asset Management, Operations and Utility Branches.”*

Our **values** define our culture and are consistent with those held by the City administration. At Public Works, we place special emphasis on:

- Respect, trust, dignity, honesty, integrity and flexibility in relationships
- Continuous improvement
- Competent, productive and satisfied employees
- A balance of work and family life
- Safety and health
- Lifelong learning

Our **vision** is: *“To ensure St. Albert residents are proud of our parks, facilities, roads and utilities through quality infrastructure management and professional, courteous and efficient service”*

2.4 Objectives

1. We will implement technologies and innovations that enable us to provide reliable and timely customer service
2. Residents, businesses and other City departments will be satisfied with services as per targets established in the branches
3. We will continue to provide services in an efficient and cost effective manner
4. We will minimize our impact on the environment
5. We will have highly skilled, motivated and satisfied employees

Each one of these objectives comes with hard-target performance measures for which we hold ourselves accountable (see below, pages 11-12).

3.0 SERVING THE VISION

Public Works has developed service levels for the seven core functions performed by our three branches:

1. **Snow and Ice Control** – with recommended service levels for snow plowing, ice control (sanding), collector snow removal, residential snow removal, and downtown snow removal (see page 21).
2. **Pavement Maintenance** – with recommended service levels for pothole and spray patching (see page 22).
3. **Turf Maintenance** – with recommended service levels for sports fields, parks, buffers and boulevards and natural areas (see page 23).

4. **Tree Operations** – with recommended service levels for planting, preventive maintenance and maintenance (see page 24).
5. **Building Maintenance** – with recommended service levels for inspections, preventive maintenance and maintenance (see page 25).
6. **Wastewater Collection** – with recommended service levels for lift stations, collection system and service connections (see page 26).
7. **Fleet Maintenance** – with recommended service levels for preventive maintenance, maintenance, equipment replacement/procurement (see page 27).

Solid Waste, Water and Other Services

8. **Solid Waste** – the suggested service levels with recommendations were approved through the Solid Waste Review in January 2009.
9. **Water/Storm Sewer** – although this report does not recommend service levels, it is assumed those service levels will remain the same and the future costs for those services will be incorporated into annual budgets.
10. **Other Public Works Services** – Again the report does not recommend service levels for all Public Works services, it is assumed those service levels will remain the same and the future costs for those services will be incorporated into annual budgets.

4.0 FINANCIAL IMPLICATIONS

The Public Works Long Term Plan covers the period from 2010 to 2020. It requires budget increases for two different purposes:

1. To meet recommended service levels.
2. To address new growth projected for St. Albert (expanding population and concomitant new roads, parks, buildings, etc.)

4.1 Costs to Meet Recommended Service Levels

To meet the service levels recommended in Section 3.0, Public Works must add new staff and equipment, thus increasing both operating and capital costs.

- The **operating** costs of meeting the recommended service levels for all seven core functions total **\$1,020,300**, once approved by Council through the annual budget process, these costs will be incorporated into the Public Works base budget.
- The **capital** costs of meeting the recommended service levels for all seven core functions total **\$797,000**.

If the budget increases necessary to meet recommended service levels aren't available, Public Works will continue to deliver service at current levels. If the necessary budget increases become available, PW will be able to meet all recommended service levels within one to five years of receiving the increases.

4.2 Costs to Meet Projected Growth

If Public Works is to continue to meet the service levels recommended in Section 3, we must also take into account city growth (new roads, parks, buildings, etc.) and include additional resources and infrastructure in department growth projections. Future incremental **operating** costs (cumulative year over year) taking into account growth projections for all seven core functions are:

2010	\$72,414	2016	\$1,192,296
2011	\$175,531	2017	\$1,349,767
2012	\$300,819	2018	\$1,486,762
2013	\$517,986	2019	\$1,625,812
2014	\$647,060	2020	\$1,766,947
2015	\$778,071		

Capital cost projections are based on the city's growth surpassing various thresholds for equipment. Most of PW's capital requirements for addressing new growth will be assessed within each three-year capital budget review process (and updated every year). The **operational** projected costs shown above include equipment charges, which PW can contract out until the thresholds are surpassed. Therefore, no **capital** requirements for equipment need to be included in projected growth costs. This is assuming the capital requirements for meeting recommended service levels (as identified in section 4.1) are met in the 2010 – 2012 operating budget.

5.0 THE PLANNING PROCESS

Public Works has followed a comprehensive, rigorous process to develop the LTP, involving professional research, collaboration with key stakeholders and integration with the City's corporate planning framework and standards. Key steps and a process overview are described below, pages 37-38.

1.0 INTRODUCTION

“He who every morning plans the transaction of the day and follows out that plan, carries a thread that will guide him through the maze of the most busy life. But where no plan is laid, where the disposal of time is surrendered merely to the chance of incidence, chaos will soon reign.”

Victor Hugo, French dramatist, novelist, & poet (1802 - 1885)

The City of St. Albert’s Public Works Department (PW) has developed a Long Term Plan (LTP) that describes our vision for the next 10 years. The LTP identifies the department’s seven core functions and attendant service levels we must meet to achieve our vision. The plan also identifies the resources required to maintain these service levels, and in so doing, bears significance for our department’s structure and functions. Hence, the LTP is integral to the future development of Public Works.

Specifically, the long term plan will:

- Set out goals to be achieved within clear time frames limits and with specific, hard measures that determine success.
- Identify required service levels and standards.
- Identify required staffing, equipment and resources and attendant financial implications.
- Provide strategic direction and focus for department activities and resources through the coming years.
- Address staff attraction and retention issues.
- Integrate with and enhance the City’s corporate planning framework.

1.1 INFLUENCES ON THE LTP

The City of St. Albert’s corporate planning framework influences all long term planning by City departments. Public Works has conducted a rigorous process to ensure that our long term plan integrates with the City’s corporate planning framework. Working within this framework, Public Works developed its LTP with guidance from the Municipal Development Plan (MDP), the Transportation Master Plan (TMP), the Utilities Master Plan (UMP) and the Infrastructure Reviews. These plans have influenced the future standards and service levels described in our LTP, and thus, our standards serve the broader objectives and strategies of the corporate planning framework. They also serve City Council’s stated priority of investing additional resources into new standards that will restore services to a level that meet Council and public expectations.

The following paragraphs describe in detail how the MDP and other master plans in the corporate planning framework have influenced Public Works’ LTP.

Municipal Development Plan

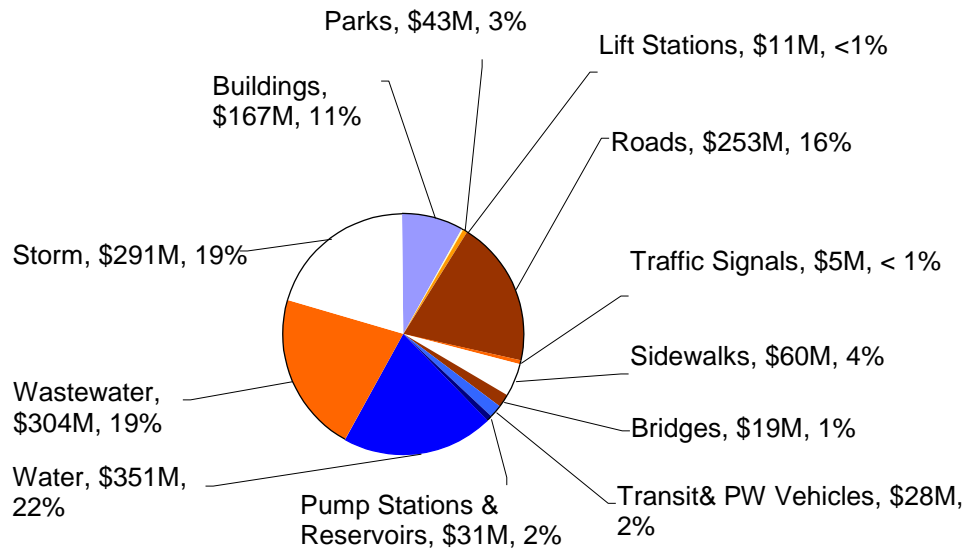
In the Municipal Development Plan, City Council recognized that PW services play a major role in St. Albert's continuing development. As part of the long-term planning process, PW will work with other departments to achieve the following Municipal Development Plan goals:

- Maintain and develop a city-wide, integrated system of schools, parks, open spaces, culture, recreation and library facilities that enhance the quality of life for all residents and help preserve the natural environment.
- Provide for the safe and efficient movement of goods and people in St. Albert.
- Plan and develop municipal infrastructure to meet the continuing growth needs of St. Albert most economically, effectively and efficiently.

Infrastructure Review – Phase 2

In 2005 the City conducted Phase 2 of the Infrastructure Review. Its purpose was to determine the current condition status of all City assets and predict how the different asset groups would perform in the future. Figure 1 shows the current replacement value for all City assets in 2005 dollars and approximately \$1.5 billion in replacement value¹.

Figure 1: Replacement Value of City Assets



PW is responsible for maintaining the City's infrastructure. Therefore, it was critical to consider the results of the Infrastructure Review as we developed our long term plan. The review identified the following three asset classes as "hot spots," areas requiring the most investment in the short term:

¹ City of St. Albert Infrastructure Study conducted in 2005

- Arterial roads: To ease the deterioration of arterial roads, the City increased the number of kilometres of overlay to \$1.1 million in 2007, \$2.2 million in 2008, \$1.95 million in 2009, \$2.25 million in 2010 and \$2.5 million in 2011. This increase will provide an overlay for each arterial road on a 12-year life cycle. Therefore, PW will need to focus on crack filling and spray injections to keep these roads from deteriorating to the point where an overlay is required.
- Collector and local roads: The City has set a 35-year life cycle for overlay on collector and local roads. Therefore, PW will need a more frequent and comprehensive crack filling and spray injection program for these roads to ensure their life cycle is extended as much as possible. In the 2009-2011 capital budget, Council approved the collector and local roads asphalt overlay program at \$1.8 million in 2009, \$2.1 million in 2010 and \$2.3 million in 2011.
- Sidewalks: Currently the City is spending approximately \$300,000 per year to address sidewalk deterioration, which supports a 300-year life cycle for sidewalk replacement. Therefore, the City is increasing its proposed budget to \$800,000 in 2009. This will pay for state-of-the-art cutting technology to repair all sidewalks with trip hazards where possible, or replace panels that can't be repaired. In turn, this budget increase will support a 70-year life cycle for sidewalks. PW will also need to continue with our ongoing sidewalk maintenance program, which responds to individual residents' complaints.

Transportation Master Plan

While we developed the PW long term plan, administration was also developing a new Transportation Master Plan (TMP). The TMP provides a 25-year policy and strategic guide for improvements to all transportation modes serving St. Albert residents, including:

- Strategic road investments (Ray Gibbon Drive and the planned northern section of Anthony Henday Drive will shift travel flows in and around St. Albert);
- Continued improvements to the transit system and its service, both within St. Albert and to the City of Edmonton;
- Enhanced walking and cycling facilities;
- Means to enhance transportation system management, including the means to make the system more sustainable (i.e. encourage more walking, cycling, car pooling and transit trips);
- Means to improve the movement of goods;
- Improved linkages between all transportation modes and land use development in the city;
- Future bus rapid transit and light rail transit connections to St. Albert from Edmonton;
- A planning methodology for a future transportation network in the city's annexation areas.

The TMP takes into account growth and planning for the City, including the recently annexed areas from Sturgeon County, through the updated Municipal Development Plan. We considered the following aspects from the TMP in the Public Works long term plan:

- Proposed growth and new arterial and collector roadways within the annexed lands;
- Increased repair and maintenance on major roadways to accommodate increased traffic volumes;
- Transit facilities and amenities.

Utilities Master Plan

The Infrastructure Review examined the physical condition of all of the City's assets and established their replacement cost. The utility component (water, wastewater and stormwater) of these assets represents approximately 60 per cent of the \$1.5 billion plus that the City holds in infrastructure asset value.

The Utilities Master Plan examines the functionality of the existing system and provides a cost effective servicing scheme for future expansion. It outlines the best servicing schemes for water, wastewater and stormwater to meet short and long term needs for existing city infrastructure, the recently annexed areas and the rest of the Intermunicipal Development Plan area. The plan provides a solid foundation for strategic, orderly and cost effective development to serve the City's expanding boundaries. It also identifies a number of projects to improve the performance of the existing wastewater collection system. These projects have been assessed and prioritized, and will be addressed accordingly in the City's new 10 year capital plan.

Because the Public Works LTP focuses on solely wastewater, in keeping with the Utilities Master Plan, it will ensure that the wastewater collection system and improvements thereto function at an acceptable level of service. In the 2009 – 2011 capital budget, Council approved \$4.16 million in 2009; \$3.04 million in 2010; and \$1.3 million in 2011 for wastewater projects.

Public Works considered the following aspects of the Utility Master Plan in its long term plan:

- Proposed growth for the newly annexed lands including trunk lines, lift stations and reservoirs, and pump houses;
- Upgrades and additions to existing infrastructure.

1.2 KEY ASSUMPTIONS FOR THE LTP

Public Works developed this LTP, and the projections within it, working from the key assumptions listed below:

- Public Works' primary objective in service delivery is to provide quality of life for the people of St. Albert.
- We will continue to place major emphasis and priority on maintaining existing infrastructure.
- We will continue to rely on existing agreements with recreation groups and societies to provide specified services.
- Annual population growth will be 0.75% - 1.5%. This growth will impact the rate at which infrastructure assets are added to the City inventory. Population growth projections are based on the 2008 municipal census and on Capital Region Board scenarios for population growth. See Appendix 1 for the City of St. Albert population growth projections over the next 10 years.



Public Works Long Term Plan

- Assessment growth will be modest for the first three years of this plan: 1.22% in 2010; 1.5% in 2011; and 1.75% in 2012.
- Growth will be contained within those lands that are currently annexed.
- Recommendations from the Transportation and Utilities Master Plans will be carried out over the next 10 years.
- There will be no major changes to the current organizational structure of the Public Works department.
- There will be no major changes to the current operational requirements as set by federal and provincial legislation.
- We will maintain current service levels for all Public Works activities as described in this plan and approved by Council through budget and policy.
- We will continue to adopt the latest technology and equipment to operate in the most efficient and cost effective manner.

2.0 PUBLIC WORKS' VISION FOR THE FUTURE

An organizational strategic vision serves the following purposes:

- It communicates clearly our department function and direction to important stakeholders and clients such as City Council, Senior Leadership Team, Leadership Team, Public Works staff, and the community;
- It lays the foundation for our long term plan;
- It also lays a foundation for our service standards;
- And it gives us the means to validate our work.

2.1 OUR MISSION

Our mission statement defines our purpose:

“To ensure the integrity and reliability of the City’s infrastructure which balances safety, environmental, and operational needs through our Asset Management, Operations and Utility Branches”

Public Works plans and conducts the operation and maintenance of the City of St. Albert’s infrastructure and systems for transportation, parks, buildings and the municipal fleet. We perform the following key services as we carry out our mandate. We:

- are stewards of the City’s infrastructure and environment;
- continually assess the City’s infrastructure;
- provide input for activity-based costing allocations;
- deliver timely response to Council and public concerns;
- provide safe and efficient municipal operations;
- provide cost effective maintenance and enhancement of natural and open spaces;
- deliver public education and increase awareness of our role;
- provide sustainable levels of service;
- develop and retain quality staff.

Core Functions

PW has three branches: Asset Management, Operations and Utilities. These branches have a number of core functions (see below, 3.0 Serving the Vision) that together, constitute the services delivered by Public Works.

The **Asset Management Branch** provides maintenance services (electrical, structural, plumbing, inspections, repairs, security, janitorial) for City buildings and playgrounds. The branch purchases and maintains the City's fleet of vehicles and equipment. And it provides stores and inventory services, procurement, warehousing, and tracking and issuing City equipment. This branch also supports the Arts and Heritage Foundation, but only in an administrative role, and only as resources and time allow.

The **Operations Branch** looks after transportation infrastructure, maintaining main roads, sidewalks and curbs, country roads and signage, and providing snow and ice control and spring cleanup. It also operates and maintains City arenas, takes care of trees and turf on City land, maintains outdoors sports facilities, supports special events and conducts winter operations such as clearing bus stop areas, sidewalks and trails.

The **Utilities Branch** provides water, wastewater, storm water, solid waste and refuse collection and disposal, composting and recycling services. The Utilities Branch is designed to be self-sustaining, with revenue from rates based on a comprehensive 100-year model. These rates are intended to provide sufficient revenue to fund operations and future capital costs in accordance with Council direction.

2.2 OUR VALUES

Our values are the principles we hold dear. We commit to them uncompromisingly as the future unfolds. Our values define our culture and are consistent with those held by the City administration:

- Excellence (We always do our best, meet our commitments and ensure our efforts are focused on caring for the community and the environment.)
- Ethics (We communicate openly and honestly, and work with each other and the community in a safe, mutually respectful manner.)
- Empowerment (We are creative and innovative, sharing our expertise and benefiting from the power of teamwork.)
- Encouragement (We encourage and support one another through our work and learning opportunities while always striving to improve performance.)
- Enjoyment (We enjoy our work and our professional environment, while maintaining a work/life balance.)

At Public Works, we place special emphasis on:

- Respect, trust, dignity, honesty, integrity and flexibility in relationships
- Continuous improvement
- Competent, productive and satisfied employees



- A balance of work and family life
- Safety and health
- Lifelong learning

At Public Works, we are proponents of change. We take a proactive approach, seeking a positive impact on costs and quality of service to the residents of St. Albert. We base our guiding principles of teamwork and collaboration on our shared values of responsiveness, professionalism, accountability, adaptability to change, integrity, commitment and our “can-do” attitude.

2.3 OUR VISION

Our vision is where we want to be in the future; it inspires us as we carry out our mission.

“To ensure St. Albert residents are proud of our parks, facilities, roads and utilities through quality infrastructure management and professional, courteous and efficient service”

2.4 OUR OBJECTIVES

Our objectives provide us specific direction as we strive to achieve our vision.

1. We will implement technologies and innovations that enable us to provide reliable and timely customer service

Measure:

- One innovation per branch each year and one innovation for the department each year

2. Residents, businesses and other City departments will be satisfied with services as per targets established in the branches

Measures:

- PW is meeting its service level targets 100 per cent of the time
- Community satisfaction levels remain consistent for:
 - Refuse collection and recycling services
 - Wastewater services
 - Winter road maintenance
 - Summer road maintenance
 - St. Albert operated outdoor rinks

3. We will continue to provide services in an efficient and cost effective manner

Measure:

- Ensure annual operating and capital expenditures are delivered within two per cent of Council approved budgets



Public Works Long Term Plan

4. We will minimize our impact on the environment
Measures:
 - Meet the AB Environment Code of Practice for water, waste water and storm water
 - Achieve and maintain ISO 14001 certification through third party audits

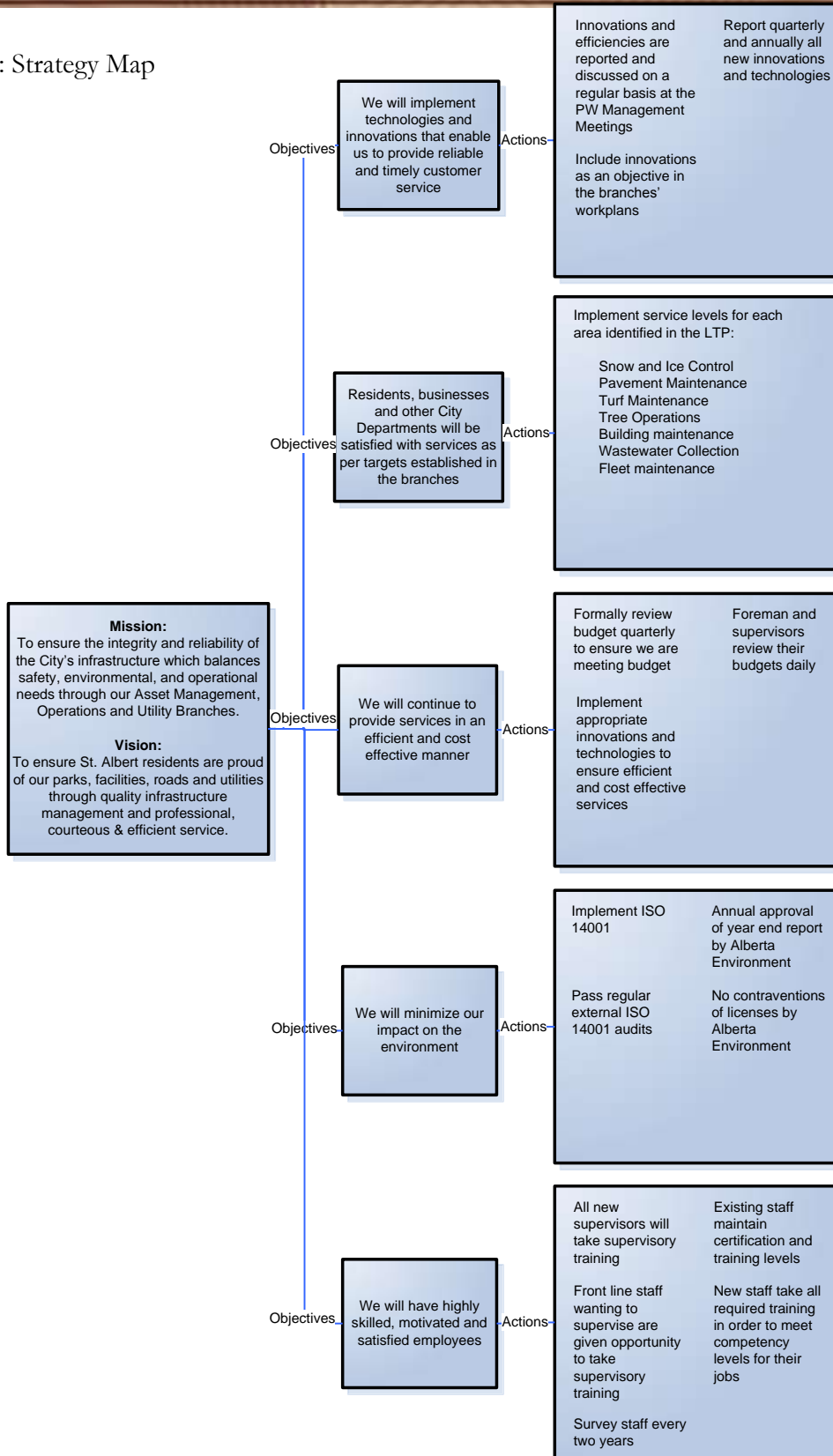
5. We will have highly skilled, motivated and satisfied employees
Measure:
 - Utilities staff are certified at all AB Environment certification levels
 - All supervisors have taken supervisory training
 - Two per cent of annual payroll budget is spent on staff training
 - PW staff satisfaction remains constant or increases

Our objectives and measures of success are dependant on the availability of resources to implement them.

2.6 STRATEGY MAP

The following graphic illustrates the strategic relationship between PW's mission, values and vision as well as the objectives and actions we've developed to serve our vision. The actions describe specific activities we will complete in order to achieve our objectives.

Figure 2: Strategy Map



3.0 SERVING THE VISION

To carry out our mission, serve our vision and meet our goals, we have developed service levels for each of the core functions performed by our three branches (see above, 2.1 Our Mission). Our service levels, which in effect are standards, serve the broader objectives and strategies of the corporate planning framework. They also serve City Council's stated priority of investing additional resources into new standards that will restore services to a level that meet Council and public expectations.

These service levels form the basis of our action plan, providing the link between the strategic elements of the LTP and its tactical elements – our business activities. Our service levels are defined below, organized under our core functions. These service levels are also summarized in a table in Appendix 2: Service Levels. A detailed description of each service including a summary of current service levels is contained in Appendices 3 through 9.

3.1 SNOW AND ICE CONTROL

Recommended service levels for roads

Snow plowing

- Priority 1 (within eight hours following two to five centimetres of snowfall): highways (St. Albert Trail, Ray Gibbon Drive).
- Priority 2 (within the same eight hours): arterials.
- Priority 3 (within sixteen hours): collectors, commercial/industrial streets, downtown and rural roads, following two to five centimetres of snowfall

Ice control (sanding) – Sand roads as conditions require following the same priorities as snow plowing.

Collector snow removal – Snow will be cleared within four days following a 20 to 30 cm snow accumulation (emphasis on hill sections and school zones).

Residential snow removal – Snow will be cleared within 10 days following the buildup of a 12 to 15 cm snow pack, or if the snow pack is softening and severely compromising vehicle mobility, or if the snow pack reaches 75 per cent of the service level threshold (10 cm) by February 1. Exceptions to this service level are piles in cul de sacs, which will be removed at a later date.

Snow removal downtown – Snow will be plowed into centre windrows following five to 10 cm accumulations on parking lanes and removed within 48 hours beginning the second night after a snowfall.



Current state (October 2009)

Presently, Public Works can meet recommended service levels for snow plowing of collector roads, snow removal in downtown, parking lots and residential streets. However, Public Works can only meet the recommended service levels for street sanding and snow plowing of arterials 50 per cent of the time.

Recommended service levels for sidewalks

Snow plowing

- Priority 1 (within eight hours after accumulation of one cm of snow): existing 12.4 km of river valley trails swept.
- Priority 2 (within 48 hrs after accumulation of two to five cm of snow): arterial and collector trails and sidewalks plowed.
- Priority 3 (within 48 hrs after accumulation of two to five cm of snow): interior trails and connector sidewalks plowed.

Current state

Presently, Public Works can meet Priority 1 and Priority 2 service levels. However, Public Works can only meet the recommended service levels for Priority 3 (interior trails) 25 per cent of the time.

3.2 PAVEMENT MAINTENANCE

Recommended service levels

Pothole patching and spraying

- Priority 1, highways: to be completed annually
- Priority 2, arterials: to be completed annually
- Priority 3, collectors: to be completed annually
- Priority 4, residential: to be completed on a 3 – year cycle

Current state (October 2009)

Presently, Public Works can meet the recommended service levels for Priorities 1 and 2. However, we can only meet 50 per cent of recommended service levels for Priority 3, and cannot meet any service levels for Priority 4.

3.3 TURF MAINTENANCE

Recommended service levels

Sports fields

- Level 1A fields (full size football and soccer fields and Fowler Track): weekly cutting up to 18 times per year and weekly trimming.

- Level 2B fields (minor baseball, mini fields and recreational open spaces): cutting on a 10-day maximum cycle and trimming every two weeks.

Parks

- Level 1A parks (civic buildings, cemetery, river valley and Red Willow Trail): weekly cutting up to 18 times per year, with weekly trimming for cemetery and civic buildings only.
- Level 2C parks (all open green space excluding buffers, boulevards or natural areas): cutting on a 10-day maximum cycle with monthly trimming.

Buffers and boulevards

- Level 2C (all open green space in buffers and boulevards): cutting on a 10-day maximum cycle with monthly trimming.

Natural areas

- Selected weed spraying (annually).
- One pass of grass cutting along fence lines and trails in selected areas (on a 10-day cycle).

Current state (October 2009)

Presently, Public Works cannot meet recommended service levels for various turf maintenance activities in each of the above listed areas, except for natural areas.

3.4 TREE OPERATIONS

Recommended service levels

Planting – Use design standards for planting. Generate the planting list through visual inspections. Purchase nursery stock locally if possible, using in-house and contract services. Develop and implement formal tree management plan that provides an overarching policy for maintaining trees.

Preventive maintenance – Structural pruning every five years on all trees (will require a number of years of "catch up"). Lifting once every five years. Regular maintenance on road buffers every three years.

Maintenance – Tree removal program for all trees at the end of their life cycle before they become hazardous. Increase monitoring for pests and disease.

Current state (October 2009)

Presently, Public Works can only meet recommended service levels for tree lifting on boulevard trees 70 per cent of the time and for pruning 10 per cent of the time.

3.5 BUILDING MAINTENANCE

Recommended service levels

Inspections – As recommended by industry for various components and buildings, to be done monthly and annually for electrical, mechanical and structural through work place safety inspections, including specific spaces not covered through work place safety.



Preventive maintenance – Establish and record annual electrical, mechanical, and structural PM programs for all functions.

Maintenance – To be carried out proactively and as asset components fail.

Current state (October 2009)

Presently, Public Works can only meet recommended service levels for inspections and preventive maintenance 50 per cent of the time.

3.6 WASTEWATER COLLECTION

Recommended service levels

Lift stations – Follow recommendations from the operations and maintenance manual for inspections, preventive maintenance and maintenance of building and components (i.e. structural, electrical, mechanical, heating, ventilation and air conditioning (HVAC), etc.).

Collection system – Using Close Circuit Television (CCTV), inspect all sewer mains on a 10-year cycle, or as needed in high-risk areas. Flush lines throughout the city based on a list of priorities; use herbicide to reduce root growth.

Service connections – Preventive maintenance programs and replacement of services as per City policies and procedures with strong emphasis on risk management and liability issues.

Current state (October 2009)

Presently, Public Works can meet recommended service levels based on the Council approved increases in the 2009 budget.

3.7 FLEET MAINTENANCE

Recommended service levels

Preventive maintenance – Vehicle use is monitored by the fleet controller, who in turn schedules all work based on available resources and to meet legislated guidelines.

Maintenance – Initial diagnostics completed in a quick service bay. The fleet controller will schedule the repair based on the size of the repair job and availability of parts. Specialty repairs are contracted out (ex. glass, air conditioning, body work, etc.).

Equipment replacement/procurement – Conduct ongoing review of vehicle life cycles to enhance longevity and adjust life cycles for specific vehicles based on actual use. Improve equipment inventories and expand the replacement fund to include a broader range of major attachments. Tender equipment purchases as approved in budget.

Current state (October 2009)

Presently, Public Works can meet recommended service levels for preventive maintenance and maintenance of equipment.

3.8 SOLID WASTE, WATER AND OTHER SERVICES

Recommended service levels

Solid Waste – suggested service levels with recommendations were approved through the Solid Waste Review in January 2009.

Water/Storm Sewer – although this report does not recommend service levels, it is assumed those service levels will remain the same and the future costs for those services will be incorporated into annual budgets. These services include:

- Water Pump Stations and Reservoirs
- Water Distribution
- Water Meters
- Storm Water

Other Public Works Services – Again the report does not recommend service levels for all Public Works services, it is assumed those service levels will remain the same and the future costs for those services will be incorporated into annual budgets. These services include:

- Traffic and Street Signs
- Arena Operations
- Sport Field Operations
- Playgrounds
- Outdoor Rinks

See Appendix 10 for a list of all services.

Current state (October 2009)

Presently, in the majority of cases, Public Works is meeting recommended services levels for these various activities. In some cases where service levels are not being met, Public works has identified these through the budget process.

4.0 FINANCIAL IMPLICATIONS

Please see Appendices 3 through 9 for all supporting financial data for the information provided in this section.

The Public Works Long Term Plan covers the 10 year period from 2010 to 2020. It requires budget increases for two different purposes:

1. To meet recommended service levels.
2. To address new growth projected for St. Albert (expanding population and concomitant new roads, parks, buildings, etc.).

These budget increases are and will be incorporated into future Public Works budgets and are subject to Council approval of the budget on a year to year basis.

Section 4.1 below explains the budget increases necessary to meet the service levels recommended in Section 3.

Section 4.2 below explains the budget increases necessary to address new growth in St. Albert.

4.1 COSTS TO MEET RECOMMENDED SERVICE LEVELS

To meet the service levels recommended in Section 3.0, Public Works requires additional staff and equipment. The Summary Cost Table (Table 1) on the next page shows estimates of the costs of meeting these service levels for **year one** of the 10-year plan, prior to considering future growth. Totalling **\$1,020,300** per year, these operating costs will be added to the Public Works base budget and as such remain the same for each year of the 10-year plan. All operating costs shown are in 2009 constant dollars. The capital cost, totalling \$797,000, is a one time expense. Sections 4.1.1 – 4.1.7 show breakdowns for these costs according to each of Public Works' seven core functions.

If the budget increases necessary to meet recommended service levels aren't available, Public Works will continue to deliver service at current levels. If the necessary budget increases become available, PW will be able to meet all recommended service levels within one to five years of receiving the increases. Some service areas are able to reach the new service levels more quickly due to the length of the maintenance program cycle.



Public Works Long Term Plan

Table 1: Summary of costs to meet recommended service levels for each year of the 10-year plan

Service	Operating	FTEs	Capital
Snow and Ice Control			
Roads	\$116,100	1.5*	\$225,000
Sidewalks	<u>\$96,400</u>	<u>1.0**</u>	<u>\$115,000</u>
Total	\$212,500	2.5	\$340,000
Pavement Maintenance	\$154,200	1.5*	\$120,000
Turf Maintenance	\$216,500	1.0**	\$144,000
Tree Operations	\$212,200	3.0	\$166,000
Building maintenance	\$224,900	1.0	\$27,000
Wastewater Collection	0	0	\$
Fleet maintenance	0	0	0
Total	\$1,020,300	9.0	\$797,000

* These FTEs (full time equivalents) will be shared with both services

**These FTEs will be shared with both services

4.1.1 Snow and Ice Control

The operating and capital costs required to meet the service levels for Snow and Ice Control are listed below.

Operating Requirements

Table 2: Operating Requirements for Snow and Ice Control

SNOW & ICE	2009				
	KM of Roads	\$/KM	Current Budget	Required Budget	Short Fall
Roads					
Street Sanding and Ice Control	385	\$1,208	\$425,980	\$464,916	(\$38,936)
Snow Plowing	262	\$1,366	\$333,706	\$358,418	(\$24,712)
Snow Removal Downtown	3	\$7,012	\$20,281	\$21,194	(\$913)
Snow Removal- Collectors	123	\$2,729	\$323,418	\$336,589	(\$13,171)
Snow Removal Residential	352	\$1,844	\$631,606	\$649,211	(\$17,605)
Parking Lots & Bus Stops (ha)	27.13	\$10,790	\$271,884	\$292,646	(\$20,762)
Materials	0	0	\$319,700	\$319,700	\$0
Sub-total Roads	736		\$2,326,575	\$2,442,674	(\$116,099)²
Sidewalks					
Priority 1	12	\$2,592	\$32,386	\$32,386	\$0
Priority 2	73	\$2,365	\$172,726	\$172,726	(\$0)
Priority 3	54	\$6,546	\$259,089	\$355,489	(\$96,400)
Sub-total Sidewalks	140		\$464,201	\$560,601	(\$96,400)³
Total Snow & Ice	876		\$2,790,776	\$3,003,275	(\$212,499)

Capital Requirements

\$225,000 - for tandem truck, plow and sander

\$115,000 - for sidewalk machine

² includes 1.5 equivalent FTEs [split with pavement maintenance], materials and equipment charges

³ includes 1.0 equivalent FTE split with turf maintenance] and equipment charges

4.1.2 Pavement Maintenance

The operating and capital costs required to meet the service levels for Pavement Maintenance are listed below.

Operating Requirements

Table 3: Operating Requirements for Pavement Maintenance

PAVEMENT	2009				
	KM of Roads	\$/KM	Current Budget	Required Budget	Short Fall
Pothole Patching	736	\$114	\$84,020	\$84,020	\$0
Spray patching	736	\$372	\$158,410	\$273,810	(\$115,400)
Asphalt patching	385	\$381	\$146,710	\$146,710	\$0
Grading/Gen. Maint.	736	\$462	\$340,260	\$340,260	\$0
Materials	736	\$264	\$155,300	\$194,125	(\$38,825)
	736		\$884,700	\$1,038,925	(\$154,225) ⁴

Capital Requirements

\$120,000 - top up budget for spray patcher

⁴ includes 1.5 equivalent FTEs [split with road snow operations] materials, and equipment charges

4.1.3 Turf Maintenance

The operating and capital costs required to meet the service levels for Turf Maintenance are listed below.

Operating Requirements

Table 4: Operating Requirements for Turf Maintenance

TURF	2009				
	# of Hectares	\$/Hectare	Current Budget	Required Budget	Short Fall
Sport Fields	15	\$15,215	\$196,228	\$223,803	(\$27,575)
Parks	519	\$1,166	\$492,248	\$605,648	(\$113,400)
Buffers & Bouevards	126	\$4,416	\$492,248	\$555,773	(\$63,525)
Natural Areas	10	\$ 2,717	\$27,376	\$27,376	\$0
Rentals, Materials and supplies	670	\$142	\$83,400	\$95,400	(\$12,000)
	670		\$1,291,500	\$1,508,000	(\$216,500) ⁵

Capital Requirements

\$144,000 - for four additional mowers

⁵ includes 1.0 equivalent FTE [split with sidewalk snow operations], casuals, materials and equipment charges

4.1.4 Tree Operations

The operating and capital costs required to meet the service levels for Tree Operations are listed below.

Operating Requirements

Table 5: Operating Requirements for Tree Operations

TREES	2009				
	Equivalent # of Trees	\$/Tree	Current Budget	Required Budget	Short Fall
Planting	350	\$316	\$110,723	\$110,723	\$0
Preventive Maintenance	37,800	\$18	\$453,520	\$665,720	(\$212,200)
Maintenance	37,800	\$9	\$331,385	\$331,385	\$0
Additional Planting	225	\$467	\$104,972	\$104,972	\$0
Materials and supplies	37,800	\$3	\$101,900	\$101,900	\$0
	44,330		\$1,102,500	\$1,314,700	(\$212,200) ⁶

Capital Requirements

\$166,000 (includes lift truck and chipper).

⁶ includes 3.0 FTEs year round, materials and equipment charges

4.1.5 Building Maintenance

The operating and capital costs required to meet the service levels for Building Maintenance are listed below.

Operating Requirements

Table 6: Operating Requirements for Building Maintenance

BUILDINGS	2009				
	# of Sq Ft	Average \$/Sq Ft	Current Budget	Required Budget	Short Fall
Public Works & Transit Buildings	130,144	2.5	\$167,600	\$325,360	(\$157,760)
Tourist Information Centre	3,665	2.5	\$13,300	\$9,163	\$4,137
Clubhouses & Other Civic Buildings	10,154	2.5	\$90,100	\$25,385	\$64,715
Akinsdale Kinex Arena Building	59,771	2.5	\$84,500	\$149,428	(\$64,928)
Outdoor Rinks Buildings	9,324	2.5	\$87,680	\$23,310	\$64,370
Pools	57,050	2.5	\$78,400	\$142,625	(\$64,225)
RCMP Building	30,011	2.5	\$36,800	\$75,028	(\$38,228)
Fire Halls	34,237	2.5	\$60,520	\$85,593	(\$25,073)
St. Albert Place	133,000	2.5	\$433,400	\$332,500	\$100,900
Other Civic Buildings	46,955	2.5	\$15,800	\$117,388	(\$101,588)
Pump Stations	2,906	2.5	\$0	\$7,265	(\$7,265)
	517,217		\$1,068,100	\$1,293,043	(\$224,943)

Capital Requirements

\$27,000 (includes one vehicle).

4.1.6 Wastewater Collection

There are no additional operating or capital costs required to meet the service levels for Wastewater Collection.

Operating Requirements

Table 7: Operating Requirements for Wastewater Collection

WASTEWATER	2009				
	Km Mains, # Bldgs or # Services	\$/Km, Bldg or Service	Current Budget	Required Budget	Short Fall
Collection System - Preventive Maintenance & Repairs/Rehab	292	\$ 1,999	\$584,170	\$584,170	\$0
Lift Stations - Preventive Maintenance & Repairs/Rehab	8	\$ 14,938	\$120,400	\$120,400	\$0
Services - Preventive Maintenance & Repairs/Rehab	19,143	\$ 32	\$607,510	\$607,510	\$0
			\$1,312,080	\$1,312,080	\$0

Council increased the 2009 operating budget by \$80,000 (including contract services for service connection replacement). This increase will provide sufficient funds to meet recommended service levels.

Capital Requirements

In the 2009 capital budget, Council allocated \$225,000 per year for five years, providing sufficient funds to meet recommended service levels.

4.1.7 Fleet Maintenance

There are no additional operating or capital costs required to meet the service levels for Fleet Maintenance.

Operating Requirements

Table 8: Operating Requirements for Fleet Maintenance

Fleet	2009				
	# of vehicles	\$/vehicle	Current Budget	Required Budget	Shortfall
BUS & TOURISM	1	\$11,502	\$11,502	\$11,502	-
CORP SERVICES	1	\$7,045	\$7,045	\$7,045	\$0
ENGINEERING	3	\$8,255	\$24,766	\$24,766	\$0
FIRE SERVICES	16	\$33,016	\$528,256	\$528,256	\$0
POLICE SERVICES	8	\$8,848	\$70,786	\$70,786	\$0
PUBLIC WORKS	163	\$19,273	\$3,141,440	\$3,141,440	\$0
TRANSIT	3	\$9,502	\$28,505	\$28,505	\$0
	195		\$3,812,300	\$3,812,300	\$0

At present, no additional resources are required to meet recommended service levels. However, this area is at a threshold and at some point in the future will require more resources to continue to meet service levels.

Capital Requirements

No additional capital costs required at this time.

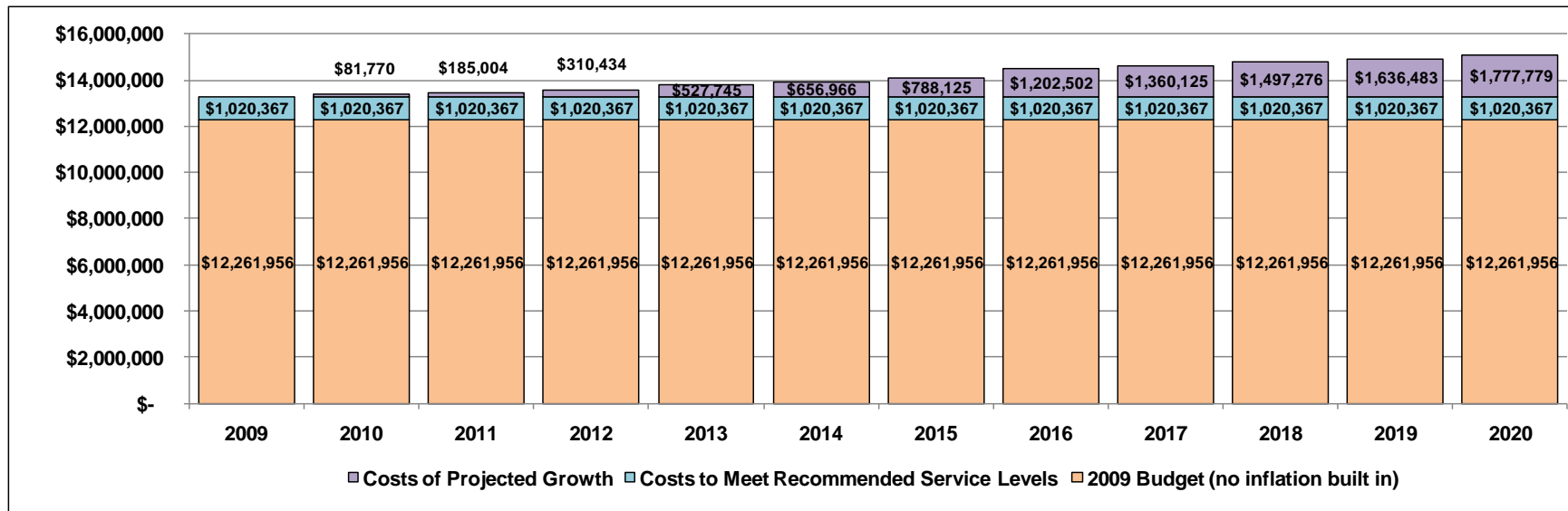
4.2 COSTS TO MEET PROJECTED GROWTH

If Public Works is to continue to meet the service levels recommended in Section 3, we must also take into account city growth (new roads, parks, buildings, etc.) and include additional staff, equipment and infrastructure in department growth projections. Section 4.2 details the additional costs of projected city growth while maintaining recommended service levels from 2010 – 2020.

Operating Requirements

The following figure provides a summary of the operating resources needed for all seven of PW’s core functions over the next 10 years, assuming the financial requirements identified in section 4.1 are met in the 2010 operating budget. Should these financial requirements not be met, service levels will continue to deteriorate because PW will not be able to keep pace with the city’s growth. The “costs of projected growth” presented in the graph are cumulative and no inflation is built in so that all costs are in constant 2009 dollars.

Figure 3: Future operating costs required to meet recommended service levels taking into account growth projections



Capital Requirements

Capital requirements are based on the city’s growth surpassing various thresholds for equipment. Most of PW’s capital requirements for addressing new growth will be assessed within each three-year capital budget review process (and updated every year). The **operational** costs shown above in Figure 3 include equipment charges, which PW can contract out until the thresholds are surpassed. Therefore, no **capital** requirements for equipment need to be included in projected growth costs, as long as the capital requirements for meeting recommended service levels (as identified in section 4.1) are met in the 2010 operating budget.

The 10-Year Capital Plan, approved in May 2009, identifies specific capital requirements. Capital requirements for 2010 – 2012 were identified in section 4.1. Additional 10-Year Capital Plan requirements are as follows:

Table 9: Additional 10-Year Capital Plan Items

Project Name	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Municipal (unfunded):											
Cold Storage Space					121,600				134,400		
North West Satellite Shop				2,000,000							
Sand & Salt Covered Storage					250,000						
Utilities (Wastewater):											
Wastewater Household Service Replacement	340,000	340,000	340,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000

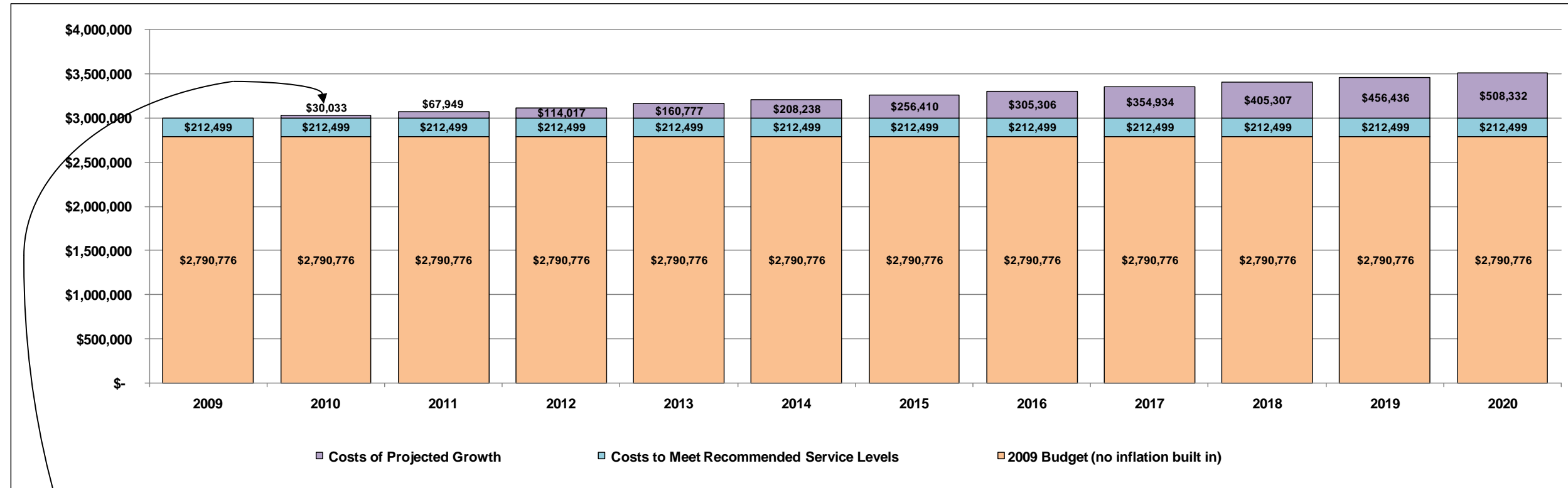
In the next sections we outline the operating requirements (as opposed to capital requirements) for each core function along with the key assumptions used to determine these needs.

Public Works Long Term Plan

4.2.1 Snow and Ice Control

The following figure provides a summary of the operating resources required for Snow and Ice Control over the next 10 years, assuming the financial requirements identified in section 4.1 are met in the 2010 operating budget. The “costs of projected growth” presented in the graph are cumulative costs.

Figure 4: Future operating resources required to meet service levels in Snow and Ice Control



The assumptions used to develop growth requirements for Snow and Ice Control are provided in the following table.

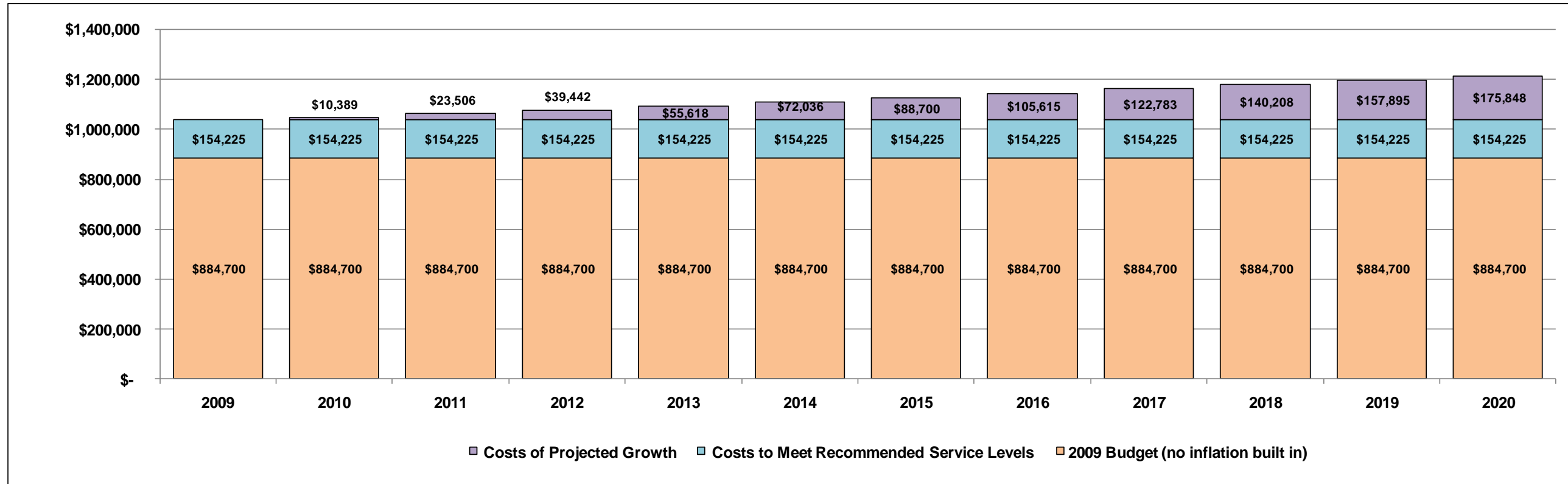
Table 10: Growth Assumptions for Snow and Ice Control

4145 - SNOW & ICE REMOVAL	ANNUAL GROWTH																										
	2009 Totals			2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		Grand Total 2010-2020	
	Km of Roads	Cost	2009 \$/Km	Km	Cost	Km	Cost	Km	Cost	Km	Cost	Km	Cost	Km	Cost	Km	Cost	Km	Cost	Km	Cost	Km	Cost	Km	Cost	Km	Cost
Street Sanding and Ice Control	385	\$ 464,916	\$ 1,208	3.8	\$ 4,649	4.9	\$ 5,870	5.9	\$ 7,132	6.0	\$ 7,238	6.1	\$ 7,347	6.2	\$ 7,457	6.3	\$ 7,569	6.4	\$ 7,683	6.5	\$ 7,798	6.6	\$ 7,915	6.7	\$ 8,034	65.1	\$ 78,691
Snow Plowing	262	\$ 358,418	\$ 1,366	2.6	\$ 3,584	3.3	\$ 4,525	4.0	\$ 5,498	4.1	\$ 5,580	4.1	\$ 5,664	4.2	\$ 5,749	4.3	\$ 5,835	4.3	\$ 5,923	4.4	\$ 6,012	4.5	\$ 6,102	4.5	\$ 6,193	44.4	\$ 60,666
Snow Removal Downtown	3	\$ 21,194	\$ 7,012	0.0	\$ 212	0.0	\$ 268	0.0	\$ 325	0.0	\$ 330	0.0	\$ 335	0.0	\$ 340	0.0	\$ 345	0.0	\$ 350	0.1	\$ 355	0.1	\$ 361	0.1	\$ 366	0.5	\$ 3,587
Snow Removal- Collectors	123	\$ 336,589	\$ 2,729	1.2	\$ 3,366	1.6	\$ 4,249	1.9	\$ 5,163	1.9	\$ 5,241	1.9	\$ 5,319	2.0	\$ 5,399	2.0	\$ 5,480	2.0	\$ 5,562	2.1	\$ 5,646	2.1	\$ 5,730	2.1	\$ 5,816	20.9	\$ 56,971
Snow Removal Residential	352	\$ 649,211	\$ 1,844	3.5	\$ 6,492	4.4	\$ 8,196	5.4	\$ 9,958	5.5	\$ 10,108	5.6	\$ 10,259	5.6	\$ 10,413	5.7	\$ 10,570	5.8	\$ 10,728	5.9	\$ 10,889	6.0	\$ 11,052	6.1	\$ 11,218	59.6	\$ 109,885
Parking Lots & Bus Stops (ha)	27	\$ 292,646	\$ 10,790	2.7	\$ 2,926	3.4	\$ 3,695	4.1	\$ 4,489	4.2	\$ 4,556	4.2	\$ 4,625	4.3	\$ 4,694	4.4	\$ 4,764	4.4	\$ 4,836	4.5	\$ 4,908	4.6	\$ 4,982	4.6	\$ 5,057	45.9	\$ 49,533
Material Costs		\$ 319,700			\$ 3,197		\$ 4,036		\$ 4,904		\$ 4,978		\$ 5,052		\$ 5,128		\$ 5,205		\$ 5,283		\$ 5,362		\$ 5,443		\$ 5,524		\$ 54,112
Total Roads		\$ 2,442,674			\$ 24,427		\$ 30,839		\$ 37,469		\$ 38,031		\$ 38,602		\$ 39,181		\$ 39,768		\$ 40,365		\$ 40,970		\$ 41,585		\$ 42,209		\$ 413,445
Sidewalks: Priority 1	12	\$ 32,386	\$ 2,592	0.1	\$ 324	0.2	\$ 409	0.2	\$ 497	0.2	\$ 504	0.2	\$ 512	0.2	\$ 519	0.2	\$ 527	0.2	\$ 535	0.2	\$ 543	0.2	\$ 551	0.2	\$ 560	2.1	\$ 5,482
Sidewalks: Priority 2	73	\$ 172,726	\$ 2,365	0.7	\$ 1,727	0.9	\$ 2,181	1.1	\$ 2,650	1.1	\$ 2,689	1.2	\$ 2,730	1.2	\$ 2,771	1.2	\$ 2,812	1.2	\$ 2,854	1.2	\$ 2,897	1.2	\$ 2,941	1.3	\$ 2,985	12.4	\$ 29,235
Sidewalks: Priority 3	54	\$ 355,489	\$ 6,546	0.5	\$ 3,555	0.7	\$ 4,488	0.8	\$ 5,453	0.8	\$ 5,535	0.9	\$ 5,618	0.9	\$ 5,702	0.9	\$ 5,788	0.9	\$ 5,874	0.9	\$ 5,963	0.9	\$ 6,052	0.9	\$ 6,143	9.2	\$ 60,170
Total Sidewalks		\$ 560,601			\$ 5,606		\$ 7,078		\$ 8,599		\$ 8,728		\$ 8,859		\$ 8,992		\$ 9,127		\$ 9,264		\$ 9,403		\$ 9,544		\$ 9,687		\$ 94,887
Total Costs		\$ 3,003,275			\$ 30,033		\$ 37,916		\$ 46,068		\$ 46,759		\$ 47,461		\$ 48,173		\$ 48,895		\$ 49,629		\$ 50,373		\$ 51,129		\$ 51,896		\$ 508,332

4.2.2 Pavement Maintenance

The following figure provides a summary of the operating resources required for Pavement Maintenance over the next 10 years, assuming the financial requirements identified in section 4.1 are met in the 2010 operating budget. The “costs of projected growth” presented in the graph are cumulative costs.

Figure 5: Future operating resources required to meet service levels in Pavement Maintenance



The assumptions used to develop growth requirements for Pavement Maintenance are provided in the following table.

Table 11: Growth Assumptions for Pavement Maintenance

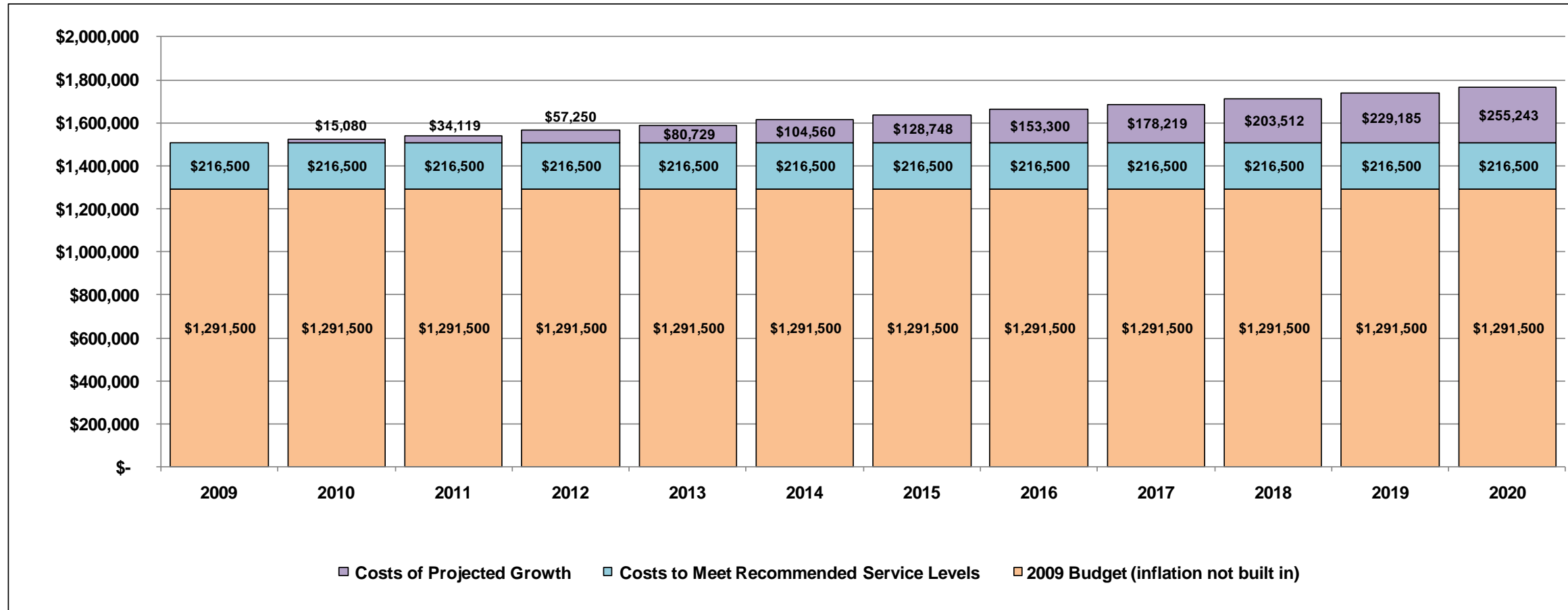
4130 - ROADWAY SERVICES		ANNUAL GROWTH (additional kilometers and costs)																										
		2009 Totals			2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		Grand Total 2010-2020	
		Km of Roads	Cost	2009 \$/Km	Km	Cost	Km	Cost	Km	Cost	Km	Cost	Km	Cost	Km	Cost	Km	Cost	Km	Cost	Km	Cost	Km	Cost	Km	Cost	Km	Cost
Pothole Patching	736	\$ 84,020	\$ 114	7.4	\$ 840	9.3	\$ 1,061	11.3	\$ 1,289	11.5	\$ 1,308	11.6	\$ 1,328	11.8	\$ 1,348	12.0	\$ 1,368	12.2	\$ 1,388	12.4	\$ 1,409	12.5	\$ 1,430	12.7	\$ 1,452	124.7	\$ 14,221	
Spray patching	736	\$ 273,810	\$ 372	7.4	\$ 2,738	9.3	\$ 3,457	11.3	\$ 4,200	11.5	\$ 4,263	11.6	\$ 4,327	11.8	\$ 4,392	12.0	\$ 4,458	12.2	\$ 4,525	12.4	\$ 4,593	12.5	\$ 4,661	12.7	\$ 4,731	124.7	\$ 46,345	
Asphalt patching	385	\$ 146,710	\$ 381	3.8	\$ 1,467	4.9	\$ 1,852	5.9	\$ 2,250	6.0	\$ 2,284	6.1	\$ 2,318	6.2	\$ 2,353	6.3	\$ 2,389	6.4	\$ 2,424	6.5	\$ 2,461	6.6	\$ 2,498	6.7	\$ 2,535	65.1	\$ 24,832	
Grading/Gen. Maint.	736	\$ 340,260	\$ 462	7.4	\$ 3,403	9.3	\$ 4,296	11.3	\$ 5,219	11.5	\$ 5,298	11.6	\$ 5,377	11.8	\$ 5,458	12.0	\$ 5,540	12.2	\$ 5,623	12.4	\$ 5,707	12.5	\$ 5,793	12.7	\$ 5,880	124.7	\$ 57,592	
Materials	736	\$ 194,125	\$ 264	7.4	\$ 1,941	9.3	\$ 2,451	11.3	\$ 2,978	11.5	\$ 3,022	11.6	\$ 3,068	11.8	\$ 3,114	12.0	\$ 3,160	12.2	\$ 3,208	12.4	\$ 3,256	12.5	\$ 3,305	12.7	\$ 3,354	124.7	\$ 32,857	
Total Costs		\$ 1,038,925			\$ 10,389		\$ 13,116		\$ 15,936		\$ 16,176		\$ 16,418		\$ 16,664		\$ 16,914		\$ 17,168		\$ 17,426		\$ 17,687		\$ 17,952		\$ 175,848	

Public Works Long Term Plan

4.2.3 Turf Maintenance

The following figure provides a summary of the operating resources required for Turf Maintenance over the next 10 years, assuming the financial requirements identified in section 4.1 are met in the 2010 operating budget. The “costs of projected growth” presented in the graph are cumulative costs.

Figure 6: Future operating resources required to meet service levels in Turf Maintenance



The assumptions used to develop growth requirements for Turf Maintenance are provided in the following table.

Table 12: Growth Assumptions for Turf Maintenance

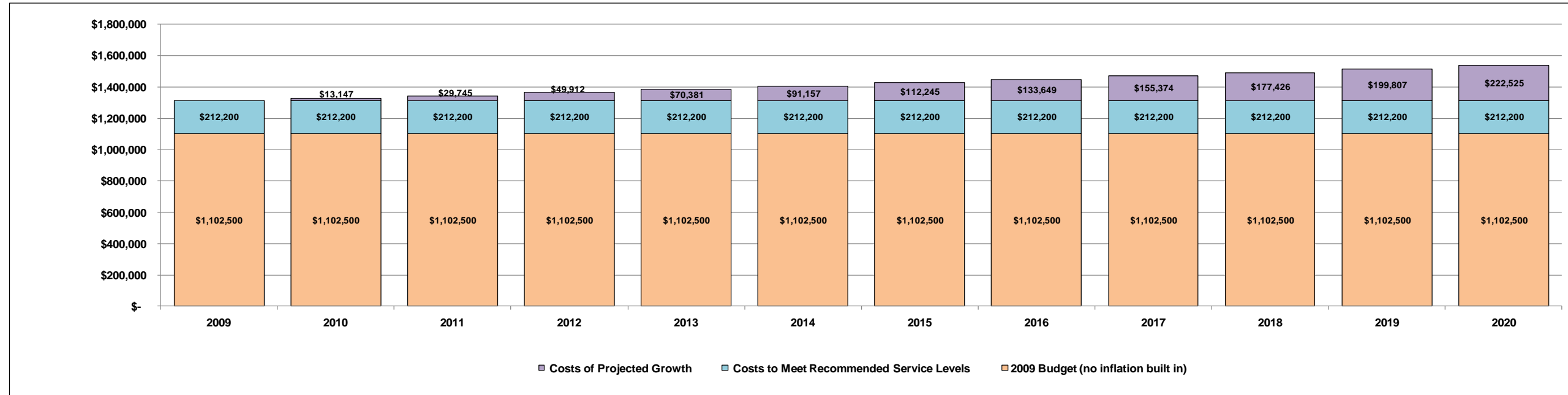
4220 - TURF MAINTENANCE & REPLACEMENT	ANNUAL GROWTH																										
	2009 Totals			2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		Grand Total 2010-2020	
	# of Hectares	Cost	2009 \$/Ha	Ha	Cost	Ha	Cost	Ha	Cost	Ha	Cost	Ha	Cost	Ha	Cost	Ha	Cost	Ha	Cost	Ha	Cost	Ha	Cost	Ha	Cost	Ha	Cost
Sport Fields	15	\$ 223,803	\$ 15,215	0.1	\$ 2,238	0.2	\$ 2,826	0.2	\$ 3,433	0.2	\$ 3,484	0.2	\$ 3,537	0.2	\$ 3,590	0.2	\$ 3,644	0.2	\$ 3,698	0.2	\$ 3,754	0.3	\$ 3,810	0.3	\$ 3,867	2.5	\$ 37,881
Parks	519	\$ 605,648	\$ 1,166	5.2	\$ 6,056	6.6	\$ 7,646	8.0	\$ 9,290	8.1	\$ 9,430	8.2	\$ 9,571	8.3	\$ 9,715	8.5	\$ 9,860	8.6	\$ 10,008	8.7	\$ 10,158	8.8	\$ 10,311	9.0	\$ 10,465	87.9	\$ 102,511
Buffers & Bouevards	126	\$ 555,773	\$ 4,416	1.3	\$ 5,558	1.6	\$ 7,017	1.9	\$ 8,525	2.0	\$ 8,653	2.0	\$ 8,783	2.0	\$ 8,915	2.0	\$ 9,048	2.1	\$ 9,184	2.1	\$ 9,322	2.1	\$ 9,462	2.2	\$ 9,604	21.3	\$ 94,070
Natural Areas	10	\$ 27,376	\$ 2,717	0.1	\$ 274	0.1	\$ 346	0.2	\$ 420	0.2	\$ 426	0.2	\$ 433	0.2	\$ 439	0.2	\$ 446	0.2	\$ 452	0.2	\$ 459	0.2	\$ 466	0.2	\$ 473	1.7	\$ 4,634
Rentals, Materials and s	670	\$ 95,400	\$ 142	6.7	\$ 954	8.5	\$ 1,204	10.3	\$ 1,463	10.4	\$ 1,485	10.6	\$ 1,508	10.7	\$ 1,530	10.9	\$ 1,553	11.1	\$ 1,576	11.2	\$ 1,600	11.4	\$ 1,624	11.6	\$ 1,648	113.4	\$ 16,147
Total Costs		\$ 1,508,000	\$ 2,251		\$ 15,080		\$ 19,039		\$ 23,132		\$ 23,479		\$ 23,831		\$ 24,188		\$ 24,551		\$ 24,919		\$ 25,293		\$ 25,673		\$ 26,058		\$ 255,243

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4.2.4 Tree Operations

The following figure provides a summary of the operating resources required for Tree Operations over the next 10 years, assuming the financial requirements identified in section 4.1 are met in the 2010 operating budget. The “costs of projected growth” presented in the graph are cumulative costs.

Figure 7: Future operating resources required to meet service levels in Tree Operations



The assumptions used to develop growth requirements for Tree Operations are provided in the following table.

Table 13: Growth Assumptions for Tree Operations

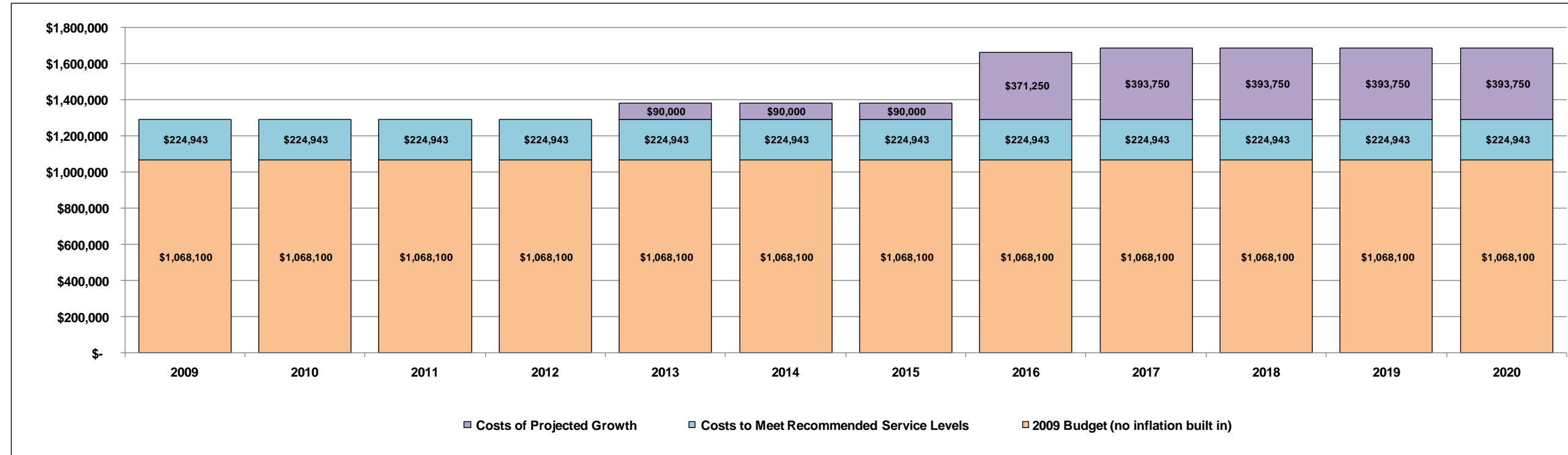
4230 - TREE MAINTENANCE & INSTALLATION	ANNUAL GROWTH																										
	2009 Totals			2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		Grand Total 2010-2020	
	Number of Trees	Cost	2009 \$/Tree	Number of Trees	Cost	Number of Trees	Cost	Number of Trees	Cost	Number of Trees	Cost	Number of Trees	Cost	Number of Trees	Cost	Number of Trees	Cost	Number of Trees	Cost	Number of Trees	Cost	Number of Trees	Cost	Number of Trees	Cost	Number of Trees	Cost
Planting	350	\$ 110,723	\$ 316	3.5	\$ 1,107	4.4	\$ 1,398	5.4	\$ 1,698	5.4	\$ 1,724	5.5	\$ 1,750	5.6	\$ 1,776	5.7	\$ 1,803	5.8	\$ 1,830	5.9	\$ 1,857	6.0	\$ 1,885	6.0	\$ 1,913	59.2	\$ 18,741
Preventive Maintenance	37,800	\$ 665,720	\$ 18	378.0	\$ 6,657	477.2	\$ 8,405	579.8	\$ 10,212	588.5	\$ 10,365	597.4	\$ 10,520	606.3	\$ 10,678	615.4	\$ 10,838	624.6	\$ 11,001	634.0	\$ 11,166	643.5	\$ 11,333	653.2	\$ 11,503	6,398.0	\$ 112,679
Maintenance	37,800	\$ 331,385	\$ 9	378.0	\$ 3,314	477.2	\$ 4,184	579.8	\$ 5,083	588.5	\$ 5,159	597.4	\$ 5,237	606.3	\$ 5,315	615.4	\$ 5,395	624.6	\$ 5,476	634.0	\$ 5,558	643.5	\$ 5,642	653.2	\$ 5,726	6,398.0	\$ 56,090
Additional Planting	225	\$ 104,972	\$ 467	2.3	\$ 1,050	2.8	\$ 1,325	3.5	\$ 1,610	3.5	\$ 1,634	3.6	\$ 1,659	3.6	\$ 1,684	3.7	\$ 1,709	3.7	\$ 1,735	3.8	\$ 1,761	3.8	\$ 1,787	3.9	\$ 1,814	38.1	\$ 17,767
Materials and supplies	37,800	\$ 101,900	\$ 3	378.0	\$ 1,019	477.2	\$ 1,286	579.8	\$ 1,563	588.5	\$ 1,587	597.4	\$ 1,610	606.3	\$ 1,634	615.4	\$ 1,659	624.6	\$ 1,684	634.0	\$ 1,709	643.5	\$ 1,735	653.2	\$ 1,761	6,398.0	\$ 17,248
Total Costs		\$ 1,314,700			\$13,147		\$16,598		\$ 20,167		\$ 20,469		\$ 20,776		\$ 21,088		\$ 21,404		\$ 21,725		\$ 22,051		\$ 22,382		\$ 22,718		\$ 222,525

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4.2.5 Building Maintenance

The following figure provides a summary of the operating resources required for Building Maintenance over the next 10 years, assuming the financial requirements identified in section 4.1 are met in the 2010 operating budget. The “costs of projected growth” presented in the graph are cumulative costs.

Figure 8: Future operating resources required to meet service levels in Building Maintenance



The assumptions used to develop growth requirements for Building Maintenance are provided in the following table.

Table 14: Growth Assumptions for Building Maintenance

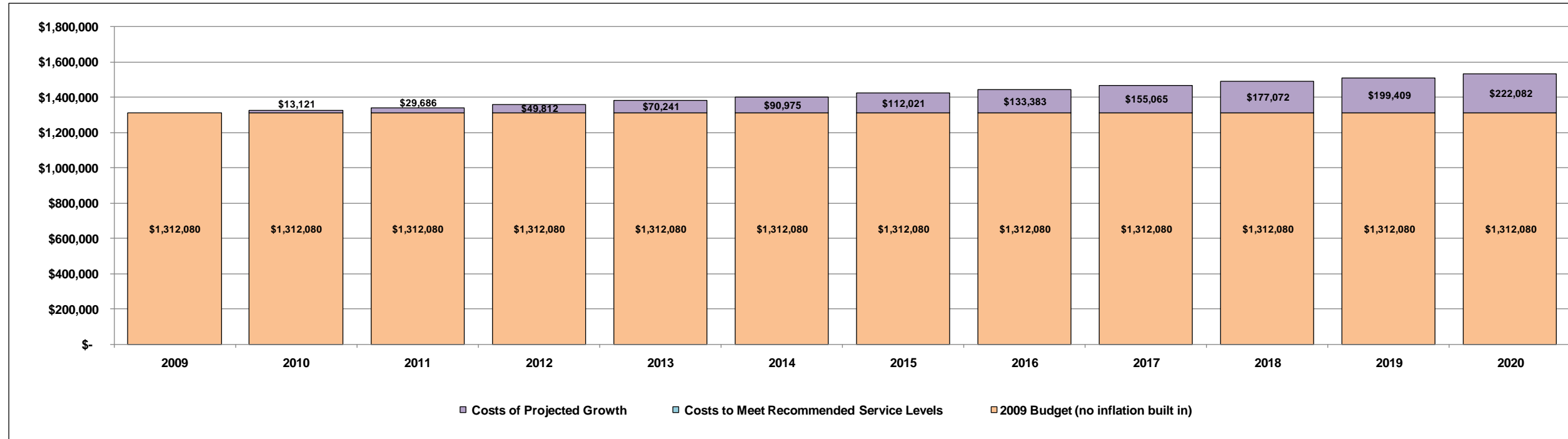
BUILDINGS	ANNUAL GROWTH																											
	2009 Totals			2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		Grand Total 2010-2020		
	# of Square Feet	Cost	2009 \$/Sq.Ft.	Square Feet	Cost	Square Feet	Cost	Square Feet	Cost	Square Feet	Cost	Square Feet	Cost	Square Feet	Cost	Square Feet	Cost	Square Feet	Cost	Square Feet	Cost	Square Feet	Cost	Square Feet	Cost	Square Feet	Cost	
Public Works Satellite Garage	-	\$ -	\$ 2.00	-	-	-	-	-	-	10,000.0	\$ 20,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10,000	\$ 20,000
Transit Satellite	-	\$ -	\$ 2.00	-	-	-	-	-	-	35,000.0	\$ 70,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35,000	\$ 70,000
Civic Building	-	\$ -	\$ 3.75	-	-	-	-	-	-	-	-	-	-	-	75,000.0	\$ 281,250	-	-	-	-	-	-	-	-	-	-	75,000	\$ 281,250
Fire Hall #4 Building	-	\$ -	\$ 2.25	-	-	-	-	-	-	-	-	-	-	-	-	-	10,000.0	\$ 22,500	-	-	-	-	-	-	-	-	10,000	\$ 22,500
All Other Buildings	551,684	\$ 1,293,043	\$ 2.34																									
Total Costs		\$ 1,293,043								\$ 90,000							\$ 281,250	\$ 22,500									130,000	\$ 393,750

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4.2.6 Wastewater Collection

The following figure provides a summary of the operating resources required for Wastewater Collection over the next 10 years, assuming the financial requirements identified in section 4.1 are met in the 2010 operating budget. The “costs of projected growth” presented in the graph are cumulative costs.

Figure 9: Future operating resources required to meet service levels in Wastewater Collection



The assumptions used to develop growth requirements for Wastewater Collection are provided in the following table.

Table 15: Growth Assumptions for Wastewater Collection

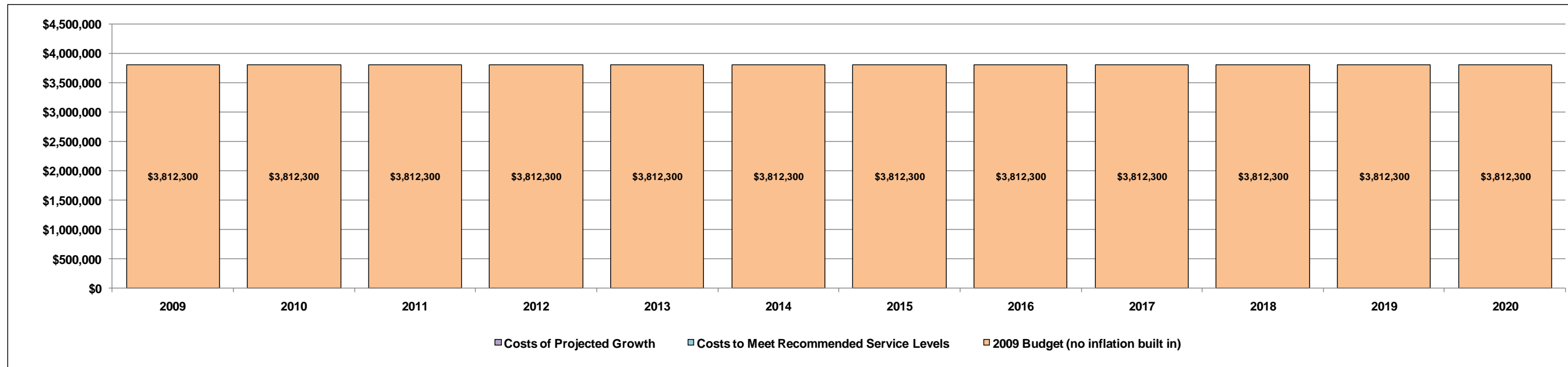
8110 to 8130 - WASTEWATER	ANNUAL GROWTH																										
	2009 Totals			2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		Grand Total 2010-2020	
	Km Mains or # Bldg Service	Cost	2009 \$/Km or Service	Km Mains or # Bldg Service	Cost	Km Mains or # Bldg Service	Cost	Km Mains or # Bldg Service	Cost	Km Mains or # Bldg Service	Cost	Km Mains or # Bldg Service	Cost	Km Mains or # Bldg Service	Cost	Km Mains or # Bldg Service	Cost	Km Mains or # Bldg Service	Cost	Km Mains or # Bldg Service	Cost	Km Mains or # Bldg Service	Cost	Km Mains or # Bldg Service	Cost	Km Mains or # Bldg Service	Cost
Collection System - Preventive Maintenance & Repairs/Rehab	292	\$ 584,170	\$ 1,999	2.9	\$ 5,842	3.7	\$ 7,375	4.5	\$ 8,961	4.5	\$ 9,095	4.6	\$ 9,232	4.7	\$ 9,370	4.8	\$ 9,511	4.8	\$ 9,653	4.9	\$ 9,798	5.0	\$ 9,945	5.0	\$ 10,094	49.5	\$ 98,876
Lift Stations - Preventive Maintenance & Repairs/Rehab	8	\$ 120,400	\$ 14,938	0.1	\$ 1,204	0.1	\$ 1,520	0.1	\$ 1,847	0.1	\$ 1,875	0.1	\$ 1,903	0.1	\$ 1,931	0.1	\$ 1,960	0.1	\$ 1,990	0.1	\$ 2,019	0.1	\$ 2,050	0.1	\$ 2,080	1.4	\$ 20,379
Services - Preventive Maintenance & Repairs/Rehab	19,143	\$ 607,510	\$ 32	191.4	\$ 6,075	241.7	\$ 7,670	293.6	\$ 9,319	298.0	\$ 9,459	302.5	\$ 9,600	307.0	\$ 9,744	311.7	\$ 9,891	316.3	\$ 10,039	321.1	\$ 10,190	325.9	\$ 10,342	330.8	\$ 10,498	3,240.0	\$ 102,827
Total Costs		\$ 1,312,080	\$ 35		\$13,121		\$16,565		\$20,126		\$20,428		\$20,735		\$21,046		\$21,362		\$21,682		\$22,007		\$22,337		\$22,672		\$222,082

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4.2.7 Fleet Maintenance

The following figure provides a summary of the operating resources required for Fleet Maintenance over the next 10 years. Budget increases or future shortfalls in this area are dependent on growth of the fleet. There is minimal fleet growth contained in the 10-year capital plan, therefore PW can not project costs into the future. As well, each department now shows the operating and maintenance cost of each unit in their budgets so the additional cost for growth is identified in those departments' budgets rather than the fleet budget.

Figure 10: Future operating resources required to meet service levels in Fleet Maintenance



The assumptions used to develop growth requirements for Fleet Maintenance are provided in the following table.

Table 16: Growth Assumptions for Fleet Maintenance

Fleet	ANNUAL GROWTH																												
	2009 Totals			2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		Grand Total 2010-2020			
	# of vehicles	Cost	\$/vehicle	# of vehicles	Cost	# of vehicles	Cost	# of vehicles	Cost	# of vehicles	Cost	# of vehicles	Cost	# of vehicles	Cost	# of vehicles	Cost	# of vehicles	Cost	# of vehicles	Cost	# of vehicles	Cost	# of vehicles	Cost	# of vehicles	Cost		
BUS & TOURISM	1	\$11,502	\$11,502	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
CORP SERVICES	1	\$7,045	\$7,045	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ENGINEERING	3	\$24,766	\$8,255	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
FIRE SERVICES	16	\$528,256	\$33,016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
POLICE SERVICES	8	\$70,786	\$8,848	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PUBLIC WORKS	163	\$3,141,440	\$19,273	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TRANSIT	3	\$28,505	\$9,502	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Costs		\$3,812,300		-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	

5.0 THE PLANNING PROCESS

Public Works has followed a comprehensive, rigorous process to develop the LTP. The process involved professional research, collaboration with key stakeholders and integration with the City's corporate planning framework and standards.

5.1 KEY STEPS

In late 2006 and early 2007, Public Works resurrected its long term planning committee and team (see Appendix 11: Long Term Plan Committee and Team Members) to complete the department long term plan (LTP). As part of the planning process, the committee reviewed over 90 activities and services conducted by the department. Refer to Appendix 10: PW Services for a complete list of services. We rated and prioritized all these activities and services, and then reduced them to a manageable number for inclusion in the plan. We selected the following eight services, which represent almost 70 per cent of Public Works' staffing and budget. The last service, solid waste collection was deleted after we started the review due to the solid waste review being conducted at the same time as we were developing this long term plan.

- Snow and ice control
- Pavement maintenance
- Turf maintenance
- Tree operations
- Building maintenance
- Wastewater collection
- Fleet maintenance
- Solid waste collection (deleted later due to separate review undertaken)

As the next step in the planning process, the committee conducted two major undertakings. First, we surveyed other communities to determine baseline service levels and benchmarking for each of the major services we selected for our plan. Although we invested significant time and effort contacting municipalities – Edmonton, Strathcona County, Red Deer, Grande Prairie, Medicine Hat, Saskatoon and Winnipeg – we received few responses, with only two inputs on operational service levels. There was no usable benchmark information.

Next, staff reviewed and defined “St. Albert” service levels for each of our selected services. We included financial implications for the City as part of our research. Extensive group work went into this exercise, with staff applying a number of criteria:

- Legislative and statutory requirements
- Safety standards
- Industry standards



- Community satisfaction surveys (most services have seen a decrease in satisfaction)
- Previous service levels (10 to 15 years ago)
- Citizen and community group feedback through customer service requests
- Regional comparisons (“Best in the Region”)
- Council and corporate plans

5.2 PROCESS OVERVIEW

- PW’s long term planning process began in February 2004. There was a hiatus during the department’s transition to new director Glenn Tompolski, who re-started the process in 2006.
- During spring and summer of 2006, the LTP project team (comprised of PW staff), wrote a report called “Preliminary Research of Departmental Data and External Practices.” Written prior to the survey of other municipalities, this report contained information such as statistics and data, policies and legislation, corporate plans and documentation, and benchmarks and industry standards.
- Next, the LTP team went through an extensive prioritization process to select a manageable number of services that would form the long term plan.
- In 2007, the LTP team conducted a Strengths, Weakness, Opportunities and Threats (SWOT) analysis (see Appendix 12). We then developed a long term strategy for the department – Vision, Mission, Values and Objectives.
- After the team completed the key steps identified in Section 5.1, we performed a gap analysis between the current state and recommended standards for the seven services. This led to our assessment of resources needed to meet the recommended service levels.
- Finally, we did the growth projections (Section 4.2) for resources needed to maintain the new service levels taking into account anticipated city land and population expansions.



APPENDICES

Appendix 1: Population Growth over the Next 10 Years

Appendix 2: Service Levels

Appendix 3: Snow and Ice Control – Service Definitions and Resource Requirements

Appendix 4: Pavement Maintenance – Service Definitions and Resource Requirements

Appendix 5: Turf Maintenance – Service Definitions and Resource Requirements

Appendix 6: Tree Operations – Service Definitions and Resource Requirements

Appendix 7: Building maintenance – Service Definitions and Resource Requirements

Appendix 8: Wastewater Collection – Service Definitions and Resource Requirements

Appendix 9: Fleet maintenance – Service Definitions and Resource Requirements

Appendix 10: Complete List of PW Services

Appendix 11: Long Term Plan Committee and Team Members

Appendix 12: Environmental Assessment (SWOT Analysis)

APPENDIX 1: POPULATION GROWTH OVER THE NEXT 10 YEARS

The population of St. Albert reached 58,501 in 2008, according to the municipal Census. The forecast in Table 17 shows population projections from 2009 to 2019. The 2009 to 2011 Population growth is estimated based on the 2008 municipal census data. The projections for 2012 and beyond are based on the Capital Region Board scenarios for population growth.

Table 17: Future Population Scenarios to Year 2019

Year	Population	Percent Growth
2008	58,501	-
2009	58,940	0.75%
2010	59,529	1.00%
2011	60,273	1.25%
2012	61,177	1.50%
2013	62,095	1.50%
2014	63,026	1.50%
2015	63,972	1.50%
2016	64,931	1.50%
2017	65,905	1.50%
2018	66,894	1.50%
2019	67,897	1.50%

APPENDIX 2: SERVICE LEVELS

The recommended service levels for each of the seven services studied are summarized in the following table. Council approved these service levels in June, 2008.

Service	Core Function	Service Levels
Snow and Ice Control - Roads	Snow plowing	<ul style="list-style-type: none"> Priority 1 (within eight hours following two to five centimetres of snowfall): highways (St. Albert Road, Ray Gibbon Drive). Priority 2 (within the same eight hours): arterials. Priority 3 (within sixteen hours): collectors, commercial industrial streets, downtown and rural roads, following two to five centimetres of snowfall
	Ice control (sanding)	Sand roads as conditions require following the same priorities as snow plowing.
	Collector snow removal	Snow will be cleared within four days following a 20 to 30 cm snow accumulation (emphasis on hill sections and school zones).
	Residential snow removal	Snow will be cleared within 10 days following the buildup of a 12 to 15 cm snow pack, or if the snow pack is softening and severely compromising vehicle mobility, or if the snow pack reaches 75 per cent of the service level threshold (10 cm) by February 1. Exceptions to this service level are piles in cul de sacs, which will be removed at a later date.
	Snow removal downtown	Snow will be plowed into centre windrows following five to 10 cm accumulations on parking lanes and removed within 48 hours beginning the second night after a snowfall.
Snow and Ice Control - Sidewalks	Snow plowing	<ul style="list-style-type: none"> Priority 1 (within eight hours after accumulation of one cm of snow): existing 12.4 km of river valley trails swept. Priority 2 (within 48 hrs after accumulation of two to five cm of snow): arterial and collector trails and sidewalks plowed. Priority 3 (within 48 hrs after accumulation of two to five cm of snow): interior trails and connector sidewalks plowed.
Pavement Maintenance	Pothole patching and spraying	<ul style="list-style-type: none"> Priority 1, highways: to be completed annually Priority 2, arterials: to be completed annually Priority 3, collectors: to be completed annually Priority 4, residential: to be completed on a 3-year cycle.
Turf Maintenance	Sports fields	<ul style="list-style-type: none"> Level 1A fields (full size football and soccer fields and Fowler Track): weekly cutting up to 18 times per year and weekly trimming. Level 2B fields (minor baseball, mini fields and recreational open spaces): cutting on a 10-day maximum cycle and trimming every two weeks.

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Service	Core Function	Service Levels
	Parks	<ul style="list-style-type: none"> Level 1A parks (civic buildings, cemetery, river valley and Red Willow Trail): weekly cutting up to 18 times per year, with weekly trimming for cemetery and civic buildings only. Level 2C parks (all open green space excluding buffers, boulevards or natural areas): cutting on a 10-day maximum cycle with monthly trimming.
	Buffers and boulevards	<ul style="list-style-type: none"> Level 2C (all open green space in buffers and boulevards): cutting on a 10-day maximum cycle with monthly trimming.
	Natural areas	<ul style="list-style-type: none"> Selected weed spraying (annually). One pass of grass cutting along fence lines and trails in selected areas (on a 10-day cycle).
Tree Operations	Planting	Use design standards for planting. Generate the planting list through visual inspections. Purchase nursery stock locally if possible, using in-house and contract services. Develop and implement formal tree management plan that provides an overarching policy for maintaining trees.
	Preventive maintenance	Structural pruning every five years on all trees (will require a number of years of "catch up"). Lifting once every five years. Regular maintenance on road buffers every three years.
	Maintenance	Tree removal program for all trees at the end of their life cycle before they become hazardous. Increase monitoring for pests and disease.
Building Maintenance	Inspections	As recommended by industry for various components and buildings, to be done monthly and annually for electrical, mechanical and structural through work place safety inspections, including specific spaces not covered through work place safety.
	Preventive maintenance	Establish and record annual electrical, mechanical, and structural PM programs for all functions.
	Maintenance	To be carried out proactively and as asset components fail.
Wastewater Collection	Lift stations	Follow recommendations from the operations and maintenance manual for inspections, preventive maintenance and maintenance of building and components (i.e. structural, electrical, mechanical, heating, ventilation and air conditioning (HVAC), etc.).
	Collection system	Using Close Circuit Television (CCTV), inspect all sewer mains on a 10-year cycle, or as needed in high-risk areas. Flush lines throughout the city based on a list of priorities; use herbicide to reduce root growth.
	Service connections	Preventive maintenance programs and replacement of services as per City policies and procedures with strong emphasis on risk management and liability issues.
Fleet Maintenance	Preventive maintenance	Vehicle use is monitored by the fleet controller, who in turn schedules all work based on available resources and to meet legislated guidelines.
	Maintenance	Initial diagnostics completed in a quick service bay. The fleet controller will schedule the repair based on the size of the repair job and availability of parts. Specialty repairs are contracted out (ex. glass, air conditioning, body work, etc.).



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Service	Core Function	Service Levels
	Equipment replacement/ procurement	Conduct ongoing review of vehicle life cycles to enhance longevity and adjust life cycles for specific vehicles based on actual use. Improve equipment inventories and expand the replacement fund to include a broader range of major attachments. Tender equipment purchases as approved in budget.



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APPENDIX 3: SNOW AND ICE CONTROL – SERVICE DEFINITIONS AND RESOURCE REQUIREMENTS

Appendix 3: Service Definitions for Snow and Ice Control - Roads

Functions	Inspections	Street Sanding and Ice Control	Snow Plowing	Snow Removal- Collectors	Snow Removal Residential	Snow Removal Industrial, commercial areas	Snow Removal Downtown
Description: Roads	Going out and monitoring the roads. Higher priority on certain trouble areas.	Sanding roads, parking lots. Includes salting which includes ice control through various chemicals.	Plowing roads, bridges. Moving the snow off to the side.	Monolithic sidewalk - Remove snow after a certain level of accumulation; Boulevards - snow moved off the roadway but not hauled away. All collectors are cleared to the asphalt.	Monolithic sidewalk - Remove snow after a certain level of accumulation; Boulevards - snow moved off the roadway but not hauled away.	Industrial park local roadways that are not considered collectors or arterials.	Plow to sides and them remove. Treat a lot like the monolithics.
Frequency (annual, weekly, daily, etc.)	Hourly during the week, all 3 shifts are responsible. Weekends on standby and also inspect every morning.	Based on conditions	Based on conditions	n/a	In spring, we remove snow from areas that have poor drainage.	Industrial parks - grade and clean driveways once plough route is finished. Could be done 4 or 5 times each year.	First priority for removal.
Timing (after each snowfall, after certain amount of snowfall, etc.)	If snow is on the ground, snowfall, freeze. Temperature and weather related.	Below freezing, in anticipation of freezing, roadways that freeze quicker than other roads, based on road and weather conditions, weather forecast, road and air temperature.	Based on amount of snow accumulation and time of day. Drifting wind conditions may dictate need for plowing.	Accumulation of 8-10 inches of hard packed snow - works out to approximately once per year.	Accumulation of 8-10 inches of hard packed snow - works out to approximately once per year.	After snow fall.	Accumulation of 3-4 inches of hard packed snow. Usually second night after snow fall event.
Who (certified, licensed, etc.)	Generally the foreman and plough truck operators. No certification required - mostly experience. Rely on RCMP, Fire, Transit, PW staff, public to inform us.	Foremen and Operators. They have on the job training and class 3 license. City supplies 20-23 sand boxes so that residents can also apply sand.	Foremen and Operators. They have on the job training and class 3 license.	Foremen, Operators and contractors. They have on the job training and class 3 license.	Foremen, Operators and contractors. They have on the job training and class 3 license.	Foremen, Operators and contractors (not as often). They have on the job training and class 3 license.	Foremen, Operators and contractors. They have on the job training and class 3 license.
Performance requirements (meets regulation or code ex. Safety codes)	Major factor is liability and policy. MGA does include responsibility to care for the road.	Environmental restrictions on use of salt, meet salt management plan (have to track the volumes seasonally)	Environmental requirements to plough all snow on bridge decks.	Need to have the roads passable for emergency vehicles. Try to adhere to the noise bylaw. Transportation guidelines - can only drive 13 hours out of a 16 hour day.	Roads need to be passable for emergency vehicles. Try to adhere to the noise bylaw. Transportation guidelines - can only drive 13 hours out of a 16 hour day.	Roads need to be passable for emergency vehicles. Less issue with the noise bylaw. Transportation guidelines - can only drive 13 hours out of a 16 hour day.	Roads need to be passable for emergency vehicles. More emphasis on the noise bylaw. Transportation guidelines - can only drive 13 hours out of a 16 hour day.
How functions are managed		Have a policy identifying when we sand the streets and how quickly we respond to calls.	Have a policy outlining priority and frequency and elapsed time to complete.	Snow and ice control policy	Snow and ice control policy	Snow and ice control policy	Snow and ice control policy
Existing practices	Check bad hills, highways, bridgedecks is priority. Weather conditions in rural areas may differ so need to inspect these too. Foreman is also ploughing while inspecting. Evening shift foreman is on the equipment much more than day shift due to lack of other staff.	Highways, arterials and collectors within 8 hours. Sand up to and including the intersection. The operator determines how much sanding to do around the intersection. Extreme weather conditions may require whole road. Consider the road, its shaded areas, hills, bridges, cross drainage, curbs, crosswalks, bus stops, bus terminal, parking lots and other factors when determining how much sanding. Country roads (hills, intersections, bridges, etc.) are sanded ideally with straight sand. After hours we check after any calls. Often have to re-sand the same location during a shift based on road temperature and weather condition. We also sand alleys (hills, intersections, etc.). All of the above is based on priority and policy of calls. Amount of sand is recorded daily through the time sheets.	2-5 centimeters on highways, arterials, collectors, and rural roads. Highways and Arterials are curb to curb within 8 hours of end of storm; collectors - push snow to side without plugging driveways within 16 hours at end of storm. Snow removed or pushed off to side to improve sight lines. Also clear driveways on St. Albert Road. Parking Lots are plowed to open up driving lanes. Country roads are treated as arterials.	Collectors and residential are cleaned at the same time. Don't remove snow from boulevard collectors - move it to the side. All driveway entrances are cleaned. Clear the roads intersecting with a collector up to the first driveway. Collectors with hills or lots of drifting are cleared more frequently than others. Clear snow away from hydrants, bus stops, where sidewalk meets street (boulevard), pull snow away from parked vehicles, super mailboxes, utility boxes. When pull the snow into an open field or park side of the road instead of on the residence side. Try to maintain driving sight lines. For monolithic sidewalks - remove snow from sidewalk at same time as the roadway.	Clear snow onto the boulevards and clear the driveway entrances. When its a monolithic then we haul the snow out. Try to open up driveway within 20 minutes of plugging it. After moving the snow out we stock pile the snow onto cul de sacs and bulbs. We remove it after the residential area is hauled out. Try not to plug city sidewalks in front of residences. Clear snow away from hydrants, bus stops, where sidewalk meets street (boulevard), pull snow away from parked vehicles, super mailboxes, utility boxes. We move the snow to the open field or park side of roads instead of on the residence side. Try to maintain driving sight lines. In alleys - scrape down to pavement and haul with a loader after residential is done. Try to keep chemicals out.	Plow or grade after the collectors and arterials are done (generally within 72 hours). Clean driveway entrances. Due to traffic volumes try to plow or grade after business hours. Clear away hydrants and bus stops.	Windrow second day after snow fall event. Remove within next 24 hours. Don't remove from sidewalks. Don't block sight lines so often punch holes in the windrow keeping it away from intersections and crosswalks. Use grader after business hours due to traffic and pedestrian volumes.
Recommended standards	24/7 coverage. Document inspections of arterials, collectors and bridges in the timesheets or through GPS or some other way.	Ice control as conditions require. Look at various options for recording sand being put down daily. Record amount of salt daily. Follow a system of priorities as per policy - see below. Informally, should review traffic volumes annually.	Follow a system of priorities as per policy - see below. Clear all rural driveways upon request (after all priority 3 roads are completed).	Following a 20 to 30 cm snow accumulation, snow will be cleared within 4 days (emphasis on hill sections and school zones). Apply increased chemical applications where conditions warrant as outlined in the salt management plan. Following 10 - 20 cm snow accumulation on monolithics snow will be windrowed to centre and hauled within 72 hours. Hauling away more may lead to less clean up in the spring. Signage on the roads with snow being removed should state that only the collector (or Stat bus route) is being cleared OR Don't use any signage.	Following an average of 12 to 15 cm snow pack or snow pack is softening and vehicle mobility is becoming severely compromised or in the event that 75% of the threshold which is 10 cm is reached by February 1st, snow will be cleared within 10 days with the exception of piles in cul de sacs which will be removed at a later date. Majority of snow clearing after March 7th will be plowed as needed. Address monolithics and spring drainage. Underbelly plough works well to level the rutting of snow.	AS-IS: Following a 20 to 30 cm snow accumulation, snow will be cleared within 72 hours. Clean driveway entrances. Due to traffic volumes try to plow or grade after business hours. Clear away hydrants and bus stops.	Following 5 - 10 cm snow accumulation on parking lane, downtown will be windrowed to centre and hauled within 48 hours. Typically we start on the second night after a snow event. Work after midnight. Need to consider visitors parking downtown now that new condos are being built.
Resources	Each new equipment means increase labour by 3. Presently inadequate staff to inspect evening & night as foreman on those shifts operate equipment when snowfall occurs. May need to split the Foreman job from operations as City grows	Due to fact plow trucks can't meet service levels, (sander units are same truck). Require extra truck and staff member per shift (3) to complete sanding when plowing taking place. Too much inventory presently.	Can't put speed plows on gravel roads. Extra inventory, cannot meet service levels of 8 hours with newly annexed area and Ray Gibbon and arterial connectors. Arterials require plow truck and 1 staff member/shift (3) - same staff and truck as per plowing. Collector roadways can meet service levels yet.	No additional staff or equipment required, contract services budget is presently adequate.	Contract services for hauling snow is inadequate, more trucks \$ required	No additional staff or equipment required. Currently have one grader and five on retainer.	No additional staff or equipment required, contract services budget is presently adequate.
Other	Should meet with RCMP again to review what we do and don't work and our expectations of them.		PW rep involved in planning meetings to ensure the new area can be maintained - plowed or otherwise.	Research ability to melt snow at pick up.			
Priority levels	This policy covers most snow collection and removal scenarios. When unusual conditions occur, PW must use discretion and judgement in the application of this policy.	Priority 1: highways (St. Albert Road, Ray Gibbon Drive); Priority 2: arterials and hill sections as required. Priority 3: collectors (school zones first in the collectors). Priority 4: rural roads, parking lots and other areas as required	Priority 1 within 8 hours: highways (St. Albert Road, Ray Gibbon Drive); Priority 2 within same 8 hours: arterials. Priority 3 within 16 hours: collectors, commercial industrial streets, downtown and rural roads.	Following a 20 to 30 cm snow accumulation , snow will be cleared within 4 days (emphasis on hill sections and school zones).	Following an average of 12 to 15 cm snow pack or snow pack is softening and vehicle mobility is becoming severely compromised or in the event that 75% of the threshold which is 10 cm is reached by February 1st, snow will be cleared within 10 days with the exception of piles in cul de sacs which will be removed at a later date.		

Appendix 3: Service Definitions for Snow and Ice Control - Sidewalks

Functions	Inspections	Sanding and Ice Control	Snow Plowing
Description: Sidewalks and Trails	Inspect river valley trails - anywhere that we take it down to the asphalt. Inspect sidewalks as conditions require.	River valley needs to be sanded more because it is down to the asphalt; other sidewalks and trails require a different level of sanding.	River valley - ploughed or broomed down to asphalt; sidewalks and other trails - ploughed. Ploughing - snow is moved off to the side.
Frequency (annual, weekly, daily, etc.)	River Valley Trails - Daily; sidewalks and other trails as conditions require	As required (river valley tends to have more sanding than sidewalks and trails)	As required based on conditions
Timing (after each snowfall, after certain amount of snowfall, etc.)	River Valley Trails - daily; sidewalks and other trails as conditions require	River valley - according to bare pavement policy; sidewalks and trails - according to snow covered conditions	River valley - after 1 cm of snow; other areas - after accumulation of 2-5 cm
Who (certified, licensed, etc.)	Operator and Foreman - no certification required	Operator and Foreman - no certification required	Operator - no certification required
Performance requirements (meets regulation or code ex. Safety codes)	Major factor is liability and policy	Environmental restrictions on use of salt, meet salt management plan	City bylaw 18/2005 part 9 - Removal of snow and ice debris for sidewalks and highways
How functions are managed		Inspection and weather conditions driven	Have a policy outlining priority and frequency and elapsed time to complete (48 hours after snow stops).
Existing practices	River Valley Trails - Drive along the trail to inspect for icy conditions; Sidewalks and other trails - as conditions require the operator drops sand on icy spots and inspect hills first. Priority 1 and 2 are inspected on a daily basis	Use sand and ice control as conditions and inspections dictate on all priority areas, 1,2,and 3.	Crew 1 - Priority 1 River Valley Trails & Transit Terminals - after 1 cm of snow and within 8 hours after snow stops, trails are swept. Crew 2 - Priority 2 Arterial/Collector Trails & Sidewalks - after accumulation of 2 to 5 cm and within 48 hours after snow stops trails/sidewalks are plowed; Crew 2- Priority 3 Internal Trails and Connector Sidewalks - after accumulation of 2-5 cm and within 72 hours after snow stopstrails/sidewalks are plowed.
Recommended standards	Daily coverage. Document inspections of river valley trails, sidewalks and other trails in the timesheets or through GPS or some other way. Yearly inspection (pre winter inspection) of every sidewalk we maintain in our policy so that during winter conditions we know exactly what is under the snow or ice.	Record volumes of salt used. Do we want different service levels for river valley and sidewalks? Possible alternatives to salt use? Continue with existing practices of sand and ice control as conditions dictate.	(Do we plough every sidewalk and trail in the city? Weekdays only or include weekends? Should we have a different standard for river valley and other trails and sidewalks? Measure pedestrian volume on trails and determine which ones should be maintained? Define major walkway corridors and priorities to determine which trails should be plowed (reference what some communities already have).) Priority 1 - River valley trails swept within 8 hours after accumulation of 1 cm of snowfall, but do not expand this level beyond existing 12.4 km. Priority 2 - Arterial /Collector trails and sidewalks plowed within 48 hrs after accumulation of 2 to 5 cm of snowfall. Priority 3 - internal trails and connector sidewalks plowed within 48 hours after accumulation of 2 to 5 cm of snowfall.
Resources:	None required, daily inspections completed with existing resources.	None required, to meet service levels of as "required "basis only.	Priority 1 - no additional resources required unless the inventory of priority 1 expands. Priority 2 - no additional resources required, can meet recommended standard. Priority 3 - cannot meet recommended standards most of the time, will require 1 extra plow machine and 2 staff. (same staff shared with turf in summer - 1 FTE equivalent)

Appendix 3: Resource Requirements for Snow and Ice Control

Description	KM'S	Staffing \$	Staffing \$/km or ha	Current Equipment	Total Equip./KM	Contract Services	2008 Budgeted Maint (\$)	Total Cost per Km	Required staff \$	Required Equip.	Total Required Budget	Budget Shortfall	Total Cost per Km
Roads													
Street Sanding and Ice Control	382.0	\$272,010	\$712.07	\$114,929	\$300.86	\$0	\$386,939	\$1,013	\$30,736	\$5,827	\$423,502	\$36,563	\$1,109
Snow Plowing	260.4	\$155,784	\$598.25	\$113,407	\$435.51	\$25,500	\$294,690	\$1,132	\$17,603	\$5,750	\$318,043	\$23,353	\$1,221
Snow Removal Downtown	3.0	\$5,593		\$4,601	\$1,533.83	\$8,500	\$18,694	\$6,231	\$632	\$233	\$19,560	\$865	\$6,520
Snow Removal-Collectors	122.4	\$81,624	\$666.86	\$63,814	\$521.36	\$150,000	\$295,438	\$2,414	\$9,223	\$3,236	\$307,896	\$12,459	\$2,515
Snow Removal Residential	349.4	\$114,530	\$327.79	\$72,277	\$206.86	\$370,000	\$556,807	\$1,594	\$12,941	\$3,665	\$573,413	\$16,606	\$1,641
Parking Lots	269,300	\$127,135	\$4,720.96	\$104,297	\$387.29		\$231,432	\$8,594	\$14,366	\$5,288	\$251,086	\$19,654	\$9,324
Materials	382.0					\$0	\$224,600	\$588	\$0		\$224,600	\$0	\$588
Sub Total	731.0	\$756,675	\$1,035	\$473,325	\$647.50	\$554,000	\$2,008,600	\$2,748	\$85,500	\$24,000	\$2,118,100	\$109,500.00	\$2,898
Sidewalks													
Priority 1	12.4	\$17,600	\$1,419.35	\$11,009	\$300.86	\$0	\$28,609	\$2,307			\$28,609	\$0	\$2,307
Priority 2	72.5	\$93,866	\$1,294.71	\$58,717	\$809.88	\$0	\$152,583	\$2,105			\$152,583	\$0	\$2,105
Priority 3	53.9	\$140,800	\$2,612.24	\$88,075	\$1,634.04	\$0	\$228,874	\$4,246	\$57,000	\$25,000	\$310,874	\$82,000	\$5,768
Sub Total	138.8	\$252,266	\$1,817	\$157,801	\$1,136.89		\$410,067	\$2,954	\$57,000	\$25,000	\$492,067	\$82,000	\$3,545
Grand Total		\$1,008,941		\$631,126			\$2,418,667		\$142,500	\$49,000	\$2,610,167	\$191,500	

APPENDIX 4: PAVEMENT MAINTENANCE – SERVICE DEFINITIONS AND RESOURCE REQUIREMENTS

Appendix 4: Service Definitions for Pavement Maintenance

Functions	Pothole Patching	Spray Patching	Asphalt Patching/Overlays (minor)
Functions	Patch potholes on all asphalt roadways and parking lots through out the city.	Spray patching on all asphalt roadways and parking lots through out the city.	Asphalt patching on all asphalt roadways and parking lots through out the city.
Description	Daily through out the winter months as conditions warrant. Summer months are on-going.	May through October daily (weather permitting). Schedule of streets to be completed based on priority.	May through October daily (weather permitting). Schedule of streets to be completed based on priority.
Frequency (annual, weekly, daily, etc.)	Year round (as per needed). 50mm depth with 100-300mm diameter.	May through October (weather permitting). 10mm width with varying lengths of 2 or 3 meters (or longer) with a depth of less than 100mm.	May through October (weather permitting). Asphalt patching will occur where there is a sub-grade failure. 150mm width with varying lengths up to 5 meters with a depth as per existing asphalt structure.
Timing (age, when called, etc.)	Foremen, operators, labourers. They have on the job training with class 5 license.	Foremen and Operators. They have on the job training with one class 3 license.	Foremen, Operators and labourers. They have on the job training with a minimum class 5 license.
Who (certified, licensed, etc.)	Liability and risk management. (Municipal Government Act).	Liability and risk management. (Municipal Government Act).	Liability and risk management. (Municipal Government Act).
Performance requirements (meets regulation or code ex. Safety codes)	Through operational procedures.	Through operational procedures.	Through operational procedures.
How functions are managed	Highways and arterials are first priority. Collector roadways are second priority. Residential and other streets are third priority. Potholes are inspected normally within 8 hours and prioritized according to severity. During freeze-thaw cycles roads are inspected and monitored on a regular basis. Inspections are carried out by all staff through daily operations and relying on public to report potholes.	Scheduled approach to maintenance. Highways, downtown and arterials are first priority. Collector roadways are second priority. Residential, parking lots and other streets are third priority. Schools zones to be completed in July and August. Highways are completed at night.	Scheduled approach to maintenance. Highways, downtown and arterials are first priority. Collector roadways are second priority. Residential, parking lots and other streets are third priority. Schools zones to be completed in July and August. Highways are completed at night. In addition, all Utility and concrete repairs.
Existing practices	Look into a process for recording number of potholes. Continue to look at new products and technologies.	Priority 1 - highways; Priority 2 - arterials; Priority 3 collectors are all to be completed annually. Priority 4 - residential to be completed on a 3-year cycle. Continue to look at new products and technologies.	Priority 1 - highways; Priority 2 - arterials; Priority 3 collectors are all to be completed annually based on road safety and base failures. Priority 4 - residential to be completed as required on a basis of road safety and base failures. These repairs are based on criteria established for potholes and repairs. Continue to look at new products and technologies.
Recommended standards	None required at this time to meet service level.	Priority 1 and 2 can be completed with existing equipment & resources. Priority 3 & 4 require an additional spray patcher and truck. 3 full time staff. Increase in materials budget. Staff offset by snow operational requirements, shared.	None required at this time to meet service level.



Appendix 4: Resource Requirements for Pavement Maintenance

Description	KM'S	Current FTEs	Avg. FTEs/100 KM	Staffing \$	Staffing \$/km or ha	Staffing Casuals	Current Equipment	Total Equip./KM	Contract Services	Contract Services \$/km	2008 Budgeted Maint (\$)	Total Cost per Km	Additional FTEs Required	Required staff \$	Required Equip & Material	Total Required Budget	Budget Shortfall (Operating Budget)	Total cost per km
Roads																		
Pothole Patching	731.0	0.8	0.11	\$45,600	\$62.38	\$9,020.00	\$20,000	\$27.36	\$0		\$74,620	\$102	0	\$0	\$0	\$74,620	\$0	\$102
Spray patching	731.0	1.5	0.21	\$85,500	\$116.96	\$13,530.00	\$38,000	\$51.98	\$0		\$137,030	\$187	1.5	\$85,500	\$27,000	\$249,530	\$112,500	\$341
Asphalt patching	382.0	1.5	0.39	\$85,500		\$13,530.00	\$35,800	\$93.72	\$0		\$134,830	\$353	0	\$0	\$0	\$134,830	\$0	\$353
Grading/Gen. Maint.	731.0	1.2	0.16	\$68,400	\$93.57	\$9,020.00	\$181,400	\$248.15	\$40,000	\$55	\$298,820	\$409	0	\$0	\$0	\$298,820	\$0	\$409
Materials	731.0										\$86,900	\$119		\$21,725		\$108,625	\$21,725	\$149
Total	731.0	5.0	0.68	\$285,000	\$390	\$45,100	\$275,200	\$376.47	\$40,000	\$55	\$732,200	\$1,002		\$107,225	\$27,000	\$866,425	\$134,225	\$1,185

APPENDIX 5: TURF MAINTENANCE – SERVICE DEFINITIONS AND RESOURCE REQUIREMENTS

Appendix 5: Service Definitions for Turf Maintenance

Functions	Inspections	Sport Fields	Parks	Buffers/Boulevards	Natural Areas
Functions	No formal inspections	Cutting grass, fertilizing, aerating, sweeping, sod replacement and line painting.	Picking up litter and then cut grass. Fertilizing, aerating, sweeping and trimming.	Litter pick up and cutting grass and trimming. Chemical trimming	Selected weed spraying and pulling as well as litter control. One pass of grass cutting from fence line and trails on selected areas.
Description	Complaint driven.	Cutting - weekly Fertilizing - once a year Aerating - once a year Sweeping - once a year (as required) Sod replacement - as required Line Painting - weekly User Groups Bookings	Cutting Maximum 10-day cycle. Fertilizing - once a year Aerating - twice a year Sweeping - once a year (as required) Special Events - extra cutting is required Weekly cutting in high profile areas such as SAP, Arts Gallery, Cemetery, RCMP, New Tourists, River Valley, Red Willow Trail Rural cutting (once a year) Trimming (varies from once/week to 3 X	Cutting - 10 day cycle (St. Albert Trail, City Entrances) Buffers/Blvd - 5 day cycle (St. Anne Street, Servus Place, Cemetery entrance) Trimming - Weekly	Selected weed spraying. (Annually) Litter Control as required. One pass of grass cutting from fence line and trails on selected areas. (Within 10 day cycle)
Frequency (annual, weekly, daily, etc.)	As required.	Cutting - weekly (before painting occurs - later in the week) Fertilizing - Fall aerating - Fall Sweeping - Fall Sod Replacement - Spring Line Painting - Weekly	Cutting - 2 week and weekly wherever the cutting cycle falls Fertilizing - June & Fall aerating - twice a year (June & Fall) Sweeping - Fall Special Events - as required. High Profile Areas - usually Fridays.	Cutting - 2 week and weekly wherever the cutting cycle falls High Profile Areas - usually Fridays	Varies time of year. Grass cutting - 10 day cycle
Timing (age, when called, etc.)	Foreman and can be operator.	Operators - Class 5 and casual laborers.	Operators Class 5 and casual laborers.	Operators Class 5 and casual laborers.	Operators Class 5 and casual laborers. Spraying - licensed spray applicators
Who (certified, licensed, etc.)	Liability and safety issues.	Risk management liability	Risk management liability. Bylaw?	Risk Management	Safety and Environmental code practice
Performance requirements (meets regulation or code ex. Safety codes)	Complaint driven.	Bookings of fields by user groups determines the service level requirements. At times complaint managed.	Based on existing practices and service levels. At times complaint managed.	Based on existing practices and service levels. At times complaint managed.	Based on existing services levels. At times complaint managed.
How functions are managed	As calls and complaints are received. They are formally inspected when service is being completed.	Cutting levels at 2 1/2" length Cutting sports fields, football and soccer fields within 8 hours. Higher level field on a weekly basis, other sports fields are completed within a 10-day turf maintenance. Trimming occurs on a monthly basis. Painting needs to be completed within 8 hours. Fertilizing & aerating (sport fields) within 16 hours.	Cutting - Maximum 10-day cycle. (within 80 hours) Fertilizing - once a year (open green spaces, parks excluding anything near open water or buffers/blvds) Within 60 hours Aerating - twice a year (except buffers/blvds) Within 120 hours Sweeping - once a year (as required) Special Events - extra cutting as required (within 8 hours) Weekly cutting in high profile areas such as SAP, Arts Gallery, Cemetery, RCMP, New Tourists, River Valley, Red Willow Trail, Servus Place, Fountain Park Pool, Grandin Pool, Transit Centre, Grandin Pond, PW entrance, Recycling (within 40 hours) Rural cutting (once a year) within 120	Cutting - 10 day cycle (St. Albert Trail, City Entrances) (within 80 hours) Buffers/Blvd - 5 day cycle (St. Anne Street, Servus Place, Cemetery entrance) (within 8 hours) Trimming - monthly Chemical trimming - Every second year	Selected weed spraying. (Annually) within a four week cycle for chemical trimming areas Litter Control as required. One pass of grass cutting from fence line and trails on selected areas. (Within 10 day cycle)
Existing practices	24/7 coverage. Document inspections of arterials, collectors and bridges in the timesheets or through GPS or some other way.	Level 1A Service - up to 18 cuts per year on weekly cycle Includes 15 - 18 trimmings and grass cut to 5-8 cm (2 1/2") Level 2B Service - up to 10 to 12 cycles, on a max. 10 day rotation. trimming every 2 weeks. Level 1 and 2 sport fields should have more aerating, detaching, fertilizing, overseeding and watering. Fertilizing - 2 X year Aerating - 2 X year	Parks Fields - Level 1A - Civic buildings, cemetery, and entrances into the City - weekly cutting up to 18 times per year. Weekly trimming of cemetery, civic building and entrances only. River valley 2 week cycle. Parks Fields - Level 1B - River valley / Red Willow Trail - weekly cutting every 2 weeks trimming. Parks Fields - Level 2C - All open park green space that is not buffers, boulevards or natural areas. Up to 10 to 12 cycles, on a max. 10 day rotation. Monthly trimming.	BB - Level 2B - all boulevards and buffer areas Max 10 day cutting cycle with 2 week trimming. Aerating and fertilizing of selected buffers throughout the City.	Selected weed spraying. (Annually) One pass of grass cutting from fence line and trails on selected areas. (Within 10 day cycle)
Recommended standards	No additional resources required	Require additional resources to carry out increase sport field maint. Require 2 FTE's to be shared among sport fields, parks, and buffers/boulevard to address recommended standards in each of those areas as identified (offset by sidewalk snow clearing in winter months, equivalent to 1 FTE in total); To address trimming service levels in sport feilds, parks and buffers/boulevards, 3 casuals per quadrant (9 casuals total) Plus vehical(s).	Can meet existing mowing service levels with staffing, but not equipment. Also new service levels for entrances into City require resources. Have not been able to meet standards of aerating and fertilizing etc. Require 2 FTE's to be shared among sport fields, parks, and buffers/boulevard to address recommended standards in each of those areas as identified (offset by sidewalk snow clearing in winter months, equivalent to 1 FTE in total); To address trimming service levels in sport feilds, parks and buffers/boulevards, 3 casuals per quadrant (9 casuals total) Plus vehical(s). Short 4 pieces of equipment (mowers) to complete all grass cutting.	Require 2 FTE's to be shared among sport fields, parks, and buffers/boulevard to address recommended standards in each of those areas as identified (offset by sidewalk snow clearing in winter months, equivalent to 1 FTE in total); To address trimming service levels in sport feilds, parks and buffers/boulevards, 3 casuals per quadrant (9 casuals total) Plus vehical(s).	None existing staff.
Priorities		Sports Fields - Level 1A - Full Size Football - Soccer and Fowler Track - weekly cutting up to 18 times per year. Weekly trimming. Sport fields - Level 2B - Minor Ball, mini fields & recreation open space, - max. 10 day cycle cutting. Trimming every 2 weeks	Parks Fields - Level 1A - Civic buildings, cemetery, river valley / Red Willow Trail - weekly cutting up to 18 times per year. Weekly trimming of cemetery and civic building only. Parks Fields - Level 2C - All open park green space that is not buffers, boulevards or natural areas. max. 10 day cycle cutting. Monthly trimming.	BB - Level 2B - all boulevards and buffer areas Max 10 day cutting cycle with trimming every 2 weeks	Selected weed spraying. (Annually) One pass of grass cutting from fence line and trails on selected areas. (Within 10 day cycle)

Public Works Long Term Plan

Appendix 5: Resource Requirements for Turf Maintenance

Description	# of ha. of Turf	Current FTEs	Current Staffing \$	Current Casuals \$	Staffing FTE \$ per ha.	Current \$ Equipment	Total Equip. per ha.	2008 Budgeted Maint (\$)	Costs per ha.	Additional FTE's \$ Required	Additional Casual \$ Required	Additional Equipment Required	Total Required Budget	Budget Shortfall	Revised Cost per ha.
Sport Fields	14.6	2.3	\$133,812	\$10,424	\$9,165	\$57,910	\$3,966	\$202,146	\$13,845.6	\$8,550	\$12,150	\$6,200	\$229,046	\$26,900	\$15,688
Parks	515.5	1.8	\$105,641	\$163,308	\$205	\$254,804	\$494	\$523,753	\$1,016.0	\$34,200	\$48,600	\$27,900	\$634,453	\$110,700	\$1,231
Buffers & Boulevards	124.9	1.8	\$105,641	\$163,308	\$846	\$254,804	\$2,040	\$523,753	\$4,192.7	\$14,250	\$20,250	\$27,900	\$586,153	\$62,400	\$4,692
Natural Areas	10.0	0.1	\$7,043	\$10,424	\$704	\$11,582	\$1,158	\$29,049	\$2,904.9	\$0	\$0	\$0	\$29,049	\$0	\$2,905
Rentals, Materials and supplies	665.0							\$80,900	\$121.7			\$12,000	\$92,900	\$12,000	\$140
Totals	665.0	6.0	\$352,136	\$347,464	\$112	\$579,100	\$871	\$1,359,600	\$2,044.5	\$57,000	\$81,000	\$74,000	\$1,571,600	\$212,000	\$2,363



Public Works Long Term Plan

APPENDIX 6: TREE OPERATIONS – SERVICE DEFINITIONS AND RESOURCE REQUIREMENTS

Appendix 6: Service Definitions for Tree Operations

Functions	Planting	Inspections	Preventative Maintenance	Maintenance	Tree nursery
Description	New and Replacement	Hazard inspections, disease, site lines, FAC Work, insurance claims	Lifting, structural pruning, pest control, plant healthcare	Lifting, plant healthcare, removal, pest maintenance	Grow trees for parks and boulevard replacement
Frequency (annual, weekly, daily, etc.)	Summer and Fall	Hazard - no proactive program, only on call or as noticed; Disease - once per year and on call; Site Lines - twice per year (spring and fall), inspect every intersection in the city and on call; insurance claims - as they come in; FAC work - as required.	Lifting - ongoing over an approx. 8 year cycle with transit area higher priority; structural pruning - small trees once, grown trees - as required; pest control - annually if inspection indicates we should do it; plant healthcare - on planting cycles (5 times per year for first two years);	As required	500 trees planted in fall of every year. Daily maintenance, general maintenance
Timing (age, when called, etc.)	Residential Boulevard - within one year of needing replacement; new - when there is new subdivision development or parks; special occasions	Hazard - after any major storm and only on call or as noticed; Disease - on call; Site Lines - on call; insurance claims - as they come in; FAC work - as required.	Lifting - ongoing; structural pruning - ongoing; pest control - ongoing; plant healthcare - after the planting and ongoing for first two years during summer and fall, elm pruning in the winter (as per bylaw).	Storms	Daily more major spring and fall. No winter work. Pruning, training in winter months.
Who (certified, licensed, etc.)	Operators, laborers and community groups and contractors	Not required; however we have certified arborists. Insurance claims - helps that we have a certified arborist. Certified appraisers for insurance claims.	Operators, laborers with direction from arborists, licensed pesticide applicators through province and feds	Operators, laborers with direction from arborists, licensed pesticide applicators through province and feds, Utility arborists for power line corridors.	Operators, laborers with direction from arborists, licensed pesticide applicators through province and feds
Performance requirements (meets regulation or code ex. Safety codes)	Current landscape standards, recognized ISA practices, First Call	We have a Dutch Elm Disease Bylaw which controls disposal and pruning. Insurance claims have an ISA approved appraisal.	Dutch Elm Disease Bylaw; Regulations and code of practice for pest control - chemicals are registered federally.	Regulations and code of practice for pest control - chemicals are registered federally; Removal - Alberta First Call, safety and risk management protocol	Regulations and code of practice for pest control - chemicals are registered federally; Maintenance as per Lanta standards
How functions are managed	Community plantings are organized through community services and PW supports it. Managed through budget and internal planting program	Dutch Elm Disease Bylaw; black knot disease pruning is recommended to be done in the winter. ISA Code of Ethics and tree pruning guidelines.	Dutch Elm Disease Bylaw; Regulations and code of practice for pest control; work through office of the environment when applying pesticides	Reactive and on a call in basis as required	Scheduled maintenance for all functions related the nursery
Existing practices	Use design standards for planting, generate the planting list through visual inspections, purchase nursery stock locally if possible, in-house and contract services	Hazardous Trees - visually to find rotten trees, leaning, broken limbs and when called. Diseased trees are inspected annually through visual inspection; Site lines - visual semi-annually; FAC Work - visually when called; Insurance Claim - visually when called	Lifting and structural pruning - spray, inject or prune as required based rotation. Pest control - spray or inject as required based on inspection; Plant healthcare - for new trees we use a planting cycle (5 times per year for first two years) Tree lifting on a 7 year cycle right now. Structural pruning only on newly planted trees.(within last 10 years) Existing older trees on a reactive mode. 7 staff & foreman year round, 3 more in summer to help with pest control. Presently 3 crews in total : One - 2 person crew (4726 large lift truck-elm tree pruning, csr, poplar program, all tasks with large trees etc.) One 2 person crew (4720 small lift with deck to address light structural pruning, disease pruning, xmas lights & banners, nest removal etc.) and One 3 - person crew (4601 boxed truck/chipper to lift residential blvd trees, and 10% of buffer and parks trees) One shrub bed crew summer - casuals	Structural pruning on large trees as required. Lift/prune approximately 2000 trees/year for sign/traffic visibility. Pest control - spray or inject as required based; Plant healthcare - for newly planted trees we use a planting cycle (5 times per year for first two years) inspect and water as required; Removal - as required and on a tree cycle based on age and condition. Tree lifting on a 7 year cycle right now. Structural pruning only on newly planted trees. Existing older trees on a reactive mode. Presently 3 crews in total : One - 2 person crew (4726 large lift truck-elm tree pruning, csr, poplar program, all tasks with large trees etc.) One 2 person crew (4720 small lift with deck to address light structural pruning, disease pruning, xmas lights & banners, nest removal etc.) and One 3 - person crew (4601 boxed truck/chipper to lift residential blvd trees, and 10% of buffer and parks trees) One shrub bed crew summer - casuals	Have not had access or recourses to properly maintained tree nursery. No work done in this area over the last 5 years other than relocation.
Recommended standards	Formal tree management plan that is an overarching policy for maintaining trees; No additional resources required bases on existing programs.	Use resitograph to inspect hazardous trees; GPS for inspections so all are documented into a database; include all naturals areas seasonally; Involvement with FAC during the planning stage - before drawings are approved; inspection prior to installation in FACs (nursery stock inspection). No additional resources required	Structural pruning every 5 years on all trees; (will require a number of years of "catch up") Lifting once every 5 years; watering program (includes fertilizer in the water); regular maintenance on road buffers every 3 years; Presently not meeting this standard for pruning and 5 year cycle for lifting. Require an additional 3 - person crew year round for structural pruning with appropriate equipment.	Consider designated staff for park and natural areas; Tree removal program - remove all trees at the end of their life cycle before they become a hazard; increase monitoring for pest and disease; have an entomologist on staff. No resources required at this time, but as trees age will have to look at additional resources.	Do we buy the trees? Do we contract out? Do we invest into our own nursery? For the next 5 to 10 year the approach is more of a tree hoarding (holding) area. Complete detail analysis of Nursery.
	notes: All Parks buffers/natural area trees only receive maintenance. Only about 10% receive Pm due to backing on to residents/parks.				
	notes: Under turf - have more mulching of shrub beds				



Appendix 6: Resource Requirements for Tree Operations

Description	# of Parks/ Buffer Trees	# of BLVD Trees	Current FTEs	Staffing \$	Current Casuals \$	Staffing FTE \$ per # of trees	Total # of trees per FTE	Current\$ Equipment	Total Equip./# of trees	Contract Services	Contract \$ per # of trees	2008 Budgeted Maint (\$)	Costs per # of trees	Additional FTEs \$ Required	Additional Equipment Required	Total Required Budget	Budget Shortfall	Revised Cost Per # of trees
Planting	0	350	1.08	\$62,023	\$7,917	\$222.45	324	\$54,510	\$155.74	0	0	\$124,450.1	\$355.57	\$0		\$124,450.1	\$0	\$355.57
Preventive Maintenance	37,800	37,800	4.80	\$275,659	\$15,834	\$6.97	8,708	\$218,040	\$5.22	\$0	\$0	\$509,532.8	\$12.19	\$172,200	\$40,000	\$721,732.8	\$212,200	\$17.27
Maintenance	37,800	37,800	2.00	\$114,858	\$47,501	\$3.88	20,900	\$90,850	\$2.17	\$90,000	\$2.38	\$343,208.8	\$8.21	\$0		\$343,208.8	\$0	\$8.21
Additional Planting	225	0	0.12	\$6,891	\$7,917	\$65.81	0	\$0	\$0.00	\$88,500	\$459.15	\$103,308.3	\$459.15	\$0		\$103,308.3	\$0	\$459.15
Materials and supplies		37,800										\$92,100.0	\$2.44	\$0		\$92,100.0	\$0	\$2.44
Totals	37,800	37,800	8.00	\$459,432	\$79,168		4725	\$363,400		\$178,500		\$1,172,600.0	\$28.05			\$1,384,800	\$212,200	\$33.13



Public Works Long Term Plan

APPENDIX 7: BUILDING MAINTENANCE – SERVICE DEFINITIONS AND RESOURCE REQUIREMENTS

Appendix 7: Service Definitions for Building Maintenance - Electrical

Functions	Inspections	Preventative Maintenance	Repairs/Maintenance	Janitorial
Description: Electrical	1. Lighting 2. Electric Distribution 3. Back up / Emergency Power			
Frequency (annual, weekly, daily, etc.)	1. N/A 2. N/A 3. Monthly	1. N/A 2. Thermography Every 5 Yrs 3. Monthly	1. As Needed / once per week 2. As Needed 3. As Needed	1. Once per year - lenses 2. N/A 3. N/A
Timing (age, when called, etc.)	1. N/A 2. N/A 3. N/A	1. N/A 2. N/A 3. N/A	1. As Needed 2. As Needed 3. As Needed	1. N/A 2. N/A 3. N/A
Who (certified, licensed, etc.)	1. N/A 2. N/A 3. Licensed Mechanic / Electricians	1. N/A 2. Licensed Electrician 3. Licensed Electricians or Mechanics	1. Maintenance Worker, Electrician 2. Licensed Electrician 3. Licensed Mechanic or Electrician	1. N/A 2. N/A 3. N/A
Performance requirements (meets regulation or code ex. Safety codes)	1. No 2. No 3. Code - Min is Monthly	1. No 2. N/A 3. N/A	1. No; Public? 2. Meet Current Codes 3. Meet Current Codes	1. No 2. N/A 3. N/A
How functions are managed	1. Work Place Safety Inspections, Daily Informal Walk Through, Staff in the Location 2. N/A 3. Monthly Inspection	1. N/A 2. Thermography Every 5 Yrs 3. Monthly	1. As Needed, if Bring in a Lift to Replace a Few Then Change All in Ceiling 2. Meet Code 3. As Needed; Meet Code	1. N/A 2. N/A 3. N/A
Existing practices	1. As is plus: Monthly through the Work Place Safety Inspections plus specific spaces not covered through work place safety 2. Annual Visual Inspection 3. As is: monthly inspection	1. Cycled Replacement Program for Bulbs 2. As is: Thermography every 5 yrs 3. As is: monthly pm	1. As is: as needed 2. As is: repairs must meet code 3. As is: repairs must meet code	1. As is: once per year on lenses 2. N/A 3. N/A
Recommended standards	Resources required to organize & document required inspections. Assist in conducting formal inspections. Required 1 tradesperson to plan, schedule PM programs and work. (same individual for mechanical and structural)	Resources required to conduct cycled replacement program for bulbs. Required 1 tradesperson to plan, schedule PM programs and work. (same individual for mechanical and structural)	Resources required to carry out required repairs as per PM program. (additional contract services)	Extra costs to clean lenses (contract services)
Note: for all activities 1 tradesman and 1 Hvac tradesman required to meet service levels, 2 FTE's				
Note: For maintenance and repair in all 3 functions requires additional contract services.				

Appendix 7: Service Definitions for Building Maintenance – Mechanical

Functions	Inspections	Preventative Maintenance	Repairs/Maintenance
Description: Mechanical	<ol style="list-style-type: none"> 1. HVAC 2. Plumbing/Fire suppression 3. Controls 		
Frequency (annual, weekly, daily, etc.)	<ol style="list-style-type: none"> 1. Daily walk throughs; mandated semi annual and annual inspections 2. Daily walk throughs; mandated annual inspections; 3. Daily and continuous monitoring (24/7) 	<ol style="list-style-type: none"> 1. Quarterly; Annually; weekly 2. Annual; annual draining 3. Quarterly 	<ol style="list-style-type: none"> 1. As needed - look up frequency in Hansen 2. As needed - look up frequency in Hansen; as needed - records maintained on file 3. As needed
Timing (age, when called, etc.)	<ol style="list-style-type: none"> 1. N/A 2. N/A 3. N/A 	<ol style="list-style-type: none"> 1. N/A 2. N/A 3. N/A 	<ol style="list-style-type: none"> 1. Increases with age 2. Increases with age; N/A 3. Increases with age
Who (certified, licensed, etc.)	<ol style="list-style-type: none"> 1. Semi and annual: applicable trade certification and building maintenance worker 2. Applicable trade certification and building maintenance worker 3. N/A 	<ol style="list-style-type: none"> 1. Applicable trade certification and building maintenance worker 2. Applicable trade certification and building maintenance worker 3. N/A 	<ol style="list-style-type: none"> 1. Applicable trade certification and building maintenance worker 2. Applicable trade certification and building maintenance worker 3. Manufacturers training
Performance requirements (meets regulation or code ex. Safety codes)	<ol style="list-style-type: none"> 1. OH&S; ABSA; ASHRAE; Alberta Building Codes; 2. Alberta Building Codes; NFPA 13; CAN/ULCS-536 3. N/A 	<ol style="list-style-type: none"> 1. ABSA 2. N/A; CAN/ULCS-536 3. N/A 	<ol style="list-style-type: none"> 1. ABSA; ASHRAE; Alberta Building Codes; OH&S 2. Alberta Building Codes; OH&S; NFPA13 3. N/A
How functions are managed	<ol style="list-style-type: none"> 1. Daily walk throughs; mandated semi annual and annual inspections 2. Daily walk throughs; mandated annual inspections; 3. Daily and continuous monitoring (24/7) 	<ol style="list-style-type: none"> 1. Quarterly; Annually; weekly 2. Annual; annual draining 3. Quarterly head end PC is checked; backups made; cursory check on all points 	<ol style="list-style-type: none"> 1. SOPs; work order histories; life cycle studies 2. SOPs; work order histories; life cycle studies 3. SOPs; service reports
Existing practices	<ol style="list-style-type: none"> 1. As is: Daily walk throughs; mandated semi annual and annual inspections 2. As is: daily walk throughs; mandated annual inspections 3. Central control of one uniform system; expand capabilities in the control system 	<ol style="list-style-type: none"> 1. Increase seasonal PM on specific items; formal tracking, recording and identifying PM activities through Hansen 2. As is: Annual PM; annual draining (following code) 3. Annual individual point calibration; As is: quarterly 	<ol style="list-style-type: none"> 1. Establish component lifecycles and tie into long term infrastructure study developed by the City; expand component audits; 2. Replace components to have consistent efficiency throughout the building and be in line with environmental (conservation) best practices; as is: follow code 3. Better tracking and recording of repairs;
Recommended standards	Resources required to organize & document required inspections. Require staff to assist in conducting formal scheduled inspections. Required 1 tradesperson to plan, schedule PM programs and work.(same individual for electrical and structural)	Resources (1 Hvac tradesmen) required to carry out PM programs, and functions as per recommended standards. Resources required to manage controls and operation of buildings. Required 1 tradesperson to plan, schedule PM programs and work.(same individual for electrical and structural)	Resources (1 Hvac tradesmen) required to carry out PM programs & life cycles, and functions as per recommended standards. Resources required to record, track and organize work. (contract services)
Note: for all activities 1 tradesman and 1 Hvac tradesman required to meet service levels, 2 FTE's			
Note: For maintenance and repair in all 3 functions requires additional contract services.			
HVAC: boilers, pumps, roof top units; air compressors			
Plumbing/fire suppression: domestic hot and cold; fire suppression; not hot water heating; not boilers			
Controls: building automation systems			

Appendix 7: Service Definitions for Building Maintenance – Structural

Functions	Inspections	Preventative Maintenance	Repairs/Maintenance
Description: Structural	1. Interior		
Frequency (annual, weekly, daily, etc.)	1. N/A 2. Seasonal 3. Annually; detailed every 5 years	1. Ad hoc - depends on the aspect of the interior; 2. Seasonal 3. Seasonal	1. As needed; annual programs 2. As needed; annual programs 3. As needed; annual programs
Timing (age, when called, etc.)	1. N/A 2. N/A 3. N/A	1. Increase with frequency 2. N/A 3. N/A	1. Increases with age 2. Increases with age 3. Increases with age
Who (certified, licensed, etc.)	1. N/A 2. N/A 3. Engineer	1. Applicable trade certification and building maintenance worker 2. Applicable trade certification and building maintenance worker 3. Applicable trade certification and building maintenance worker	1. Applicable trade certification and building maintenance worker 2. Applicable trade certification and building maintenance worker 3. Applicable trade certification and building maintenance worker
Performance requirements (meets regulation or code ex. Safety codes)	1. N/A 2. N/A 3. N/A	1. N/A 2. N/A 3. N/A	1. Safety codes; meet current codes 2. Follow architectural controls 3. N/A
How functions are managed	1. Work Place Safety Inspections; daily informal walk through; staff in the location 2. Ad hoc visual inspection; staff in the location 3. Annually; detailed every 5 years	1. Depends on the aspect of the interior 2. Seasonal 3. Seasonal	1. SOPs; work order histories; life cycle studies 2. SOPs; work order histories; life cycle studies 3. SOPs; work order histories; life cycle studies
Existing practices	1. Formal inspection annually 2. Thermographic scans on brickwork 3. As is: Annually; detailed every 5 years	1. Annual PM programs (ex. Doors); 2. To be determined based on results of thermographic scans (inspection) 3. Explore technologies to extend life of the roof	1. Use new technologies (ex. carpet tile instead of broom) when replacing existing items; asset replacement programs 2. Increase annual brickwork initiative; Address unique amenities 3. Explore technologies to extend life of the roof
Recommended standards	Resources required to organize & document required inspections. Require staff to assist in conducting formal scheduled inspections. Required 1 tradesperson to plan, schedule PM programs and work.(same individual for mechanical and electrical)	Resources required to conduct annual PM programs. Required 1 tradesperson to plan, schedule PM programs and work.(same individual for mechanical and electrical) plus contract services.	Resources required to carry out required repairs as per PM program. (contract services)
Note: for all activities 1 tradesman and 1 Hvac tradesman required to meet service levels, 2 FTE's			
Note: For maintenance and repair in all 3 functions requires additional contract services.			

Appendix 7: Service Definitions for Building Maintenance – Administration

Functions	Inspections	Preventative Maintenance	Repairs/Maintenance	Contract Management
Description: Administration	1. Janitorial 2. Security			
Frequency (annual, weekly, daily, etc.)	1. Daily 2. N/A	1. N/A 2. N/A	1. N/A 2. N/A	1. Daily follow-up to ensure contract specs are met and resolve customer service requests 2. Daily report between building operator and security
Timing (age, when called, etc.)	1. N/A 2. N/A	1. N/A 2. N/A	1. N/A 2. N/A	1. N/A 2. N/A
Who (certified, licensed, etc.)	1. N/A 2. N/A	1. N/A 2. N/A	1. N/A 2. N/A	1. N/A 2. N/A
Performance requirements (meets regulation or code ex. Safety codes)	1. N/A 2. N/A	1. N/A 2. N/A	1. N/A 2. N/A	1. N/A 2. N/A
How functions are managed	1. Meet Contract Specs; Daily Inspections; Weekly meetings with area supervisor 2. Rely on building users to inform us if no security on site	1. N/A 2. N/A	1. N/A 2. N/A	1. Daily follow-up to ensure contract specs are met; resolve customer service requests; track invoicing and payment approvals; develop and renew contracts atleast annually; dispute resolution 2. Daily report; track invoicing and payment approvals; develop and renew contracts atleast annually; dispute resolution; resolve customer service
Existing practices	1. As is: Meet Contract Specs; Daily Inspections; Weekly meetings with area supervisor 2. As is: Rely on building users to inform us if no security on site	1. N/A 2. N/A	1. N/A 2. N/A	1. As is: Daily follow-up to ensure contract specs are met; resolve customer service requests; track invoicing and payment approvals; develop and renew contracts atleast annually; dispute resolution 2. As is: Daily report; track invoicing and payment approvals; develop and renew contracts atleast annually; dispute resolution; resolve customer service
Recommended standards				

APPENDIX 8: WASTEWATER COLLECTION – SERVICE DEFINITIONS AND RESOURCE REQUIREMENTS

Appendix 8: Service Definitions for Wastewater Collection – Liftstation

Functions	Inspections	Preventative Maintenance	Repairs/Rehabilitation
Description: Liftstations	General interior and exterior sight inspection; inspections of gensets	Cleaning, scraping, washing the wet wells and bar screens, pump and valve maintenance, level controller maintenance, painting	Anything that could cause an intervention of our code of practice or affects the operation of the station
Frequency (annual, weekly, daily, etc.)	3 times a week; quarterly inspections of gensets by the garage unit	Cleaning three times per week; check and flush valves monthly; load test on generator once per week; painting once per year; SCADA communications testing weekly	As required
Timing (age, when called, etc.)	After an alarm for the station then do a follow-up inspection and regularly scheduled inspections	If something noted during an inspection, if suspect something from the daily readout, or an alarm is broadcast from the station	Increases with age, prone to flooding by infiltration by storm water, high usage, constituents within the inflow, etc.
Who (certified, licensed, etc.)	One certified operator (min level 1) and another person to do the inspections	One certified operator (min level 1) and another person, must meet a competency profile	One certified operator (min level 1) and another person - may include a contractor (from approved vendor list), must meet a competency profile
Performance requirements (meets regulation or code ex. Safety codes)	Alberta Environment requires the overall operation of the liftstation be operated under a certified operator - need a level 4, level 3, and two level 2s as per their code of practice. OH&S requirements i.e., entering confined spaces and respiratory code of practice	Alberta Environment requires the overall operation of the liftstation be operated under a certified operator - need a level 4, level 3, and two level 2s as per their code of practice. OH&S requirements i.e., entering confined spaces and respiratory code of practice	Alberta Environment requires the overall operation of the liftstation be operated under a certified operator - need a level 4, level 3, and two level 2s as per their code of practice. OH&S requirements i.e., entering confined spaces and respiratory code of practice
How functions are managed	Have SOPs; O&M manuals for the stations	Have SOPs; O&M manuals for the stations and foreman direction	O&M manuals for the stations and foreman/management direction
Existing practices	Walk through three times per week; daily review of SCADA printouts; all changes and inspections are documented in a logbook at the station	Cleaning, scraping, washing the wet wells and bar screens, pump and valve maintenance, level controller maintenance, painting with frequency	As required; as needed and immediate
Recommended standards	Itemized inspection sheet with appropriate frequencies; implement new SCADA technologies; Follow O&M manual recommendations for inspections (i.e. annual inspections on electrical, mechanical, HVAC, etc.); replace manual bar screen with grinding equipment. Yearly inspection of cathodic protection.	Pump maintenance based on manufacturer recommendations (typically annual); Hansen to print out weekly work orders; electronically record all work completed in the liftstation through Hansen; Follow O&M manual recommendations (i.e. HVAC, electrical, mechanical) Mandatory Life expectancy of	Set a frequency for station maintenance audits; electronically record all work completed in the liftstation through Hansen; maintenance parts manuals and schematics on Hansen or some system (may require a computer at each station so can access the information)
Resources required:	May require additional funding in the future based on proactive inspection program. No immediate staffing requirements.	May require additional funding in the future based on proactive inspection program. No immediate staffing requirements.	May require additional funding in the future based on proactive inspection program. No immediate staffing requirements.

Notes: Earthtec report lists priorities for the next few years.

Appendix 8: Service Definitions for Wastewater Collection – Collection Maintenance

Functions	Inspections	Preventative Maintenance	Repairs/Rehabilitation
Description: Flushing, root cutting, repairs, and CCTV	Inspection of manholes to determine if there is something backing up; inspect all sewer mains in St. Albert using CCTV	Flushing, root cutting, manhole cleaning, enzyme treatment	Anything that could cause an intervention of our code of practice or affects the operation of the system
Frequency (annual, weekly, daily, etc.)	Weekly inspection of high risk manholes to determine if sewer is backing up; 10 year cycle to inspect all sewer mains in St. Albert using CCTV	All - as required; manhole checks - weekly, enzyme treatment - quarterly; flushing - semi annual, annual, bi-annual, tri annual; root cutting semi annual, annual, bi-annual	As required
Timing (age, when called, etc.)	Frequency of inspections increases based on CCTV results, multiple backups, and liability risks, if a complaint is received.	If something noted during an inspection, response to complaints, historical problems for a specific site	Increases with age, prone to flooding by infiltration by storm water, high usage, constituents within the inflow, contractor damage, etc.
Who (certified, licensed, etc.)	One certified operator (min level 1) and another person to do the inspections	One certified operator (min level 1) and another person (may include contractors), must meet a competency profile	One certified operator (min level 1) and another person - may include a contractor (from approved vendor list), must meet a competency profile
Performance requirements (meets regulation or code ex. Safety codes)	Follow NAPPI guidelines and certification; Alberta Environment requires the overall operation of the collection system be operated under a certified operator - need a level 4, level 3, and two level 2s as per their code of practice. OH&S requirements i.e., entering confined spaces and respiratory code of practice; liability insurance requirements.	Alberta Environment requires the overall operation of the collection system be operated under a certified operator - need a level 4, level 3, and two level 2s as per their code of practice. OH&S requirements i.e., entering confined spaces and respiratory code of practice.	Alberta Environment requires the overall operation of the collection system be operated under a certified operator - need a level 4, level 3, and two level 2s as per their code of practice. OH&S requirements i.e., entering confined spaces and respiratory code of practice.
How functions are managed	Have SOPs; O&M manuals for the stations and foreman direction	Have SOPs; foreman direction	Have SOPs; foreman/management direction
Existing practices	Weekly visual inspection of high risk manholes to determine if sewer is backing up; 10 year cycle to inspect all sewer mains in St. Albert using CCTV; as needed	All - as required; manhole checks - weekly, enzyme treatment - quarterly; flushing - semi annual, annual, bi-annual, tri annual; root cutting semi annual, annual, bi-annual	As required; as needed and immediate (repairs); document all repairs in Hansen
Recommended standards	Determine priorities for CCTV (semi-annual, annual, bi-annual)	Flush lines throughout the city based on a list of priorities; use herbicide to reduce root growth	Document changes to the as built documents electronically
Resources required	May require additional equipment in the future based on CCTV results. No immediate staffing requirements.	May require additional equipment in the future based on CCTV results. No immediate staffing requirements. Herbicide/ chemical treatment may require additional equipment and training.	May require additional equipment in the future based on CCTV results. No immediate staffing requirements.

Appendix 8: Service Definitions for Wastewater Collection – Sewer Services

Functions	Inspections	Preventative Maintenance	Repairs/Rehabilitation
Functions	Inspection of service lateral to determine if there is problem; inspect laterals using CCTV	Option 1 Yearly mechanical cleaning program on services that have experienced previous problem. Based on homeowner agreement. Option 2 Biannual rootex program based on homeowner agreement. Option 3 - line rehab/replacement based on homeowner agreement.	Entire service line rehab/replacement based on homeowner agreement.
Description	1) Receiving a call, as phoned in 2) As part of PM program	Option 1 Yearly mechanical cleaning program on services that have experienced previous problem. Based on homeowner agreement. Option 2 Biannual rootex program based on homeowner agreement. Option 3 based on homeowner agreement.	Reviewed on an annual bases , as agreed to with homeowner and as budget allows.
Frequency (annual, weekly, daily, etc.)	Frequency increases with age and type pipe material.	Frequency increases with age and type pipe material.	Frequency increases with age and type pipe material severity and reoccurring problems.
Timing (age, when called, etc.)	One certified operator or another person to do the inspections	Minimum 2 laborer (may include contractors), must meet a competency profile	City staff and or contractor. City Staff supervising - level 2 min.
Who (certified, licensed, etc.)	Liability insurance requirements, environmental/Public Health	Liability insurance requirements, environmental/Public Health	Alberta Safety Codes
Performance requirements (meets regulation or code ex. Safety codes)	Have SOPs; O&M manuals for equipment, part of EMS, records and filing system.	Have SOPs; O&M manuals for equipment, part of EMS, records and filing system.	Have SOPs; O&M manuals for equipment, part of EMS, records and filing system.
How functions are managed	1) receiving a call, as phoned in 2) as part of PM program	Coordinate PM practices with homeowner and schedule appointments.	Coordinate rehab/replacement with contractor and homeowner and schedule appointments. 85 per year goal is 100.
Existing practices	Clarification on commercial/industrial	Clarification on commercial/industrial. Establish 10% on maximum failure rate biannually.	Rehab/replace all requested services within a 2 year period.
Recommended standards	May require additional equipment in the future based on increased problems with tree roots. No immediate staffing requirements. Commercial/Industrial Service levels if changed may require additional resources. ACRWC sample for overstrenght wastewater for commercial/Industrial may require resources.	No immediate staffing / equipment resource requirements.	May require additional equipment in the future based on CCTV results. No immediate staffing requirements. Contractor funding for replacing backlog services is required for at least 3 years. Presently replace approx. 80/year split evenly 40 Operating / 40 capital. Backlog is 340. Backlog through capital. Increase operating to prevent future backlog another



Public Works Long Term Plan

Appendix 8: Resource Requirements for Wastewater Collection

Description	KM or #S	Current FTEs	Total FTEs per 10 KM per building 100 services	Staffing \$ per building	Staffing\$ per KM per building service	Current Equipment	Total Equip./ KM	Contract Services	Contract\$ per KM per building services	2008 Budgeted Maint (\$)	Total \$ per KM per building per service	Additional \$ Staffing Required	Additional Equipment Required	Contract Services	Total Required Budget	Budget Shortfall	Total \$ -per KM -per building -per service
Collection System - Preventive Maintenance & Repairs/Rehab	290	4.50	0.16	\$379,150	\$1,307	\$95,880	\$331	\$89,950	\$310	\$564,980	\$1,948	\$0	\$0	\$0	\$564,980	\$0	\$1,948
Lift Stations - Preventive Maintenance & Repairs/Rehab	8	2.00	2.50	\$43,900	\$5,488	\$12,000	\$1,500	\$3,500	\$438	\$59,400	\$7,425	\$0	\$0	\$0	\$59,400	\$0	\$7,425
Services - Preventive Maintenance & Repairs/Rehab	19,000	4.50	0.02	\$379,150	\$20	\$63,920	\$3	\$167,050	\$9	\$610,120	\$32	\$0	\$0	\$80,000	\$690,120	\$80,000	\$36
Total		11.00		\$802,200		\$171,800	\$1,834	\$260,500		\$1,234,500		\$0	\$0	\$80,000	\$1,314,500	\$80,000	



Public Works Long Term Plan

APPENDIX 9: FLEET MAINTENANCE – SERVICE DEFINITIONS AND RESOURCE REQUIREMENTS

Appendix 9: Service Definitions for Fleet Maintenance

Functions	Inspections/Preventative Maintenance	Running Repairs	Welding and Fabrication	Equipment Servicing	Capital Replacement and Disposal
Description	Scheduled inspections and manufacturers recommended elements to be inspected on a routine basis (varies by vehicle)	Operations generated repairs - such as road calls, tires, towing, lighting, abnormal use, miscellaneous component failures	Support service to the fleet maintenance area as well as other areas in PW. Have a mobile service.	Operations generated repairs for small engine and air cooling equipment such as mowers, tampers, weed eaters, etc.	Set up new vehicles and dispose of old ones. Monitor vehicle condition and make recommendations for replacement.
Frequency (annual, weekly, daily, etc.)	Every vehicle is inspected at minimum annually but varies based on use and legislative programs (such as ambulances, dump trucks, etc)	Continuous based on customer driven requirements and programs (ie, blade replacements, brooms, etc.), as needed	Continuously as required	Continuous based on customer driven requirements and programs (ie, summer turf programs), as needed	Based on predetermined life cycle
Timing (age, when called, etc.)	Some are seasonal - so before the season starts we ensure all vehicles are ready (inspected off-season).	Does increase as asset gets older	Seasonal requirements (ex.in winter will need to weld hockey nets)	Does increase as asset gets older	Based on predetermined life cycle
Who (certified, licensed, etc.)	Licensed mechanic; as required we hold additional certifications within Alberta Health and Wellness for ambulances; CVIP; etc.	Depends on the repair - some require a licensed mechanic and others are non-licensed service staff	Licensed welding technician	Does not require a trade - we use licensed small engine technicians and trained service staff	Involves everyone in the shop
Performance requirements (meets regulation or code ex. Safety codes)	Complete all elements in the inspection form and record metrics which determine additional work required	Task and component requirements and industry determined turnaround time standards	Element of safety attached to all tasks based on the risk of failure of the component	Task and component requirements and industry determined turnaround time standards	Cost effectiveness and uniqueness of task (ie. Fire trucks)
How functions are managed	Vehicle usage is monitored by the fleet controller who in turn schedules work internally and externally based on available resources and meeting legislated guidelines.	Initial diagnostics completed in a quick service bay and dependent upon magnitude of the repair and availability of parts, the fleet controller will schedule the repair. Specialty Repairs are contracted out (ex. glass, air conditioning, body work, etc.)	Complete base repairs and minor fabrications	Customers drop off the equipment at our drop off centre and seasonal overhaul programs	We replace the vehicle based on its pre-determined life cycle
Existing practices	AS-IS plus: Ongoing review and improvement of the inspection forms. Improve staff training to diagnose and repair problems. Improve usage reporting.	Improve diagnostic and shop equipment. Improve staff training to diagnose and repair problems.	Enhance tooling to improve overall efficiencies	Improve diagnostic and shop equipment. Improve staff training to diagnose and repair problems.	Perform an ongoing review of life cycles to optimize the life of the vehicle - address units/vehicles that require a different life based on its actual use. Improve equipment inventories and expand the replacement fund to include a broader range of major attachments. Improve usage reporting.
Recommended standards	If operations grows then fleet and maintenance may need to grow. Determine what the tie is from fleet requirements to operational requirements.				

Appendix 9: Resource Requirements for Fleet Maintenance

Department	Unit ID	Vehicle Type	Life (Yrs)	Year Purchased	Year Replace	Remaining Life	Replace Price
BUS & TOURISM	41-87	Car	10	2007	2017	8	\$17,000
C & P SERVICES	43-x1	1/2 Ton	10	2009	2019	10	\$27,000
CORP SERVICES	41-84	Station Wagon	10	2006	2016	7	\$23,000
ENGINEERING	43-x2	1/2 Ton	10	2009	2019	10	\$27,000
ENGINEERING	43-61	1/2 Ton	10	2002	2012	3	\$27,000
ENGINEERING	41-83	Car	10	2002	2012	3	\$25,000
FIRE SERVICES	42-33	Ambulance	8	2003	2011	2	\$180,000
FIRE SERVICES	42-34	Ambulance	8	2003	2011	2	\$180,000
FIRE SERVICES	42-37	Ambulance	7	2005	2012	3	\$180,000
FIRE SERVICES	42-42	Ambulance	9	2008	2017	8	\$160,000
FIRE SERVICES	42-26	Ambulance	9	1998	2007	-2	\$180,000
FIRE SERVICES	43-68	1/2 Ton	10	2007	2017	8	\$35,000
FIRE SERVICES	43-70	1/2 Ton	10	2008	2018	9	\$27,000
FIRE SERVICES	43-50	1/2 Ton	8	1999	2007	-2	\$27,000
FIRE SERVICES	43-52	1/2 Ton	8	2000	2008	-1	\$27,000
FIRE SERVICES	49-x1	Aerial Ladder	20	2008	2028	19	\$1,150,000
FIRE SERVICES	49-x2	Pumper	16	2008	2024	15	\$550,000
FIRE SERVICES	49-09	Pumper	15	1995	2010	1	\$550,000
FIRE SERVICES	49-10	Pumper	15	2004	2019	10	\$550,000
FIRE SERVICES	49-13	Pumper	15	2008	2023	14	\$550,000
FIRE SERVICES	49-08	Pumper	15	1993	2008	-1	\$550,000
FIRE SERVICES	49-12	Rescue	15	2007	2022	13	\$235,000
FIRE SERVICES	49-11	Tanker	20	2007	2027	18	\$287,000
FIRE SERVICES	42-38	Van	10	2007	2017	8	\$26,000
POLICE SERVICES	41-81	Car	8	2002	2010	1	\$30,000
POLICE SERVICES	41-82	Car	8	2002	2010	1	\$30,000
POLICE SERVICES	41-85	Car	8	2007	2015	6	\$30,000
POLICE SERVICES	41-86	Car	8	2007	2015	6	\$30,000
POLICE SERVICES	41-88	Car	8	2009	2017	8	\$30,000
POLICE SERVICES	41-89	Car	8	2009	2017	8	\$30,000
POLICE SERVICES	43-63	Compact Truck	10	2003	2013	4	\$30,000
POLICE SERVICES	43-51	Compact Truck	8	2000	2008	-1	\$30,000
POLICE SERVICES	51-62	Snow mobile	12	2001	2013	4	\$10,000
POLICE SERVICES	51-80	Snow mobile	10	2007	2017	8	\$10,000
PUBLIC WORKS	43-60	1/2 Ton	10	2002	2012	3	\$27,000
PUBLIC WORKS	43-67	1/2 Ton	10	2004	2014	5	\$27,000
PUBLIC WORKS	43-49	1/2 Ton	10	1997	2007	-2	\$27,000
PUBLIC WORKS	44-63	3/4 Ton	10	2009	2019	10	\$33,000
PUBLIC WORKS	44-51	3/4 Ton	10	1999	2009	0	\$33,000
PUBLIC WORKS	42-31	Van	10	2002	2012	3	\$26,000
PUBLIC WORKS	42-32	Van	10	2002	2012	3	\$26,000
PUBLIC WORKS	42-36	Van	10	2004	2014	5	\$26,000
PUBLIC WORKS	42-43	Van	10	2009	2019	10	\$26,000
PUBLIC WORKS	42-28	Van	10	1999	2009	0	\$26,000
PUBLIC WORKS	43-53	1/2 Ton	12	1999	2011	2	\$35,000
PUBLIC WORKS	46-04	2 Ton	15	2007	2022	13	\$56,000
PUBLIC WORKS	45-17	2 Ton	12	1995	2007	-2	\$27,000
PUBLIC WORKS	44-61	3/4 Ton	9	2008	2017	8	\$33,000
PUBLIC WORKS	51-57	Forklift	20	1998	2018	9	\$37,000
PUBLIC WORKS	45-19	1 Ton	10	1999	2009	0	\$42,000
PUBLIC WORKS	45-21	1 Ton	8	2002	2010	1	\$42,000
PUBLIC WORKS	45-24	1 Ton	9	2000	2009	0	\$42,000
PUBLIC WORKS	45-32	1 Ton	8	2007	2015	6	\$42,000
PUBLIC WORKS	45-34	1 Ton	10	2008	2018	9	\$45,000
PUBLIC WORKS	42-25	1 Ton	8	1994	2002	-7	\$42,000
PUBLIC WORKS	45-22	1 Ton	10	1994	2004	-5	\$42,000
PUBLIC WORKS	45-23	1 Ton	8	2000	2008	-1	\$42,000
PUBLIC WORKS	45-25	1 Ton	10	1998	2008	-1	\$42,000
PUBLIC WORKS	43-57	1/2 Ton	10	2001	2011	2	\$27,000
PUBLIC WORKS	43-69	1/2 Ton	10	2007	2017	8	\$27,000
PUBLIC WORKS	43-71	1/2 Ton	10	2008	2018	9	\$27,000
PUBLIC WORKS	43-72	1/2 Ton	10	2008	2018	9	\$27,000
PUBLIC WORKS	43-54	1/2 Ton	9	1999	2008	-1	\$27,000
PUBLIC WORKS	43-55	1/2 Ton	8	1998	2006	-3	\$27,000
PUBLIC WORKS	43-58	1/2 Ton	8	2000	2008	-1	\$0
PUBLIC WORKS	46-01	2 Ton	10	2006	2016	7	\$56,000
PUBLIC WORKS	47-x1	3 Ton	12	2008	2020	11	\$126,000
PUBLIC WORKS	47-26	3 Ton	10	2001	2011	2	\$135,000
PUBLIC WORKS	47-32	3 Ton	15	2008	2023	14	\$126,000
PUBLIC WORKS	47-20	3 Ton	16	1991	2007	-2	\$126,000
PUBLIC WORKS	47-23	3 Ton	12	1995	2007	-2	\$126,000
PUBLIC WORKS	44-56	3/4 Ton	8	2006	2014	5	\$33,000
PUBLIC WORKS	44-58	3/4 Ton	8	2006	2014	5	\$33,000
PUBLIC WORKS	44-59	3/4 Ton	8	2007	2015	6	\$33,000
PUBLIC WORKS	44-60	3/4 Ton	8	2007	2015	6	\$33,000
PUBLIC WORKS	44-46	3/4 Ton	10	1997	2007	-2	\$33,000
PUBLIC WORKS	44-48	3/4 Ton	8	1998	2006	-3	\$33,000
PUBLIC WORKS	44-49	3/4 Ton	1				\$33,000
PUBLIC WORKS	50-48	Aerial Lift	12	1995	2007	-2	\$126,000
PUBLIC WORKS	51-54	ATV Utility	16	1997	2013	4	\$33,000
PUBLIC WORKS	51-70	ATV Utility	10	2005	2015	6	\$15,000
PUBLIC WORKS	51-78	ATV Utility	10	2007	2017	8	\$15,000
PUBLIC WORKS	51-79	ATV Utility	10	2007	2017	8	\$15,000
PUBLIC WORKS	51-64	Bombardier	8	2003	2011	2	\$113,000
PUBLIC WORKS	50-65	Brush Chipper	10	2002	2012	3	\$41,000
PUBLIC WORKS	50-66	Brush Chipper	10	2002	2012	3	\$41,000
PUBLIC WORKS	43-73	Compact Truck	8	2008	2016	7	\$21,000
PUBLIC WORKS	43-74	Compact Truck	8	2008	2016	7	\$21,000
PUBLIC WORKS	51-69	Ice Resurfacer	8	2004	2012	3	\$100,000
PUBLIC WORKS	51-72	Ice Resurfacer	8	2006	2014	5	\$100,000
PUBLIC WORKS	51-75	Ice Resurfacer	8	2007	2015	6	\$100,000
PUBLIC WORKS	51-56	Ice Resurfacer	7	1998	2005	-4	\$100,000
PUBLIC WORKS	52-16	Mow er 50"	9	2000	2009	0	\$10,000
PUBLIC WORKS	52-17	Mow er 50"	9	2000	2009	0	\$10,000
PUBLIC WORKS	52-27	Mow er 72"	5	2005	2010	1	\$36,000
PUBLIC WORKS	52-28	Mow er 72"	5	2005	2010	1	\$36,000
PUBLIC WORKS	52-29	Mow er 72"	5	2005	2010	1	\$36,000
PUBLIC WORKS	52-30	Mow er 72"	5	2005	2010	1	\$36,000
PUBLIC WORKS	52-31	Mow er 72"	5	2006	2011	2	\$36,000
PUBLIC WORKS	52-32	Mow er 72"	5	2006	2011	2	\$36,000
PUBLIC WORKS	52-33	Mow er 72"	5	2006	2011	2	\$36,000
PUBLIC WORKS	52-34	Mow er 72"	5	2006	2011	2	\$36,000
PUBLIC WORKS	52-35	Mow er 72"	5	2006	2011	2	\$36,000
PUBLIC WORKS	52-38	Mow er 72"	5	2009	2014	5	\$33,000
PUBLIC WORKS	52-39	Mow er 72"	5	2009	2014	5	\$33,000
PUBLIC WORKS	52-40	Mow er 72"	5	2009	2014	5	\$33,000

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Department	Unit ID	Vehicle Type	Life (Yrs)	Year Purchased	Year Replace	Remaining Life	Replace Price
PUBLIC WORKS	52-41	Mow er 72"	5	2009	2014	5	\$33,000
PUBLIC WORKS	52-24	Mow er 72"	5	2004	2009	0	\$36,000
PUBLIC WORKS	52-25	Mow er 72"	5	2004	2009	0	\$36,000
PUBLIC WORKS	52-26	Mow er 72"	5	2004	2009	0	\$36,000
PUBLIC WORKS	52-14	Mow er 72"	1				\$36,000
PUBLIC WORKS	52-15	Mow er 72"	1				\$36,000
PUBLIC WORKS	52-20	Mow er Wide Area	7	2003	2010	1	\$95,000
PUBLIC WORKS	52-23	Mow er Wide Area	7	2004	2011	2	\$95,000
PUBLIC WORKS	52-36	Mow er Wide Area	7	2007	2014	5	\$95,000
PUBLIC WORKS	52-37	Mow er Wide Area	7	2009	2016	7	\$95,000
PUBLIC WORKS	52-18	Mow er Wide Area	7	2002	2009	0	\$95,000
PUBLIC WORKS	52-03	Mow er Wide Area	1				\$95,000
PUBLIC WORKS	50-56	Rotary Cutter	15	1999	2014	5	\$12,000
PUBLIC WORKS	50-33	Shedder Mixer	25	1987	2012	3	\$30,000
PUBLIC WORKS	51-58	Skid-Steer	10	1999	2009	0	\$55,000
PUBLIC WORKS	51-66	Skid-Steer	10	2004	2014	5	\$41,000
PUBLIC WORKS	50-69	Skid-Steer Attacment	15	2004	2019	10	\$12,000
PUBLIC WORKS	51-63	Tractor	10	2002	2012	3	\$115,000
PUBLIC WORKS	51-73	Tractor	10	2006	2016	7	\$50,000
PUBLIC WORKS	51-74	Tractor	10	2006	2016	7	\$50,000
PUBLIC WORKS	51-76	Tractor	10	2007	2017	8	\$50,000
PUBLIC WORKS	51-59	Tractor w Loader	15	1999	2014	5	\$70,000
PUBLIC WORKS	51-68	Tractor w Loader	10	2004	2014	5	\$35,000
PUBLIC WORKS	56-x1	Trailer	10	2009	2019	10	\$12,000
PUBLIC WORKS	56-x2	Trailer	10	2009	2019	10	\$12,000
PUBLIC WORKS	56-x3	Trailer	10	2009	2019	10	\$12,000
PUBLIC WORKS	50-62	Tree Spade	15	2001	2016	7	\$44,000
PUBLIC WORKS	50-57	Tuff Vac	20	1999	2019	10	\$18,000
PUBLIC WORKS	48-30	Refuse Truck	12	2000	2012	3	\$110,000
PUBLIC WORKS	48-31	Refuse Truck	12	2000	2012	3	\$110,000
PUBLIC WORKS	48-32	Refuse Truck	12	2000	2012	3	\$110,000
PUBLIC WORKS	48-33	Refuse Truck	10	2003	2013	4	\$75,000
PUBLIC WORKS	48-34	Refuse Truck	10	2005	2015	6	\$110,000
PUBLIC WORKS	48-29	Refuse Truck	10	1996	2006	-3	\$110,000
PUBLIC WORKS	42-29	Van	8	2000	2008	-1	\$26,000
PUBLIC WORKS	45-20	1 Ton	8	2002	2010	1	\$42,000
PUBLIC WORKS	45-28	1 Ton	8	2004	2012	3	\$42,000
PUBLIC WORKS	45-29	1 Ton	8	2004	2012	3	\$42,000
PUBLIC WORKS	45-31	1 Ton	8	2006	2014	5	\$42,000
PUBLIC WORKS	45-14	1 Ton	8	1994	2002	-7	\$42,000
PUBLIC WORKS	43-62	1/2 Ton	10	2002	2012	3	\$27,000
PUBLIC WORKS	43-65	1/2 Ton	10	2004	2014	5	\$27,000
PUBLIC WORKS	43-44	1/2 Ton	8	1995	2003	-6	\$27,000
PUBLIC WORKS	43-46	1/2 Ton	8	1995	2003	-6	\$27,000
PUBLIC WORKS	47-27	3 Ton	12	2002	2014	5	\$71,000
PUBLIC WORKS	44-53	3/4 Ton	8	2002	2010	1	\$33,000
PUBLIC WORKS	44-55	3/4 Ton	8	2004	2012	3	\$33,000
PUBLIC WORKS	44-57	3/4 Ton	8	2006	2014	5	\$33,000
PUBLIC WORKS	44-44	3/4 Ton	8	1996	2004	-5	\$33,000
PUBLIC WORKS	44-47	3/4 Ton	10				\$33,000
PUBLIC WORKS	50-43	Air Compressor	20	1993	2013	4	\$15,000
PUBLIC WORKS	51-43	Asphalt Compactor	20	1992	2012	3	\$40,000
PUBLIC WORKS	50-51	Asphalt Mixer	20	1998	2018	9	\$23,000
PUBLIC WORKS	50-85	Asphalt Spray Injector	10	2006	2016	7	\$80,000
PUBLIC WORKS	50-54	Concrete Grinder	10	1999	2009	0	\$14,000
PUBLIC WORKS	51-82	Grader	8	2009	2017	8	\$250,000
PUBLIC WORKS	50-58	Gravel Pump	10	2000	2010	1	\$20,000
PUBLIC WORKS	56-x4	Hog Broom	10	2009	2019	10	\$15,000
PUBLIC WORKS	56-x5	Hog Broom	10	2010	2020	11	\$15,000
PUBLIC WORKS	51-61	Loader	12	2001	2013	4	\$190,000
PUBLIC WORKS	51-77	Loader	12	2007	2019	10	\$170,000
PUBLIC WORKS	51-48	Loader	14	1993	2007	-2	\$170,000
PUBLIC WORKS	50-29	Mixer	1				\$30
PUBLIC WORKS	50-50	Sander	12	1997	2009	0	\$40,000
PUBLIC WORKS	50-59	Sander	10	2000	2010	1	\$31,000
PUBLIC WORKS	50-63	Sander	10	2001	2011	2	\$33,000
PUBLIC WORKS	50-64	Sander	10				\$33,000
PUBLIC WORKS	51-65	Skid-Steer	10	2004	2014	5	\$41,000
PUBLIC WORKS	51-67	Skid-Steer	10	2004	2014	5	\$41,000
PUBLIC WORKS	50-52	Skid-Steer Attacment	12	1998	2010	1	\$16,000
PUBLIC WORKS	50-68	Skid-Steer Attacment	15	2004	2019	10	\$16,000
PUBLIC WORKS	50-40	Snow blow er	20	1991	2011	2	\$85,000
PUBLIC WORKS	46-02	Sw eeper	15	2006	2021	12	\$40,000
PUBLIC WORKS	46-03	Sw eeper	15	2007	2022	13	\$234,000
PUBLIC WORKS	47-24	Tandem	11	1998	2009	0	\$190,000
PUBLIC WORKS	47-25	Tandem	9	2001	2010	1	\$135,000
PUBLIC WORKS	47-28	Tandem	9	2002	2011	2	\$135,000
PUBLIC WORKS	47-30	Tandem	9	2006	2015	6	\$155,000
PUBLIC WORKS	47-31	Tandem	9	2007	2016	7	\$270,000
PUBLIC WORKS	47-13	Tandem	12	1988	2000	-9	\$135,000
PUBLIC WORKS	45-18	1 Ton	10	1999	2009	0	\$42,000
PUBLIC WORKS	45-26	1 Ton	8	2002	2010	1	\$51,000
PUBLIC WORKS	45-27	1 Ton	8	2002	2010	1	\$51,000
PUBLIC WORKS	45-33	1 Ton	8	2008	2016	7	\$65,000
PUBLIC WORKS	45-30	1 Ton	8				\$42,000
PUBLIC WORKS	43-64	1/2 Ton	10	2004	2014	5	\$27,000
PUBLIC WORKS	43-66	1/2 Ton	10	2004	2014	5	\$27,000
PUBLIC WORKS	43-45	1/2 Ton	8	1995	2003	-6	\$27,000
PUBLIC WORKS	44-52	3/4 Ton	8	2002	2010	1	\$33,000
PUBLIC WORKS	44-54	3/4 Ton	8	2003	2011	2	\$33,000
PUBLIC WORKS	44-62	3/4 Ton	8	2009	2017	8	\$33,000
PUBLIC WORKS	44-43	3/4 Ton	8	1996	2004	-5	\$33,000
PUBLIC WORKS	51-71	Backhoe	10	2005	2015	6	\$90,000
PUBLIC WORKS	43-47	Compact Truck	8	1995	2003	-6	\$12,000
PUBLIC WORKS	47-33	Flusher / Vac Truck C	14	2008	2022	13	\$350,000
PUBLIC WORKS	50-87	Pressure Washer	10	2007	2017	8	\$30,000
PUBLIC WORKS	47-29	Tandem	10	2002	2012	3	\$120,000
PUBLIC WORKS	42-xx	Van	10	2009	2019	10	\$26,000
PUBLIC WORKS	42-35	Van	10	2004	2014	5	\$26,000
PUBLIC WORKS	42-39	Van	10	2007	2017	8	\$26,000
PUBLIC WORKS	42-40	Van	8	2007	2015	6	\$26,000
PUBLIC WORKS	42-27	Van	8	1999	2007	-2	\$26,000
SERVUS	43-56	1/2 Ton	8	1999	2007	-2	\$27,000
SERVUS	51-81	Forklift	20	2006	2026	17	\$37,000
TRANSIT	43-59	1/2 Ton	10	2002	2012	3	\$27,000
TRANSIT	42-30	Van	10	2002	2012	3	\$26,000
TRANSIT	42-41	Van	8	2008	2016	7	\$26,000
Total							\$15,645,030

APPENDIX 10: COMPLETE LIST OF PUBLIC WORKS SERVICES

Asset Management Branch

The Asset Management Branch provides the following services:

- 1) Fleet
 - a. Maintenance
 - vehicles
 - small equipment
 - heavy equipment
 - other city assets (gensets)
 - b. Capital Replacement
- 2) Stores / Inventory
 - a. Procurement
 - b. Warehousing
- 3) Building Maintenance & Facilities
 - a. Facility Maintenance
 - electrical
 - structural
 - plumbing
 - general maintenance
 - b. Playgrounds
 - inspection
 - repair
 - c. Other Assets
 - park furniture
 - d. Security
 - e. Janitorial

Operations Branch

The Operations Branch provides the following services:

- 1) Transportation
 - a. Road Main
 - asphalt
 - crack filling (contract)
 - pothole maintenance
 - street sweeping & flushing
 - b. Sidewalks / Curbs
 - sidewalk replacement & maintenance
 - mud-jacking
 - concrete
 - c. Country Roads
 - dust control & maintenance
 - d. Snow & Ice Control
 - snow removal (roads)
 - plowing
 - removal
 - snow storage
 - salting & sanding
 - parking lots
 - e. Traffic & Street Signs
 - f. Spring Clean-Up
- 2) Solid Waste
 - a. Refuse Collection
 - b. Refuse Disposal
 - c. Compost Yard
 - d. Recycle
 - e. Special Programs
 - Take It or Leave It
 - Christmas Trees
 - a. Electronic Recycle
- 3) Parks
 - a. Arena Operation
 - ice maintenance (cleaning & flooding)
 - janitorial
 - off-season maintenance & use
 - customer service
 - building maintenance
 - b. Trees
 - Planting, watering & removal
 - structural maintenance (pruning & growth control)

Parks Continued

- pest control
- nursery
- shrubs
- festive lighting
- c. Turf Maintenance (biggest: especially in terms of staff)
 - litter control
 - aerate, cut, fertilize & dethatch (take away dead grass)
 - landscape
 - cemetery
 - green-space/ sports-field/ manicured/ natural grass
- d. Sports Facilities
 - baseball parks/ football & soccer fields/ tennis courts/ skateboard parks
 - Fowler Track
 - water parks / pools
- e. Winter Operations
 - outdoor ice surfaces (parks, patios, rinks)
 - snow removal
 - sidewalk & trail clearance
 - bus stops & terminals/ parking lots
 - litter control
- f. Special Event Support

Utilities Branch

The Utilities Branch provides the following services:

- | | |
|---|---|
| <p>1) Water</p> <ul style="list-style-type: none">a. Pump-house & Reservoirs<ul style="list-style-type: none">- maintenance (very time dependent)- cleaning- upgrades / efficiencies- inspectionsb. Distribution Maintenance<ul style="list-style-type: none">- major & minor repairs- preventative maintenance (P.M. Programs)- unidirectional flushing- product replacement & repair- infrastructure replacement & repair- hydrant operations (pressure testing) | <p>2) Wastewater</p> <ul style="list-style-type: none">a. Lift Stations<ul style="list-style-type: none">- maintenance (very time dependent)- cleaning- upgrades / efficiencies- inspections- building maintenance (specific & contracted services)b. Collection Maintenance<ul style="list-style-type: none">- flushing- root cutting- major & minor repairs- P.M. Programs- C.C.T.V. (inspection of sewer lines with robot-camera) |
|---|---|

Water Continued

c. Services / Meters

- new meter installations
- replacements & services
- types of meters
 - reading capability (radio/
touchpad/ no-read)
- service calls
- construction water

3) Storm-water

a. Lift Stations

- maintenance (very time dependent)
- cleaning
- upgrades / efficiencies
- inspections

b. Collection Maintenance

- flushing
- root cutting
- major & minor repairs
- P.M. Programs
- C.C.T.V. (inspection of sewer lines
with robot-camera)

Wastewater Continued

c. Sewer Services

- repairs and/or replacement (done by city &
by contract)
- general maintenance
- service calls
- new installations
- P.M. root control / chemical cleaning

c. Outfalls

- cleaning
- maintenance
- rehabilitations

d. Storm-water Management Facilities

- aerate with pumps
- testing water quality
- environmental protection
 - leaks / requirements / regulations /
legislation



APPENDIX 11: LONG TERM PLAN COMMITTEE AND TEAM MEMBERS

The following individuals were on the Long Term Plan Committee:

Glenn Tompolski, Director of Public Works
Bob Stephen, Operations Manager
Dan Rites, Utility Manager
Doug Todd, Asset Management Manager
Jennifer Jennax, Manager of Corporate Planning

The following individuals were on the Long Term Plan Working Team:

Glenn Tompolski, Director of Public Works
Jennifer Jennax, Manager of Corporate Planning
Blair Roy, Utilities Branch
Brett Macdonald, Utilities Branch
Chris Richards, Asset Management Branch
Darrell Symboluk, Operations Branch
David Graham, Operations Branch
Derek Dallardo, Operations Branch
Derek Merchant, Operations Branch
Derek Benson, Operations Branch
Dwayne Sopiwnyk, Operations Branch
Greg Grueber, Utilities Branch
Ian Lensink, Operations Branch
Ivan Kieser, Asset Management Branch
Jason Eddleston, Operations Branch
Kevin Veenstra, Operations Branch
Leonard Sarnosky, Asset Management Branch
Lynn Ness, Operations Branch
Mike Jones, Operations Branch
Scott Stanley, Operations Branch
Steve Schlese, Operations Branch
Umesh Chand, Operations Branch

The following individuals provided critical support and resources to this project:

Bob Treidler, General Manager, Business & Strategic Services
Don Corrigan, Director of Public Works (past)
Guy Boston, General Manager, Planning & Engineering Services (past)
Neil Jamieson, General Manager, Planning & Engineering Services
Paul Shields, Health and Safety Coordinator
Phil Dixon, Infrastructure Manager (past)



APPENDIX 12: ENVIRONMENTAL ASSESSMENT (SWOT ANALYSIS)

The Long Term Plan working team identified the following Strengths, Weaknesses, Opportunities and Threats (SWOT). PW will strive to build on these strengths, address weaknesses, maximize its response to opportunities, and overcome any threats that will be encountered in the future.

INTERNAL QUALITIES	
Strengths	Weaknesses
<p>Our structure provides a foundation for planning and adaptability to change</p> <ul style="list-style-type: none"> Organizational structure provides a foundation for succession planning Organizationally and operationally we are adaptable to change and implement innovations 	<p>We tend to be reactive</p> <ul style="list-style-type: none"> As an organization we tend to over-respond to customer complaints We manage our aging infrastructure through reactive planning
<p>Our employees are well trained and productive</p> <ul style="list-style-type: none"> Productive and experienced staff Do some cross training Flexibility for work assignments (we help each other) Formal training is provided to staff 	<p>We lack standards and policies</p> <ul style="list-style-type: none"> Lack of defined service standards (i.e. residential snow clearing and road maintenance) Do not have council approved departmental policies
<p>Our employees take pride in their work</p> <ul style="list-style-type: none"> Ownership and pride in our work Staff care about what they do 	<p>Overall staff have less experience</p> <ul style="list-style-type: none"> Aging workforce Lack of succession planning Insufficient supervisory training
<p>We care about the community</p> <ul style="list-style-type: none"> We get a lot of feedback on customer service and document positive feedback We work with a lot of community groups High customer service standards Strong focus on environmental impacts 	<p>We require more resources</p> <ul style="list-style-type: none"> Availability of human resources External access to material (i.e. concrete and equipment) Lack of resources to meet growth (growing population, growing number of kMs, etc.) Can not do enough quality control over contractors
<p>We have great IT systems</p> <ul style="list-style-type: none"> PWIS is a great system Investment in IT (HANSEN) 	<p>Information and data is not managed effectively</p> <ul style="list-style-type: none"> Information and data management processes are redundant Data and information is difficult to pull out to substantiate budget requests HANSEN is not used to its potential
<p>We have modern resources and programs</p> <ul style="list-style-type: none"> Equipment, material and resources are up to date We have a great Health and Safety program Working towards standards (i.e. signs) 	<p>We do not have land available for operational uses</p> <ul style="list-style-type: none"> No yard storage site Location of PW yards No snow storage site No compost site No tree nursery site No clay storage site
<p>Corporate communications is positive</p> <ul style="list-style-type: none"> Employee forums 	<p>We are not involved soon enough</p> <ul style="list-style-type: none"> Lack of PW input in FAC from developers, criteria Our level of input into planning, design, construction
<p>We have a positive union/management relationship</p> <ul style="list-style-type: none"> Employees are involved in developing programs 	<p>Communication needs to improve</p> <ul style="list-style-type: none"> Lack of public awareness and education Departmental communication in some areas



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EXTERNAL IMPACTS	
Opportunities	Threats
<p>Hire more staff related to Servus Place</p> <ul style="list-style-type: none"> Hiring of internal positions Utilizing new positions to fill gaps that contractors are not meeting in other areas of operation. 	<p>Alberta's economy is hot</p> <ul style="list-style-type: none"> Reduces availability and quality of contracted services Losing our employees to other organizations Upgraders may cause unmanageable growth
<p>Opportunities exist to be more proactive members of regional and provincial boards & committees</p> <ul style="list-style-type: none"> To be a step ahead of any changes 	<p>Changes to legislation and regulations</p> <ul style="list-style-type: none"> Need to catch up to the changes OH&S legislation and regulations
<p>There are greater opportunities to partner</p> <ul style="list-style-type: none"> Partner with other communities to share equipment and purchasing power Partner with NAIT and community colleges for specialized training 	<p>Regional climate could change</p> <ul style="list-style-type: none"> Regionalization Risk of being annexed EPCOR may want to take over utilities
<p>Growing understanding that departments need to work together</p> <ul style="list-style-type: none"> Use Office of the Environment more Work more closely with Engineering to develop standards 	<p>Environmental practices</p> <ul style="list-style-type: none"> Mandated pressures Political pressures
<p>It's a good time to evaluate solid waste management</p> <ul style="list-style-type: none"> Running out of landfill space Eco station in St. Albert? 	<p>Risk Management</p> <ul style="list-style-type: none"> Liability against the City for type of services we provide
<p>Revenue opportunities</p> <ul style="list-style-type: none"> Shredded dirt in the annexed area 	<p>Escalating costs</p> <ul style="list-style-type: none"> Insurance Utilities Contractors Materials Fuel
<p>Better technologies exist</p> <ul style="list-style-type: none"> Expand use of GIS/AVL technology In the field data input Software that works with current IT applications CCTV and Hansen working together Watch for new technologies becoming available due to the "Upgraders" Leak detection hardware and software Environmentally friendly equipment and vehicles 	<p>Catastrophic events</p> <ul style="list-style-type: none"> Contamination of our water Major accidents Pandemics Terrorism/security Weather pattern changes Global Warming Natural disasters Record snowfalls
<p>Opportunity to create more accountability with community groups</p> <ul style="list-style-type: none"> Includes review of agreements Public Education through: <ul style="list-style-type: none"> News stories Website 	<p>Public and community groups expectations are increasing</p> <ul style="list-style-type: none"> Expect higher service levels Increased customer service



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INTERNAL QUALITIES	
Strengths	Weaknesses
	<p>Changing demographics</p> <ul style="list-style-type: none">• Cost of living is increasing so seniors may not be able to afford living here• Seniors may require higher service standards (i.e. sidewalk clearing, faster snow removal so more buses can pass)• Aging workforce• Increasing vandalism