



## REPORT

To: **GENERAL COMMITTEE**

Date of Meeting: September 7, 2010

Prepared By: Mike Hausser, P. Eng.

Department: Transportation & Public Works

Date to Management Committee: September 1, 2010

Report No.: TPW-40/10

File No.:

Ward No.: All

<p><b>FEDERAL GAS TAX - INFRASTRUCTURE EXPENDITURE UPDATE</b></p>
---

---

Recommendation(s):

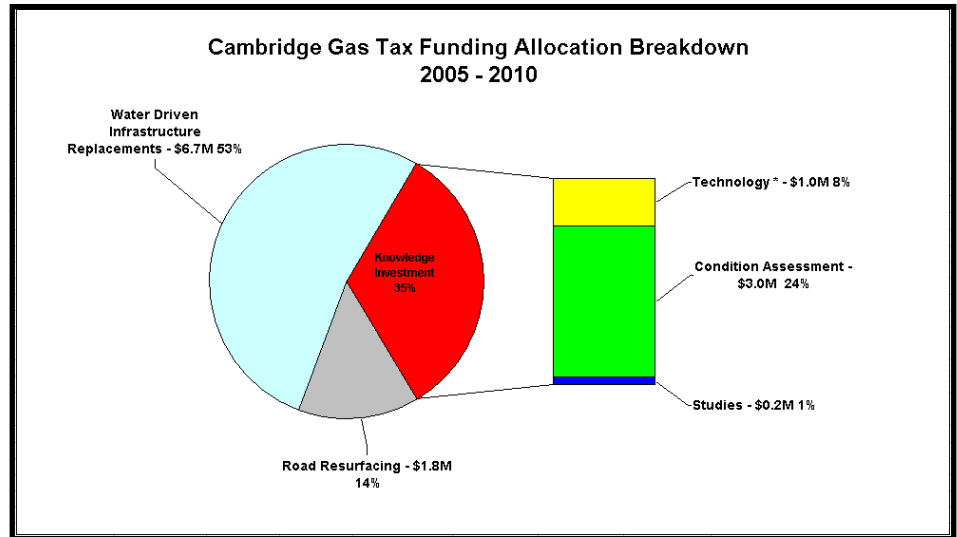
THAT Council receive the information contained within report TPW-40/10 on completed and ongoing Gas Tax Funded projects for years 2005-2010.

## **EXECUTIVE SUMMARY**

Gas tax funding has been applied to a variety of Infrastructure and Asset Management initiatives.

The first few years of funding was heavily allocated towards knowledge-based projects, technology, and programs. The majority of funding is now being allocated directly to systematic infrastructure renewal.

This systematic approach is possible only through the initial investments in knowledge as outlined in the body of this report. While ongoing knowledge-based investment is required, it is proportionally smaller than in prior years. This is allowing more funding to assist in addressing the infrastructure renewal backlog for the foreseeable future.



## **REPORT**

### **Background**

The following pages provide an update to prior Gas Tax project reports along with outcomes and revised figures based on actual costs or adjusted estimates.

**2005 Gas Tax Revenue - \$1,076,092**

Account #	Agreement Classification	Category	Project Description	Actual Cost	Notes	Completion Date
06C02001	Capacity Building	Knowledge	<p><b>Work Management/Maintenance Management System 1 of 2:</b></p> <p>Purchase and implementation of computerized work management/maintenance management business system for use in Transportation and Public Works. Sustaining hardware, software, and technical resource costs to be included in Asset Management and Information Technology operating budgets.</p>	\$ 656,000	<p><b>Completed</b></p> <p><i>IBM Maximo</i> System is Implemented and Operational.</p> <p>System is now tracking work done by Operations Division on assets and locations and direct costs associated with the work. This provides the means to quantify what work is getting done at what cost and what work is not getting done. Information from this system will be used to progressively plan program and resource needs working towards sustainable funding and program planning.</p>	March 2008
06C02002	Capacity Building	Knowledge	<p><b>Water Meter Replacement Program Phase 1 of 2</b></p> <p>Replacement of residential water meters that have exceeded 20 year life as of 2005. Meters have reached end of serviceable life. New meters will improve accuracy of water meter readings to ensure water usage is accurately accounted for.</p> <p>Gas Tax funding to provide initial replacement needs with a subsequent ongoing annual replacement program funded through multi-year phase-in water rate increases.</p>	\$ 420,000	<p><b>Completed</b></p> <p>Approximately 3,375 meters replaced under this phase of the program.</p>	October 2008
<b>Total</b>				<b>\$ 1,076,000 *</b>		

- Note: \$92 Surplus re-allocated to Gas Tax funded projects in subsequent years.

**2006 Gas Tax Revenue - \$1,076,092**

Account #	Agreement Classification	Category	Project Description	Actual Cost	Notes	Completion Date
06C01801	Capacity Building	Knowledge	<b>Road Condition Assessment</b> An external contract providing a system wide inspection of the road network. This will provide a standard measurement to direct maintenance, repair, rehabilitation, and reconstruction programs.	\$62,590	<b>Completed.</b>  Information provided from this Study was used to prioritize road reconstruction and maintenance programs in years 2007/2008 and provided a preliminary top-down assessment of road needs.	June 2006
06C01802	Capacity Building	Knowledge	<b>Top Down Infrastructure Analysis (State of Infrastructure Report)</b> Primarily a financial assessment of the current capital funding program in comparison to the long-term infrastructure life cycle replacement needs. This analysis is a rolling 100 year horizon which enables the city to pre-plan 'spikes' in capital replacement needs from both a work and financial perspective.	\$63,429	<b>Completed.</b>  The results of this study were presented to Council and has provided an initial estimate of sustainable funding gaps in the order of \$15 million annually for water, sewer, storm, roads.	February 2007
06C01803	Capacity Building	Knowledge	<b>Work Management/Maintenance Management System 2 of 2</b>	\$174,160	<b>Completed.</b>  See description under prior year funding for this project.	March 2008
06C01804	Capacity Building	Integration	<b>Drinking Water Quality Management System (DWQMS) implementation:</b> Involves the review, revision, and development of documentation and processes required to meet the DWQMS requirement as defined under the Safe Drinking Water Act.	\$90,353	<b>Completed</b>  System in place, audited, and City has been certified.	February 2009
06C01805	Water	Replacement	<b>Reconstruction of section of Dolph St:</b> includes road, sanitary, storm, and water infrastructure driven by Water main breaks	\$224,213	<b>Completed.</b>	October 2006
06C01806	Capacity Building	Knowledge	<b>Sanitary and Storm Sewer Initial Condition Assessment Phase 1 of 4:</b>  This is part of ongoing systematic inspection of the system to better understand the current condition of the assets. This information is a key input to life-cycle analysis, capital renewal planning, and O&M program development. Together, this forms a substantial component of determining what is level of work is needed to sustain these systems at acceptable service levels.	\$445,360	<b>Completed.</b>  Initial inspections utilized cost-effective state-of-the-art zoom camera technology to get an initial look at the oldest 50% of the sanitary and storm system.	February 2008
<b>Total</b>				<b>\$1,060,105 *</b>		

\*Note: \$15,987 surplus re-allocated to Gas Tax funded projects in subsequent years.

## 2007 Gas Tax Revenue - \$1,434,629

Account #	Agreement Classification	Category	Project Description	Actual Cost	Notes	Completion Date
0C701601	Capacity Building	Knowledge	<p><b>Sanitary and Storm Sewer Initial Condition Assessment Phase 2 of 4</b></p> <p>This is part of ongoing systematic inspection of the system to better understand the current condition of the assets. This information is a key input to life-cycle analysis, capital renewal planning, and O&amp;M program development. Together, this forms a substantial component of determining what level of work is needed to sustain these systems at acceptable service levels.</p>	\$463,713	<p><b>Completed</b></p> <p>As noted in prior year's funding of same project.</p>	June 2009
0C701602	Roads	Renewal	<p><b>Road Resurfacing 1 of 2</b></p> <p>Resurfacing includes the removal of surface asphalt and recycling part of the asphalt either into the base to improve strength, or recycled into the replacement asphalt layers onsite. This type of treatment can add between 10 and 20 years to the life of the road before it will require full reconstruction.</p>	\$370,800	<p><b>Completed</b></p> <p>Roads include sections:            Garden St: Concession to Durham            Munch Ave: Hilldale to Elgin            Stirling McGregor Dr: Dalkeith to Grand Ridge            Woodside Ave: Cedar to Victoria</p>	November 2008
0C701603	Water	Replacement	<p><b>Reconstruction of section of Courtney:</b>            includes road, sanitary, storm, and water infrastructure.</p>	\$341,286	<p><b>Completed</b></p>	July 2007
0C701604	Capacity Building	Knowledge	<p><b>Water Meter Replacement Program Phase 2 of 2</b></p> <p>Represents water meters that have reached the 20 year age mark as of 2007. 50% of funds in this year to come from Gas Tax with the remaining in this year and subsequent years coming from an increase in water rates.</p>	\$114,754	<p><b>Completed</b></p> <p>With the completion of this second phase, the City has successfully dealt with the backlog of residential meter replacement.</p>	March 2009
0C701606	Capacity Building	Knowledge	<p><b>Pavement Condition Assessment:</b></p> <p>A systematic assessment of road condition that is used to determine reconstruction, rehabilitation, and maintenance programs. Information is also used for provincial reporting of road condition.</p> <p>This project will also include an extensive strength testing procedure which helps to differentiate between roads that can be effectively resurfaced vs those that need the base re-built.</p>	\$64,583	<p><b>Completed</b></p> <p>Information gained from this work provided the means to objectively develop road resurfacing programs including the Federal/Provincial/Municipal Stimulus investment in roads completed in 2009 and 2010.</p>	May 2009
0C701610	Capacity Building	Knowledge	<p><b>Vehicle Collision Database</b></p> <p>This database and application will provide improved organization of traffic and collision information to facilitate intersection safety audits.</p>	\$33,552	<p><b>Completed</b></p> <p>System implemented and operational.</p>	December 2008
<b>Total</b>				<b>\$1,388,688 *</b>		

\*Note: \$45,941 surplus re-allocated to gas tax funded projects in subsequent years.

## 2008 Gas Tax Revenue - \$1,793,166

Account #	Agreement Classification	Category	Project Description	Actual / Estimate	Notes	Completion Date
08C100	Roads	Resurfacing	Road Resurfacing 2 of 2  Resurfacing includes the removal of surface asphalt and recycling part of the asphalt either into the base to improve strength, or recycled into the replacement asphalt layers onsite. This type of treatment can add between 10 and 20 years to the life of the road before it will require full reconstruction.	\$975,024	Completed  Beaverdale Rd: Fisher Mills to N of Mohawk Bishop St: Franklin Blvd to East of Werlick Cardinal St: Coleman Rd to Branchton Rd Moffat Dr: Hillmer to Anderson Speedsville Rd: Middle Block to Kossuth Stirling McGregor Dr: Grand Ridge to Fairlake Grand Ridge Dr: Stirling McGregor to Stirling McGregor Sherwood Dr: Blair Rd to Park Ave	June 2010
08C028	Roads	Resurfacing	Pavement Preservation – Surface Treatment  Surface treatments included micro-paving, slurry sealing, and chip seal techniques which improve the friction of the road for safety purposes, extend the life of the road by slowing down the process of oxidation of the asphalt and reducing the extent of water getting into the base of the road. These types of treatments can add between 3 and 5 years of life to roads before it would need to be resurfaced.	\$164,558	Completed:  Surface Treatment of Road Sections: River Rd: Melran to Townline Sacha Rd: Nicholas to Poplar Linda Dr: Scott to Milton Fearwood St: Fisher Mills to Memory Trillium Ave: Fisher Mills to Milton Fallbrook Lane: Blair to Langdon Morningside Dr: Fountain to end Davies St: Vanier to End Middle Block Rd: Riverbank to Fountain Mohawk Rd: Beaverdale to Speedsville Briardean Rd: Speedsville to Maple Grove Ripplewood Dr: Vanier to End Trillium Ave: Milton to Memory Lane	November 2008
08C029	Capacity Building	Knowledge	Sanitary and Storm Sewer Condition Assessment This is part of ongoing systematic inspection of the system to better understand the current condition of the assets. This information is a key input to life-cycle analysis, capital renewal planning, and O&M program development. Together, this forms a substantial component of determining what is level of work is needed to sustain these systems at acceptable service levels.	\$267,028	Completed:  Ongoing inspection of the system that provides the information needed to make sound decisions on capital renewal and maintenance programs.	May 2010
08C034	Capacity Building	Knowledge	Work Management System Phase II – Project includes implementation of functionality deferred from initial implementation and upgrade to Maximo V7, and initial implementation of mobile computing.	\$95,000	In Progress	March 2010
08C032	Capacity Building	Knowledge	Water Fill Station  Software and Hardware to dispense water purchased by third parties in a controlled manner. This provides a higher level of water usage accounting.	\$20,000	In Progress	November 2010
08C033	Capacity Building	Knowledge	Pavement Base Thickness Measurement  A one-time data capture project that identifies the thickness of the pavement and base layers. These two attributes are the most significant factors that determine the life expectancy of a road. In conjunction with a condition assessment, this will provide the means to better plan effective road maintenance, rehabilitation and replacement programs.	\$50,000	Revised Estimate  To be done once road resurfacing has been completed for 2010.	November 2010
<b>Total</b>				<b>\$1,571,610 *</b>		

\*Note: \$221,557 surplus re-allocated to subsequent gas tax funded projects.

**2009 Gas Tax Revenue - \$3,586,332**

Account #	Agreement Classification	Category	Project Description	Actual / Estimate	Notes	Completion Date
09C025	Water	Renewal	<b>Queen Street Reconstruction</b> Water system renewal along with replacement of other underground assets and right-of-way assets.	\$1,017,899	In Progress	November 2010
09C026	Water	Renewal	<b>Middleton St Reconstruction</b> Water system renewal along with replacement of other underground assets and right-of-way assets.	\$966,980	In Progress	November 2010
09X001 / 09Y001	Water	Renewal	<b>Christopher St Reconstruction</b> Water system renewal along with replacement of other underground assets and right-of-way assets. Project is also partially funded through Capital Reserves.	\$334,461	Completed	November 2009
09X001 / 09Y001	Water	Renewal	<b>Wooley St Reconstruction</b> Water system renewal along with replacement of other underground assets and right-of-way assets. Project is also partially funded through Capital Reserves.	\$329,678	Completed	November 2009
09X001 / 09Y001	Water	Renewal	<b>Hilltop St Reconstruction</b> Water system renewal along with replacement of other underground assets and right-of-way assets. Project is also partially funded through Capital Reserves.	\$259,861	Completed	November 2009
09C027	Roads	Renewal	<b>Asphalt Overlay / Resurfacing</b> Resurfacing includes the removal of surface asphalt and recycling part of the asphalt either into the base to improve strength, or recycled into the replacement asphalt layers onsite. This type of treatment can add between 10 and 20 years to the life of the road before it will require full reconstruction.	\$277,121	In progress  <i>Cowansview Rd – Bishop to South End Elgin St – Faial to Goldsboro</i>  <i>Additional Roads to be identified and completed in 2011 following completion of Stimulus funded resurfacing activities in 2010.</i>	November 2010
09C028 / 09Y002	Capacity Building	Knowledge	<b>Sanitary and Storm Sewer Condition Assessment</b> This is part of ongoing systematic inspection of the system to better understand the current condition of the assets. This information is a key input to life-cycle analysis, capital renewal planning, and O&M program development. Together, this forms a substantial component of determining what is level of work is needed to sustain these systems at acceptable service levels.	\$204,872	In Progress	August 2010
09Y100	Capacity Building	Knowledge	<b>Inflow &amp; Infiltration Investigation (INI)</b> Funding to pursue specific field investigations in areas where flow monitoring has shown significant I&I is occurring.	\$317,665	In Progress  This is an ongoing activity for a number of years until extraneous sewage flows have been reduced	March 2011
09X200	Capacity Building	Knowledge	<b>Water Loss Mitigation</b> Various studies and activities directed towards the identification of sources of water loss and mitigation efforts.	\$124,058	In Progress  This will be an ongoing activity for a number of years until water loss is reduced	March 2011
<b>Total</b>				<b>\$3,832,595 *</b>		

\*Note: Expenses are \$246,263 above 2009 gas tax revenue and is funded from accumulated surpluses in gas tax funded projects in prior years.

**2010 Gas Tax Revenue - \$3,703,884**

Account #	Agreement Classification	Category	Project Description	Actual / Estimate	Notes	Completion Date
10C026 / 10Y005 / 10Y002	Capacity Building	Knowledge	<b>Sanitary and Storm Sewer Condition Assessment</b> This is part of ongoing systematic inspection of the system to better understand the current condition of the assets. This information is a key input to life-cycle analysis, capital renewal planning, and O&M program development. Together, this forms a substantial component of determining what is level of work is needed to sustain these systems at acceptable service levels.	\$617,976	In Progress	August 2011
10C030	Water	Renewal	<b>Lydia St Reconstruction</b> Water system renewal along with replacement of other underground assets and right-of-way assets.	\$712,000	In Progress	September 2011
10C031	Water	Renewal	<b>Rosedale St Reconstruction</b> Water system renewal along with replacement of other underground assets and right-of-way assets.	\$236,000	In Progress	September 2011
10C032	Water	Renewal	<b>McDonald and Dorset St Reconstruction</b> Water system renewal along with replacement of other underground assets and right-of-way assets.	\$924,000	In Progress	September 2011
10C034	Water	Renewal	<b>Mary / Grims Rd Reconstruction</b> Water system renewal along with replacement of other underground assets and right-of-way assets.	\$664,000	In Progress	September 2011
10X003	Water	Renewal	<b>George St Reconstruction</b> Water system renewal along with replacement of other underground assets and right-of-way assets.	200,000	In Progress	September 2011
10Y003	Capacity Building	Knowledge	<b>Inflow &amp; Infiltration Investigation (INI)</b> Funding to pursue specific field investigations in areas where flow monitoring has shown significant I&I is occurring.	\$165,987	In Progress This is an ongoing activity for a number of years until extraneous sewage flows have been reduced	March 2011
10X004	Capacity Building	Knowledge	<b>Water Loss Mitigation</b> Various studies and activities directed towards the identification of sources of water loss and mitigation efforts.	\$221,235	In Progress This will be an ongoing activity for a number of years until water loss is reduced	June 2011

**\$3,741,198 \***

\*Note: Expenses are \$37,313 above 2010 gas tax revenue and is funded from accumulated surpluses in gas tax funded projects in prior years.