

*Corporation of the*  
***Township of Selwyn***

<b>Date:</b>	December 16, 2013
<b>To:</b>	Mayor Smith and Members of Council
<b>From:</b>	R. Lane Vance, Manager of Financial Services/Treasurer
<b>Subject:</b>	Selwyn Township Asset Management Plan – Phase One Approval
<b>Status:</b>	For Endorsement.

## **Recommendation**

That the report of the Manager of Financial Services entitled Selwyn Township Asset Management Plan - Phase One Approval be received for information; and

That the Selwyn Township Asset Management Plan - Phase One be approved as presented; and

That the recommendations included in Selwyn Township Asset Management Plan - Phase One be included for discussion as part of the annual budget process and in establishing priorities for long term capital plans.

## **Information**

This report is provided for Council to summarize the Selwyn Township Asset Management Plan – Phase One (STAMP-P1) process, to formally approve the first asset management plan as a starting point, and to bring long term asset management planning into the financial planning and budgeting process at Selwyn Township.

STAMP-P1 will aid in establishing infrastructure funding targets, identifies infrastructure funding deficiencies in certain areas, will establish priority areas for investment and will be incorporated into Township management practices.

With the adoption of the initial STAMP-P1, work begins anew on refinements, filling in information gaps, considering areas that require more study, and re-thinking how infrastructure investment decisions are recommended. The approved plan will then feed into the budget process for 2014 and become another working document that guides and informs the day-to-day operations related to core infrastructure of the Township.

Council comments on the plan are welcomed and will help inform next steps for how STAMP-P1 can be beneficial in forming Selwyn's long term approach to capital plans.

## **Financial Impact**

There is no direct financial impact by approving the above noted recommendation. Any financial impacts will be part of additional reports to Council and as part of long term plans resulting from the STAMP – P1 recommendations.

## **Strategic Plan Reference**

*Goal # 2 - Achieve excellence in governance and service delivery.*

*Goal # 3 - Support a sustainable, balanced and investment-ready community*

## **Attachment**

- Asset Management Plan

*R. Lane Vance*

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Prepared By: R. Lane Vance  
Manager of Financial Services  
Treasurer

***Janice Lavalley***

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Reviewed By: Janice Lavalley  
Chief Administrative Officer

## **1. Introduction**

Asset management plans provide sufficient qualitative and quantitative detail to make informed decisions that will maximize the benefits of the Township's infrastructure.

The Selwyn Township Asset Management Plan – Phase One (STAMP-P1) is the starting point for a new long term asset management planning and budgeting process at Selwyn Township.

### **Scope**

Phase One of the Selwyn Township Asset Management Plan (STAMP) includes core infrastructure.

For the purposes of this plan, **core infrastructure** is:

1. Roads network (*including stormwater collection*)
2. Water treatment and distribution system
3. Sewage treatment and collection system
4. Stormwater management ponds

### **Rationale**

- These four key areas represent the largest infrastructure components in the Township asset base
- The potential for funding from upper levels of governments specific to Infrastructure are linked to these core areas
- The Township will use STAMP P1 as a launching point to Phase Two which will:
  - Improve the completeness and quality of asset data on hand
  - Build upon service level deliverables
  - Formalize asset condition rating systems
  - Extend reach to additional asset classes including facilities, fixed equipment, vehicles and other mobile equipment

### **Data Compilation**

Staff have utilized existing data sources to establish an overall snap shot of readily available information and identify any significant gaps/approaches.

Acknowledge up-front that this process will identify information gaps and reliability concerns. This process is an important part of asset management and will reinforce the need to establish sound information gathering techniques.

## **Service Standards**

In establishing STAMP every effort will be made to tie back to the Township's Strategic Plan directly.

*Goal # 3 – Support a sustainable, balanced and investment-ready community*

Use underlying rationale of the Strategic Plan to develop more robust service standards based on stated goals, initiatives and Council supported projects.

## **Long Term Decision Making**

STAMP is a 'living' document that requires attention to detail, makes use of an integrated and coordinated planning model for asset renewal, and, at a minimum, will be refreshed with annual updates.

STAMP will feed into the annual capital budget, impact the operations budget and reinforce that the priorities established for infrastructure renewal require predictable financial resources.

In addition to capital investments, it is essential that preventative maintenance programs clearly extend useful life of assets and minimize future costs. Examples of these preventative maintenance programs for core infrastructure include:

- Early resurfacing to maintain road bed condition
- Concrete relining of iron water mains with no/low break frequencies
- Crack sealing sewer mains and grouting sewer manholes
- Proper annual maintenance of stormwater retention ponds

These types of investments reflect proper financial stewardship and minimize risk. This type of priority setting and the complementary financial strategy is formally adopted through a locally based decision making process.

## **Public Outreach and Transparency**

STAMP will be available through the Township's website under the Financial Services Department.

Given its relationship to priority setting in the annual budget, STAMP will be denoted through a specific tab or by using a specific symbol. This will reinforce that priority setting for annual expenditures are grounded in long term planning.

## **2. State of Local Infrastructure**

### **Roads**

The Selwyn Public Works department is responsible for the maintenance and construction of the Township's road network. The road network includes road base and surfaces, shoulders, ditches, culverts and related signage. In urban sections the road network also includes stormwater management features including curb and gutter, catch basins and drainage outlets.

For the purposes of this report, the stormwater management collection system within the roads network is included in the roads replacement costs and captured through the increased urban construction values. *(stormwater management ponds are included as a separate asset class)*

### **Surface Type**

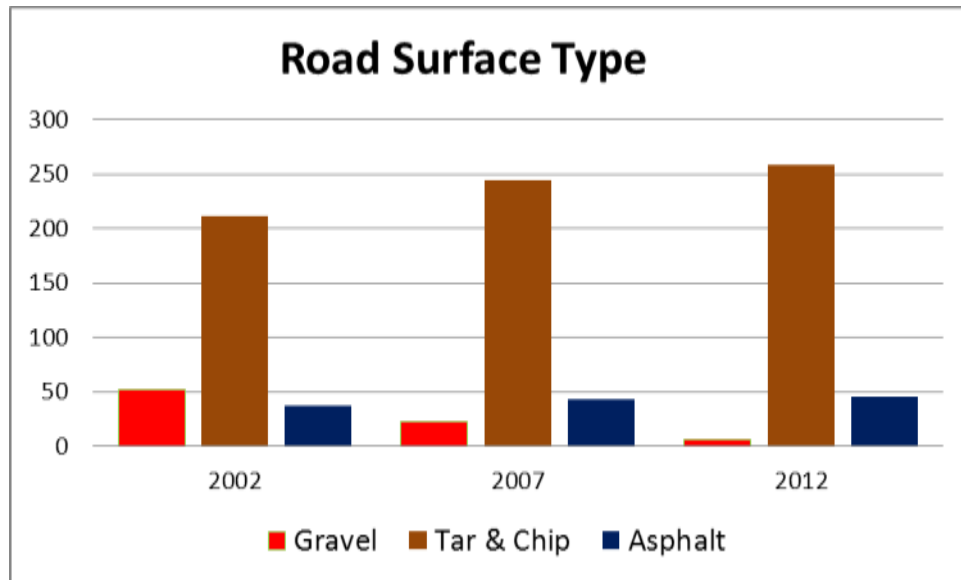
The Township's complete road infrastructure system covers approximately 310 km within a mix of both urban and rural settings. The road network includes surfaces ranging from gravel to low class bituminous (LCB) to hot mix paved (asphalt). The Township has approximately 6 km of gravel roads, 259 km of surface treated roads (low class bituminous (LCB)) and 45 km of asphalt paved roads (HCB).



Rural road with open ditch drainage and tar & chip surface



Urban road with curb & gutter, storm water and asphalt surface



<b>Township of Selwyn</b>	
<b>Road System in Kilometres</b>	
<b>as of September 2012</b>	
<b>A.</b>	<b>Surface Type *</b>
Earth	0
Gravel (Loose Top Gravel)	6
Low Class Bituminous (LCB)	259
Hot Mix (HCB)	45
<b>Total A</b>	<b>310 km</b>
<b>B.</b>	<b>Roadside Environment</b>
(i)	<b>Rural</b>
Gravel	6
LCB	186
HCB	6
<b>Total Rural</b>	<b>198 km</b>
(ii)	<b>Semi-Urban</b>
Gravel	0
LCB	72
HCB	29
<b>Total Semi-Urban</b>	<b>101 km</b>
(iii)	<b>Urban</b>
Gravel	0
LCB	1
HCB	10
<b>Total Urban</b>	<b>11 km</b>
<b>Totals B</b>	<b>310 km</b>
*Estimated to the nearest kilometre.	

## Road Network Valuation

### Tangible Capital Asset Values

For audit purposes, historical cost is used and then amortized over the useful life of the asset. Recent changes in public sector accounting standards required the implementation of tangible capital asset accounting which captured the historical costs.

A review of the Township's TCA data related to roads shows TCA asset values of over \$27 million.

<b>Tangible Capital Asset Details</b>	<b>Amounts</b>
Roads - Historical Cost	27,250,928
Roads - Accumulated Amortization	(14,983,924)
	-----
Roads - Net Book Value	12,267,004

Based on financial accounting valuation, data illustrates that historical cost less amortization (useful life measure) is 45% net book value.

### Replacement Cost

In developing a long term asset management plan, one needs to have regard for replacement cost. Replacement cost, as referenced by the Province's Building Together guide, is forward looking and accounts for expected inflation, changes in technology and other factors.

For the purposes of the Roads Needs Study, industry standards are used by the engineering firm and referenced in Appendix B of the Roads Needs Study.

This valuation method is further impacted in Selwyn by the fact that many types of rural and semi urban construction are completed using our own staff and equipment. While labour, equipment time, aggregates and construction materials are appropriately charged to the specific jobs, this has historically resulted in lower construction values than that which would have been incurred if we tendered on the open market.

### **Standards and Condition Rating**

The Township road network is monitored through periodic road patrols with conditions documented through standardized record keeping in conjunction with Minimum Maintenance Standards.

In addition, it has been the Township's practice since 2002 to complete a comprehensive Road Needs Study every five years. The purpose of the Road Needs Study is to assess the current condition of the network and update the road inventory to include new additions since the last Road Needs Study. The information derived from the study update provides assistance to the Township for developing and executing a planned road maintenance and improvement program.

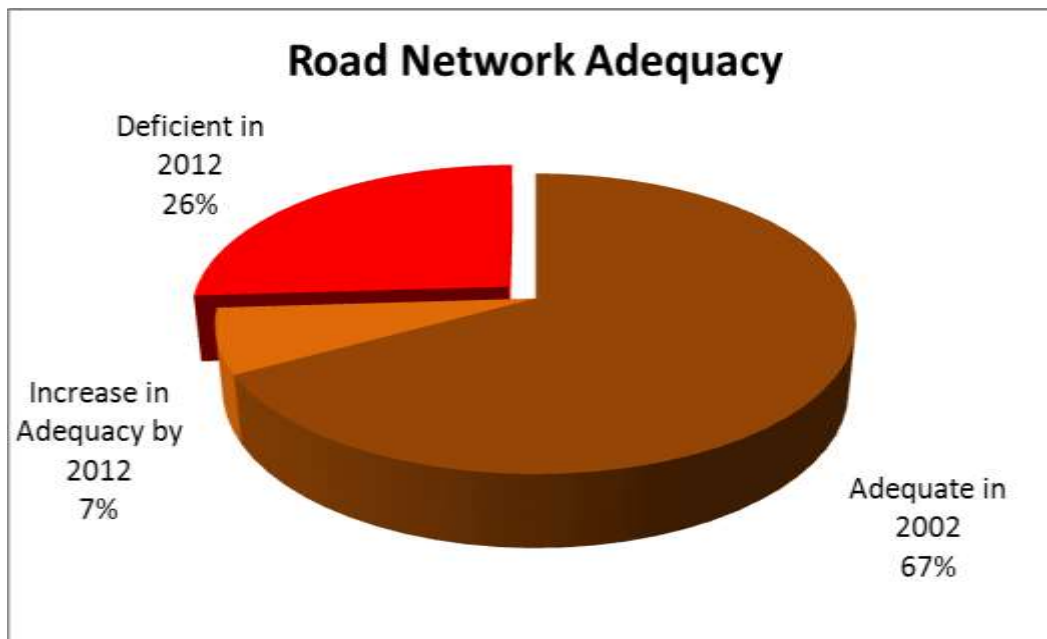


The Township retained the services of D.M. Wills Associates (Wills) to undertake a review of the existing road network and assess its physical condition as well as confirm various road attributes. Data collected as a result of the field review is used to develop a prioritized listing of the road network needs, the results of which are included in the updated Roads Needs Study 2012.

Of the 310 km of roads inventoried, a total of 88 km were found to be critically deficient in one or more areas or expected to be within five (5) years. Of these 88 km of road, 6 km represents roads with AADT of less than 50 vehicles. Regardless of condition ratings, roads with AADT of 50 or less are assigned as "Adequate" as per the Ministry protocol and as such are excluded from the system adequacy calculation. The total overall system adequacy for the 2012 Road Needs Study, which is based upon the total road kilometres less the identified critically deficient roads, is as follows:

The 2012 Roads Study calculates Township road adequacy at 74%, meaning only 26% of our roads are considered deficient based on a number of engineering criteria

$$\text{2012 System Adequacy} = \frac{310 - 82}{310} \times 100\% = 74\%$$



## **Water System**

### Overview

The Township of Selwyn owns two municipal drinking water systems located in Lakefield and in the Woodland Acres water service area.

### Lakefield Water System

The majority of the Lakefield water system was installed in 1955. The water distribution system received significant upgrades to key water mains in the mid 1990's. The water treatment plant was upgraded at several junctures to add standby power and was expanded with new filter beds and related pumping and equipment in 2002.

The Lakefield Water System has been operated and managed under contract with Peterborough Utilities Services Inc. (PUS) since 2001. PUS is a respected water provider in the industry and an accredited Operating Authority under Operational Plan # 149-402.

The Lakefield water system provides municipal drinking water to approximately 1,275 households and a mixture of semi-urban commercial/industrial/institutional customers, which total approximately 3,000 users.

The Lakefield water distribution system consists of approximately 23,645 metres of water main, 109 hydrants, booster station, a standpipe with an effective volume of 900 m<sup>3</sup> and an elevated storage tank (water tower) with capacity of 2,750 m<sup>3</sup>.

The standpipe and elevated storage allow the system to operate as one pressure zone, save and except a small area adjacent to the base of the standpipe which operates in isolation with assistance from the booster station.

The water treatment plant is located at Water Street North and consists of a dual intake from the Otonabee River, a low lift pumping system located within the water treatment plant, and a treatment process using chemical coagulation, ballasted floc sedimentation (Actiflo), dual media filtration and disinfection. The plant has a two-celled baffled 1,000 m<sup>3</sup> clearwell and a high lift pumping facility discharging to the distribution system.



New water tower

### Woodland Acres Water Service Area

The Woodland Acres Water System consists of two phases within a semi-urban subdivision. The original phase was installed in the 1960's. A significant upgrade to the phase 1 section was completed in 2001-2002. At the same time the main water feed was upgraded and phase two installations began.

The Woodland Acres Water System has been operated and managed under contract with Peterborough Utilities Services Inc. (PUS) since 2001. PUS is an accredited Operating Authority under Operational Plan # 149-401.

The Woodland Acres water system is a water distribution system connected to the Peterborough Water Commission water system. The Woodland Acres system receives its water supply at a booster station at the corner of Woodland Avenue and Woodland Drive via a 300 mm diameter watermain from the City of Peterborough. The pumping station boosts pressure to the water service area which includes watermains, hydrants and provides municipal drinking water to approximately 265 households.



Woodland Acres Booster Station

### **Water System Valuation**

#### Tangible Capital Asset Values

For audit purposes, historical cost is used and then amortized over the useful life of the asset. Recent changes in public sector accounting standards required the implementation of tangible capital asset accounting which captured the historical costs.

A review of the Township's TCA data related to water shows TCA asset values of over \$9.98 million. *(This does not include the new water tower and related mains identified as work in progress at the end of 2012 – approx. \$5.19 million)*

<b>Tangible Capital Asset Details</b>	<b>Amounts</b>
Lakefield Water Plant - Historical Cost	2,596,655
Lakefield Plant Equipment – Historical Cost	1,918,812
Water Distribution – Total Mains - HC	3,664,716
Water Distribution - Hydrants – Total - HC	322,348
Water Distribution – Stations & Storage - HC	1,485,104 **
Water - Accumulated Amortization	(2,741,179)
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Water - Net Book Value	7,245,857
** Does not include new tower in WIP	

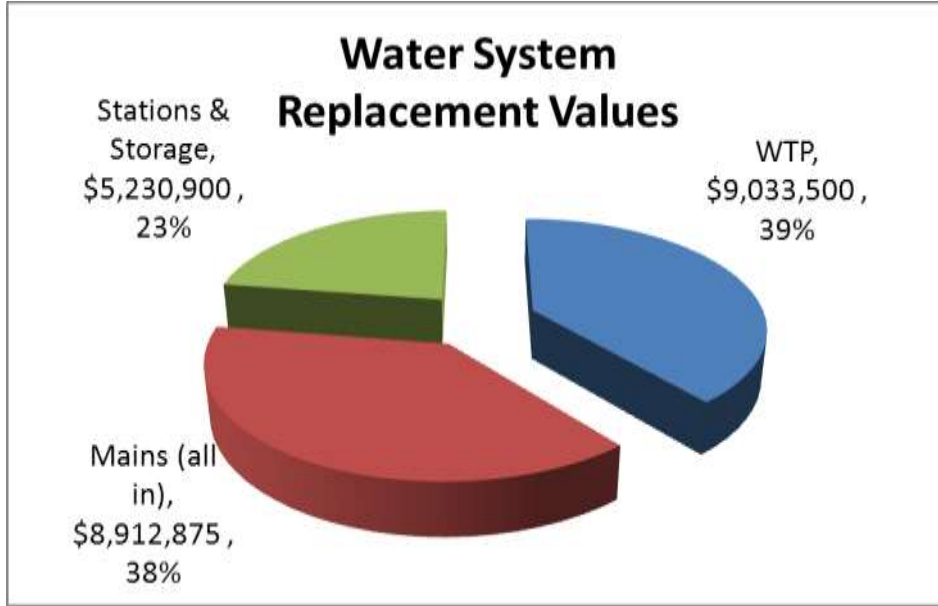
Based on financial accounting valuation, data clearly shows that the system is relatively new. The Township has been investing in system betterments. The chart above illustrates that historical cost less amortization (useful life measure) is 73% net book value.

### Replacement Cost

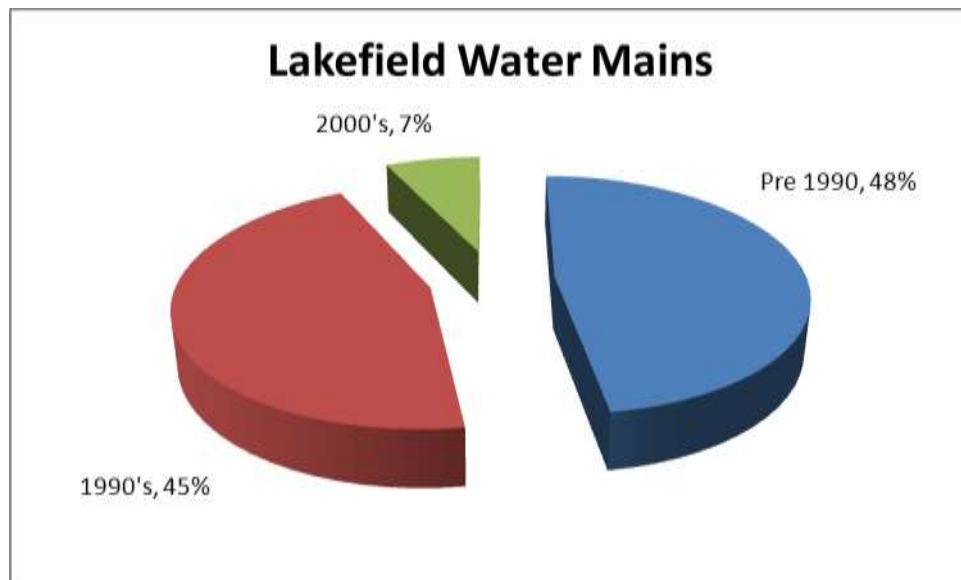
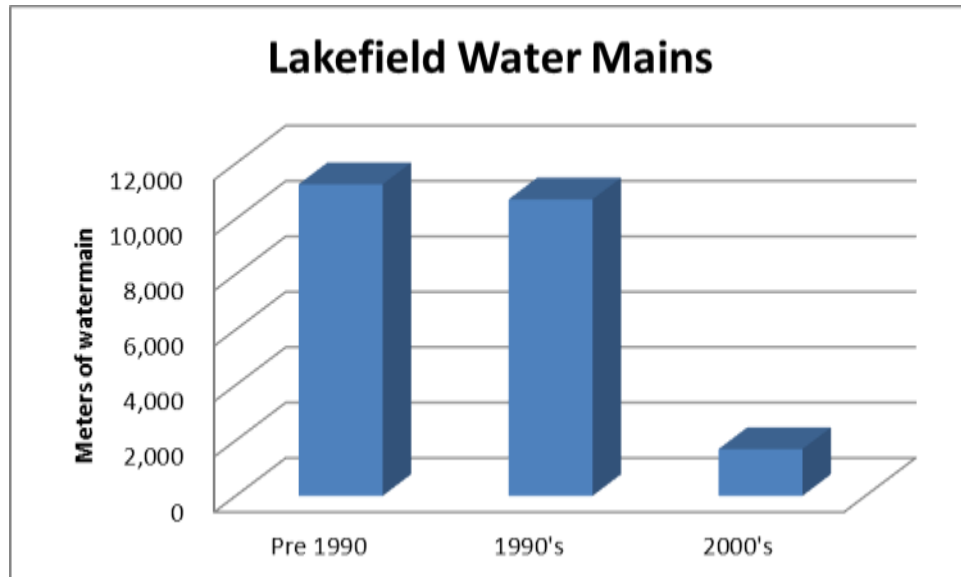
As noted earlier in this report, in developing a long term asset management plan, one needs to have regard for replacement cost.

For the purposes of this report industry standards used by engineering and insurance professionals are used and included as reference in appendices to this report.

<b>Capital Asset Details</b>	<b>Amounts</b>
Lakefield Water Plant	9,033,500
Water Distribution – Total Mains (Lakefield*)	8,912,875
Water Distribution – Stations & Storage	5,230,900
	-----
Water – Full Replacement Value	23,177,275



<b>Township of Selwyn</b>	
<b>Lakefield Water Distribution- mains by meter</b>	
<b>as of December 2012</b>	
30 mm copper	575
32 mm copper	31
50 mm copper	96
100 mm cast iron	123
100 mm pvc	173
150 mm cast iron	7252
150 mm cast iron/cement relined	1716
150 mm ductile iron/unknown	1602
150 mm pvc	2992
200 mm cast iron	1065
200 mm cast iron/cement relined	117
200 mm ductile iron	191
200 mm pvc	2930
300 mm pvc	3489
350 mm cast iron	31
350 mm ductile iron	190
350 mm pvc	460
400 mm ductile iron	203
400 High Density Poly	283
500 High Density Poly	127
<b>Total Meters</b>	<b>23,646</b>



The two charts above show the Lakefield water mains according to years of installation. The 1990's marked a major restoration in the watermains in terms of meters replaced, switch to PVC and upsizing for better flows. A majority of the pre-1990's water mains in place actually relate to the original installation and are of 1955 vintage.

## Standards and Condition Rating

The Township water systems are monitored by PUS as the Service Provider. In accordance with the agreement, PUS provides management, operation, administration and maintenance services. As part of this management service PUS makes annual recommendations for capital expenditures as follows:

*“Capital Expenditures” means the charges for all capital items in relation to the Facilities, including new or replacement equipment, any overhaul or rebuild of equipment, any non-routine repair; maintenance and excluding routine maintenance.*

*No later than September 30th of each year this Agreement is in force, or a date as the parties may agree in writing, THE SERVICE PROVIDER will provide the Township with an estimate of the Capital Expenditures reasonably required for the operation of the Facilities for the following year. The list of recommended Capital Expenditures shall include the reason for the recommendation and potential implication for not performing the work. The Township’s written approval of any estimate authorizes THE SERVICE PROVIDER to incur the Capital Expenditures included in the estimate in the following year (the “Approved Capital Expenditures”).*

Peterborough Utilities Services representatives have recommended that a number of watermains be considered for relining. These recommendations will be combined with recommendations from our engineering firm to feed into the asset management plan to establish priorities.

This work builds upon the various studies and lifeline reports that have been completed by the Township engineer D.M. Wills Associates (Wills). Data collected as a result of the field review is used to develop a prioritized listing of the watermain needs, the results of which are included in the updated annual budget.

In addition, it has been the Township's practice to track watermain breaks and plot on distribution plans. These breaks are then cross-referenced to roads needs and repairs/replacement prioritized.

With relation to plant and storage, PUS tracks and reports on flow data by month. For long term planning purposes, staff will be able to produce trending reports on consumption. Staff can also analyze in terms of other qualitative data such as whether the summer was a dry season. This type of data and data analysis will aid in some of the works outlined in the recommendations section of the report.



## **Sewer System**

### Overview

The Township of Selwyn owns two municipal sewage systems located in Lakefield and in the Woodland Acres sewer service area.

### Lakefield Sewage System

The majority of the Lakefield sewer system was installed in 1972. The sewer collection system has received periodic camera inspection and crack sealing as well as manhole grouting. The main sewage pumping station was upgraded in 1991 to expand wet well size, install three pumps and to add standby power. In 2011 a building addition was completed to bring chemical storage inside with proper containment and to replace the sewer forcemain with dual 300 mm forcemains.

The Lakefield Sewer System has been operated and managed under contract with Peterborough Utilities Services Inc. (PUS) since 2001.

The Lakefield sewer system accepts wastewater from approximately 1,275 households and a mixture of semi-urban commercial/industrial/institutional customers, which total approximately 3,000 users.

The Lakefield sewage collection system consists of approximately 23 kilometers of sewer main, 281 sewage manholes, 5 pumping stations, a main pumping station with three pumps and dual forcemains to a two celled sewage lagoon.

The main sewage pumping station located on Water Street accepts all wastewater from the collection system, adds a coagulation chemical to aid sedimentation, and then pumps to the sewage lagoon through one of two forcemains.

The sewage lagoon is located on County Road 33 to the south east of Lakefield. The south cell is fully aerated with a sedimentation basin; the north cell is used as a polishing pond before effluent goes through UV filtration and is received by the Otonabee River downstream of the Village.



Lagoon – south cell



Underground Pumping Station

<b>Township of Selwyn</b>	
<b>Sewage Collection- mains</b>	
<b>as of December 2012</b>	
150-250 mm AC	12,999
300-375 mm AC	1,907
Clay 150 mm	782
200 mm pvc	5,942
300 mm pvc	1,354
<b>Total</b>	<b>22,984</b>

### Woodland Acres Sewer Service Area

The Woodland Acres sewer system consists of two phases. The original phase was installed in the 1960's. Phase 2 began in the early 2000's at which time a significant upgrade to the phase 1 section was completed with camera inspection and crack sealing. At the same time, the on-site sewage treatment plant was decommissioned and replaced with a sewer main connected to the City system. Phase two also included the servicing of additional households as the subdivision construction continued toward build-out.

The Woodland Acres Sewer System has been operated and managed under contract with Peterborough Utilities Services Inc. (PUS) since 2001.

All sewage collected within the Woodland Acres sewer service area of approximately 265 homes flows to the south east via a gravity sewer main to the City of Peterborough.

### **Sewer System Valuation**

#### Tangible Capital Asset Values

For audit purposes, historical cost is used and then amortized over the useful life of the asset. Recent changes in public sector accounting standards required the implementation of tangible capital asset accounting which captured the historical costs

A review of the Township's TCA data related to sewer shows TCA asset values of over \$5.4 million.

<b>Tangible Capital Asset Details</b>	<b>Amounts</b>
Lakefield Main Pumping Station- HC	2,684,116
Sewage Collection – Total Mains - HC	4,317,294
Sewage Collection – Manholes – Total - HC	420,697
Sewage Collection – Pumping Stations-HC	126,169
Sewage - Accumulated Amortization	(2,103,283)
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Sewage - Net Book Value	5,444,993

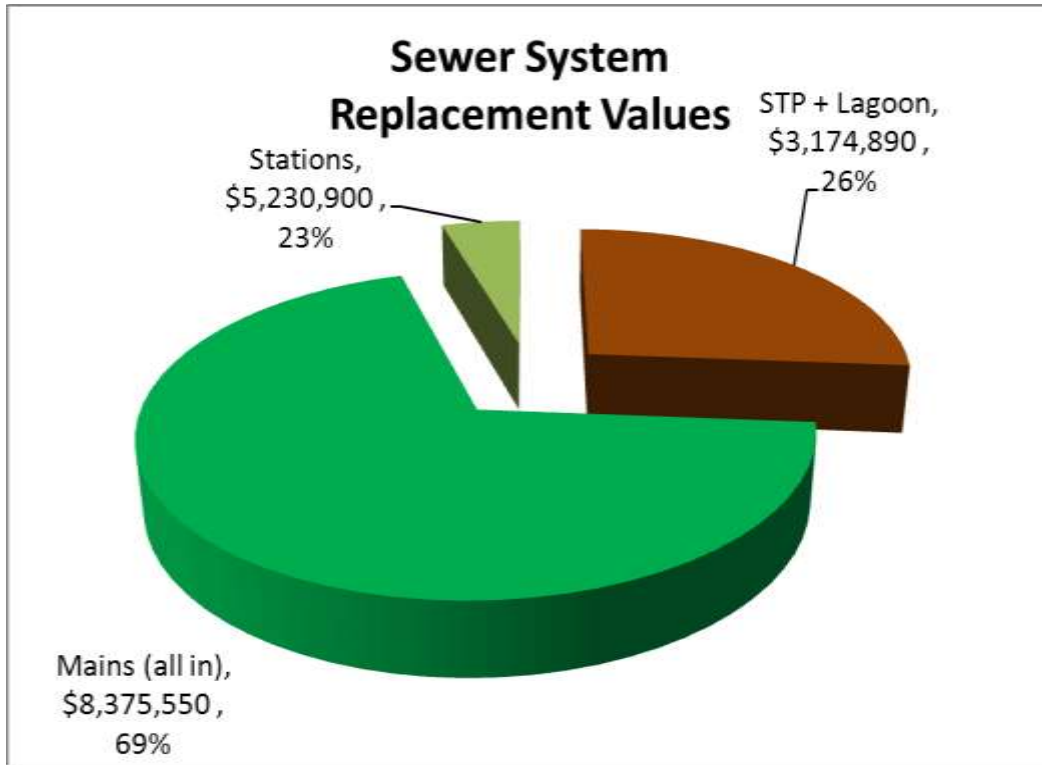
Based on financial accounting valuation, data clearly shows that the system is relatively new. The Township has been investing in system betterments. This data illustrates that historical cost less amortization (useful life) is 72% net book value.

Replacement Cost

As noted earlier in this report, in developing a long term asset management plan, one needs to have regard for replacement cost.

For the purposes of this report industry standards used by engineering and insurance professionals are used.

<b>Capital Asset Details</b>	<b>Amounts</b>
Lakefield Main Pumping Station & Lagoon	3,174,890
Sewage Collection – Mains (all in)	8,375,550
Sewage Collection – Pumping Stations	554,000
	-----
Sewage System – Replacement Value	12,104,440



## Standards and Condition Rating

The Township sewage systems are monitored by PUS as the Service Provider. In accordance with the agreement PUS provides management, operation, administration and maintenance services. As part of this management service PUS makes annual recommendations for capital expenditures as follows:

*“Capital Expenditures” means the charges for all capital items in relation to the Facilities, including new or replacement equipment, any overhaul or rebuild of equipment, any non-routine repair; maintenance and excluding routine maintenance.*

*No later than September 30th of each year this Agreement is in force, or a date as the parties may agree in writing, THE SERVICE PROVIDER will provide the Township with an estimate of the Capital Expenditures reasonably required for the operation of the Facilities for the following year. The list of recommended Capital Expenditures shall include the reason for the recommendation and potential implication for not performing the work. The Township’s written approval of any estimate authorizes THE SERVICE PROVIDER to incur the Capital Expenditures included in the estimate in the following year (the “Approved Capital Expenditures”).*

Peterborough Utilities Services representatives have recommended a number of improvements/repairs and these recommendations will be combined with recommendations from our engineering firm to feed into the asset management plan to establish priorities.

This work builds upon the various studies and lifeline reports that have been completed by the Township engineer D.M. Wills Associates (Wills). In addition, it has been the Township's practice to track sewer main replacements and plot on collection plans.

Data collected as a result of the field review is used to develop a prioritized listing of the sewer main needs, the results of which are included in the updated annual budget.

## Storm Water Management Ponds

### Overview

The Township of Selwyn owns and is responsible for three (3) municipal storm water management ponds located in the former Village of Lakefield, the former Township of Ennismore and in the Woodland Acres subdivision.



Typical subdivision stormwater pond

In addition, there is one 'Stormceptor' catch basin that is not a pond but is a stormwater quality tool not located on a road allowance and will be tracked in this section of the plan.

At the date of report writing there are four (4) other storm water management ponds pending approval. Should approval be granted, these will also be Township owned and maintenance will fall under Township responsibility.

All Township ponds are provided for both storm water quality and quantity.

### Tangible Capital Asset Values

Based on current TCA practice for the Township, storm water management ponds are not capitalized. As such no historical cost is available.

### Replacement Cost

There is very little data on the ponds, but the following chart provides a starting point for further research. All were contributed assets from developers, but now fall under the Township's responsibility.

<b>Township of Selwyn</b>			
<b>Stormwater Management Ponds</b>			
<b>As at December 2012</b>			
<b>Planning File #</b>	<b>Applicant</b>	<b>Ward</b>	<b>Location</b>
15T-01003	Watson	Lakefield	Albert St.-south side
15T-91002	Hickson	Ennismore	Earl Ave. - north
15T-10001	Cor-Plan Inc.	Smith	Woodland Acres – south on hydro corridor

### **3. Asset Management Strategies**

Township infrastructure planning and financial management for capital projects has been and continues to be a key component of the annual budgeting process.

The Township always needs to be able to react to infrastructure challenges as they arise. Many times capital projects are the result of **reactive** strategies as unanticipated events occur.

Thus far, capital project planning has been more typically **preventative** in nature, as staff attempt to anticipate infrastructure issues before they become critical and require a reactionary response.

When one considers more effective asset management strategies and looks to replacement values, the long term needs requires a switch in focus to being more **proactive**. Whether this is through funding/financing or replacing/renewing before the useful life of the asset is reached and failure becomes more critical.

The following information outlines some of the strategies currently used and how it may impact on core infrastructure. The Township does need to move towards a more proactive replacement strategy. It is expected that once some of the outstanding pieces outlined in this report are completed, that annual updates will begin to improve the asset management strategy moving forward.

#### **Roads**

In terms of planned actions or strategies to take care of the roads infrastructure, the Township Roads department makes use of a number of tools and information sources.

The Township continues to do the regular maintenance in the form of ditching cleanout and clearing in order to extend the useful service life of all existing roads.

Recently, improved roadside maintenance has resulted from using different types of equipment to improve brushing efforts.

Sweeping is another necessary maintenance items following winter control operations to control dust and excess accumulations on road surfaces.

The Township road network is monitored through periodic road patrols, with conditions documented through standardized record keeping in conjunction with Minimum Maintenance Standards. This informs potential capital needs of the roads network and this is particularly evident following the spring when frost within the road base may cause breakup.



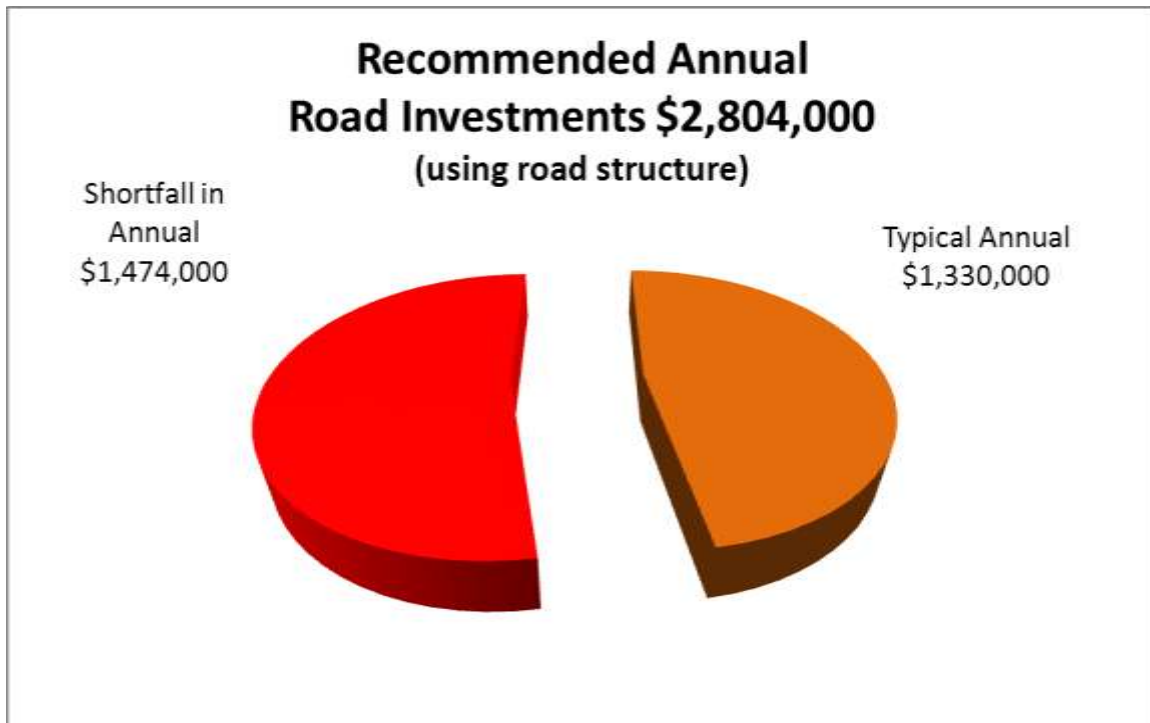
Another informative capital planning tool is the Roads Needs Study. While the study provides an excellent database on road sections and road types, it also provides recommendations on repair or capital replacement. In the last three (3) Roads Needs Studies, prioritization for capital improvements has been based on the structural adequacy and traffic demands on each road.

Using this approach, and as noted in section 2, the roads network is considered to be 76% adequate. This percentage illustrates a good overall condition of the roads, due in large part to the commitment by Selwyn Council and roads staff.

Based on the report the total cost to undertake the recommended capital improvements for the 5 year plan is \$5,878,000. The report also recommends resurfacing 37 km annually + 3 km of asphalt annually to maintain overall system adequacy.

The typical road expenditures included in the last decade of approved budgets are as follows:

- An annual road construction budget of approximately \$1,000,000
- Coupled with a hard top resurfacing program of \$330,000 covering approximately 23 kilometres of roads



This difference is indeed significant, but is open to further analysis and options.

When determining long term planning for roads, Council does have the option to set capital plans based on criteria other than road base adequacy.

For instance, 'ride-ability' and road surface could be determining factors. Also reconstruction or resurfacing policies could be set in relation to average daily traffic flows or thresholds related to traffic volumes. These types of factors can then influence whether a road surface would be tar & chip or asphalt. All of which, affects the annual funding allocated to road funding.

Operationally, these choices are occurring now. That could be one reason that, despite the underfunding outlined above, the Township's road adequacy has actually increased accordingly to the latest draft Roads Needs Study.

As a result, the recommendations section suggests a more detailed debate on how the final Roads Needs Study will be formatted prior to bringing this to Council for approval. The final study will then better inform the debate on the amount of funding that should be reasonably set aside on an annual basis. This in turn will inform the long term approach to roads infrastructure funding.

## Water

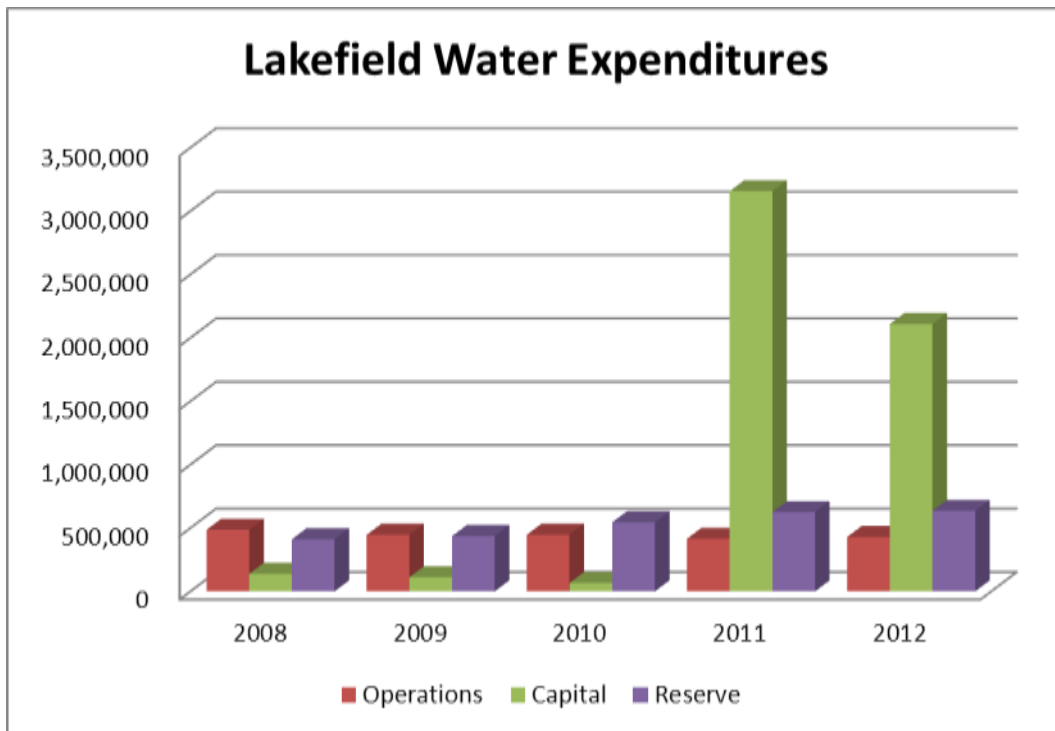
Both of the Township Water Systems operate under separate full cost recovery models and also adhere to section PS3150, of the Public Sector Accounting Handbook related to accounting for tangible capital assets (TCA).

Through the implementation of annual water rate increases and receipt of various operating and capital grants, the water systems have been well maintained and have kept current with industry operating practices.

The Lakefield system is debt free. There are no plans within the life of this plan to require the acquisition of debt.

Based on the existing rate structure, the Lakefield user rate supports three components: ongoing operations, planned typical capital projects and ongoing reserve contributions.

In order to look to the future, it is important to have some context of past expenditures. This will also allow the Township to investigate what type of funding increases may be required for full system replacement.



Ongoing pump rebuilds/replacements and typical chemical feed maintenance items are currently covered within the existing rates.

As well, whenever urban roads are slated for rehabilitation, staff have regard for the underground water mains and whether they should be included for relining or replacement. As a matter of practice PUS staff will provide data on break frequency to inform the above noted replacement schedule.

With the water stand pipe and elevated storage tank just recently upgraded and installed, no works are planned in those areas.

The water treatment plant does have some communication and data capture matters that need to be reviewed and attended too. The SCADA system is being reviewed by PUS with recommendations coming forward for short term replacement.

Until such time as more informed replacement cost data related to plant equipment is available, this rate structure will serve the Township well within the life of this plan.

#### Woodland Acres

The Woodland Acres water system is free of external debt and there are no plans within the life of this plan to require the acquisition of debt. The residents in the area are repaying a capital investment in the system that was funded internally by the Township.

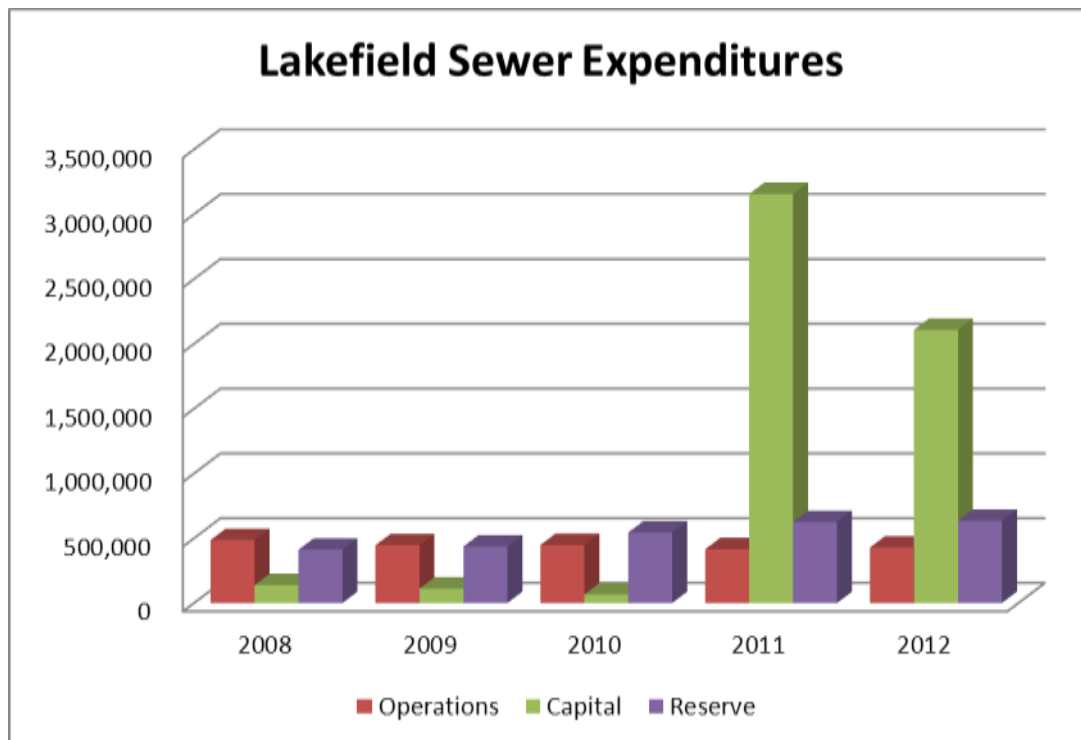
Built into the annual budget is a reserve contribution which considers the eventual replacement of the booster station and any additional water main projects as identified by PUS.

Based on the existing contribution to reserve and until such time as firm replacement cost data related to watermains is available, this rate structure will serve the Township well within the life of this plan.

## Sewer

Both of the Township Sewer Systems operate under separate full cost recovery models and also adhere to section PS3150, of the Public Sector Accounting Handbook related to accounting for tangible capital assets (TCA).

Through the implementation of annual sewer rate increases and receipt of various operating and capital grants, the sewer systems have been well maintained and have kept current with industry operating practices.



The main pumping station has been recently upgraded and the lagoon treatment process is functioning well. On occasion, there have been some effluent exceedances which relates to ice cover on the polishing pond.

The Lakefield sewer system is debt free. There are no plans within the life of this plan to require the acquisition of debt.

Next steps in terms of priority are replacement of aging pumping stations.

The pumping station on Murray Street was decommissioned in favour of an extension of a gravity feed sewer. Two other stations have been identified as priorities for rehabilitation or replacement;

- George Street pumping station
- Lakefield College School pumping station



George Street Pumping Station Access

With respect to the George Street pumping station it involves a combination of required upgrades to a key pumping station and regard for expansion of the system to link the Lakefield South development area and currently underserved areas on west Bridge Street and west Smith Street.

The pumping station:

1. Is nearing the end of its useful life at approximately 40 years old
2. Is the sole sewage transfer point for the west sector with no redundancy
3. Has no standby backup power
4. Is located directly adjacent to the Otonabee River on the Trent Severn Waterway and upstream of the City of Peterborough.

In order for any upgrades or improvements to occur with this station, a Class Environmental Assessment is required. Initial discussions with our consultant reveal that this process will take more than a year to complete. After the preferred approach is approved, it is estimated that the construction could take at least one more year to complete.

Following the 2013 budget presentation and Council approval, public notice was provided to advise that the Lakefield Sewer EA had commenced. In addition to the preliminary work already completed in 2013, the next two stages of the class EA have been approved and will ensure that ecological site sampling and reports are completed and reviewed for the summer/fall seasons, preliminary topographic surveys are completed, and initial assessment of flows and sewage capacity are calculated.

With knowledge that the overall total costs for the EA could range as high as \$215,000, staff has worked with the engineers to refine the approach and more clearly understand the stages involved. Assuming neither serious capital equipment failures, nor any increased development pressures in Lakefield South, the EA process could stretch from 2013-2015. This would allow for funding over multiple budget years, with 2014 including the bulk of the EA expenditures of approximately \$130,000, and the remainder in the 2015 budget year.

After identifying a preferred solution through the EA process, additional detailed engineering design will be required to fulfill the requirements of the federal environmental assessment process. These costs will be more readily available when the preferred solution is identified and confirmed through the public notice period.

With respect to the Lakefield College School (LCS) pumping station, discussions have only just begun on next steps. Likely a replacement would consider changes to power supply configuration and possibly standby back-up power. These changes will be affected by discussions with LCS and whether the Township should indeed own the station or not. As well, there may be some possible cost sharing based on the scope of the project and future needs of LCS.

#### Woodland Acres

The Woodland Acres sewer system is free of external debt and there are no plans within the life of this plan to require the acquisition of debt. The residents in the area are repaying a capital investment in the system that was funded internally by the Township.

Routine sewer main flushing has been approved and PUS continues to monitor the system, with no recommended improvements.

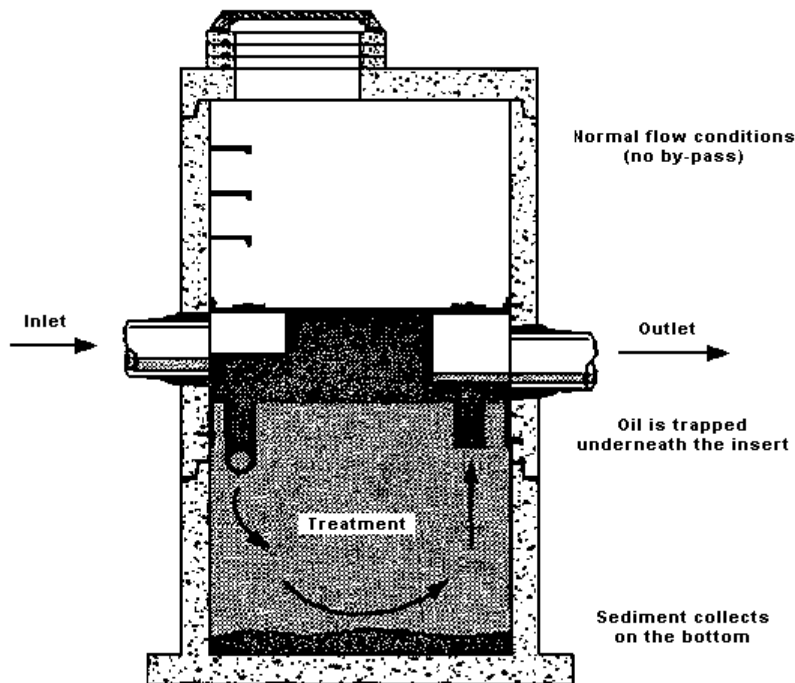
Based on the existing contribution to reserve and until such time as firm replacement cost data related to sewer mains is available, the rate structure currently in place will serve the Township well within the life of this plan.

## Storm Water

There is currently no annual maintenance program or funding dedicated specifically to storm water management ponds that are owned by the Township.

The Township does maintain several licences with the federal waterway for storm sewer outfalls in Lakefield.

As well, annual maintenance of a stormceptor is completed on the catch basin in the Isabel Morris Park parking lot. The stormceptor captures run off from the parking lot and contains any contaminants from reaching the adjacent waterway.



Cross Section Schematic of a Stormceptor



## **4. Recommendations and Next Steps**

The annual budget process has typically included capital projects and planning for projects over the short to mid- term. The Selwyn Township Asset Management Plan – Phase One represents the next step in capital project planning. Over time this Plan will be used to provide the Township with the information it needs to make informed decisions on managing capital assets in a sustainable manner over the long term.

Overall, the Township is in a good position to move forward with sustainable asset management planning. The Township has made considerable effort in recent years to address infrastructure needs and improve the condition of assets.

Many elements of core infrastructure assets are relatively new and investments in infrastructure, for both tax and rate supported assets, have put the Township in a good position.

The following recommendations are put forward in response to information gaps; best practices that should be in place; the need to maximize each asset based on its own set criteria; and in the spirit of continuous improvement.

### **1. Maintain Accurate Infrastructure Information**

#### **Ensure Asset Inventories are Updated Regularly**

- In order to make sound asset management decisions, the information in the asset database needs to be detailed, supportable and accurate.
- The Township should regularly update the asset database as part of ongoing operations
- Regular updates should have regard for not only the cost of asset purchases but also have regard for the rationale for the asset upgrades, consider asset condition ratings, and include information about remaining useful life

#### **Filling Information Gaps**

- A scope of work should be developed and estimates should be obtained from the Township engineer and/or PUS to more accurately document the water main types and sizes in the Woodland Acres subdivision to ensure a more accurate inventory
- A scope of work should be developed and estimates should be obtained from the Township engineer and/or PUS to more accurately document the sewer main types and sizes in the Woodland Acres subdivision to ensure a more accurate inventory
- A scope of work should be developed by Township staff to update and discuss the existing stormwater management ponds database to create a more robust inventory

### **Capture Intangible Corporate Knowledge Now**

The need to capture intangible corporate knowledge is important and proper documentation is required now. Over the next decade many key employees and senior managers for the Township and PUS will be eligible for retirement and their working knowledge of asset details needs to be captured. This is a key part of good succession management and time needs to be dedicated to this task.

### **Make Use of GIS Capabilities**

Resources should be allocated to maximize the use of reliable GIS data and work with the County of Peterborough to upload GIS layers. As a minimum these layers should include:

- Updated water distribution systems
- Updated sewage collection systems
- Updated Township road systems
- Storm water pond locations

## **2. Optimize the Useful life of Existing Assets**

In seeking to extend the useful life of current assets, the Township should consider the following activities:

### **Roads**

- Conduct a series of meetings with the Township engineer to further refine the Roads Needs Study
- Consider the pros and cons of using road base versus road surface as a method for prioritization

### **Water**

- Review water conservation measures currently in place in other jurisdictions and compile report with recommended actions in Selwyn
- Implement water conservation measures as approved
- Continue watermain relining programs and use of trenchless technologies where appropriate
- Further refine the PUS capital recommendation process with respect to prioritization and improve documentation on condition ratings

### **Sewer**

- Complete periodic condition assessment reviews of sewer mains through flushing and camera inspection
- Crack seal and grout as required to repair infiltration issues on existing mains
- Further refine the PUS capital recommendation process with respect to prioritization and improve documentation on condition ratings

**Storm water**

- Develop documentation for proper maintenance practices for each type of pond identified

**All Assets Classes**

- Repair and replacement of capital works should be prioritized more formally and include asset condition ratings as a key prioritization factor
- The process for urban area infrastructure improvements should continue to have regard for all components of road sections including road, water, sewer and storm sewer
- The Township should, where possible, coordinate the construction of new infrastructure with infrastructure repairs and replacement to achieve cost efficiencies

**3. Establish and Track Service Levels**

- A range of quantifiable service level targets that incorporate the quantity and quality of capital assets should be established for all services
- Service level data should be measured, reported in relation to established targets, and adjusted annually
- Service level targets, likely more detailed and tailored to each service area, should complement measures currently being developed for the Township Strategic Plan

**4. STAMP Reporting****Asset Management Plan – Short Term Updates**

- As additional information becomes available, refinements to this plan should be completed as part of the 2014 budget process
- In the second quarter of 2014, an update should be provided to Council on STAMP-P1 in advance of the formatted plan being posted to the Township website

**Asset Management Plan – Annual Updates**

The resolution and end result of recommendations included above should be included in an annual update to this report.

**Comprehensive Asset Management Plan Update Frequency**

STAMP should be comprehensively reviewed and updated every five (5) years.