*3 -Soundness:* The current condition of the assets is the key strength. Improving the knowledge of the physical condition of the assets and of their maintenance will raise the grade of this dimension.

The majority of waste management infrastructure in York Region is relatively new. The transition in focus from growth to rehabilitation and replacement will occur later as compared to the other service areas within the Department. This provides an opportunity to proactively prepare for future rehabilitation and replacement needs.

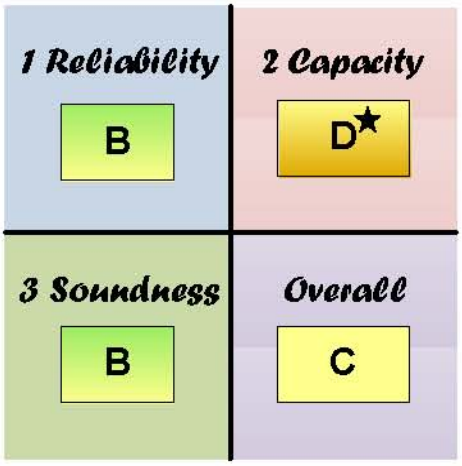
**Duffin Creek WPCP**

Duffin Creek represents almost half the total value of the Department's infrastructure. Because of its cost and importance it is graded as a separate entity.

Duffin Creek WPCP is co-owned with equal share by York Region and Durham Region. The total flow to the plant however is primarily from York Region and this facility provides greater than 80% of all treatment within York Region. The original facility was built in 1979 with a major expansion built in 1991 and major upgrades completed around 2004 for both solids and liquid treatment capability. Major processes include:

- Raw sewage lift station
- Primary clarification
- Secondary treatment with fine bubble aeration
- Disinfection by chlorination
- Digestion and incineration for solids treatment & disposal
- Ancillary facilities including laboratory & solids thickening

**Duffin Creek WPCP Grades**




★ Improves to an A when the Stage 3 Expansion is commissioned

**Key findings for the state of *Duffin Creek WPCP***

*1 -Reliability:* Strengths in this dimension are the ability to maintain safe and secure operations and to provide service during power outages through the provision of standby power. The grade can be improved by developing knowledge of predictive and preventive maintenance.

An initiative focused on sustainable practices is the Greening/Biodiversity Plan at the Duffin Creek WPCP. The plan provides a unique opportunity to enhance the natural surroundings of the plant. Planned as a five hectare berm, this naturalized area will form a wildlife corridor and reintroduce a variety of wildlife to the area, as well as establish a wetland area.

*2 -Capacity:* Strengths in this dimension is the commitment to expansion of the facility and achievement in maintaining service during significant construction activities and growth within both Regions. The opportunities for improvement within this dimension are centered on specific individual processes and equipment to meet future capacity, and are currently being addressed. The low grade will

improve to an "A" when the plant expansion is complete.

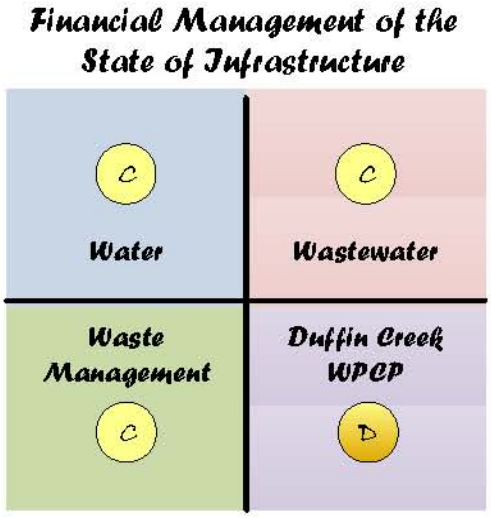
The Duffin Creek WPCP is currently in the process of a major expansion. The project will enable the YDSS to accommodate an expected increase in the population and will enhance the ability of the WPCP to treat and process biosolids on-site rather than sending this waste to a landfill. The proposed expansion represents good planning and implements a solution to infrastructure needs identified under Regional Master Plans completed under the Municipal Class Environment Assessment. It will enable the facility to operate at a higher capacity and responsibly service existing and future residents in York Region.

*3- Soundness:* Strengths in this dimension are the ability to maintain an effective internal maintenance program. The grade for this dimension can be raised by improving and prioritizing the physical condition of the assets and the corresponding rehabilitation and replacement needs.

In 2007 York and Durham Regions initiated an Asset Evaluation and Facility Forecast Study at the Duffin Creek WPCP. The project includes a detailed assessment of the condition of the plant's assets, a detailed inspection of key process equipment, a forecast of facility improvement needs and budgeting requirements, and the development of an infrastructure needs profile for the next 25-year period. After tagging over 9,000 assets in the process, it was found that the operating condition ratings were generally fair to good.

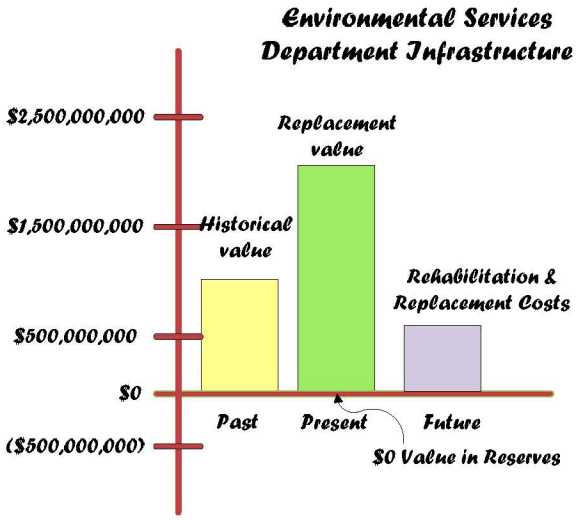
**Financial**

The most significant downside to the current State of Infrastructure is the lower grade for the financial component.




The Annual and 10-Year budget ranks strongly due to Council's continuous commitment to infrastructure spending, including annual budget commitments of about $20 million towards the improvement of existing infrastructure.

However, there are opportunities to improve marks for the long term financial reserves as it is significantly less than forecast requirements. This would require adequately funding the Capital Replacement Reserve for future infrastructure projects related to existing assets.




***Water:*** The effective short term annual budget program and the integration with identified rehabilitation needs are the key strengths. The lower grade can be addressed by improving the financial strength of the organization through increased annual investments into financial reserves.

In August of 2007, the Ministry of the Environment (MOE) filed O. Reg. 453/07, the Financial Plans Regulation under the Safe Drinking Water Act. This regulation sets out requirements for financial plans that all municipal drinking water systems will be required to prepare as early as July 2010. One of the requirements of the regulation is full-cost accounting to encourage better long-term planning for capital renewal and replacement. Through this and other initiatives York Region is well-positioned to respond to this new standard.

It should be noted that although the overall reserve for the Environmental Services Department infrastructure is essentially zero, the water account has a small positive reserve.

***Wastewater:*** The effective short term annual budget program and the integration with identified rehabilitation needs are the key strengths. The identified need for improvement within this dimension is the same as in water services; to improve the financial strength of the organization by increasing the annual investments into financial reserves.

***Waste Management:*** Strengths in this dimension are the limited short term annual budget demands for the waste management facilities and the near term service agreements with private vendors. Increasing the annual investments into financial reserves is once again a key area for improvement along with improving the knowledge of this requirement.

***Duffin Creek:*** Strengths in this dimension are the ability to meet funding requirements for the current year. In this dimension there is a need to improve the financial strength of the organization by increasing the annual investments for both the near term annual budgets (10 year) and the long term financial reserves.

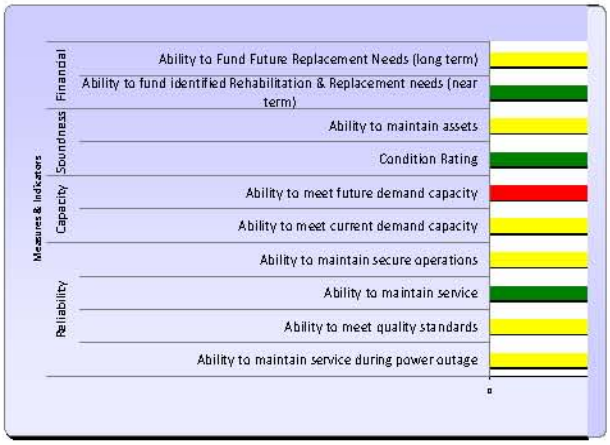
The Environmental Services Department has completed the assessment to identify infrastructure spending requirements over the next five years, which amounts to $150 million. The next challenge will be to prioritize and fund these needed improvements.

**Data Management**

One of the key objectives of the report is the ability to replicate and substantiate results of the marks and grades. This is achieved through building marks from indicator data scores. Issues that were encountered with data collection and management include:

- Data available only for entire service (e.g. Water & Wastewater compliance results) and not by asset type
- Indicator data not available except through detailed analysis or study (e.g. capacity for future demand)
- Data collection and management practices do not account for needed data or allow for access (e.g. facility permit capacity is not captured in any information management system)

Confidence in the indicator data is provided in the following illustration with colour representing the ability to secure the needed data.




As can be seen the majority of the indicator data (represented by yellow confidence limits) is available through work-around methods. For example data for standby power is available but not stored in any maintenance or infrastructure management system and data for power demand is not available. However a work-around solution is the knowledge of York staff of the capabilities of the facilities - which is not documented in a systematic manner.

Similarly the indicator data for future demand is not available except through a detailed study such as the Master Planning process. York has such a report however the information in this report is not readily transferable to a simple data indicator.

Opportunities for improvement include formalizing the need for 'State of Infrastructure' data and establishing good data management practices including capturing and systematically documenting staff knowledge on system performance.

## WHAT'S IN STORE FOR THE FUTURE?

In 2008 the Environmental Services Department established Strategic Objectives that characterize the commitment to service delivery and recognize factors currently driving and impacting the business. The State of Infrastructure Report aligns with goals to determine service level requirements and objectives relating to the business and infrastructure. Findings from this report will be incorporated into the planning and management of the infrastructure.

To meet these goals and maintain or improve the infrastructure, a number of innovative infrastructure management tools are planned or in process including:

- a consistent ranking system to evaluate the state and condition of infrastructure assets;
- a risk assessment methodology to help quantify the risk of asset failure and relate this risk to funding limitations; and
- life cycle cost methodology to support better decision-making and planning
- detailed levels of service corresponding with State of Infrastructure and indicator data


*The Environmental Services Department's Strategic Goals align with York Region's corporate strategy, They guide the delivery and improvement of service and serve as a measure of performance and achievement for the Department's initiatives.*

York Region's Operations, Maintenance & Monitoring (OMM) branch has progressively applied best practice in a number of areas including cross training, maintenance training programs and adopting a Computerized Maintenance Management System.

The OMM branch has initiated development of a Maintenance Strategy to review and document current maintenance practices and processes including the decision-making framework for asset maintenance and rehabilitation. This strategy will be central to future maintenance process improvement and will be based on a combination of best practices and the practicalities of operating in a municipal environment. The result will be to increase reliability in the Water and Wastewater service areas.

These tools, together with improving data management capabilities will enhance the ability to develop programs, and inform members of management, stakeholders and Council of the current and future State of Infrastructure.