

The Enterprise Asset Management Strategy

The Enterprise Asset Management Strategy defines how the Asset Management Policy is implemented. The Strategy outlines how infrastructure is assessed and how infrastructure needs are identified and prioritized in a consistent way across the entire organization. The Enterprise Asset Management Strategy is made up of four sub-strategies:

Levels of Service

The Level of Service Strategy links an assets' condition and performance to the level of service it provides to the customer. Asset levels of service targets are set to enable the delivery of service outcomes the public is expecting to receive. The Asset Levels of Service are approved by Council under the Asset Management Policy.

Risk Management Strategy

The Risk Management Strategy supports informed decisions across a very complex and diverse portfolio of assets. Asset risk is directly related to whether an asset meets level of service targets. Risk helps to prioritize infrastructure investments and maximize return on investments. When a service is exposed to asset related risk beyond the tolerances of Council, the assets generating the high-level of risk become a priority for infrastructure investments.

Lifecycle Management Strategy

The Lifecycle Management Strategy provides a means to forecast both how an asset will measure up against level of service targets and future asset investment needs. As assets age their health deteriorates and their ability to meet level of service targets decreases. The amount of risk to the service delivery is directly related to the degree to which assets don't meet level of service targets. Asset investments are used to improve the health or replace

an asset. Asset lifecycles are unique to each type of asset and include replacement and refurbishment strategies. Replacement strategies identify the optimal time to replace an asset. Refurbishment strategies prolong the functional lifespan of an asset. Both replacement and refurbishment strategies maximize Peel's return on asset investments. Lifecycles allow Peel to forecast risk and investment needs.

Asset Replacement Values

Asset Replacement values are required as part of asset lifecycles. Replacement values are estimates of the realistic cost to replace an asset at current day standards. Asset lifecycles require asset replacement values to forecast asset investment needs.

Corporate Reporting on Asset Management

The Reporting Strategy defines the requirements of corporate level reporting which is undertaken annually to give an organization wide perspective on Peel's infrastructure needs and priorities to enable better, more informed strategic planning and decision-making.

Levels of Service

Defined Levels of Service are an integral part of the Peel's Enterprise Asset Management Strategy. Levels of Service allow for the assessment of both financial requirements and risk. Peel's Enterprise Asset Management Strategy uses two tiers of Levels of Service:

Customer Levels of Service

Customer Levels of Service (CLOS) describe how a service is expected to be received by the customer and sets non-technical service targets. Peel considers factors including health and safety, adequacy, quantity, quality, and other social, financial, and environmental factors when defining CLOS.

Asset Levels of Service

Asset Levels of Service (ALOS) are specific and measurable targets established to support the delivery of Customer Levels of Service (CLOS). Peel sets ALOS at levels that manage the risk of not meeting CLOS targets. Some ALOS are discretionary and can be adjusted to reflect Council's risk tolerance. Others are driven by regulatory requirements and must be maintained. All ALOS are endorsed by Regional Council in accordance with Peel's Asset Management Policy. The level of risk to services is influenced by the extent to which assets are not meeting defined ALOS targets. Peel's Enterprise Asset Management Strategy uses two types of Asset Levels of Service:

Asset Condition Levels of Service

Condition Levels of Service measure the physical "health" of the assets. Typical measures include indicators such as pipe breaks, pavement wear, roof leaks, foundation cracks, and equipment malfunctions or failures. Condition Levels of Service can be forecasted using lifecycle models, allowing Peel to predict how asset condition will change over time. Capital projects aimed at improving condition generally involve major rehabilitation or replacement activities.

Asset Performance Levels of Service

Performance Levels of Service measure the "suitability" of the assets and asset systems to meet service needs. They assess the ability of assets to provide the required quality and quantity of service and/or have adequate capacity to manage risks to service delivery. Performance Levels of Service may include indicators such as adequate pipe capacity, appropriate heating and cooling in buildings, sufficient backup capacity in the event of system failures and measures to protect the environment. Capital projects to improve the performance may involve upgrading or replacing assets with more modern technology, reconfiguring existing assets, or adding new assets to increase capacity or improve service outcomes.

Risk Management

Finding the balance between ensuring that Peel Region's infrastructure is in a state to support Peel's desired Service Outcomes and doing so at the least possible cost to the residents of Peel is about managing risk. Peel Region could try to maintain all assets in as good as new condition, but that would be financially unrealistic for the residents of Peel. At the other extreme, Peel Region could stop reinvesting in the infrastructure, but then it would not be able to provide the services that residents rely on. Risk management is the tool to find the balance between these extremes.

The risk management approach looks at infrastructure related threats to the Peel's Services and assesses the level of risk using consequence and likelihood.

Consequence

Consequence is the impact that a potential threat could have on the Peel Region's goals. Consequence is assessed using a standardized scoring guide on a scale from 'Insignificant' to 'Severe' and looks at potential:

- Strategic and long-term impacts to the community
- Corporate image and reputational impacts to the Peel Region
- Environment impacts
- Health and safety impacts to employees and the public
- Third party impacts
- Operational impacts and the continuity of service
- Financial impacts to the Peel Region

Likelihood

Likelihood is the probability that the consequences of a potential threat will be experienced. Likelihood is assessed using a standardized scoring guide on a scale from 'Rare' to 'Certain'. The asset levels of service reduce the likelihood of potential threats to the Peel Region's goals to within council's risk tolerance.

The Enterprise Asset Management Strategy uses the risk-management-based approach to:

- Identify the assets that are putting the Peel's service outcomes and goals at undue risk because of condition and performance deficiencies as measured by the asset level of service targets.
- Prioritize asset reinvestments to minimize the risk to service from potential asset failures and impaired asset performance.

Lifecycles

Defined asset lifecycles allow for the forecasting of asset related risk to service and the capital requirements of rehabilitations and replacements. They are also used to estimate the current condition of assets where condition inspections are not possible, or current condition data is not available.

Lifecycles are calibrated to specific types of assets and are extensively tested and validated with program staff to ensure they represent current best practices and are aligned with the risk models. Lifecycles include strategies for the major rehabilitation and replacement of assets. They are developed with planned maintenance practices in mind. The lifecycles assume that the programs are actively managing the assets between treatments, by undertaking the planned maintenance activities. The lifecycles are calibrated with actual asset data, and changes in maintenance practices are reflected in the assumptions. The lifecycle assumptions are reviewed annually, and the lifecycles are re-calibrated as needed to consider new practices, changing technologies, and new asset information.

There are four broad types of lifecycle models used:

No Deterioration

This model is used when a measure is not expected to change over time without intervention. Performance levels of service and some condition levels of service are static measures. This model may drive a current need but will never forecast a future need.

Estimated Service Life (ESL)

This model is used when there is insufficient data to develop lifecycle curves for an asset class, or there is no cost benefit to do so. ESL models can include rehabilitations which extend the asset life at defined trigger points. Assets are replaced when they reach the end of life.

Lifecycle Curve

This model is used when sufficient data, in house knowledge, or industry knowledge exists to plot the change of an ALOS over time. Lifecycle Curve Models can include rehabilitations which improve the level of service of an asset. Assets are replaced when either they reach a defined ALOS target or reach a defined end of service life.

Forward Works

This model is used for facilities. Detailed Building Condition Assessments (BCAs) are used to forecast a Facility Condition Index (FCI). Rehabilitations occur when the FCI passes a trigger point defined by the ALOS.

All lifecycle models require asset class specific data to run. Asset data is evaluated and updated annually and includes the following data at a minimum:

- Asset id and/or name
- Asset condition, installation data, estimate service life, and/or forward works plan
- Asset replacement and rehabilitation costs; and
- Asset specific attributes (i.e. material type, size, location etc.)