Terminology

***It is crucial that this terminology is read in conjunction with the CIDMS toolkit. The CIDMS toolkit is available and can be accessed on the CIDMS website.***

Acronyms

The following acronyms are used in this Glossary and should be noted:

|  |  |
| --- | --- |
| AADD | Annual average daily demand |
| AFS | Annual financial statements |
| AM | Asset management |
| AMP | Asset management plan |
| AR | Asset register |
| CAPEX | Capital expenditure |
| BCA | Benefit-cost analysis |
| CBD | Central business district |
| CCTV | Closed circuit television camera |
| CG | Condition grade |
| CIDB | Construction Industry Development Board |
| CO2 | Carbon dioxide |
| CRC | Current replacement cost |
| CSIR | Council for Scientific and Industrial Research |
| DCF | Discounted cash flow |
| DORA | Division of Revenue Act |
| DPRN | Depreciation |
| DRC | Depreciated replacement cost |
| DRDLR | Department of Rural Development and Land Reform |
| DU | Dwelling unit |
| EIA | Environmental impact assessment |
| EPWP | Expanded Public Works Programme |
| EUL | Expected useful life |
| FAR | Financial asset register |
| FMECA | Failure modes, effects and criticality analysis |
| FY | Financial year |
| FYTD | Financial year to date |
| GDS | Growth and development strategy |
| GDP | Gross domestic product |
| GFMAM | Global Forum for Maintenance and Asset Management |
| GFS | Government financial statistics |
| GIS | Geographic information system |
| GL | General ledger |
| GRAP | Generally recognised accounting practice |
| GVA | Gross value add |
| Ha | Hectare |
| IAM | Infrastructure asset management |
| IAMP | Infrastructure asset management *(also see AMP)* |
| IAS | International Accounting Standards |
| ICDG | Integrated Cities Development Grant |
| ICT | Information and communication technology |
| IDP | Integrated development plan |
| IDMS | Infrastructure delivery management system |
| IIMM | International Infrastructure Management Manual |
| ISO | International Standards Organisation |
| IT | Information technology |
| IRR | Internal rate of return |
| kℓ | Kilolitre |
| Km | Kilometre |
| kWh | Kilowatt per hour |
| LED | Local economic development |
| LGIAMG | Local Government Infrastructure Asset Management Guidelines |
| LOS | Level of service |
| m2 | Square metre |
| MCA | Multi-criteria analysis |
| MEA | Modern equivalent asset |
| MFMA | Municipal Finance Management Act |
| MIG | Municipal Infrastructure Grant |
| MTREF | Medium-Term Revenue and Expenditure Framework |
| MVA | Megavolt-Ampere (unit of electrical power) |
| NDG | Neighbourhood Development Grant |
| NDP | National Development Plan |
| NT | National Treasury |
| O&M | Operations and maintenance |
| OPEX | Operating expenditure |
| PPE | Property, plant and equipment |
| PSI | Public service industries |
| R | Rand |
| RCM | Reliability-centred maintenance |
| RDBMS | Relational database management system |
| ROA | Return on assets |
| RUL | Remaining useful life |
| RV | Residual value |
| SANS | South African National Standard |
| SCM | Standard Charter of Accounts |
| SDF | Spatial development framework |
| SCOA | Standard Charter of Accounts |
| SCM | Supply chain management |
| SDBIP | Service delivery and budget improvement plan |
| SDF | Spatial development framework |
| SG | Surveyor General |
| SLA | Service level agreement |
| SPLUMA | Spatial Planning and Land Use Management Act No. 16 of 2013 |
| V | Volt (unit of electrical potential) |
| VAR | Valuation asset register |
| VIP | Ventilated improved pit toilet |
| UFW | Unaccounted for water |
| WACC | Weighted average cost of capital |
| WTW | Water treatment works |
| WWTW | Waste-water treatment works |
| VIP | Ventilated improved pit toilet |

Glossary

**Aggregate**

A whole formed by combining several different elements or the act of making this whole.

**Amalgamation rules**

The rule set applied to the results of an investment study when different sets of results are combined in a multicriteria analysis (see multicriteria analysis).

**Analysis period**

Time interval used in the financial evaluation of an investment opportunity (number of assessment periods). For the purposes of this toolkit the analysis period in formulae is denoted with an "*n*".

**Asset**

A resource owned or controlled by an entity as a result of past events and from which future economic benefits or service potential is expected to flow to the entity.

**Asset hierarchy (IIMM)**

A framework for segmenting an asset base into appropriate classifications. The asset hierarchy can be based on asset function, asset type, or a combination of the two.

**Asset life (ISO 55 000)**

Period from asset creation to asset end of life.

**Asset management (LGIAMG)**

The process of decision making, planning and control over the acquisition, use, safeguarding and disposal of assets to maximise their service-delivery potential and benefits, and to minimise their related risks and costs over their entire life.

**Asset management information system (LGIAMG)**

A combination of processes, data and software applied to provide outputs needed to manage assets well.

**Asset management objectives (IIMM)**

Specific outcomes required by implementing an asset management system.

**Asset management plan**

A documented plan developed to manage one, or a portfolio of, assets. It combines multidisciplinary management techniques (including technical and financial) over the life cycle of the asset in the most cost-effective way to provide a specified level of service. The plan specifies approaches, programmes, projects, activities, resources, responsibilities and time frames across the life cycle of the asset(s) planned for, or over a time frame appropriate for robust life-cycle planning.

**Asset management practices (IIMM)**

The asset management processes and techniques that an entity undertakes, such as demand forecasting, developing and monitoring levels of service and risk management.

**Asset management strategy (IIMM)**

The high-level, long-term approach to asset management including asset management action plans and objectives for managing the assets.

**Asset management system (ISO 55 000)**

An management system whose function it is to establish the asset management policy and objectives, as well as processes and organisational arrangements inclusive of structure, roles and responsibilities to achieve asset management objectives.

**Asset register (LGIAMG)**

A record of asset information considered worthy of separate identification for both asset accounting and strategic management purposes including inventory, historical, condition and construction, technical and financial information about each.

Note: The unit of account in an asset register is a component (see definition of a component).

**Asset system (ISO 55 000)**

A set of assets that interact or are interrelated.

**Asset type (ISO 55 000)**

Grouping of assets having common characteristics that distinguish those assets as a group or class.

**Attribute data**

Data in tabular format (rows and columns).

**Audit (ISO 55000)**

Systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled.

**Benefit-cost analysis − community**

Discounted cash flow that takes into account the benefits and costs of an investment opportunity to the entity and the community it serves.

**Benefit-cost analysis − organisation**

Discounted cash flow that takes into account the benefits and costs of an investment opportunity to the entity only.

**Brownfields development**

Development that is restricted by existing fixed structures, often necessitating some extent of demolishment prior to starting the intended construction.

**Capacity (IIMM)**

Maximum output that can be produced or delivered using the existing network or infrastructure.

**Capital (financial concept of)**

Net assets of an entity.

**Capital (physical concept thereof)**

The productive capacity of an entity as measured by the optimised depreciated replacement cost method.

**Capital expenditure (CAPEX)**

Expenditure used to create new assets, increase the capacity of existing assets beyond their original design capacity or service potential, or to return the service potential of the asset or expected useful life of the asset to that which it had originally. CAPEX increases the value of capital asset stock.

**Capital upgrading**

Enhances the service potential of the asset or the economic benefits that can be obtained from use of the asset and may also increase the life of the asset beyond that initially expected.

**Cash flow**

The stream of costs and/or benefits over time resulting from a project investment or ownership of an asset.

**Competence (ISO 55 000)**

The ability to apply knowledge and skills to achieve intended results.

**Component (IIMM)**

A component (Note 1) is a specific part of a complex item (Note 2) that has independent physical or functional identity and specific attributes such as different life expectancy, maintenance and renewal requirements and regimes, risk or criticality.

Note 1: A component is separately recognised and measured (valued) in the organisation's asset register as a unique asset record, in accordance with the requirements of GRAP 17 to componentise assets.

Note 2: A complex item is one that can be disaggregated into significant components. Infrastructure and buildings are considered complex items.

**Condition (IIMM)**

The physical state of the asset.

**Condition assessment or condition monitoring (IIMM)**

The inspection, assessment, measurement and interpretation of the resultant data, to indicate the condition of a specific component so as to determine the need for some preventive or remedial action.

**Conformity (ISO 55 000)**

Fulfilment of a requirement.

**Constant price**

Price excluding adjustment for inflation.

**Continual improvement (ISO 55 000)**

Recurring activity to enhance performance.

**Corrective maintenance**

Maintenance carried out after a failure has occurred and intended to restore an item to a state in which it can perform its required function. Corrective maintenance can be planned or unplanned.

**Critical assets (IIMM)**

Those assets that are likely to result in a more significant financial, environmental and social cost in terms of their impact on organisational objectives and service delivery.

**Current replacement cost (IIMM)**

The cost the entity would incur to acquire the asset on the reporting date. The cost is measured by reference to the lowest cost at which the gross future economic benefits could be obtained in the normal course of business, or the minimum it would cost to replace the existing asset with a new modern equivalent asset with the same economic benefits, allowing for any differences in the quantity and quality of output and in operating costs.

**Customer database**

A database of all customers within the municipality. Each line in the database describes some form of geography (a building, land parcel, or a census sub place), each column in the database describes some attribute of the customer.

**Customer profile**

A summarised version of the customer database, quantifying the number of customers for a specific geographic area.

**Deal breaker**

A non-negotiable policy or other requirement (e.g. minimum performance standard or condition level of an asset) that must be adhered to.

**Decommissioning (IIMM)**

Actions required to take an asset out of service.

**Deferred maintenance**

The portion of planned maintenance work necessary to maintain the service potential of an asset that has not been undertaken in the period in which such work was scheduled to be undertaken.

**Demand management**

The active intervention in the market to influence demand for services and assets with forecast consequences, usually to avoid or defer CAPEX expenditure. Demand management is based on the notion that ‘as needs are satisfied’, expectations rise automatically and almost every action taken to satisfy demand will stimulate further demand.

**Density**

Measurement of the population of a defined urban area, excluding non-urban land uses. Non-urban uses include regional open space, agriculture and water bodies. Density can be measured using any of the following means, depending on the purpose of the measurement:

* Floor area ratio (FAR) – the total floor area of buildings divided by land area of the lot on which they are built;
* Residential density – the number of dwelling units in a given area;
* Population density – the number of people in a given area;
* Employment density – the number of jobs in a given area;
* Gross density – any density figure for a given area of land that includes uses not necessarily directly relevant to the figure (normally roads, typically accounting for about 20 per cent the land cover of a settlement); and
* Net density – a density figure for a given area of land that excludes land not directly related to the figure.

**Depreciated replacement cost (IIMM)**

The replacement cost of an asset less accumulated depreciation calculated on the basis of such cost to reflect the already consumed or expired economic benefits of the asset.

**Depreciation (GRAP)**

Depreciation is the systematic allocation of the depreciable amount of an asset over its useful life.

**Derecognition**

To remove a previously recognised financial asset or liability from an entity's balance sheet, especially when it reaches end of life or when it is sold to a third party.

**Disaggregate**

Break down into separate parts or entities.

**Discounted cash flow**

A technique to convert cash flows that occur over time to equivalent amounts at a common point in time. It is the process of finding present values, which is the inverse of compounding interest.

**Discount factor**

A rate or factor used to relate present and future money values. Also, referred to as the discount rate, hurdle rate, required return, cost of capital or opportunity cost. For the purposes of this Toolkit the discount factor in formulae is denoted with an "r".

**Disposal (IIMM)**

Actions necessary to decommission and dispose of assets that are no longer required.

**Economic life (IIMM)**

The period from acquiring the asset to the time when the asset, while physically able to provide a service, ceases to be the lowest cost alternative to satisfy a particular level of service. The economic life is at the maximum when equal to the physical life, however obsolescence will often ensure that the economic life is less than the physical life.

**Externalities**

Benefits, costs or actions that have an impact on third parties as a result of the entity’s actions or non-action.

**Facility (IIMM)**

A complex comprising many assets (e.g. a hospital, water treatment plant, recreation complex, etc.), which represents a single management unit for financial, operational, maintenance or other purposes.

**Failure modes**

Ways in which an asset can fail in relation to required levels and standards of service that trigger asset management planning and potentially investment decision making:

* Capacity;
* Condition;
* Cost of operation; and
* Performance.

**Failure modes, effects and criticality analysis (IIMM)**

A systematic, logical risk-based maintenance approach aimed at maximising the reliability of plant and equipment assets.

**Financing costs**

Includes annual interest costs and capital repayments (principle amount) for the investment over the period of the loan.

**Geographic information system (GIS)**

Software that provides a means of spatially viewing, searching, manipulating and analysing an electronic database.

**Greenfields development**

Development that is unconstrained by existing fixed structures.

**Impact**

Impacts are effects that either positively contribute to an outcome or strategic objective, such as increased revenue, or that reduce risks such as environmental disasters, workplace injuries, loss of property, or damage to the reputation or image of the organisation.

**Impairment**

The loss of future economic benefits or service potential of an asset over and above the systematic recognition of the loss of the asset’s future economic benefits or service potential through depreciation.

**Impairment loss (GRAP)**

An impairment loss of a cash-generating asset or a non-cash-generating asset is the amount by which the carrying amount of an asset exceeds its recoverable amount.

**Incident (ISO 55 000)**

Unplanned event or occurrence resulting in damage or other loss.

**Indicators (in multicriteria analysis)**

The criteria used to measure a broad range (e.g. financial, economic, social and environmental) outcomes of a project in a multicriteria analysis.

**Infill development**

New construction that “fills in the gaps” in an already urbanised area. This type of development has the potential to use existing infrastructure, increase density, limit urban sprawl and strengthen the existing economy.

**Infrastructure assets**

Stationary systems forming a network and serving whole communities, where the system as a whole is intended to be maintained indefinitely at a particular level of service potential by the continuing replacement and refurbishment of its components.

**Intangibles**

A component that is difficult to quantify in a measurable way.

**Integrated development plan**

An approach to planning that involves the entire municipality and its citizens in finding the best solutions to achieve good long-term development. Refer to the Municipal Systems Act, 2000 for more detail.

**Internal rate of return (IRR)**

IRR is the discount rate that equates the present value of net cash inflows with the initial investment in the project, resulting in a NPV = R0. The IRR is the true yield of the investment, expressed as a rate of return.

**Inventories (GRAP)**

Inventories are assets: (a) in the form of materials or supplies to be consumed in the production process; (b) in the form of materials or supplies to be consumed or distributed in the rendering of services; (c) held for sale or distribution in the ordinary course of operations; or (d) in the process of production for sale or distribution.

**Investment costs**

The initial capital investment plus any intermittent capital expenditure required to achieve the project outcomes.

**Level of service (IIMM)**

Levels of service statements describe the outputs or objectives an entity intends to deliver to customers.

**Life**

A measure of the anticipated life of an asset or component, such as time, number of cycles, distance intervals etc. over which benefits are derived from the use or availability of an asset.

**Life cycle (IIMM)**

The time interval that commences with the identification of the need for an asset and terminates with the decommissioning of the asset or any liabilities thereafter.

**Life cycle asset management**

Encompasses all asset management strategies and practices associated with an asset or group of assets that result in the lowest life cycle cost necessary to achieve stated service requirements within acceptable risk parameters.

**Life cycle cost (IIMM)**

The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, renewal and disposal costs.

**Maintenance**

All actions intended to ensure that an asset performs a required function to a specific performance standard(s) over its expected useful life by keeping it in as near as practicable to its original condition, including regular recurring activities to keep the asset operating, but specifically excluding renewal. Refer to CIDMS toolkit (Appendix A), available on the CIDMS website for a hierarchy of maintenance type, approach and actions.

Note: Maintenance also specifically excludes restoring the condition or performance of an asset following a recognised impairment event, which would be classified as either renewal or upgrading, depending on the circumstances.

**Maintenance of capital**

Expenditure to ensure that the productive or operating capacity of the asset base is maintained over time. The value vested in capital assets is maintained when the entity has at least as much capital at the end of the period as it had at the beginning thereof.

**Maintenance expenditure**

Recurrent expenditure as required to ensure that the asset achieves its intended useful life. Maintenance is funded through the entity’s operating budget, and such expenditure is expensed in the entity’s Statement of Financial Performance.

**Maintenance plan**

Describes the planned and unplanned maintenance actions for an asset, facility or portfolio of assets, with intended delivery methods and schedules, budget requirements and responsible parties.

**Maintenance objectives (IIMM)**

Objectives for what maintenance has to achieve to ensure the assets are in the right condition to meet the needs of the entity. Maintenance performance measures and targets are the means of assessing whether the maintenance objectives are being met.

**Maintenance standards**

The standards set for the maintenance service, usually contained in preventive maintenance schedules, operation and maintenance manuals, codes of practice, estimating criteria, statutory regulations and mandatory requirements, in accordance with maintenance quality objectives.

**Maintenance strategy**

Interprets higher-order documents and formulates maintenance objectives and targets, establishes maintenance tactics, and defines maintenance roles and responsibilities.

**Material (GRAP)**

Omissions or misstatements of items are material if they could, individually or collectively, influence the decisions or assessments of users made on the basis of the financial statements. Materiality depends on the nature or size of the omission or misstatement judged on the surrounding circumstances. The size of the information item, or a combination of both, could be the determining factor.

**Modern equivalent asset (IIMM)**

The most cost-efficient asset currently available, which will provide equivalent functionality to the asset that will be replaced (or is currently being valued using the Depreciated Replacement Cost (DRC) methodology).

**Monitoring (ISO 55000)**

Determining the status of a system, a process or an activity.

**Monocentric city**

A city structure with one dominant core, typically the Central Business District (CBD), which is the hub of economic activity and employment in the city.

**Multicriteria analysis**

An analysis technique that takes into account a range of qualitative and quantitative criteria reflecting the financial, economic, social and environment characteristics of the investment opportunity.

**Net benefits**

The sum of annual benefits less annual costs in the year of the project/asset’s life.

**Net present value**

The value of an asset to the entity in present money terms. It is the net amount of discounted cash inflows arising from the use and subsequent disposal of the asset, after deducting the value of the discounted total cash outflows.

**Node**

A centre of activity, economic or otherwise. These often occur at intersections of major corridors, but some just function as the centre of their neighbourhood.

**Numeraire (for purposes of optimised decision making and investment analysis)**

The numeraire is the money unit of measure within an abstract macroeconomic model in which there is no actual money, but other forms of utility value or costs.

**Objective (Adjusted from ISO 55000)**

Result to be achieved at strategic, tactical or operational level. Objectives can be set in a variety of domains or outcome areas (e.g. economic, social or environmental outcomes), or can relate to elements of the entity (e.g. corporate level or units in the entity), or can relate to processes, services, products, programmes and projects.

**Obsolescence (Optimised Decision-Making Guidelines)**

The asset can no longer be maintained, or suffers a loss in value due to a decrease in the usefulness of the asset, caused by technological change, or changes in people's behavioural patterns or tastes, or environmental changes.

**Operating expenditure**

OPEX is recurrent expenditure to provide services. Examples of OPEX include staff costs, administration costs, consumables, maintenance and repairs and feasibility studies.

**Opportunity cost**

The cost of cash flows that could have been earned in the best alternative investment opportunity.

**Optimised decision making (IIMM)**

Two definitions are:

1. A formal process to identify and prioritise all potential solutions with consideration of financial viability, social and environmental responsibility and cultural outcomes
2. an optimisation process for considering and prioritising all options to rectify existing or potential performance failure of assets. The process encompasses NPV analysis and risk assessment.

**Performance (ISO 55 000)**

Measurable result of either a quantitative or qualitative nature that can relate to the management of activities, processes, products or services, systems or entities.

**Performance measure (IIMM)**

A qualitative or quantitative measure used to measure actual performance against a standard or other target. Performance measures are used to indicate how the entity is doing in relation to delivering levels of service.

**Performance monitoring**

Continuous or periodic quantitative and qualitative assessments of the actual performance compared with specific objectives, targets or standards.

**Policy**

Intentions and direction of an entity as formally expressed in a documented statement approved by top management and communicated throughout the entity.

**Polycentric city**

A city structure that typically has a weak, diffused core, and several competing primary nodes. Employment opportunities in a polycentric city is dispersed.

**Predictive action (ISO 55 000)**

Action to monitor the condition of an asset and predict the need for preventative or corrective action. Also, referred to condition monitoring or performance monitoring.

**Preventative action (ISO 55 000)**

Action to eliminate the cause of a potential nonconformity or other undesirable potential situation.

**Preventative maintenance**

Maintenance carried out at predetermined intervals, or corresponding to prescribed criteria, and intended to reduce the probability of failure or the performance degradation of an item. Preventative maintenance is planned or carried out on opportunity.

**Process (ISO 55 000)**

Set of interrelated or interacting activities, which transforms inputs into outputs.

**Property, plant and equipment (PPE) (GRAP)**

Property, plant and equipment (PPE) are tangible items that: (a) are held for use in the production or supply of goods or services, for rental to others, or for administrative purposes; and (b) are expected to be used during more than one reporting period.

**Relational database management system**

A relational database management system (RDBMS) is a database management system (DBMS) that is based on the relational model.

**Reliability-centred maintenance (IIMM)**

A process for optimising maintenance based on the reliability characteristics of the asset.

**Remaining useful life (IIMM)**

The time remaining until an asset ceases to provide the required service level or economic usefulness.

**Renewal**

Expenditure on an existing asset that returns the service potential of the asset or expected useful life of the asset to that which it had originally.

Note 1: Renewal can include works to replace existing assets or facilities with assets or facilities of equivalent capacity or performance capability.

Note 2: Expenditure on renewals is funded through the entity’s capital budget, and such expenditure is recognised in the entity’s Statement of Financial Position.

**Replacement cash flow decision**

Cash flows to be determined for the replacement of an existing asset, where the investment analyst must find the *incremental* cash outflows and inflows that will result from the replacement.

**Residual value**

The estimated value of an asset at the end of its useful life, or the value that remains at the end of the analysis period where the asset useful life exceeds the analysis period. The residual value is considered as a benefit (cash inflow) in the final year of the analysis period.

**Risk (IIMM)**

The effect of uncertainty on objectives. Risk events are events that may compromise the delivery of the entity's strategic objectives.

**Risk controls (IIMM)**

Measures to manage or mitigate identified risks.

**Risk exposure (IIMM)**

The level of risk to which an entity is exposed. Risk exposure is a function of the probability of an occurrence times the impact of that occurrence.

**Risk management (IIMM)**

The application of a formal process that identifies the exposure of an entity to service performance risk and determines appropriate responses.

**Risk register (IIMM)**

A record of information that stipulates risks identified, the levels of risk exposure before and after implementation of risk controls, and details of appointed risk owners as a minimum.

**Routine maintenance (IIMM)**

Day-to-day operational activities to keep the asset operating (replacement of light bulbs, cleaning of drains, repairing leaks, etc.) and which form part of the annual operating budget, including preventative and periodic maintenance.

**Sensitivity analysis**

Testing of the variations in the outcome of an evaluation by altering the values of key factors about which there may be uncertainty.

**Spatial development framework**

A spatial development framework (SDF) is the principal strategic planning instrument, which guides and informs all planning and development, and all decisions with regard to planning, management and development in the municipality.

**Spatial planning**

Spatial planning is a process of place shaping and delivery. It is about the management of space and development in order to create better places, responding to the needs of society, the economy and the environment. Spatial planning systems are the methods used by the public sector to influence the distribution of people and activities in spaces of various scales. Discrete professional disciplines, which involve spatial planning include land use, urban, regional, transport and environmental planning.

**Statement of Financial Performance**

The Statement of Financial Performance, also known as an income statement, shows the revenue and expenses of an entity over a period of time.

**Statement of Financial Position**

The Statement of Financial Position, also known as the balance sheet, presents the financial position of an entity at a given date. The statement comprises three main components, these being assets, liabilities and equity, and gives users of financial statements insight into the financial soundness of an entity in terms of liquidity risk, financial risk, credit risk and business risk.

**Sunk costs**

Cash outlays already made (past expenditures) that therefore have no effect on the cash flows relevant to the current investment decision. As a result sunk costs should be excluded from a project’s incremental cash flows in a replacement cash flow investment decision.

**Unplanned maintenance (IIMM)**

Corrective work required in the short term to restore an asset to working condition so that it can continue to deliver the required service or to maintain its level of security and integrity.

**Upgrading**

The replacement of an asset or addition/ replacement of an asset component, which materially improves the original service potential of the asset.

**Useful life (GRAP)**

The useful life of an asset is the period over which an asset is expected to be available for use by an entity or the number of production or similar units expected to be obtained from the asset by an entity.

**Valuation**

Estimated asset value, which may depend on the purpose for which the valuation is required, i.e. replacement value for determining maintenance levels or market value for life cycle costing.

**Weighted average cost of capital (WACC)**

WACC is the combination of cost of debt capital, being the interest rates for borrowing short-term and long-term debt, and the opportunity cost of capital for equity, which is the risk-free interest rate for equity funds on deposit.