ASSET MANAGEMENT PROGRAM EVALUATION BEST PRACTICES

1.0 Corporate Asset Management Program

    1.1 Vision and Support

    1.2 Resource Management

    1.3 Strategic Asset Management Plan

    1.4 Communications

2.0 Customer Service and Risk Management

    2.1 Levels of Service

    2.2 Performance and Quality Management

    2.3 Risk Management

3.0 Asset Planning

    3.1 Asset Development

    3.2 Asset Financing and Reporting

    3.3 Business Case Evaluation

4.0 Asset Acquisition

    4.1 Asset Knowledge

    4.2 Asset Plans

5.0 Asset Operations

    5.1 Operations Strategy

6.0 Asset Maintenance

    6.1 Maintenance Strategy

7.0 Asset Replacement and Rehabilitation

    7.1 Renewal Strategy

8.0 Business Support Tools

    8.1 Information Systems

ASSET MANAGEMENT PROGRAM EVALUATION BEST PRACTICES

1. Corporate Asset Management Program

1.1 Vision and Support

Support from policy body	The governing body understands the objectives of asset management and treats it as a policy priority.
Management direction	Top management strongly and visibly supports improved AM.
Organizational Commitment	All levels of management understand the importance of AM and agree on need for improvement.
Corporate AM goals and objectives	AM is a key part of the business plan and has associated goals, objectives, strategies, etc.

1.2 Resource Management

Allocation of resources	Top management has ensured adequate people, equipment and tools are available to develop or sustain an AM program.
Asset Manager Responsibility	Top management has appointed an Asset Manager with the authority to lead an Asset Management Team (AMT) and the resources to develop and sustain an AM program.
Establishment of AM Team	The AMT has been formally constituted with senior management representation from Planning, Design, Construction Management, O&M, Finance, and Customer Service at a minimum.
AM Program Overview	The AMT has prepared a set of goals and objectives for moving ahead with AM.
AM Program development	The AMT has developed a general outline of the desired AM program with defined schedules and preliminary responsibilities for performance.
Resources and progress	The AMT has allocated the initial resources needed to move ahead with program development, training, monitoring, controlling, reporting, auditing, and updating and improving the AM program.
Roles and responsibilities	Roles and responsibilities have been defined for all personnel involved in the AM program.
Employee Development	A systematic approach for educating and motivating the work force to generate both direct and indirect value for the AM program has been established.

ASSET MANAGEMENT PROGRAM EVALUATION BEST PRACTICES

1.3 Strategic Asset Management Plan

Assessment of current practices	Current AM-related business processes are identified, documented, understood, and evaluated.
Development of vision	The AMT has defined goals for achievement in each AM performance area, with associated periods.
Analysis of gaps	Comparisons have been made between the current status of business practices and the desired status, and "gaps" have been identified.
Preparation of SAMP	A Strategic Asset Management Plan (SAMP) has been prepared to close the "gaps" within the associated time frames, and all associated elements (resources, responsibilities, reporting, etc.) have been specified. The SAMP specifies the quantitative benefits expected from the AM program.

1.4 Communication

Communications plan	Communications plan is established and used to communicate goals and objectives to all staff and stakeholders.
AM strategy awareness	Staff are aware of the AM program goals and have specific knowledge of their level of involvement and responsibilities.
Communication of SAMP	The SAMP has been communicated to guide all parts of the organization involved in gap closure and general strengthening of AM.

2.0 Customer Service and Risk Management

2.1 Levels of Service

Documented Service Levels	A clear and complete set of service levels (both internal and external) are documented that meet regulatory requirements and long-term interest of the organization
Measurable Service Levels	Levels of service are measured and tracked to ensure they meet the expectations of all stakeholders.
Alignment with customer service	The relationships between service levels and costs are understood. Programs exist to help customers understand the costs of various service levels, and to gain agreement on the desired service levels.
Customer's perspective	There is an understanding of the customer's level of service expectation, how AM will benefit them, and ongoing communication to manage those expectations.
Regulatory compliance strategy	Regulatory requirements and pending requirements are continuously monitored and communicated as part of the AM planning process.
Regulatory reporting	Methods (data collection, reporting) to comply with regulatory requirements are established and documented in the organization.

2.2 Performance and Quality Management

Key performance Indicators	Indicators of success are established to measure effectiveness of the AM program and used to develop corrective actions on a proactive basis.
Continual improvement	There is a continual improvement plan developed that outlines the review process for the AM program and establishes guidelines for updating the AM program as

	necessary
AM program audit	The overall AM Program is reviewed periodically for adherence to the plan goals and for measurements of actual benefits arising from AM.
Exception reporting	There is a mechanism established to allow staff and stakeholders to provide feedback on program and procedural improvements in the AM program.

2.3 Risk Management

Risk policy	A risk policy has been established by the organization that establishes the level of risk the organization is willing to accept to meet its level of service.
Risk identification	Areas that have the potential to impact service levels, regulatory compliance, financial objectives and other business objectives are understood in the organization.
Risk analysis	The likelihood and consequence of risk is has been established and quantified.
Risk mitigation	Mitigation plans have been established for equipment and processes determined to have a high risk level.

3.0 Asset Planning

3.1 Asset Development

Origination	The need for new assets or projects is anticipated well in advance and arises from master plans or specific asset plans (not ad hoc, annual polling in engineering and operations, etc.).
Scope for projects	The need for assets or projects is documented in a way that leaves alternatives open to consideration.
Alternatives	Alternative assets or projects are identified, including re-rating or reconfiguration of existing assets.
Life-cycle costs	Life-cycle costs of alternatives are prepared according to defined formats and PV analyses contribute to selection.
Delivery methods	All legally available delivery methods are considered, such as in-house, design and construct, design-build (DB), design-build-own (DBO), design-build-own-operate (DBOO), and selection made with due consideration of comparative life-cycle costs.
Operability and maintainability	Operations and Maintenance (O&M) personnel are involved in design from an early point with the objective of minimizing ongoing costs of asset ownership.
Design requirements	Drawings identify assets by the standard hierarchical enumeration scheme.
Construction requirements	Facility is delivered with asset listings in accord with the enumeration scheme. Acquisition costs and life-cycle plan data at the asset level are delivered along with the asset listings.
Asset reliability and assessment updates	If a delivered facility includes new asset types, processes, or components outside the existing enumeration scheme, the scheme and condition assessment program are updated.
Operating manuals, procedures, and guarantees	Design and construction requirements include delivery of operating and maintenance manuals, guarantee information, and asset plan data.

ASSET MANAGEMENT PROGRAM EVALUATION BEST PRACTICES

Asset tracking	For all new assets, and in accord with the enumeration scheme, life-cycle asset plan, and asset data are entered into the AM system. Assets removed from service are retired.
Process review	Asset development processes are reviewed periodically through the AM continual improvement process

3.2 Asset Financing and Reporting

Growth needs	Systems to determine the system growth and necessary capacity are determined on a scheduled basis and used to determine the funding needs.
R&R needs	Near- and long-term R&R needs are known or estimated through the asset planning process. Sufficient reserves exist to handle unexpected near-term needs.
Funding plan	A funding plan for infrastructure sustenance exists and is maintained. Alternative sources of funding, including reserve accumulations, are considered.
Funding policies	The governing body has approved formal long-term funding policies for infrastructure sustenance.
Historical trending	Procedures to review the trend in funding plans and available funds are done to update the funding plan and policies.
Consistency in reporting	The financial reporting asset database is identical to or synchronized with the engineering and operations asset listings.
Change management	Asset additions, capital refurbishments, expansions, partial retirements, and full retirements are accurately reflected in the financial reporting database in a timely manner.
Comprehensive reporting	The financial reporting database is updated to account for asset retirements, additions, and betterments. Key asset and AM data are reflected in the financial statement's Required Supplemental Information (RSI), if GASB 34's modified approach is not used. Long-term capital needs for infrastructure sustenance and funding policies to meet those needs are reported. Depreciable lives are updated if appropriate.
Budgeting with objectivity	Budgets are developed in accordance with system needs and predefined levels of services. Budgets are measured against the goals and objectives.
Cost forecasting	Periodic analyses are undertaken of the financial results and used to determine future costs of assets and asset operation and maintenance costs.

3.3 Business Case Evaluation

Business case evaluation (BCE)	BCEs are used to justify operational and capital expenditures.
BCE process	A formal BCE process has been established.
BCE training	Staff are trained on how to perform BCEs.
Asset decisions	Asset decisions are developed to gain the best cost and project outcome for the organization.
Process review	A quality loop has been implemented to track actual costs of BCE solution to document savings (or lack thereof), and lessons learned are incorporated into the BCE process

ASSET MANAGEMENT PROGRAM EVALUATION BEST PRACTICES

4.0 Asset Acquisition

4.1 Asset Knowledge

Asset detail	Criteria are established for the level of detail at which asset identification takes place (maintenance requirements, date in service, acquisition cost, description, nameplate data, horsepower, length, diameter, etc.).
Asset criticality	Criticality is determined for each asset based on reliability and consequence of failure in terms of cost, service delivery risk, environmental risk, etc.
Asset classes	Asset classes are identified for all assets and class definitions have been documented. "Default" estimates, formulas, or look-ups are established for R&R intervals, useful lives, and R&R costs by asset class.
Asset hierarchies	Asset hierarchies are defined for all facilities and assets and are used throughout the asset life-cycle, including design and construction.
Asset identification	Assets have been identified at the appropriate level of detail, given criticality measures, categorized with respect to management regime, assigned to asset classes, and "tagged" per the asset hierarchy.
Asset Inventory	Asset inventory has been developed to track asset performance against the asset detail.
Configuration management	A process is in place to documents physical changes to assets as well as changes to operational and maintenance practices.
Process review	Asset knowledge processes are reviewed periodically through the AM continual improvement process

4.2 Asset Plans

Asset plans	Life-cycle asset plans exist for assets at levels defined by the hierarchy.
Short-interval activities	Asset plans include short-interval activities along with standard labor hours, materials, etc., for preventive maintenance, calibration, adjustment, cleaning, and condition assessment. Allowances for planned levels of corrective maintenance are included.
Maintenance levels	Levels of asset maintenance are identified (full management, routine maintenance, run to failure, etc.) and criteria for assignment of assets to each category have been developed based on cost and criticality.
Long-interval activities	Asset plans include years and estimated costs of long-interval capital refurbishments and asset replacement, along with pricing years. Costs include salvage values (if any) and disposal costs.
Process review	Asset plans are regularly updated based on deviation from planned ownership costs, unexpected changes in asset condition, etc.
Project prioritization	The asset planning process is used to establish project priorities.

ASSET MANAGEMENT PROGRAM EVALUATION BEST PRACTICES

5.0 Asset Operations

5.1 Operations Strategy

Operational procedures	Operational procedures are documented
Operations costs	Operational costs are tracked by asset and analyzed.
Condition monitoring methodology	Appropriate procedures, intervals, and rating methodology for new assets are determined at or prior to delivery and allow for consistency in condition assessments.
Condition tracking	Procedures exist for determining, recording, tracking, and updating condition assessments and intervals are established.
Maintenance scheduling	Trends in assessed condition, along with cost and risk analyses, are used to update intervals for preventive maintenance.
Corrective actions	Trends in assessed condition, along with cost and risk analyses, are used to update long-term cost estimates and near-term schedules for corrective maintenance.
Predictive maintenance	Condition monitoring is used to support and conduct predictive maintenance.
Process review	Operational strategies and processes are reviewed periodically through the AM continual improvement process. Operational procedures and performance are assessed periodically to minimize maintenance expenses caused by operational factors.

6.0 Asset Maintenance

6.2 Maintenance Strategy

Asset plan utilization	Asset plans are utilized to schedule maintenance activities.
PM definition	Preventive maintenance (PM) activities are fully defined at the appropriate asset level and in accord with the assigned management regime. Intervals and resource information (standard hours, parts lists, etc.) are included.
PM scheduling	PM is scheduled and performed in accord with the specified intervals.
Predictive maintenance	Predictive maintenance usually arises from condition assessment and is performed prior to failure and is tracked separately in the maintenance management system for analysis purposes.
Corrective maintenance	Corrective maintenance, based on equipment failure, is tracked separately in the maintenance management system for analysis purposes.
Maintenance costs	Work orders are prepared on an asset-specific basis. Costs of fulfilling work orders are accumulated along with underlying details (hours used by craft, actual materials, etc.).
Failure codes defined	Failure codes are tied to failure modes at the asset class level. Asset failures are recorded with appropriate codes and details.
Root cause analysis	Asset failures are analyzed and used to update PM procedures and intervals as well as R&R schedules for similar assets.

ASSET MANAGEMENT PROGRAM EVALUATION BEST PRACTICES

Risk and backlog	Maintenance backlogs are prioritized based primarily on the criticality and condition of the underlying assets.
Process review	Maintenance strategies and processes are reviewed periodically through the AM continual improvement process, and maintenance strategies and PMs are updated based on the results.

7.0 Asset Replacement and Renewal Strategy

7.1 Asset Renewal Strategy

R&R planning	Most R&R decision points are known in advance through the asset planning process. Surprises are minimal.
R&R alternatives	Alternatives are identified and fully considered including refurbishment, replacement, and re-rating or reconfiguration of existing assets.
R&R analysis	R&R alternatives are evaluated considering economics and risk factors.
Life extensions	In the case of refurbishment, the life extension (if any) of the underlying asset is estimated. The capital asset plan for the subsequent life-cycle is updated.
R&R costs	R&R costs, including indirect costs, are recorded in the asset history.
Process review	R&R planning and execution processes are reviewed periodically. Benefits from these procedures are measured, and programmatic improvements are proposed.

8.0 Business Support Tools

8.1 Information Systems

Information system plan	The information system is planned and budgeted annually with a 5-year forward forecast of needs that were gathered from all divisions of the organization.
Data collection tools	Data collection tools are used to streamline the process of data input and improve accuracy of information in the databases.
Operational data	Operational data is collected and utilized to support condition monitoring and maintenance activities.
Forecasting tools	Forecasting of AM needs is done through the use of optimization tools (capacity planning, asset acquisition, maintenance analysis, R&R alternatives, etc.).
Standards and protocols	Standards and protocols for asset information systems exist and are followed by all divisions of the organization and managed under a single party.
System integration plan	Plan has been prepared to integrate the various asset information systems into a single point of data access and reporting.
Linked to inventory/ stores	The AM system is linked to the inventory and stores system.
Linked to budget/ performance reporting	The AM system is linked to the budgeting and the financial performance reporting system.
Linked to F/A system	The AM system is linked to the financial accounting system.

ASSET MANAGEMENT PROGRAM EVALUATION BEST PRACTICES

GIS functionality	GIS support field maps and is used to access asset information through a graphical interface. The GIS is available to all necessary users.
Supports GASB 34 depreciation method	The AM Information system meets GASB 34 depreciation requirements.
Supports GASB 34 modified approach	The AM Information system meets GASB 34 modified approach requirements.
Change management process	An integrated process ensuring that software issues, change requests, and bugs are managed and controlled in a formal and consistent manner.
Process review	A review process is in place to periodically review and update IT procedures, software, hardware, etc.