PORTLAND PARKS & RECREATION

Healthy Parks, Healthy Portland

Total Asset Management

July 2006

Total Asset Management

July 2006

Acknowledgements

PP&R Asset Management Coordination Team

Robin Grimwade, Manager, Strategy, Finance and Business Development
Janet Bebb, Strategic Projects Manager
Nancy Gronowski, Senior Planner/Project Manager
Randy Webster, Principal Management Analyst

Asset Management Team and Asset Register Group

Richard Bosch
Scott Cooper
Bob Downing
Leo Franz
Nancy Gronowski
Melissa Howlett
Jennie Ju
Greg McGowan
Pauline Miranda
Robi Potter
Lee Pudwill
Glenn Raschke
Shawn Rogers
Kathleen Wadden
Randy Webster
Riley Whitcomb

Cover photo: Mt.. Scott Community Center indoor aquatic center completed in June 2000

Portland Parks & Recreation
1120 SW Fifth Avenue, Suite 1302
Portland, Oregon 97204
503-823-PLAY
www.PortlandParks.org

Dan Saltzman, Commissioner
Zari Santner, Director

Contents

Letter from the Director

Dear Colleagues:

Portland Parks & Recreation staff, managers, and administrators face many challenges as we strive to provide excellent parks and recreation services and facilities to Portland residents. Among the challenges of providing and managing high quality assets are:

- Aging facilities and infrastructure
- Limited staff and resources
- Insufficient funds
- Increased demands

This manual has been developed to provide integrated and coordinated methods of asset management to ensure that we provide the right assets in the right quantity and in the right places. It establishes the framework for us to:

- Develop the policies and procedures that link our assets with our services.
- Assess our current assets and their role in our portfolio.
- Identify alternative methods to deliver excellent park and recreation services that do not rely on Portland Parks & Recreation ownership of the assets.
- Develop strategies and plans that manage and use assets for their whole life.

This manual is not a static document but an evolving tool that will help us provide better services through effective asset management. It will be regularly revised and updated to improve decision-making abilities in all parts of the bureau. The net result will be the ability to use our resources more effectively, to improve accountability, make better business decisions, and develop a culture of service.

An interdepartmental team of staff and managers will continue to review and revise these asset management plans and procedures. We welcome your suggestions on how to improve our asset management and provide the best services to Portland residents.

Sincerely,

Zari Santner,
Director

Berkeley Park in SE Portland

Executive Summary

Introduction

Portland Parks & Recreation (PP&R) is responsible for nearly a million square feet of facilities, 150 miles of trails, 365 sports fields, over 100 courts, and thousands of amenities that provide a wide array of park and recreation services to the public. Assets range from community centers to picnic tables, from soccer fields to drinking fountains, and from gardens to natural areas.

Over the years, these assets have been acquired and developed to meet a wide variety of community needs. Because of changing needs and limited funding, PP&R is examining its asset portfolio to ensure that our assets are appropriate to meet identified service needs. This document describes how we provide, manage, and maintain all of our assets to best serve the public.

A New Approach to Asset Management

Assets exist to provide services. This simple statement sums up the basic premise of Total Asset Management (TAM), a relatively new concept in the United States, but one used extensively in other parts of the world. TAM principles support the effective and efficient delivery of services by reducing asset dependency and improving asset provision.

TAM responds to identified service delivery needs and informs:

- Asset acquisition and capital investment
- Maintenance and operations
- Renewal and adaptation
- Asset disposal

PP&R has adapted TAM principles to meet its service delivery needs and is developing the *Total Asset Management Strategy and Plans* to integrate and coordinate the planning, operation, and maintenance of its assets.

Implementing this coordinated, integrated system of asset management will improve park and recreation services by ensuring that the right assets are located in the right places and that they are planned, programmed, and maintained to meet identified community needs.

PP&R Assets

Assets are physical objects having real value (usually $5,000 or more) and a useful life of at least a year. For the purposes of this asset management program, land is not included as an asset.

PP&R assets are organized in five groups:

- Buildings
- Amenities
- Infrastructure
- Developed Landscape
- Natural Resources

Effective Asset Management

Successful asset management depends on accurate, current information and a thorough understanding of the asset portfolio. Information includes a complete inventory of assets, their condition, current value, total life-cycle costs, and suitability for intended use. This information is used to inform strategic, tactical, and operational decision-making at all levels of planning, management, and operations.

PP&R is committed to an ongoing program of effective asset management that will contribute to the bureau's ability to realize its mission, mandates, and goals.

The Manual

Purpose

This manual, and the soon-to-be-completed *Asset Strategy and Plans*, have been developed to coordinate all aspects of asset management by providing the mechanisms and processes to:

- Plan for, manage, and maintain Portland Parks &Recreation assets.
- Determine the appropriate level of maintenance for assets.
- Articulate the rationale for acquiring and disposing of assets.
- Establish the protocols for coordinating asset planning and management.

Organization

The manual is presented in six chapters and an appendix.

Chapter 1: Introduction to Total Asset Management provides background about Total Asset Management practices and includes the overarching principles and policies for asset management.

Chapter 2: PP&R TAM Strategy and Plans describes the strategies and plans that will guide PP&R asset management.

The *TAM Strategy* (to be developed after the *Service Delivery Strategy* is complete) sets the future direction for the bureau by matching assets to service delivery requirements. It determines whether assets should be enhanced, maintained or disposed of and provides the foundation for developing the major asset plans.

The *TAM Plans* will describe how the strategy will be accomplished. They include:

- The **Capital Investment and Acquisition Plan:** identifies the assets to be acquired and assets to be upgraded or expanded to meet service needs.
- The **Asset Maintenance Plan:** provides a structured process for planning and developing the appropriate level of

maintenance of existing assets.

- The **Asset Disposal Plan:** identifies assets that are surplus to requirements and describes the disposal process.
- The **Cultural Assets Plan:** addresses the special needs of historic assets.

Chapter 3: The Asset Register and Asset Register Reports includes information on the inventory of assets and development of the Asset Register Reports. These are prepared for individual assets, groups of assets, parks, and properties.

Information in the Asset Register Reports will be used for decision-making in all areas of the bureau including park policies, budget preparation, capital planning, programming, annual maintenance, and daily operations.

Chapter 4: Asset Data includes general information on the organization and management of asset data. More detailed information will be found in the Data Management Manual.

This chapter includes the *Data Framework*, developed to provide a consistent structure for all PP&R asset data. This structure allows for consistent evaluation and analysis of the various assets over time. The *Data Framework* allows data to be cross-referenced, updated, and retrieved.

Chapter 5: Roles and Responsibilities describes staff and management implementation responsibilities.

Chapter 6: Implementation includes information on funding and measuring performance.

The **Appendix** includes supplemental information:

- Asset Management Definitions
- 2004 Cost of Service Study
- Data Framework
- Asset Inventory Definitions

Chapter 1
Introduction to Total Asset Management

Overview of Total Asset Management

Total Asset Management (TAM) is an established method of strategically managing physical assets to best support the delivery of identified services. It involves a continuous cycle of inventory, condition, value, and performance assessment that allows sound decision-making on all levels. TAM includes the framework, policies, plans, and practices that allows financially responsible asset management. It provides the basis for developing the strategy and plans to provide the right asset portfolio to meet service needs.

Asset planning and management involves a thorough evaluation of all service delivery options, including non-asset dependent solutions, and leads to specific actions to acquire any new assets that may be needed, to dispose of assets that are surplus, and to operate and maintain existing assets effectively and efficiently.

GOALS AND OBJECTIVES OF TOTAL ASSET MANAGEMENT

Reduce dependence on assets.

- Identify and analyze alternate ways to deliver needed services.
- Examine the roles and responsibilities of community partners in delivering services.

Support the efficient delivery of services with appropriate assets.

- Assets are cost effective, well maintained, accessible, energy efficient, and safe.

Improve ability to make sound business and planning decisions at all levels.

- Develop objective and coordinated information about assets that is the basis for integrated and defensible decision-making.
- Link asset management to financial management, funding decisions, and capital improvement plans by taking into account the full cost of maintaining and operating the asset and understanding its life cycle costs.

Clinton Park in SE Portland

Promote effective use of resources.

- Develop information that encourages the optimal use of existing infrastructure and facilities.
- Provide information that ensures better allocation of resources.

Improve bureau support and accountability.

- Develop accurate and accountable information that builds public and private support for and understanding of decisions.
- Improve communication and eliminate duplication of effort by clearly assigning responsibilities.

Develop a culture of service.

- Emphasize effective and efficient service delivery when making decisions about assets.
- Link assets to community needs.

Improve city asset management planning.

- Promote coordinated capital planning at the city level and effective long-term city asset planning.

TYPICAL ASSET CYCLES

Over its life, a typical asset goes through the following cycles:

Planning: establishing the requirements for an asset in response to service delivery needs.

Acquisition/capital improvement: the purchase, construction, lease or other methods used to bring assets into service.

Management and maintenance: the periodic or regular maintenance, refurbishment or major repair of the asset so it can fulfill its intended purpose.

Disposal: initiated when the economic life of the asset has expired, or when the need for the service provided by the asset no longer exists.

NEED FOR EFFECTIVE ASSET MANAGEMENT

As Portland Parks & Recreation (PP&R) has grown in terms of services provided and the number of assets needed to support those services, so has the need for a systematic approach to asset management. In times of fewer resources, greater demand, and reduced funding, it is vital that PP&R develop efficient and effective ways of managing assets and providing service to the public.

The following chart illustrates some of the benefits of Total Asset Management as it applies to park planning, management, and maintenance of assets:

Activity	Benefits
Scheduling daily work	Predictable work loads
Staffing and resource allocation	More cost-effective management
Scheduling preventive maintenance	Extended asset life; improved property management
Programming and scheduling public use of facilities	Optimal use of assets
Forecasting long-range capital needs	Appropriate and timely actions
Determining costs to remedy current deficiencies	Improved financial management
Enhancing system planning for specific asset groups such as community centers or sports fields	Equitable asset distribution
Maintaining facilities to specific standards and performance levels	Improved safety of public and staff
Preparing reports for various audiences	Accurate information
Determining life-cycle costs	Understanding of total costs
Coordinating asset management and planning at the city level	Improved public service

PP&R's Asset Base and Current Management

CHARACTERISTICS OF PARK ASSETS

For the purposes of asset management, assets are defined as physical objects with significant value and an expected useful life of more than one year.

Assets have real value and deteriorate in predictable ways that always require resources. Over the life of an asset, maintenance and operation consume the most resources.

Assets include built facilities and amenities. They may be items that operate independently or objects that function together. PP&R also tracks natural assets.

Park assets exist to contribute to the delivery of identified recreational, cultural, educational or environmental services. Generally, the assets are not maintained as ends in themselves, except in the cases of landscapes, natural resources or unique cultural assets or historic resources. These assets often *are* the service and are maintained as ends in themselves. Different standards and values will apply to these elements.

Assets have service potential, which is a measure of the ability of the asset to fulfill its role in service delivery. As assets decline over time, their service potential usually declines due to physical deterioration, obsolescence or change in need.

PP&R ASSET GROUPS

PP&R assets are organized into five groups: Buildings, Amenities, Infrastructure, Developed Landscape, and Natural Resources. (See the Data Framework in the Appendix for a more complete listing of the asset groups and categories.) Over the past decades, PP&R assets have been acquired and developed to meet a variety of needs. When there was sufficient funding to maintain the assets that was not a problem. Now that funding is limited, it is essential that only those assets that deliver identified needed services be kept, acquired, and maintained.

CURRENT ASSET MANAGEMENT

Currently, decisions about park services and assets are guided by *Parks 2020 Vision*, city mandates, and various strategic management plans developed over the years for acquisition, improvements, and disposal. The following general observations apply to most asset groups.

- Most assets are fully utilized; the need exists for more assets and greater capacity. Many facilities do not meet current community needs because of small size, outdated amenities, and poor location.

- Most PP&R assets are well maintained within the existing budgets, but some buildings have serious structural deficiencies that good maintenance alone cannot remedy.

- Capital improvement decisions are often made on an emergency basis or when funds become available for a particular asset or group of assets.
- Highly vocal advocates can sway decisions about services and assets.
- There is an abundance of information about assets, but it is scattered throughout the bureau and often gathered on an as-needed basis.
- Databases are not integrated and data is not collected uniformly.
- Data collection is not easily replicated over time or available to other departments in the bureau.
- Without reliable and accurate data, it is difficult – if not impossible – for staff, managers, and administrators to make informed and consistent decisions about what assets to provide, where and how to provide them, and how to best manage the assets.
- A comprehensive method of managing all PP&R assets, better coordination, and more complete consultation are needed to achieve sustainable long-range solutions.

Vera Katz Eastbank Esplanade

- Application of TAM principles and practices provides a sound basis for addressing these concerns in a coherent, integrated, and sustainable manner.

TAM Principles and Policies

PRINCIPLES

Service delivery guides asset management.

Effective service delivery is the basis for asset management. Assets are provided and managed to provide services by linking asset management strategies to desired service outcomes.

Alternative service delivery methods are considered before investing in assets.

Non-asset solutions, existing alternatives, full life cycle costs, and risks are considered as assets are acquired, built or expanded.

Assets are managed to the end of their useful lives.

Asset management planning reflects a whole-of-life approach. Assets are assessed regularly and maintained at appropriate levels throughout their lives. Asset decisions are based on the assessment of life cycle costs, benefits, and risks.

All assets have value and deteriorate at predictable rates that inevitably demand resources.

Assets are managed to respond to predictable deterioration, based on reasonable assumptions and regular assessments.

Asset management is a key bureau activity and is linked to the bureau's strategic planning process.

Asset management planning is part of a series of strategies and plans for realizing bureau goals and objectives. PP&R's *TAM Strategy* derives from the *Strategic Business Plan*, the *System Plan*, and the *Service Delivery Strategy*.

POLICIES

Asset management activities are undertaken within an integrated planning framework.

Decisions at strategic and detailed assessment levels are based on policies and standards that are easily understood and uniformly applied. PP&R staff and managers rely on common asset information.

Services are clearly defined before asset management decisions are made.

Trends, needs, mandates, and missions are considered before decisions are made on asset acquisition, replacement, rehabilitation or disposal.

All service delivery options are considered.

Non-asset solutions to service delivery are given full consideration and preference, if applicable.

Processes are objective and repeatable.

Actions and decisions at both the strategic high level and the detailed assessment level are logical, defensible, and objective and applied in a consistent and compatible manner. Consequences of action and of inaction are carefully considered.

Financial and technical analyses are fully integrated.

Asset planning and management includes the appropriate level of financial and technical information at all levels.

Heron Lakes Golf Course

Full asset costs are considered in budgeting and capital planning. The full life cycle costs and risks of owning, maintaining, and operating assets are considered before investing in new assets or rehabilitating existing assets.

Argay Park basketball court

Chapter 2
PP&R TAM Strategy and Plans

PP&R Planning Framework

The *TAM Strategy* is one of PP&R's principle planning documents. Along with the *Strategic Business Plan*, the *System Plan*, and the *Service Delivery Strategy*, it describes how PP&R will fulfill its mission, meet its mandates, and serve the public.

The *Strategic Business Plan* provides organizational direction derived from PP&R's mission, vision, and values. It addresses current issues, determines actions and desired outcomes, and sets performance measures.

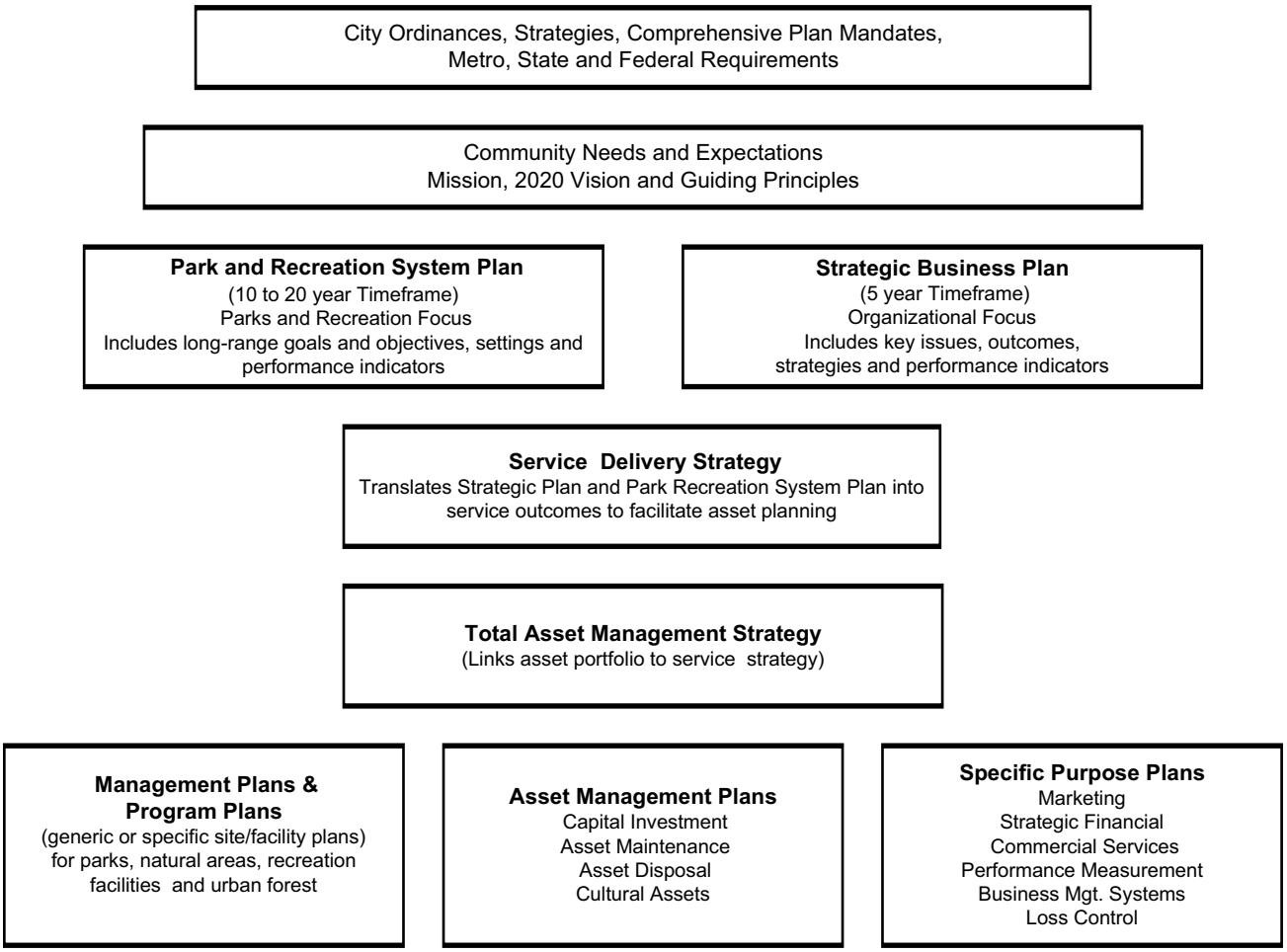
The *System Plan* describes long-range goals and objectives and the recreation settings for the various park experiences.

The *Service Delivery Strategy* (currently being developed) identifies the bureau's service objectives and defines which services the bureau will provide. It identifies the specific service outcomes of the bureau, how they will be achieved, and the resources needed to deliver them. Defining the services will ensure that assets are used to provide needed services and not maintained for their own sake.

The *Total Asset Management Strategy* is the document that provides the long-range direction for developing PP&R's asset portfolio. The *TAM Strategy* will define which assets are needed to successfully deliver services and how and by whom they will be provided.

The *TAM Strategy* provides the foundation and rationale for developing the four major *TAM Plans:* Capital Investment and Acquisition, Asset Maintenance, Asset Disposal, and Cultural Asset Plan.

The chart on the following page shows the relationships between these plans and strategies.



PP&R Planning Framework

PP&R TAM Strategy Development

The TAM Strategy will describe the overall direction that PP&R will take to provide an appropriate asset portfolio that meets identified needs. It will take the following factors into account:

- Identified service needs
- External factors such as the political and legislative environment
- Internal bureau management and corporate plans
- Stakeholder interests
- Asset life cycles
- Service delivery options
- Financial implications
- Risk tolerance

The strategy will be developed as follows:

PHASE ONE: COLLECT AND ANALYZE RELEVANT DATA

The analysis phase, currently underway, involves identifying, collecting, and analyzing all relevant data about the existing assets and the need for assets, including links to service delivery strategies and corporate planning.

This analysis includes information related to the:

- Asset base (inventory and condition)
- Service delivery needs
- Gap analysis
- Business environment

Information is collected on an ongoing basis and reviewed to ensure that all relevant information is available for analysis.

The Asset Base

Information on the existing asset base will be stored in the Asset Register. See Chapter 3: The Asset Register and Asset Register Reports. The Asset Register is a hierarchical inventory of assets that includes the following information:

- Physical (location and condition)
- Financial (current replacement value and cost to maintain)
- Suitability (functionality and serviceability)

Service Delivery Needs

As noted earlier, this information will come from the *Service Delivery Strategy*, currently being developed, and specific topic management plans.

Gap Analysis

After the asset inventory is identified and described, a 'gap analysis' can be done to identify the difference between what is available and what is needed. Successful analysis depends on:

- Relevant information on existing assets
- Demand trends
- Clear strategic direction and objectives
- Appropriate planning tools and methodologies

The Business Environment

Internal and external business environments are examined in order to achieve effective delivery of services while developing and managing assets. The bureau's approach will address the variables of the business environment relevant to its service obligations.

Internal business variables include:

- Service delivery requirements/demand
- Service delivery strategies
- Resource management and budgeting
- Operational factors (internal policies and directives)

This information is obtained through research and consultation with key stakeholders.

External business variables include:

- Regulatory factors (legislation, local laws, and policies)
- Political factors (policies)
- Economic factors (financial considerations and market forces)
- Social factors (demographics, community attitudes, and trends)
- Technological factors (advances in industry and sciences)

In addressing service obligations, the bureau will analyze these business variables and identify the strengths, weaknesses, opportunities, and threats in relation to the business environment.

Significant factors include changes in government policies, changes in demand for particular services, and the ability of the bureau to respond to a changing environment in a timely and effective manner.

PHASE TWO: SET DIRECTION

Direction is set by developing strategic objectives to meet identified gaps and needs. It recognizes that assets are *one* of a group of resources (others include human, financial, and information) that support the delivery of services. Objectives and desired outcomes must be compatible with corporate plans and service delivery strategies.

PHASE THREE: CHOOSE A STRATEGY

In many cases, there will be several strategic alternatives that have asset implications. This phase of the process involves identifying, evaluating, and selecting these alternatives.

Identification determines the potential ways to achieve the objectives and outcomes. These may include:

- Addressing demand (developing ways to influence the demand for asset usage).
- Addressing supply (developing strategies to ensure that assets perform more efficiently and efficiently, e.g., in respect to functionality and/or maximum utilization).
- Identifying non-asset solutions.
- Providing capital to improve the existing asset or to provide a new asset solution.

Evaluation assesses the viability of alternatives, considering issues such as:

- External business environment (political needs and issues, including the whole-of-government view as well as those of individual public sector agencies)
- Internal business environment (budget issues, service delivery needs)
- Measurability (performance measures)
- Risk exposure

Selection establishes the priority order for various alternatives based on their significance to stakeholders and their ability to be implemented. Categories into which the strategic options are grouped are:

- New assets to be acquired or developed
- Existing assets to be upgraded
- Assets currently performing as desired
- Assets that are surplus to requirements

Brooklyn Park in SE Portland

PHASE FOUR: IMPLEMENT PREFERRED STRATEGY

Prior to implementation, ensure that the following needs are met:

- Staffing levels are adequate and appropriately skilled personnel are available
- Appropriate technology systems exist
- Organizational systems are in place
- Funding is in place or financing is assured

PHASE FIVE: MEASURE PERFORMANCE

Performance measurement involves assessing the adequacy of a process or result, in qualitative and/or quantitative terms.

Qualitative measures may include:

- Establishing that strategies contributed significantly to the achievement of objectives outlined in corporate plans and service delivery strategies.
- Acknowledging that consultation with key stakeholders (such as resource and service delivery planners) results in due consideration being given to their asset-related needs.
- Determining the quality of experience of park users.

Quantitative measures assess performance in quantitative terms, such as reducing maintenance costs per unit or reducing the capital budget outlays over a specified period.

PHASE SIX: PERIODIC REVIEW

In reviewing and evaluating the strategies adopted (either investment, maintenance, re-investment or disposal of assets), some key questions need to be addressed:

- Is the asset supporting the most effective delivery of the service?
- If so, is the asset performing optimally?

As the asset portfolio is refined and aligned to meet the service delivery needs, the asset portfolio will become more stable. Changes will occur only when there are significant service changes. Typically, only maintenance actions will be needed.

Matching Assets to Service Delivery Needs

Developing the right portfolio of assets to support the bureau's mission requires testing each asset or class of assets against the following service delivery criteria and analyzing the performance.

If the asset complies with all of the service delivery criteria, it should be maintained at the level determined by the *Service Delivery Strategy*. If it does not comply, the asset should be adjusted or service delivery methods changed or modified.

Service Dependency: Is the service or program asset-dependent? If so, should PP&R provide the assets? Can the service delivery be less asset-dependent?
Making services less asset-dependent may be done in a number of ways:

- By finding a different way to deliver the services.
- By sharing assets with another agency.
- By centralizing some common functions.

The ability to reduce assets may be limited where the asset *is* the service, e.g., open space and natural areas provide service simply by existing.

Asset reduction recommendations need to be made after all economic advantages have been examined, service demands for other resources have been assessed, the need for inter-agency agreements has been studied, and the impacts on service delivery have been determined.

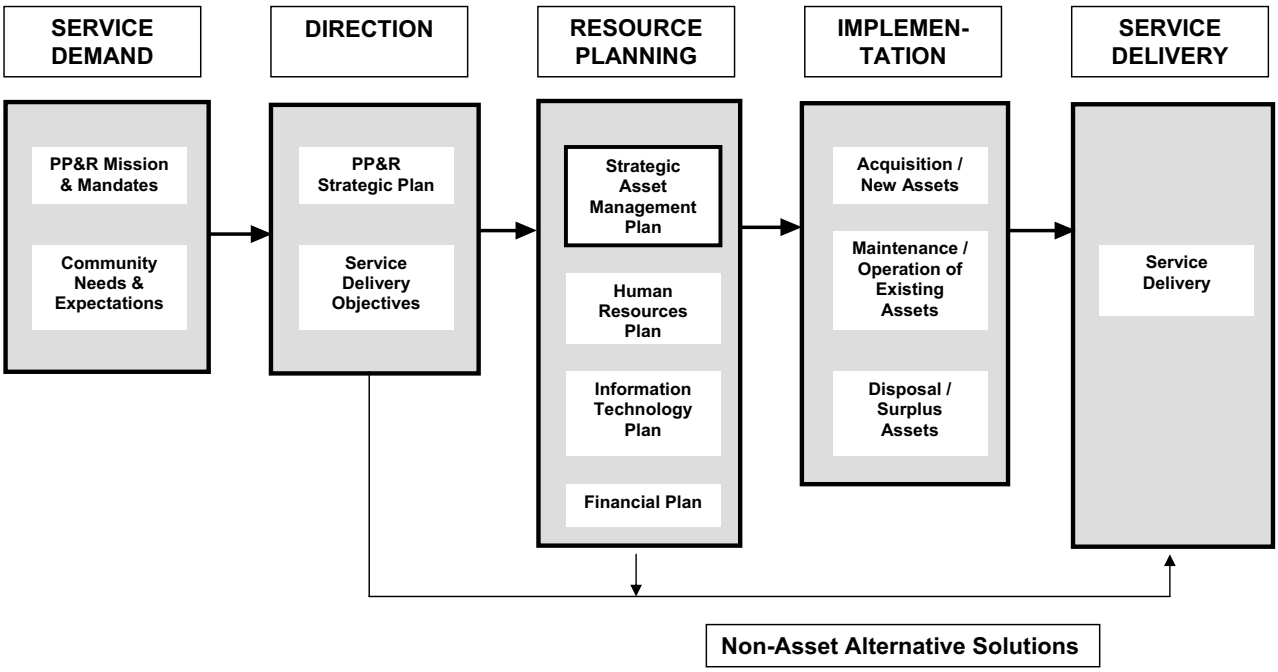
Asset Capacity: Does the asset have sufficient capacity to meet demand?
Asset capacity refers to quantity and size of assets. Qualities such as comfort and security also affect capacity. Some assets have spare capacity either from deliberate design or from reduced demand for services. Where this is identified, the bureau should consider using the capacity to improve service delivery, allocating excess capacity to other agencies or disposing of the excess capacity if it is not needed to meet future demand. Surplus capacity may be retained but monitored on a regular basis.

Asset Location: Is the asset located in the right place for effective service delivery?
Changing demographics and changing service needs affect asset locations. In cases where relocation of assets is too expensive, compensatory services may be considered. This may be a cost-effective way to meet service delivery needs.

New technology may affect service provision. For example, electronic registrations may reduce the need for on-site registration services.

Asset Suitability: Does the asset function effectively to deliver the intended services?
Asset size and configuration affect the ability of the asset to meet service delivery needs in a cost-effective manner. The suitability of assets to deliver specific services may change if service delivery requirements change or if there are better ways of delivering the services. Higher standards of comfort may be desired or new technology may require fewer resources.

The following chart shows the relationship of asset management to service demand and delivery.



Relation of Service Demand and Delivery to Asset Management

PP&R TAM Plans

After the *TAM Strategy* has been developed and an appropriate asset portfolio determined, the individual Asset Plans will be developed. This section describes those plans and the processes needed to develop them. As the plans are developed, they will be inserted in the Manual.

CAPITAL INVESTMENT AND ACQUISITION PLAN

The *Capital Investment and Acquisition Plan* describes how to efficiently and effectively utilize limited capital resources for capital improvement projects and major maintenance work. This plan applies where the *TAM Strategy* indicates the need to invest in new assets or significantly improve or upgrade existing assets.

It involves assessing all investment options (purchase, lease, service contracts, private sector involvement, and non-asset solutions) and needed resources (assets, financial, human resources, information management and technology, etc.).

The *Capital Investment and Acquisition Plan* allows PP&R to:

- Directly link asset investment with required service delivery outcomes.
- Improve the quality of assets.
- Achieve cost savings while maximizing benefits.

Recognizing that assets are only platforms for the delivery of services, a structured process must be followed to ensure that the need for new investment is clearly demonstrated. The process for initiating new capital investment proposals must include a review of service delivery strategies, the consideration of alternative asset solutions, and a full capital budgeting and risk analysis.

Appropriate analyses include:

- Value management
- Cost-benefit analysis
- Risk analysis
- Review of statutory and planning issues, including heritage and environmental issues

The process will ensure that additional assets are only funded where the need has been identified, investigated, evaluated, and thoroughly substantiated, including the ability to maintain the asset at the appropriate level. Consistent processes will be developed to ensure that unsolicited gifts are only accepted when they improve service delivery or, at a minimum, do not adversely affect current allocations of resources.

Detailed project planning and evaluation will assist the bureau in making and supporting funding requests. The degree of detail required will vary according to the size, complexity, and specific circumstances of projects.

Planning Process

- Assess the asset portfolio against the service and asset strategies.
- Translate service delivery outcomes into detailed project objectives.
- Prepare a project brief that describes specific and detailed project objectives and benefits.
- Generate project options including non-asset solutions.
- Develop project specific information including estimated cost, project type, start and finish dates, and cash flow for each year of project (if appropriate).
- Develop a short list of best options.
- Select preferred options.

Current PP&R Strategies for Addressing Capital Needs

PP&R uses the following strategies to address capital asset needs:

Capital Investment Strategy: This strategy addresses the backlog of existing deficiencies, the land and facilities needed to meet projected growth, and responses to identified trends and city visions.

Capital Improvement Program: The PP&R CIP directs financial resources toward short- and long-range capital planning goals. The five-year plan submitted by the bureau as part of the City's annual budget process details project descriptions, funding sources, and operations and maintenance costs. The long-range capital plan forecasts future development out from 5 to 20 years. It is less detailed but still ties directly to PP&R system and service goals. In all cases it allows for forecasting of the financial investment required for capital improvements that maintain and expand the City's park system.

Current Acquisition Policy: PP&R has developed a 20-year plan to build more capacity into the park system. During the 20-year life of the plan, PP&R plans to acquire new parkland for parks, trails, and habitat.

Natural Resources Acquisition Plan: PP&R has developed a long-range vision for a sustainable system of protected natural area parkland within the City. It features several very large park sites, corridors along major waterways, and green connections between these elements. In each of the City's watersheds, priority acquisition objectives and short-term acquisition targets have been identified.

Trail Strategy: PP&R has developed a strategy to complete Portland's portion of the regional trails system. Regional trails, such as those in the 40-Mile Loop, connect Portland to adjacent communities and to significant regional features such as rivers and streams. The strategy develops priorities for acquisition and development for the remaining 58 miles of a projected 220-mile network. PP&R also provides shorter local access trails in natural areas (60 miles) and parks (80 miles). Several large sites have plans ready for implementation.

Urban Forest Strategy: In 2004, the city adopted the *Portland Urban Forestry Management Plan*, prepared by PP&R in conjunction with other city bureaus. PP&R is currently developing an implementation strategy to realize the desired outcomes of protecting, preserving, and expanding the urban forest, promoting stewardship, and providing the benefits of the urban forest for all residents.

ASSET MAINTENANCE AND OPERATIONS PLAN

The purpose of the *Asset Maintenance and Operations Plan* is to protect the asset's service delivery potential and ensure that health and safety concerns are met. This means ensuring that the asset is in good physical condition, is effectively and efficiently utilized, and provides economically viable services.

Reductions in service delivery can occur for a number of reasons. Among them are:

- Wear and tear from physical use, in excess of what normal maintenance can restore.
- The overall effects of age from exposure to weather and environmental conditions.
- Technical obsolescence; that is, an asset becomes increasingly out-of-date and, on a comparative basis, is less efficient as a result of technological advances and improvements.
- Commercial obsolescence; that is, an asset is redundant due to reduced market demand for the goods or services for which the asset is used.

As assets age, their service potential declines. The challenge of asset management is to counteract the "spiral of dilapidation" through the strategies of **preservation** and **adaptation** to achieve a degree of equilibrium, where the facility's condition and suitability for its intended uses remains relatively constant from year to year.

Preservation: This includes regular preventive maintenance and an effective program of planned capital maintenance or repairs. These efforts should be constant over time. Regular maintenance is funded out of a facility's annual operating budget. The large expenditures of capital renewal to replace assets/systems at the end of their useful life are normally handled as capital expenses.

Preventive maintenance is planned and anticipates deterioration. It addresses systems and equipment having predictable life cycles in order to maintain and extend the life of the system and the facility. These needs can be identified by the age of the asset and its inspected condition or anticipated from particular environmental conditions. It is important to plan for these needs and set aside funding to correct them to avoid the problems of deferred maintenance.

Corrective maintenance can be deferred or current.
Deferred maintenance is capital repair or replacement that has been delayed, usually due to lack of funds. This work includes major activities that have maintenance cycles of more than one year. The longer maintenance is deferred, the worse it gets (conditions deteriorate at an accelerated rate) and the more expensive it is to correct (inflation causes costs to increase).

Current deficiencies are work that has not been identified before and needs repair or replacement in the current inventory cycle. If funds have been diverted to correct emergencies, money is not available to correct the current deficiencies and the cycle of deferred maintenance continues.

Adaptation: This occurs when facilities are renovated to meet changes in regulatory or industry standards, to accommodate changes of building use (due to new work processes, new technology or new service offerings), to improve the competitive attractiveness of the facility or to achieve operating efficiencies (e.g., energy conserving measures).

The benefits of effective asset maintenance include:

- Long-term reduction in life cycle costs
- Better asset performance and service
- Optimization of asset life
- Improved public perception of the asset's service and safety standards

Maintenance Plans
Maintenance plans address routine preventive maintenance and planned capital maintenance. Ideally, most maintenance is routine or preventive, not a continuous cycle of expensive emergency repairs. Industry practice recommends a ratio of 80% planned maintenance to 20% reactive or emergency maintenance. PP&R is currently at a ratio of 60% to 40%.

Preparing asset maintenance plans ensures that maintenance activities are undertaken in a targeted and timely manner to facilitate

cost-effective use of maintenance resources and protect the value of PP&R assets.

Ballfield maintenance equipment

The process for developing a maintenance plan is as follows:

- Define the level at which the asset is to be maintained, consistent with the role that the asset plays in the delivery of services. The plan should:
  - Be consistent with the role that the asset plays in the delivery of services, relative to the other assets in the portfolio.
  - Comply with statutory regulations and requirements.
  - Be realistic given the age, condition, expected life, and service potential of the asset.
- Describe the systems and procedures to be used for maintenance work.
- Specify the types of maintenance to be carried out, and why.
- Describe how to implement and fund the maintenance.
- Outline the projected costs of maintenance.
- Forecast major replacements.

The annual maintenance plan will detail the maintenance tasks to be performed each year and the resources needed. Records of maintenance activities (labor and materials) are kept for planning purposes. Where appropriate, historic maintenance records may be used to prepare the annual maintenance plan.

Operational Plans

Operational plans address custodial and routine service needs to ensure that existing assets are being managed and run efficiently and effectively on a day-to-day basis. An operational plan describes:

- Responsibility for the asset or system; e.g., irrigation systems, HVAC equipment.
- Methods for monitoring asset performance.

- Necessary staff training to achieve optimal effectiveness.
- Estimated annual operating costs.

Maintenance Categories and Definitions

Custodial: Regular cleaning of the asset. Does not affect the usefulness or estimated useful life of the asset. Custodial costs should not be capitalized.

Routine: Regular scheduled maintenance of buildings, property, and equipment, including annual servicing. Allows the asset to provide service for its estimated useful life. Does not extend the useful life. Routine maintenance costs should not be capitalized.

Capital/Major: Large preventive maintenance and renovation projects, usually anticipated and scheduled in advance. Renovations and improvements are usually capital projects and may require plans and permits to accomplish.

On-Demand/Emergency: Non-routine or periodic unscheduled maintenance that needs to be attended to immediately, such as storm damage.

Maintenance Examples

Custodial	Routine	Capital/Major	On-Demand/Emergency
Periodically sweep the roof to remove rubbish.	Annually, tar a roof to prevent leakage and premature deterioration.	Replace a worn-out roof on a building by tearing off the old roof and installing a new one.	Repair storm damage to roof.
Periodically clean, collect litter, sweep, etc.	Patch holes in the surface to maintain a flat surface.	Resurface a parking lot due to deterioration.	Remove mud and debris due to flooding.
Clean spots on a carpet and vacuum periodically.	Shampoo the carpet of an entire floor to maintain appearance.	Carpet an entire floor of a building not previously carpeted.	Replace stained section of carpet.
Wash windows to maintain visibility.	Replace a broken window with a new one.	Replace regular windows in a building with energy efficient windows.	Replace window broken by a baseball.

ASSET DISPOSAL PLAN

Decisions to dispose of an asset require a thorough examination and economic appraisal. Like acquisition decisions, they must be taken within an integrated planning framework that takes into account the service delivery needs, bureau objectives, financial and budgetary constraints, and overall resource allocation objectives.

While disposal may represent the final stage in the strategic asset management process, disposal action may generate the need for a new or replacement asset to support the continued delivery of services. Disposal is a crucial component of the asset management life cycle and cannot be addressed in isolation.

Asset disposal strategies should focus on identifying those assets that no longer meet the service delivery needs of the agency and on disposing of those assets in a structured and prioritized manner. Disposal action should be undertaken within a citywide context to ensure that major assets marked for disposal are not of value to other bureaus or agencies.

Asset disposal involves two separate and distinct elements:

- A detailed assessment of the assets identified as surplus.
- An analysis of how to dispose of them, in full knowledge of prevailing market conditions and government priorities and direction.

Surplus Asset Assessment

Once an asset has been identified as surplus, the disposal process should consider and analyze the following:

- Nature of the asset
- Potential market value
- Cultural or heritage aspects
- Location
- Trade-in value
- Ability to support other city functions
- Market conditions

Asset Disposal Analysis

- Identify opportunities to maximize asset disposal value.
- Develop detailed costs and budgets for asset disposal.

All proposed property disposals need to be reviewed by the Asset Management Steering Committee and PP&R's Senior Managers to determine their strategic value in terms of wider government policies and objectives, other agency requirements, community interest, environmental outcomes, and other areas of interest.

CULTURAL ASSETS PLAN

Managing heritage assets requires additional and different considerations to protect the assets and their significance for future generations. This plan is currently being developed.

Columbia Park playground

Chapter 3
The Asset Register and Asset Register Reports

Developing a program of total asset management involves having complete information on current assets and having that information easily accessible to those who control and manage the assets. Accurate information supports making sound decisions and complying with financial reporting requirements.

The Asset Register

Asset management relies on an accurate Asset Register – the comprehensive inventory of all bureau assets that includes appropriate information for each type of asset. The Asset Register (AR) includes information about the size, construction, condition, and value of an asset or particular group of assets. This allows evaluation to determine if their performance is adequate to support their intended service delivery.

Information in the Asset Register is organized in accordance with the Data Framework into five major groups: Buildings, Amenities, Infrastructure, Developed Landscape, and Natural Resources. Each group is further divided into categories, systems, styles, types, etc. (See the Appendix for the Data Framework hierarchy.)

ASSET REGISTRATION

Asset registration is the process of recording and accessing asset information to measure and report on the performance of assets in the delivery of services. The Asset Register database provides information for strategic planning and operations management.

Information categories include:

- Physical details (e.g., location and condition)
- Financial details (e.g., service potential, risks, and liabilities)
- Asset performance details
- Service performance indicators

The objectives of the asset registration process are to facilitate ready access to relevant information and to answer questions such as:

- What assets is the bureau responsible for?
- Where are these assets located?
- What is their condition?
- What is the appropriate maintenance strategy based on risk analysis?
- How do these assets contribute to the bureau's mission, or, what is the correlation between assets and services?
- What is the service potential of these assets?
- What are the past transactions and events associated with the control of the assets?
- What are the future benefits and risks associated with the assets?
- How are assets performing compared with set service delivery indicators?

Asset Register Reports

The Asset Register Reports are analytical tools that provide information for decision-making purposes at all levels of planning and management. They are instrumental in making decisions about whether to buy, lease, keep, refit, renovate, reuse, upgrade or dispose of owned or leased assets. The information in the reports allows the bureau to improve service delivery, forecast maintenance needs, and improve budget preparation.

Asset Register Reports provide information on individual assets or a group of assets within the system; e.g., all the community centers or all the tennis courts. They can be used to describe the assets within a particular geographic area such as a service zone or a neighborhood.

INFORMATION IN ASSET REGISTER REPORTS

The objective of the reports is to provide ready access to accurate information about PP&R assets in a standardized format using a repeatable process including:

- Relevant information on the physical condition.
- Service potential and how the assets contribute to PP&R's mission.
- Financial information including the asset's value, maintenance and program costs.

These reports are updated on a regular schedule to ensure that they are dynamic and effective asset management tools.

Physical Condition

Facility Condition Assessments: description and analysis of the asset's physical components and systems, including code compliance where applicable.

Facility Condition Index: a metric that expresses the general condition of the asset. It is a ratio of the cost to correct existing deficiencies to the value of the asset.

Suitability

Suitability Assessment: addresses whether the asset is appropriate for its intended use. This includes its functionality and serviceability, the current intensity of use, and the location.

Asset Priority Index: a metric that indicates the value of the asset in meeting PP&R's mission. This has not been developed yet.

Financial Performance

Financial Assessment: includes the current replacement value, maintenance, operation and program costs, rate of depreciation if applicable, and reports on any income generated.

Roller skating rink at Mt... Scott Community Center

KINDS OF ASSET REGISTER REPORTS

Strategic/Policy Level Asset Register Reports

These high-level policy reports generally include information about a range of issues and asset characteristics related to trends, rather than specific data about individual assets. The level of accuracy for specific assets is of less importance than the completeness of information for the whole system. Approximations or proxy information are often acceptable for these upper-level decision-making purposes.

- Current overall condition (expressed as good, fair, poor)
- Suitability for current use (expressed as optimal, sufficient, limited)
- Current replacement value

Example: Asset Management Plans

These strategic-level reports indicate the relative system-wide condition and value of a particular group of PP&R assets, in an easily updateable form. Information is often 'rolled-up' from other sources or based on reasonable estimates. These reports are forecasting tools that may trigger further investigation.

Tactical Asset Register Reports

These reports provide sufficient information about the condition, suitability, and financial value of selected PP&R assets to reasonably estimate long-term capital needs, identify the resources needed to meet identified needs, and set priorities for further investigations. The level of detail and accuracy needed depends on the importance of the decisions to be made.

Tactical reports are used for portfolio and property management, to develop *general* estimates for possible capital improvements, and to provide the background for some preliminary and schematic design work. These reports include basic information about the asset or group of assets including the size, year of installation, dates of major additions or remodel, and general information on:

- Current condition, expressed as Facility Condition Index (FCI), and description of the asset and its components
- Suitability for current use (including functionality and serviceability)
- Detailed financial information
- Maintenance assessment

Example: Asset Register Reports on specific assets or groups of assets

These include more detailed cost information and along with information about need and demand (from the *Service Delivery Strategy*) are used to determine priorities for capital projects for specific periods of time.

Operational/Project Level Asset Register Reports

Operational reports provide detailed information on the condition, suitability, and value of assets. More detail allows greater accuracy for making decisions about how to maintain, repair, replace or dispose of assets.

These tend to require source data with high levels of accuracy to support day-to-day decisions by individual staff in the field. Operational data are often the prime sources of aggregated information for tactical and strategic purposes.

Example: Routine asset management decisions

Accurate asset data supports regularly scheduled maintenance and timely replacement of assets. Use and analysis of this data results in a higher level of awareness of future needs and promotes a more systematic approach to management.

Uses for Asset Register Reports

Asset Register Reports support the following activities:

Capital Planning, Reinvestment, and Budget Preparation
- Existing conditions
- Determine requirements and priorities for capital investment.
- Provide higher level of accuracy in setting priorities.

Maintenance Planning
- Work orders
- Inventory

System Planning
- Location and condition of assets to assist with planning and logical distribution of facilities

Master Planning and Facility Design
- Complete and accurate information for specific parks

Facility Programming and Scheduling
- Information on the capacity and capability of assets to accommodate use

Code Compliance
- Identify ADA, building codes, energy efficiency deficiencies, and need to correct and upgrade.

Asset Portfolio Management
- Identify changes to asset portfolio needed to meet PP&R mission.
- Value and current condition of a facility
- Property management

Financial Forecasting and Modeling
- Annual budget preparation

Annual Reports
- *Service Efforts and Accomplishments* - City Auditor
- *Asset Status and Conditions Report* - City of Portland

General Information Requests
- Asset Register Reports will facilitate information requests and provide better information about the PP&R system.

Components of Asset Register Reports

FACILITY CONDITION ASSESSMENT

A key component of the Asset Register Report is an accurate Facility Condition Assessment (FCA). It is important for strategic capital planning and for setting tactical project priorities. The FCA includes a description of the physical condition of an asset, the soundness and quality of its construction, and the condition of its systems. It can include information about code compliance. These reports document the deferred and current maintenance needs and identify expected major maintenance activities.

Developing the FCA begins with acquiring accurate baseline data. For buildings, this includes information on the architectural, structural, mechanical and electrical systems, ADA and code compliance, and dates of major renovation or capital construction. The National

Association of College and University Business Officers (NACUBO) recommends the following minimum information:

- Building name
- Gross square footage/size
- Date of construction/major addition/major renovation
- Type of construction
- Functional use
- Number of floors
- Current replacement value

The next step is to perform a non-invasive inspection to determine the condition and maintenance deficiencies for each building. If conditions warrant, additional testing may be needed to determine the extent and severity of deficiencies. The inspection provides information that is used to develop the Facility Condition Index (FCI).

FACILITY CONDITION INDEX

The Facility Condition Index is a metric that indicates the *general condition* of an asset and its key systems. It is a relative indicator of the physical quality of an asset. It does not address the suitability of an asset to meet service needs.

The FCI is the ratio of the cost to correct identified deficiencies (expected or inspected) to the current replacement value (CRV) of the whole asset.

$$\text{Facility Condition Index} = \frac{\text{Cost to Correct Existing Deficiencies}}{\text{Current Replacement Value}}$$

The closer the FCI is to 0.0, the better the condition of the asset. (See the chart showing the relationship of the FCI to the condition rating on page 41.)

Information used to compute the FCI is as follows:

Deficiencies: Deficiencies are defined as major maintenance repairs and replacements that have been deferred due to lack of funds. They do not include projected capital needs or routine maintenance in the current budget cycle. They are identified in one of two ways. They are either *expected* based on the age and the manufacturer's expected life for an asset or they are *inspected* physically by an expert (either staff or a consultant). While both are valid, the physical inspection is more accurate as it accounts for local conditions that may increase or decrease the life of a particular asset. Deficiencies are defined[1] as follows:

Current Deficiencies: Replacement cost of assets that are due to be repaired now (0 years life remaining). Without repair or replacement, the current deficiencies become deferred deficiencies and consequently more expensive to correct.

Deferred Deficiencies: Replacement cost of assets that were due to be repaired in the past (less than 0 years life). It should be noted that deferred maintenance items tend to deteriorate faster than items in good condition. This backlog deterioration factor is commonly considered to increase costs by 2% to 10% per year.[2]

Existing Deficiencies: The sum of current and deferred deficiencies. This value is used to calculate the FCI.

Emerging Deficiencies: These are forecast from the remaining life of an asset. They provide important planning information for future investment in the assets, but are not used to compute the FCI.

Cost to Correct Deficiencies: Accepted sources of information on average repair and replacement costs include *R. S. Means* and *Whitestone Building Maintenance and Repair Cost Reference* guides as well as local cost information and recent experience. Costs include labor, materials, and contractor's overhead.

Current Replacement Value (CRV): The CRV is the total cost to replace the entire asset to meet current accepted building standards, codes, and livability standards. The commonly used and accepted method to calculate the CRV is to multiply gross square feet by an

[1] PP&R has adopted definitions used in the City of Eugene's *2001 Facility Condition Report*.
[2] *2001 Facility Condition Report*, City of Eugene, Oregon, p. 15.

estimated per-square-foot value from *R. S. Means* guidelines and other empirical data.

The CRV can be costs to replace in 'kind' or replace in 'function.' Costs include hard construction costs as well as soft design, project management, and administrative costs (usually 20% of construction costs) to replace, but not to expand the facility. This estimate is prepared collaboratively by PP&R's planners, architects, and designers, and trades supervisor, with consultants as needed.

Condition Ranking: the PP&R Asset Register Group adopted the following FCI scale developed by the City of Eugene:

FCI Index	**<0.05**	**0.05-.010**	**0.10-0.30**	**0.30-0.50**	**>0.50**
Expressed as percent deterioration of the asset	<5%	5%-10%	10%-30%	30%-50%	>50%
Condition Rating	Very Good	Good	Fair	Poor	Very Poor

Example: Facility Condition Index (FCI)

If a building has $100,000 of existing deficiencies and a replacement value of $1,000,000, its FCI is $100,000 divided by $1,000,000 or 0.10. This puts it in the 'Good' category. The closer the FCI is to 0.0, the better the condition of the asset.

General practice is to consider *replacing* an asset rather than repairing it when the FCI is 60%-70% or higher. When asset conditions reach this point, it is time to consider the role of the asset in meeting system needs; e.g., its size and/or location, the cost to replace major components or system, etc., before proceeding with repairs. A complete cost and suitability analysis is needed to determine the best course of action, including determining any historic value or significance to the community.

When used consistently, the FCI can be used to measure and compare asset condition over time or to compare different assets of a particular kind. It can also be used to measure the total portfolio of all assets rolled up together.

When coupled with financial information, it can be used to forecast asset condition as follows:

1. Determine the resulting asset condition if the current funding

level is maintained over time (improves, stays the same, deteriorates, and the rate of change).

2. Determine the funding needed to maintain an asset at its current FCI.

3. Determine the amount of additional funding needed to achieve a desired FCI.

It is very important to note that the costs to correct deficiencies for the FCI *should not be used to predict capital project costs.* More information is needed to determine the scope and extent of any capital work since it nearly always includes more than just the replacement or repair of the items identified in the FCI.

Some asset managers advocate use of a more comprehensive 'Needs Index' that provides more information about costs to renovate buildings.[3] PP&R will consider using it as the bureau becomes more experienced in asset management.

SUITABILITY ASSESSMENT

Determining the suitability of an asset for its intended use involves understanding service needs. Once service needs are defined, the suitability of an asset to meet that need can be determined. Suitability is a comparison of functionality (what is needed/demand) to service ability (the ability or capacity of the asset to meet that demand/supply).

Comparing the service needed to the capacity of the asset to meet that need leads to conclusions about an asset's suitability for particular needs.

Functional Requirements (Program needs): These are the identified needs of particular programs and desired service delivery levels. (See example on next page.)

Service Requirements (Asset characteristics): These are the characteristics needed to meet the program and service delivery levels. They include sufficient size, the right location, and asset accessibility.

[3] The Needs Index (NI) provides more information on the actual cost to improve an asset to meet current codes and needs. It is defined as Deferred Maintenance (DM) Costs + Capital Renewal (CR) Costs + Modernization Costs divided by the Current Replacement Value (CRV). The Needs Index addresses current capital needs, not future needs.

Suitability Ratings

Suitability is rated from most to least suitable.

1. Optimal – provides high level of service and meets demand
2. Satisfactory – provides moderate/sufficient level of service
3. Limited – provides low level of service

Table 3: Functionality and Serviceability Relationships

Functionality = Need/Demand/Input	**Serviceability** = Capacity/Supply/Output
Public/Staff: Define Needs, Requirements, Desires	Assets/Facilities: Provide Services/Capacity
User Functions/Activities/Ends/Performance	Asset/Facility Features/Means/Solutions/Results
Functional Element	Physical Feature
Functionality Requirement Profile	Serviceability Rating Profile
Bundle of Functions	Combination of Features
User Requirement Scales	Serviceability Rating Scales
Level of Demand	Level of Service

Adapted from the *Facility Design and Management Handbook*

Grant Park outdoor swim pool

Example: Building Suitability for Public Use

Functional Requirements (Program needs)	**Service Requirements** (Asset characteristics)
Size and space configurations are suitable for primary activities.	Spatial and Functional Relationships
Finishes are appropriate and easily maintained.	Architectural
Heating and cooling systems provide year-round comfort.	Mechanical
Service is adequate for building capacity.	Plumbing
Adequate capacity exists to meet needs.	Electrical
Lighting levels are adequate with sufficient control to provide for specific needs.	Lighting
Adequate capacity exists to meet needs.	Data/Telecom
Activities in various parts of building can be conducted simultaneously without interfering with each other.	Acoustics/Noise Control
Major equipment and appliances are appropriate for use and activities.	Furnishings/Equipment
Building, restrooms, and major facilities meet program accessibility standards and comply with ADA requirements.	Accessibility
Building provides safe environment for public and staff.	Security
Able to provide service for specified period of time.	Durability

Note: Physical conditions are analyzed in Condition Assessments.

ASSET PRIORITY INDEX

Suitability is also a function how well the asset fulfills the bureau's mission and meets identified service needs. PP&R is considering developing the Asset Priority Index (API) – a metric that reflects this aspect of suitability – based on work done by the National Park Service (NPS). The NPS uses five criteria to determine the API: asset classification, natural or cultural preservation, visitor use, park operations, and asset substitutability. They use a 100 point scale

with high (100) being mission-critical and low (0) being not necessary to the mission.

FINANCIAL ASSESSMENT

The purpose of the financial assessment is to determine the value of the asset, the cost to correct deficiencies, and the costs to maintain and operate the asset and estimate any income generated by the asset. Financial assessments consider the following:

Cost to Deliver Services: Understanding the costs associated with using assets is necessary in order to effectively manage the asset. Costs are used to:

- Set operational budgets and management targets
- Monitor performance
- Evaluate capital projects
- Establish the basis for charges to others related to the use of the asset

Costs need to be determined on a life cycle basis to determine the full cost of service that they provide. This means using an activity-based costing approach to allow realistic costs to be assigned to specific programs or services.

Depreciation: Depreciation is a way of accounting for the deterioration of an asset over time and recognizing its loss of service potential. It is not an immediate expense but it is recorded as a cost over time.

Life Cycle Costs: Life cycle costing accounts for the total cost of operating an asset over its whole life. There are three basic components:

Capital costs: the costs to acquire and construct an asset.

Recurrent costs: all costs incurred in managing and operating the asset.

Disposal costs: costs to dispose of an asset.

Life cycle costing provides a way to look at possible alternatives to owning and constructing assets, monitoring actual costs, and making future decisions about asset design and acquisition.

Full Asset Costs: Determining the full cost of an asset includes the following:

Direct costs: costs that can be attributed to a specific asset which include depreciation, utility costs, maintenance charges, and finance costs.

Indirect costs: costs that can be allocated on a proportional basis to a specific asset such as rental based on the floor space that is occupied.

Overhead costs: costs that are bureau or city-related but not attributed to a specific asset, such as fleet management or human resource services.

Cost Recovery: In some cases it is appropriate to charge for use of an asset. Sometimes the full cost of asset or the services it provides can be recovered. In other cases, a portion of the costs can be recovered. In many cases, PP&R provides assets and services at low cost to ensure that these resources can be available to all. Cost recovery can be used to modify or suppress demand, or to encourage the search for more efficient way to deliver services.

Setting charges requires the bureau to understand the total cost structure of the asset and the services that it supports. Charges can be determined using any of the following pricing models:

Market price: the prevailing market rate for use of a comparable asset.

Full cost: the actual cost of using the asset including overhead but no profit.

Full cost plus: the actual cost of using the asset plus a percent or flat fee.

Standard cost: actual cost without overhead.

Marginal cost: partial cost for use of the asset.

No cost: no charge for use of the asset.

MAINTENANCE ASSESSMENT

Maintenance assessments involve determining the effort and costs to maintain an asset. This includes materials, time, and frequency of maintenance. Data is collected on maintenance activities to develop programs for routine and preventive maintenance as well as asset maintenance and operations plans. General information on maintenance needs can be estimated from the FCI and resulting rating as shown below for the various asset groups.

Building Group Maintenance Recommendations

FCI	Resulting Rating	General Condition	Recommendations
< 0.05	Very Good	Sound condition with no major deficiencies; no repairs needed	Requires only regular preventive maintenance, routine corrections or enhancements. No major work needed in next 5 to 10 years; monitor on regular basis
0.05 – 0.10	Good	Sound condition with few deficiencies; minor repairs needed	Requires preventive maintenance, routine corrections or enhancements. No major work needed in next 3 to 5 years; monitor on regular basis
0.10 – 0.30	Fair	Generally acceptable condition with deficiencies in not more than one major system; requires only minor repairs; condition may have minor impacts on full use of facility	Perform repairs within next 12 to 24 months
0.30 – 0.50	Poor	Borderline acceptable condition; code violations; large repairs needed; condition negatively impacts use	Correct within next 6 to 12 months
>0.50	Very Poor	Generally unacceptable condition with deficiencies in two or more major systems; life safety code violations; condition prevents or threatens use.	Correct immediately or close the facility

Amenities and Infrastructure Groups Maintenance Recommendations

Est. Life Remaining	Resulting Rating	Condition	Recommendations
80% to 100%	Very Good	Sound condition with no major deficiencies; no repairs needed	Requires only regular preventive maintenance, routine corrections or enhancements. No major work needed in next 5 to 10 years; monitor on regular basis
60% to 80%	Good	Sound condition with few deficiencies; minor repairs needed	Requires preventive maintenance, routine corrections or enhancements. No major work needed in next 3 to 5 years; monitor on regular basis
40% to 60%	Fair	Generally acceptable condition; requires only minor repairs; condition may have minor impacts on full use of facility	Perform repairs within next 12 to 24 months
20% to 40%	Poor	Borderline acceptable condition; large repairs needed; condition negatively impacts use	Correct or replace within next 6 to 12 months
0% to 20%	Very Poor	Generally unacceptable condition with deficiencies that prevent or threaten use; life safety or legal compliance issues	Correct immediately or take asset out of service

Erv Lind Stadium at Normandale Park

Developed Landscape Group Maintenance Recommendations

Est. Life Remaining	Resulting Rating	Condition	Recommendations
80% to 100%	Healthy	80% to 100% living turf or healthy plants	Continue current level of care and monitoring
60% to 80%	Good	60% to 80% living turf or healthy plants	Minor action needed to improve condition of resource
40% to 60%	Fair	40% to 60% living turf or healthy plants	Numerous actions needed in timely manner to prevent loss of resource
20% to 40%	Poor	20% to 40% living turf or healthy plants	Immediate action required to address current stresses and impacts unless other changes are anticipated
0% to 20%	Very Poor	0% to 20% living turf or healthy plants; hazardous conditions	Immediate action required; complete revegetation is needed

Natural Areas Group Maintenance Recommendations

The Natural Resources Division has developed the following rating system and maintenance regime to implement its Ecological Management program.

Est. Life Remaining	Resulting Rating	Condition	Recommendations
80% to 100%	Healthy	High levels of ecological function; streams are intact; human impacts are minimal	Continue current level of care and monitoring
60% to 80%	Good	Some invasives or noticeable human impacts	Minor action or intervention needed to improve condition of resource
40% to 60%	Fair	May have multiple invasive species and noticeable human impacts	Numerous actions needed in timely manner to prevent loss of resource
20% to 40%	Poor	Areas at risk of becoming severely degraded; damaging levels of use or other impacts	Immediate action required to address current stresses and impacts unless other changes are anticipated
0% to 20%	Very Poor	Ecological functions severely compromised; little native structure or habitat remains	Start over; complete revegetation is needed

Producing Asset Register Reports

Asset Register Reports rely on accurate data and information to determine the condition, suitability, and financial status of assets. Collecting information and making assessments is both linear (there is a prescribed sequence to the work) and cyclical (steps in the process are repeated on a regular basis). The process is consistent and systematic, allowing comparisons over time to identify trends and needs.

KEYS TO PRODUCING ACCURATE ASSET REGISTER REPORTS

Accurate reports depend on:

- A clear understanding of the need for and value of accurate information
- Well-trained staff who understand the process
- Clear process for collecting and entering data
- Consistent data standards and performance measurements
- Regular, ongoing programs of inspection and assessment to update information

STEPS IN PRODUCING ASSET REGISTER REPORTS

Following are current protocols for gathering information. Additional protocols will be developed as PP&R gains experience in preparing asset reports.

1. Gather baseline data.

- Gather and review existing information (note sources) including:
  - Existing drawings (date, prepared by)
  - Existing reports (date, prepared by)
  - Installation and manufacturer's information
  - Prior inspection information
- Ensure that baseline data is accurate and current.
- Identify if asset has historic value (may require different techniques).

2. Assemble team.

Team Member	General Area of Responsibility
Asset Management Coordinator	Project coordination and report preparation
Architect/Engineer - staff or consultant	Visual inspection including seismic and code compliance and historic data collection; energy efficiency - inspection and cost estimates
Structures Staff: Lead Carpenter	Doors and windows, interior and exterior finishes - inspection and cost estimates
Structures Staff: Lead Mechanical	Mechanical and plumbing - inspection and cost estimates
Structures Staff: Lead Electrical	Electrical - inspection and cost estimates
Building Director	Suitability information, current use, trends
Financial Analyst	Financial assessment

Teams will include different combinations of team members based on the skills needed for particular situations. Members may be staff or consultants.

3. Conduct condition inspections.

Record all observed deficiencies. Deficiencies are items that are broken, obsolete, unsafe, not code compliant or at the end of their useful lives.

4. Record data.

Only record the amount of data that can be effectively maintained, taking into account management processes, skills, and resources.

5. Estimate costs to correct deficiencies.

Use standard guides such as *Whitestone Building Maintenance and Repair Cost Reference* and *R. S. Means*, manufacturer's information and local cost information.

6. Determine Facility Condition Index (FCI) from condition assessment.

Minimum Data

- Asset name/Identification number
- Size/Gross square footage/Number of floors
- Date of *expected* renewal for the asset and its major systems

Full Report

In addition to the minimum data above, a full report includes:

- Type of construction
- Date of original construction and major capital improvements
- Date of inspected renewal for assets and / or major systems

7. Determine asset suitability.

Minimum Data

- Original use
- Current use
- Estimated number of users
- Overall size
- Estimate of demand/need

Full Report

- User Surveys (staff and public)
- Usability (percent of asset used on average)

8. Perform financial assessment.

- Develop financial information including CRV and other information such as cost to deliver services, cost recovery, staffing, maintenance costs, etc.

9. Perform maintenance assessment.

- Describe routine and regular maintenance activities, noting any tasks that take more or less time than normally expected.

10. Produce reports.

INFORMATION SOURCES FOR DEVELOPING ASSET REGISTER REPORTS

	Asset Information	**Information Sources**
Condition Assessment	Physical condition	Inventories, inspections, reports, evaluations, and analysis by staff and consultants, archives, historic data, building log
	Construction and technical data	Contract documents (drawings and specs) Manufacturers info
	Maintenance data	Manufacturers information/warranties and guarantees Work orders
Suitability	Suitability (Functionality and Serviceability)	Inspections and assessments Trend data Surveys and questionnaires Staff interviews Staff analysis
Financial Information	Cost to provide/maintain/replace	Utility costs, operating costs, offsetting fees and incomes Replacement – Manufacturer info Level of service costs – Means Estimating Guides Architectural/Engineering consultants
	Financial value	Cost to remedy deficiencies (from staff inspections) Book value (from Admin and Finance). Sources depend on needs.

Brentwood Park fenced off-leash area

Cathedral Park boat launch

Chapter 4
Asset Data

Relevant, accurate, and accessible asset data are needed to produce the reports that assist and enhance all levels of decision-making. Consistent inventories and databases, along with a systematic and coordinated approach to data gathering and organization, are critical parts of asset management.

This chapter includes general information on the procedures for collecting and maintaining asset-related data and the roles and responsibilities of data managers. Detailed data management protocols will be found in the *Data Management Manual*. Those protocols describe the content, structure and format of different databases, data collection and maintenance, data entry and calibration, along with staff roles and responsibilities.

PP&R Asset Data

PP&R maintains asset databases for parks and properties, buildings, amenities, infrastructure, developed landscape, and natural areas. Currently asset-related data exists in approximately 40 databases. The bureau's current approach is to build on and adapt existing databases to develop an integrated data system for most assets, and to stay abreast of current data management techniques. Over time, the bureau expects to build or acquire an effective, fully integrated asset data system that will allow data and data management to be more accurate and better organized.

The Data Framework

The key to PP&R data organization is the Data Framework – a hierarchical structure that provides a consistent asset data standard for all PP&R asset data. The Data Framework provides the template for asset inventories and databases and allows for easy coordination of asset data. The Data Framework allows data in different databases to be cross-referenced, linked, and retrieved as required to produce reports on individual assets, groups of assets, parks, and properties.

Data links include geographic information systems, operations activities, planning and development, financial valuations, and capital budgeting. The Data Framework allows assets to be viewed in their logical hierarchy while allowing them to be grouped in the way they are managed.

DATA FRAMEWORK ORGANIZATION

The highest level of the Data Framework is the Asset Group – Buildings, Amenities, Infrastructure, Developed Landscape, and Natural Resources. These are further divided into Categories, Kind/System, Style, Type, and Material.

The following describes the five groups and some of their categories. (A more detailed illustration of the Data Framework is in the Appendix.)

Building Group: structures with walls and/or roofs.
Categories in the Building Group are organized using a modified Construction Specification Institute (CSI) format. The CSI is an accepted industry standard for architectural, engineering, and construction work. The chart on the following page shows the relationship between the Data Framework and the CSI format for Buildings.

Clinton Community Garden

Data Framework Relationship to CSI Format for Buildings

CSI section	CSI description	DF Group/Category	DF Style
03000	Concrete	Foundation* Floors* Walls* Stairs*	Footings, foundations Floors Structural and non-structural Exterior and interior
04000	Masonry		
05000	Metals		
06000	Wood and plastics		
07000	Thermal; moisture protection	Thermal; moisture protection	Roofing and flashing, gutters and downspouts, moisture protection, insulation
08000	Doors and windows	Doors and windows	Exterior and interior doors, windows, skylights, other
09000	Finishes	Finishes	Exterior and interior surfaces, floor coverings, wall coverings, ceilings
10000	Specialties	Specialties	Louvers, partitions, bathroom accessories
11000	Equipment	Equipment	Equipment
12000	Furnishings	Furnishings	Carpet, seating, furnishings
13000	Special construction	Special construction	Pools, towers, solar collectors
14000	Conveying systems	Conveying systems	Elevators and lifts
15000	Mechanical	Mechanical	Utilities, HVAC systems, plumbing, plumbing fixtures, accessories, energy management
16000	Electrical	Electrical	Service and distribution, light fixtures, low voltage systems - telephone and data, fire alarm system, energy monitoring, security systems

* These building elements can generally be made of concrete, masonry, metal or wood depending on their particular construction. All other elements match the CSI format.

Amenities Group: assets that provide visitor services that are not buildings.

- Furnishings
- Recreation facilities
- Non-vehicular circulation
- Water features

Infrastructure Group: major substructure or underlying system.

- Site utilities (up to the buildings)
- Vehicular circulation

Developed Landscape Group: green elements that require regular maintenance.

- Planting beds and bioswales
- Trees
- Turf areas

Natural Resources Group: green elements that are part of an ecological system and are generally self-sustaining.

- Vegetation units (habitats)
- Land forms
- Natural water features

Heavy equipment is used by PP&R Service Zones for hauling, loading, and unloading.

Chapter 5
Roles and Responsibilities

Competent, integrated and coordinated management of all aspects of the Total Asset Management program is critical to the bureau's ability to provide appropriate and well-maintained assets. This chapter describes the responsibilities for asset management and how the tasks from strategic planning to data management will be implemented.

Senior Management Team

Who: PP&R Director and Senior Managers

Role: Set strategic policies and direction for management of PP&R's portfolio in accordance with *TAM Strategy and Plans*.

Responsibilities:

- Guide development and implementation of the PP&R *TAM Strategy and Plans*.
- Develop and approve asset management policies and procedures.

Meeting Frequency: Annually to review progress in realizing *TAM Strategy and Plans.*

Asset Management Steering Committee

Who: Asset Management Coordinator with Strategic Projects Manager, Principal Management Analyst, Parks Maintenance Superintendent, CIP Analyst, Service Zone Managers, City Nature Zone Managers, Citywide Collaborative Alliances Manager, Property Manager

Role: Ensure that AM goals and objectives are realized throughout the bureau and that bureau-wide asset management plans are implemented. Coordinate proposed projects with the CIP committee. Each member is expected to be knowledgeable about asset management and able to integrate AM into routine work, to understand the economic value of AM and the principles of lifecycle costing.

Responsibilities:

- Be familiar with the TAM Manual and with current PP&R AM practices and procedures.

- Optimize PP&R maintenance and operations to provide appropriate levels of service at the lowest sustainable cost.
- Incorporate AM principles and practices in bureau work.
- Coordinate asset management needs with capital plans and projects.
- Monitor TAM implementation schedule and progress, programs and procedures.
- Inform the Senior Management Team of AM projects and progress.
- Identify performance gaps and strategies needed to close them.
- Identify AM training needs and opportunities.
- Review and comment on draft reports.
- Advise City Council, the Park Board, and Portland Parks Foundation as needed.

Meeting Frequency: Bimonthly

Asset Management Coordinator

Who: Senior Planner; reports to Strategic Projects Manager

Role: Institute asset management planning as standard practice within the bureau and ensure that AM policies and procedures are used throughout the bureau.

Responsibilities:

- Develop PP&R *TAM Strategy and Plans* in coordination with the following Framework Plans: *Strategic Business Plan*, *System Plan*, and *Service Delivery Plan*.
- Coordinate asset management and capital planning to accomplish PP&R goals and objectives.
- Coordinate recommendations of the Asset Management Steering Committee.
- Work with Principal Management Analyst to ensure that proper practices and protocols are established to achieve desired results.
- Coordinate production of Asset Register Reports.
- Represent PP&R on the city's Capital Asset Management and

System Teams to coordinate asset management among the city's infrastructure bureaus.

- Ensure that *TAM Strategy and Plans*, policies, and procedures are accurate and current.
- Collaborate with PP&R Data Manager to ensure that asset reporting requirements are met.
- Ensure that asset information supports key bureau decision-making needs.
- Coordinate asset management and asset data collection.

Asset Teams for Specific Asset Groups and Categories

Who: Staff and managers with expertise in various asset groups and categories.

Role: Provide ongoing expert information on specific topics as-needed.

Responsibilities:

- Manage condition assessments for particular asset groups and categories.
- Provide detailed information on particular areas of expertise.
- Assist and advise planning staff in preparing strategic system management plans.

Meeting Frequency: As needed.

PP&R Supervisors and Staff

Role: Implement asset management plans and apply recommendations to assets in their respective portfolios.

Responsibilities:

- Implement the recommendations and decisions of the Asset Management Steering Committee.
- Maintain assets to prescribed levels.
- Assist with gathering, providing and verifying asset information.
- Perform scheduled repairs and emergency maintenance.
- Conduct regular inspections and asset condition assessments.

Data Management Group (DMG)

Who: Data Manager and Database Administrators (CAMP, GIS, Parks Inventory, MS2000) with Asset Management Senior Planner and others as needed.

Role: Provide integrated, accurate, and timely information to support bureau needs.

Responsibilities:

- Coordinate and integrate data in various databases.
- Develop efficient and accurate protocols and procedures for collecting and maintaining data.
- Ensure accuracy and timeliness of 'core' data.
- Update data as needed.
- Assist in training staff in data collection and data entry.

Database Administrators (DBA)

Who: Major database administrators (see list above) and others as needed.

Role: Ensure that database software meets needs of particular users.

Responsibilities:

- Determine how to organize and store data.
- Coordinate with other database administrators.
- Identify user requirements.
- Set up computer databases.
- Test and coordinate modifications to database systems.
- Ensure the performance of the system.
- Understand the platform on which the database runs.
- Add new users to the system.
- May design and implement system security.

Meeting Frequency: As needed

Principal Management Analyst/Data Manager

Reports to SFBD Manager.

Role: Supervise and coordinate all aspects of data management for the bureau, including assets; has overall responsibility for all data reports

generated throughout the bureau. (See the Data Management Manual for more information.)

Responsibilities:

- Link financial management and asset management.
- Develop budget projections.
- Assist with development of scenarios for acquisition, maintenance and operations, and asset disposal.
- Develop key performance indicators to link PP&R portfolio to bureau goals and objectives.
- Ensure that data records for PP&R assets are well maintained and coordinated.
- Ensure that accurate and relevant asset information is available to support key decision-making needs.
- Coordinate all bureau reporting to meet internal and external reporting requirements including Asset Register Reports, budgets, CIP, SEA, GASB, etc.
- Monitor costs, processes, and amount of detail needed to provide accurate information and reports.

Gabriel Park tennis courts

Chapter 6
Implementation

Funding and Resources

Funding, capital investment, and resource plans need to be developed that are clearly linked to service delivery strategies and that conform to bureau and city goals and objectives.

Developing these plans involves analyzing the options available to fund capital and recurrent costs. Considerations need to be based on an analysis of all available possibilities, including the utilization of the private sector or other partner resources where appropriate.

This analysis should address:

- Total life cycle costs of assets
- Proposed sources of funding for asset acquisition and maintenance, including annual cash flow requirements
- Proposed use of funds from the sale of assets
- Potential costs to be incurred as a result of the disposal of assets
- Net effect of proposals on service delivery

Plans should clearly demonstrate the costs and benefits of providing assets so that decisions can be made based on facts. It should also demonstrate the links between the proposal, the *Service Delivery Strategy*, and the bureau's *Strategic Business Plan*. Proposals can then be ranked and prioritized, taking into account the role they play in service delivery.

CURRENT FUNDING SOURCES

Portland Parks & Recreation's total budget for FY 2005-06 was approximately $69 million. Of that total, $33 million (48%) came from General Fund taxpayer revenues; $36 million (52%) came from fees and charges (including the System Development Charge), grants, and levy funds – money often earmarked for specific purposes. The portion of funding available from the General Fund has been steadily decreasing over the past years, resulting in additional fees and charges and the need to find additional funding from other sources.

System Development Charge: PP&R assesses new residential development with one-time fees called the Parks System Development Charge (SDC). These fees cover a portion of the cost to provide the parks and recreation facilities needed to serve new residential development and further the goals of PP&R's 20-year capital plan. At the current rate of $1,705 per single family unit, the residential development fee generates about $1.5 million per year for park capital improvements. The SDC has funded several major new acquisitions in Outer East in past years where the area is experiencing much new growth. City Council is considering adding a commercial SDC.

Levy Funding: In November 2002, Portland voters approved a five-year Parks Levy that runs from July 2003 to June 2008. In addition to restoring $2.2 million in cuts and additional services, the Levy provides for the following capital improvements:

- Build and maintain two neighborhood skateboard areas.
- Rebuild Wilson Pool, PP&R's most popular outdoor pool (completed in July 2005).
- Complete renovations to University Park Community Center.
- Provide a pool at East Portland Community Center (scheduled for 2006).
- Improve playground areas.
- Improve energy efficiency, fix leaks, replace broken fixtures, upgrade mechanical systems, and maintain facilities throughout the system.

Funding Needed to Maintain Assets over Time

Capital replacement is needed over the life of an asset for it to function at the appropriate level to provide the desired level of service. Since the average rate of depreciation of a facility is 2% to 4% of its total CRV, the National Research Council recommends providing 2% to 4% of the facility's value for annual maintenance and repair. The number is lower if there are few deficiencies and higher if there are many deficiencies.

Currently PP&R spends about 1% on maintenance and repair. Given the age, condition, and heavy use of many of our facilities, we should be spending an average of 3% to correct the current amount of deferred maintenance.

Knowing the level of maintenance funding allows the bureau to develop a range of scenarios and make appropriate decisions about resource allocations. For example:

- The rate of deterioration over time can be determined by knowing the level of funding needed to keep an asset in a certain condition. Insufficient funding will result in the steady deterioration of an asset and loss of service. This is known as the funding gap – the difference between what is needed and what is available to maintain an asset at a specific condition level
- The amount of funding required to maintain an asset at a prescribed condition level can be determined.

Maintenance and capital needs can be determined after an asset's condition, suitability, and financial needs have been assessed and evaluated.

Priority 1: Urgent (12 months)
These repairs or replacements need to be completed within a year.

Priority 2: Short-term Needs (1 to 2 years)
These should be corrected in the near future to prevent additional deterioration and to maintain the integrity of the building.

Priority 3: Medium-term Needs (3 to 5 years)
Typical needs include planning the repair or replacement of components that are close to the end of their useful lives.

Priority 4: Long-term Needs (5 to 10 years)
Long-term needs can be determined to meet growth needs and provide equity across the system.

Performance Measurement

Performance measurement is important to ensure that an asset is achieving the objectives set out in the asset management plans. Performance indicators may include:

- Achievement/occurrence of critical success factors
- Satisfactory performance in predetermined outcomes (met, or not met) for specified processes/procedures in key result areas
- Degree of flexibility offered to users

Performance can be measured qualitatively and/or quantitatively for each indicator to determine the effectiveness of the asset.

Measuring Asset Performance

Asset performance will be reviewed and evaluated on a regular basis to verify that desired outcomes are being achieved. The results of performance reviews will help bureau management to:

- Identify actions to be taken.
- Comply with ongoing city and federal reporting requirements, as well as with PP&R's corporate, business, and planning processes.

The following can be measured to assess asset performance:

- Physical condition
- Utilization
- Functionality
- Financial performance

Physical condition: An asset must be able to be used safely and effectively. This means that it needs to be maintained in a condition that is adequate for the purpose for which it is intended, and that it complies with relevant health and safety standards. This involves:

- Determining the required condition of the asset relative to its service delivery requirements and value (criteria should include those relating to operational efficiency, public health and safety, and amenity).

- Inspecting the asset and comparing its condition with that required.
- Forecasting the future condition of the asset.

Utilization: Asset utilization is a measure of how intensively an asset is being used to meet its service delivery objectives in relation to the asset's potential capacity. Criteria and benchmarks need to be appropriate to the services being delivered and to the class of asset being considered. They should include determining the:

- Value of the asset's unit of service potential being used relative to the units of service being delivered
- Physical measures of asset capacity relative to the units of service being delivered
- Use being made of the asset relative to the optimal availability for the type of asset

The utilization criteria should be based, wherever appropriate, on best practice data as well as on the results of analyses undertaken either by the bureau or elsewhere in the private and public sectors.

Underutilized assets should be identified, and the reasons for this determined. The asset may no longer be effective or it may be in poor condition. It may be that there is reduced need for the services it delivers or supports. Some reasons for underutilization may include:

- Physical constraints, such as poor lighting for night-time use
- Technological obsolescence
- Management constraints, such as the hours worked by staff

Action should be taken either to improve the asset's utilization or to redeploy it, provided that service delivery needs can be met by alternative means.

Where asset utilization is low, PP&R should consider if the cost of holding the asset exceeds the cost of transferring the services it delivers, and if there is a more economical way of delivering the services. Alternative or additional uses of assets should also

be considered (e.g. an underutilized group of classrooms may appropriately house a health clinic).

The utilization of each asset should be reviewed annually.

Functionality: An asset's functionality is a measure of the effectiveness of the asset to support the activities to be carried out. Monitoring and assessing functionality includes determining the:

- Role that the asset plays in achieving service delivery outcomes
- Functional characteristics required of the asset to support the specified activities

The functionality of assets should be regularly reviewed to identify any significant impacts on services. This will also allow timely changes to be made to improve both service delivery and functional standards. The results of regular functionality reviews are used in the formulation of asset strategies.

Financial performance: The financial performance of an asset must be evaluated to determine whether or not it is providing economically viable services. To do this, the bureau needs to monitor and assess:

- Operating expenses
- Current and projected cash flows, including capital expenditures

This information is then used to determine the current and projected economic return of the asset. Discounted Cash Flow analysis can be used to provide a measure of the Net Present Value and the internal rate of return for assets.

Another important aspect of an asset's financial performance is the maintenance of equity. This measure provides a basis for evaluating the performance of assets and the bureau. It is also a major consideration in establishing approaches to service pricing and revenue.

Appendix

Asset Management Definitions

Asset: A physical object, component of infrastructure or a facility that has significant value (usually $5,000 or more) and has an expected useful life of more than one year, that would be replaced if destroyed, and is not surplus to needs.

Asset Management: The continuous cycle of asset inventory, condition, and performance assessment that has as its goal the cost-effective provision of a desired level of service for physical assets. Investment decisions consider planning, design, construction, maintenance, operation, rehabilitation, and replacing assets on a sustainable basis that considers social, economic, and environmental impacts.

Asset Register: The inventory of PP&R assets and related asset information including, but not limited to, location, physical characteristics, value, and condition. Assets are recorded if they have a service potential and/or the capacity to provide economic benefits that may be used in the delivery of services.

Backlog: The sum of deferred activities, such as maintenance, operations, and rehabilitation, needed to achieve the lowest life cycle cost for an asset. Backlog results from lack of money, materials or staff to perform the needed work. (See Funding Gap.)

Capital Expansion: Projects or facilities that create new assets, increase the capacity of existing assets beyond their original design capacity or service potential or increase the size and service capability of a current service area, including service to newly annexed, undeveloped or under-served areas. Generally increases the total maintenance requirements because it is increasing the total asset base.

Condition Assessment: The method used to quantify the deterioration rate and remaining useful life of an asset. Methods of condition assessment vary by asset classification and range from use of industry estimates for deterioration rates up to documented physical inspection regimens on established cycles that ensure optimum economic life of an asset.

Condition Measure /Rating: A means of classification using information from periodic inspections or measurements to indicate the ability of an asset to deliver a particular level of service.

Confidence Levels (in data/information): The expression of accuracy and reliability in the areas of information (source and reliability), process (ad hoc or repeatable), and documentation (documented or not documented).

The following chart[4] addresses this information:

	Inventory completeness	Condition assessment method and frequency	Process and documentation	Resulting confidence level
1	No inventory	No assessment method	No process	No confidence
2	Partial inventory	Condition estimate based on manufacturer's estimate or other reliable source	Process not documented	Low confidence
3	Inventory complete	Condition estimated and certain % tested on regular schedule	Process verbally documented	Moderate confidence
4	Inventory complete	Condition based on visual inspection by qualified personnel on regular schedule	Process partially documented	High confidence
5	Inventory complete	Condition based on inspections and testing by qualified personnel on regular schedule	Process well documented	Optimal confidence

Current Replacement Value (CRV): The CRV is the total cost to replace the entire asset to meet current accepted standards and codes. Age-based current value is the theoretical value of the asset based solely on its age. Condition-based current value is based on its inspected condition.

Depreciation Rate: The rate at which the value of the asset is reduced over its useful life. Depreciation is a process of systematic allocation for those assets to which costs or values can be assigned and measured reliably. The Depreciation Rate is set by the city's Office of Management and Finance. Depreciation rates are reviewed annually and adjusted to reflect the most recent assessments of the useful lives of the respective assets with regard to asset usage and the rate of technical and commercial obsolescence.

Note: 'Green' assets need to be valued differently since they appreciate in value for much of their useful lives. As trees and shrubs

[4] *Asset Status & Condition Report*, City of Portland, Oregon, December 2005.

grow, they provide increased service, utility, and aesthetic value so they appreciate in value over time until they eventually decline and need to be replaced. Currently, there is no agreed-on method for valuing green assets.

Facility Condition Index: The FCI is a simple assessment of facility condition. It is the ratio of the cost to correct all identified deficiencies to the current replacement value of the facility. For example, if a building with a replacement value of $1,000,000 has $100,000 of existing deficiencies, the FCI is $100,000 ÷ $1,000,000 or 0.10.

Funding Gap: The difference between the funding needed to address infrastructure needs of an asset at a defined condition or level of service and the funding that is currently available. The funding gap varies with the funding level and affects the level of service. The funding gap is the amount of money needed to eliminate the backlog and/or maintain the asset to achieve its useful life. Given a certain funding level, the resulting level of service can be forecast; if a certain level of service is desired, the funds needed to achieve it can be estimated.

Infrastructure: PP&R's infrastructure consists of assets in two general networks that serve whole communities: transportation modalities (roads, rail, etc.) and utilities. These are necessary municipal or public services, provided by the government or by private companies and defined as long-lived capital assets that normally are stationary in nature and can be preserved for a significant number of years. Examples are: streets, bridges, tunnels, drainage systems, water and sewer lines, pump stations and treatment plants, dams, and lighting systems. Beyond transportation and utility networks, Portland includes buildings, green infrastructure, and communications and information technology as necessary infrastructure investments that serve the community.

Inventory: A list of assets and their principal components.

Level of Service: A defined standard against which the quality and quantity of service can be measured. A level of service can include reliability, responsiveness, environmental acceptability, customer values, and cost.

Life Cycle Cost: The sum of all costs throughout the life of an asset, including planning, design, acquisition, construction, operation, maintenance, rehabilitation/renewal, and disposal costs.

Life Expectancy: The expected life of the asset with normal use and normal maintenance.

Maintenance: Activities that keep an asset operating as designed or prevent it from deteriorating prematurely, excluding rehabilitation or renewal which may extend asset life. Maintenance can be planned or unplanned.

Planned maintenance is:

- Preventive – maintenance conducted at regular scheduled intervals based on average statistical/anticipated lifetime.
- Condition-based – maintenance based on objective evidence of need from tests, measurements, and observations.
- Deferred – the shortfall created by postponing prudent but non-essential repairs to save money or materials. Generally, a policy of continuing deferred maintenance results in higher costs when repairs are eventually made, or failure that occurs sooner than if normal maintenance had been performed.

Unplanned maintenance is:

- Reactive or Emergency – corrective actions taken upon failure or obvious threat of failure, usually at a higher cost than planned or preventive maintenance.

Operations: The ongoing activities that allow the use of an asset for its intended function.

Performance Indicator: A qualitative or quantitative measure used to compare actual performance against a defined standard. Indicators are commonly used to measure cost, performance or customer satisfaction.

Performance Monitoring: The periodic assessments of actual performance compared to specific objectives, targets or standards.

Rehabilitation/Renewal: Maintenance performed on an asset to restore it to its original level of service or capacity and achieve its useful life, which may result in an extension of the asset's service life.

Replacement Date: Date when asset is expected to need replacement based on the Inspected Remaining Life, if possible, or the Expected Remaining Life, if needed.

Retirement/Removal: Decommissioning or removal of an asset through disposal, abandonment, demolition or sale that may involve retiring deteriorated assets and recovering salvage value.

Useful Life: The period of time over which an asset is expected to deliver efficient service given normal use with normal maintenance (defined as accepted industry standards or documented local experience).

PP&R owns and maintains 369 sports fields

2004 Cost of Service Study

PP&R completed a *Cost of Service Study* in September 2004. This management tool was an effort to determine and understand the true and total costs to provide recreation programming services to the public and to determine the amount of cost recovery realized from fees and rentals charged for some activities.

The study included costs to deliver the following recreation programs: aquatics, arts, after school, summer playgrounds, outdoor recreation, tennis, special recreation, and the cost of permitting and recovering revenue from parks facilities.

Costs to deliver services include:

- Direct Program Costs (full-time recreation staff, program staff for a particular program or location)
- Allocated Facility Costs (facility maintenance, utilities, capital replacement set-aside costs (2% to 4% per year)
- Overhead Costs (Bureau and General Fund)

PP&R Data Framework

Note: These are the first three columns of the Data Framework; the full Data Framework includes additional columns with information on type and materials.

Group	Category	System
Buildings: Type / Function		
	Administration	
	Arts / Cultural	
	Aquatic Facilities	
		Indoor - stand alone
		Outdoor
	Clubhouse	
	Community Centers	
		With pool
		Without pool
	Gazebos	
	Maintenance Buildings	
	Residence	
	Restrooms	
	Shelters	
		Picnic
		Basketball
	Stadiums	
	Storage	
	Utility	
	Visitor Services	
Buildings: Components		
	Foundation	
	Floor and Stairs	
	Walls	
	Thermal; moisture protection	
	Doors and Windows	
	Finishes	
	Specialties	
	Furnishings	
	Special Construction	
	Conveyance	
	Electrical	
	Mechanical	
Amenities		
	Furnishings	
		Art Work / Plaque
		Bench
		Bike Rack
		Bleachers
		Cooking Facility
		Drinking Fountain
		Kiosk
		Memorial

Group	Category	System
		Pole
		Sign
		Table
		Pad
		Trellis
		Trash Receptacle
	Non-vehicular Circulation	
		Bollard
		Bridge
		Bumper
		Fence/Gate (non- athletic)
		Guard Rail
		Path
		Ramp
		Sidewalk
		Stairs (exterior)
		Trail
		Wall
	Recreation Facilities	
		Boat Dock / Pier
		Boat Ramp
		Canoe Launch
		Plaza/Terrace
		Play Area
		Skate Park
		Sports Court
		Sports Field
		Stage/Amphitheater
	Water Features	
		Fountain
		Pond
		Spray Pool
		Wading Pool
Infrastructure		
	Utilities	
		Electric
		Gas
		Irrigation
		Potable Water
		Sanitary Sewer
		Storm Sewer
		Telecom
	Vehicular Circulation	
		Curb
		Bridges
		Guard Rails
		Parking Area
		Roads

Group	Category	System
Developed Landscape		
	Bioswales	
	Planting Beds	
		Hedge
		Mixed
		Specialty, e.g. roses
	Trees	
		Park
		Street
	Turf Areas	
		General Lawn
		Sports Field
		Synthetic Grass
		Tall Grass
Natural Areas		
	Vegetation Units	
		Forest
		Grassland/ Shrub land
		Other
	Landforms	
		Ridge
		Side hill
		Canyon
		Bench / terrace
		Flat
	Water Features	
		Springs
		Pond
		River bank
		Stream

PP&R Asset Inventory Definitions

BUILDINGS	Any roofed and / or walled structure whether enclosed on all 4 sides or open on one or more sides or enclosed and open on top.
Building Type	Refers to the primary function / use of a building
Administration	Houses administrative headquarters for various PP&R programs.
Arts / Cultural	Buildings for performing arts, art education and cultural displays.
Aquatics Facility	Stand-alone indoor or outdoor pool and the associated bath or pool house.
Clubhouse	Sports facility with lockers, restrooms, concessions, etc.
Community Center	Provides spaces for multiple recreation, social, cultural and educational activities.
Community Center and Pool	Provides spaces for multiple recreation, social, cultural and educational activities, and aquatic facilities.
Gazebo	Small pavilion, either open or enclosed, that provides seating or a viewpoint.
Maintenance	Buildings that house maintenance and operations personnel and equipment, may include small accessory office space.
Residence	A dwelling unit.
Restroom	Provides public toilets and sinks, may include accessory space for storage or shelter.
Shelter	Structure open on one or more sides for picnics, active recreation or transit stops, may include restrooms or storage space.
Stadium	Large structure for public sporting events, usually open, with seating and restrooms, may include storage areas.
Storage	Provides temporary or permanent storage space for moveable supplies or equipment.
Utility	Houses and protects permanent utility equipment.
Visitor Services	Visitor centers, concession areas and gift shops providing information, goods and services.
Building Components	Major systems that make up the building
Foundation	Concrete footings, slab on grade, etc.
Floor and Stairs	Interior and exterior floors and stairs.
Walls	Exterior and interior solid structural (load bearing) and non-structural vertical elements.
Thermal; moisture protection	Roof, gutters, downspouts, flashing and Insulation.
Doors and Windows	Interior and exterior doors, windows and skylights.
Finishes	Floor, wall and ceiling coverings including paint, carpets, tile, etc.
Specialties	Accessories, louvers and partitions.
Furnishings	Furnishings, seating, etc.
Special Construction	Pools and pool equipment, solar systems, towers, chimneys, etc.
Conveyance	Elevators and lifts.
Electrical	Components and fixtures for electrical distribution and lighting system, includes low voltage systems for alarm and security systems and energy management.
Mechanical	Components and fixtures for heating, ventilation and air conditioning systems, plumbing system and elevators.
AMENITIES	The built elements within a park or property (excluding Buildings) that enrich and directly support park visitor experiences.
Furnishings	Park amenities, generally permanent, for the comfort, use and enjoyment of park visitors
Art Work / Plaque	Structure or element whose primary purpose is decorative, not functional.
Benches	Seating with or without backs for one or more park visitors, usually permanently attached to a concrete or asphalt pad.
Bicycle Rack	Rigid structure to which a bicycle can be attached for security.

Bleachers	Open series of increasingly higher seating for viewing performances, may be fixed or moveable.
Cooking Facility	Grills and / or pits for outdoor cooking.
Drinking Fountain	Device with nozzle that provides potable water and allows drinking without a cup; often requires activation.
Kiosk	Multi-sided structure for signs and posters, usually 6’ to 8’ tall, often with a roof.
Memorial	Structure or element such as a monument or statue that recognizes, honor or remembers persons or events, not including plaques on benches or trees.
Pole	Tall slender structure that supports a flag or banner.
Sign	Device that provides graphic and written information and directions.
Tables	Table for picnics or games, usually permanently attached to a concrete or asphalt pad.
Terrace / Plaza / Pad	Miscellaneous paved surface, often support features such as a table, bench or trash can.
Trash Receptacle	Fixed or moveable container, including drop box, for public trash and garbage disposal.
Trellis	Lattice or frame structure to support and display vines or other plants or to provide shade.
Non-vehicular Circulation	Paved and unpaved elements that accommodate travel and movement other than motor vehicles (pedestrian, bicycles, equestrian, etc.)
Bollard	A vertical post, or series of posts, to restrict access to or from a trail, path or road.
Bridge	Structure that spans a body of water or a ravine or other steep change in elevation and provides passage over it.
Bumper	Individual elements or series of logs, curbs or rails at ground level to control vehicular traffic.
Fence / Gate (not athletic)	Vertical element, other than a wall, that acts as a barrier, boundary or enclosure. Device - usually hinged - that allows access through an opening in a wall or fence.
Guardrail	A structure made of rails and posts that acts as a barrier or protection for vehicles or people.
Path	Hard surface pathway within the Developed portions of a park and not in the right-of-way.
Ramp	A paved inclined or sloping surface connecting two different levels.
Sidewalk	Hard surface sidewalk pathway in right-of-way.
Stairs (exterior)	Flight of steps.
Step	One riser (the vertical face) and run (the horizontal surface).
Trail	Hard or soft surface pathway located in Natural Areas, primarily for non-motor vehicle use but may accommodate service vehicles.
Wall	Solid vertical structure that may be freestanding or confine the advance of a mass of earth or water such as a retaining wall.
Recreation Facilities	Major elements, excluding buildings, clearly defined for active recreation or other specific use
Boat Dock / Pier	Structure that extends into or alongside the water that may provide places for watercraft to tie up.
Boat Ramp	Inclined paved surface that provides access for motor vehicle / boat trailer from land into water (and vice-versa).
Canoe Launch	Water access-way for carrying or rolling small boats, such as canoes, kayaks, and rowboats, into and out of the water.
Plaza / Terrace	Flat, open paved square or terraced area, often defined by design elements such as bollards, surrounding shrubs, steps, or change in surface.
Play Area	Site that is defined or contained by curbing or surface material with play equipment in it (as opposed to a loose collection of play equipment scattered throughout a park).

Playground Equipment	Swings, slides, climbers and other play equipment for various ages, either stand-alone or clustered into a group.
Skatepark	Hard surface (either pre-fab or concrete) either in-ground or above-ground with ramps, bowls, rails and jumps for use by skateboarders, BMX bikers or in-line skaters.
Sport Court	Paved or soft surface courts for basketball (full and half court), tennis, horseshoes, volleyball, etc.
Sports Equipment	Goals, hoops, nets, players' benches, etc. for use by players on sports fields or courts, may be fixed or moveable. Fences and backstops clearly associated with a particular sport.
Sports Field	Grass or artificial turf area for football, baseball, softball, soccer, etc. plus the sideline areas needed for players and spectators.
Stage / Amphitheater	Open amphitheater, stage or other space for public performances.
Water Features	Outdoor water facilities including fountains and spray pools for active play or viewing
Pond	Man-made water feature such as the Casting Pond at Westmoreland Park.
Decorative Fountain	Architectural water feature, often large, which may be used for active play or be primarily for viewing. Water is usually treated and recirculated.
Spray Pool	Water play facilities that use potable water with continuous water flow from source to drain (water is not recirculated and treated) to provide a variety of interactive water play. Water spray is often "on demand."
Wading Pool	Shallow constructed pools, usually concrete, for children to wade and play in. (These must be decommissioned by 2012 unless water is treated to meet state standards.)

Strolling in Gov. Tom McCall Waterfront Park

INFRASTRUCTURE	Circulation systems and regulated public services exterior to buildings
Bridge	Structure that spans a body of water or a ravine or other steep change in elevation and provides passage over it.
Curb / Bumper	Rim of concrete, asphalt or other material around parking lots, parking areas or streets. Interior to park (not at city streets).
Electric	Wires, conduit and equipment that deliver electricity.
Gas	Pipes, conduit and equipment that deliver natural gas.
Guardrail	A structure made of rails and posts that acts as a barrier or protection for vehicles or people.
Irrigation	Pipes and spray heads that deliver water to planting beds and turf areas, includes irrigation wells.
Parking Area	Vehicle storage area with individual spaces within a park, or areas along roads and streets for public or staff.
Potable Water	Pipes, conduit and equipment that deliver drinkable water.
Road	Paved or gravel surface primarily for motor vehicles for use by public or staff within a park or property.
Sanitary Sewer	Drains, pipes and appurtenances for sanitary waste removal and transport.
Storm Sewer	Drains, pipes and appurtenances for storm water removal and transport.
Telecom	Telecommunication equipment.
DEVELOPED LANDSCAPE	Green / living elements that require frequent regular maintenance
Bioswales	Shallow depression in the earth designed to catch and treat stormwater runoff using natural means, including vegetation and soil.
Planting Beds	Designated areas for permanent or seasonal displays of plants, includes hedges – closely planted rows of plants that act as barriers or provide erosion control.
Turf	Grass that is maintained and cultivated for lawns and sports fields; includes synthetic grass.
Trees	Street trees and individual trees in parks.
NATURAL AREAS	Green / living elements that are part of an ecological system, generally self-sustaining and managed as natural areas
Vegetation Units	Examples are grasslands, shrub lands, and forested habitat areas.
Landforms	Examples are ridge, side hill, canyon, etc.
Natural Water Features	Includes ponds, river banks, and streams.