Infrastructure asset management focuses on physical rather than financial assets, such as streets and bridges versus stocks and bonds. The renewal and replacement of the physical assets that make up Portland’s transportation infrastructure have been ongoing tasks for more than 20 years. In 2010 the Portland Bureau of Transportation (PBOT) adopted a new asset management policy consistent with internationally accepted best practices to maximize the value of our infrastructure assets and guide all decisions to manage the system, our services and our financial well-being.

Generally, asset management focuses on strategic maintenance, rehabilitation and replacement of assets. Rather than a “worst first” investment strategy, PBOT has a “preservation first” strategy. A “worst first” strategy tends to undermine the entire notion of asset management and strategic decision-making. “Worst first” means that the asset in worst condition gets the first investment; whether or not an asset receives investment is determined by its place in line and how much money there is to invest.

Preservation includes regular preventive maintenance and planned rehabilitation. The idea is to intervene at strategic points to extend an asset’s expected useful life and prolong performance. The goal is better decision-making based on quality information and well-defined objectives.

Assets provide services. An asset’s useful life is its expected lifetime, or the acceptable period of use before it reaches an unacceptable condition and requires major rehabilitation or replacement. Assets deteriorate in predictable ways. Typically, an asset with a long useful life requires multiple intervention points including a combination of repair and maintenance activities and even overall rehabilitation.

Under a “preservation first” strategy, scheduled preventive maintenance like crack sealing will extend a street’s life before small sections of it need to be rehabilitated with base repair or it needs an overall rehabilitation with re-paving. Maintaining the street at a fair, good or very good condition is much more cost-effective than allowing the street to erode to a poor or very poor condition where replacement costs skyrocket. Strategically timing treatment interventions helps extend the street’s useful life and maximizes financial resources.

Asset management is the strategy that allows us to make the right amount of investment in the right asset at the right location at the right time. It is through evidence-based decisions that PBOT spends our financial resources to manage our physical assets for the best long-term benefit.

“Asset management is the strategy that allows us to make the right amount of investment in the right asset at the right location at the right time. It is through evidence-based decisions that PBOT spends our financial resources to manage our physical assets for the best long-term benefit.”
PBOT’s mission is to be a community partner in shaping a livable city. We plan, build, manage and maintain an effective and safe transportation system that provides people and businesses access and mobility. In short, we keep Portland moving.

PBOT customers are Portland’s residents, businesses and visitors who expect transportation professionals to manage transportation assets in an effective, efficient and sustainable manner. They rely on us to be good stewards of the resources entrusted to us. As good stewards, we do more than account for our assets. Through asset management, we minimize the total costs of owning and operating our assets while ensuring proper use and performance of those assets.

Challenges
PBOT is responsible for overseeing and maintaining a vast infrastructure with a replacement value of $8 billion. Paved streets, sidewalks, bridges, traffic signals and streetlights make up the majority of the dollar value. PBOT owns other assets that also ensure the safe and efficient movement of people, goods and services (e.g., streetcars, an aerial tram, support facilities, traffic calming devices, signs, parking meters, parking garages, pavement markings, bikeways, guardrails, retaining walls, the Harbor Wall, stairways and traffic signal computer controllers).

Transportation infrastructure managers nationwide face many challenges, including aging assets, tighter budgets, limited infrastructure information and the need to satisfy multiple stakeholders and public expectations for more sustainable transportation solutions. Over the years, transportation infrastructure assets have been acquired and developed to meet a variety of community needs. Because of ever-evolving needs and challenges, PBOT is using asset management to ensure that our assets meet identified service needs.

PBOT is responsible for ensuring that the transportation system stays in good working order regardless of the age of its infrastructure assets or the availability of additional funds. Therefore, the challenge to manage transportation infrastructure assets has led PBOT to emphasize an asset management policy as a business process that drives decisions based on data and information.

Asset management goal
The goal of asset management is to provide a targeted level of service and performance for various assets within the transportation network, in a most cost-effective manner, by making the right amount of investment in the right asset at the right location at the right time.

PBOT’s approach to asset management allows us to monitor asset status and condition, determine level of service, measure performance and determine unmet need.

Using good data and information, we can better plan how to maintain, rehabilitate and replace assets through timely, cost-effective management, program development and resource allocation.

“The goal of asset management is to provide a targeted level of service and performance for various assets within the transportation network, in a most cost-effective manner. PBOT’s approach to asset management allows us to monitor asset status and condition, measure performance and determine unmet need.”
PBOT uses an asset management framework recommended by the International Infrastructure Management Manual, which is also used by the Federal Highway Administration and Environmental Protection Agency. The framework includes five core questions for infrastructure managers.

This continuous cycle of inventory, condition, value, performance, risk and cost assessment provides data and information that asset managers use to develop and implement an asset management plan for each asset group (e.g., streets, bridges, signals and so on). The asset management plan is the tactical plan for managing an asset group. It describes the maintenance, rehabilitation and replacement strategies and includes a project list that includes the project type, location, estimated costs and estimated start and finish dates. The plans and lists inform the Bureau’s budget development process.

Simply stated, we’re assessing what we have, then assessing what condition it’s in and then assessing the financial costs to maintain it at a targeted condition. This approach is effective in maximizing the value of our capital, operations and maintenance expenditures within current revenues, while continuously delivering levels of service that the public desires and decision makers require, at an acceptable level of risk to the Bureau.

The following terms and definitions are used in PBOT’s asset management strategy:

- **Status** is how critical an asset is to the overall system based on its costs and impacts on organizational objectives.
- **Condition** is the physical state of an asset (e.g., fair, good or very good).
- **Level of service** describes what an asset is intended to deliver to its users matching expectations with willingness to pay (i.e., what the organization pledges to deliver to its customers). It is a qualitative or quantitative measure of how well an asset is delivering a needed service.
- **Unmet need** is the minimum cost to maintain an asset at a targeted level of service and condition.

### Best practices

1. **Prepare an asset inventory and system map that includes what we own, its location, its condition, its useful life and its replacement value.**
   - Example: GIS map of asset locations

2. **Determine targeted levels of service and performance measures, and track progress towards achieving those targets.**
   - Example: Condition target: 80% of arterial and collector streets in fair or better condition

3. **Rank assets from most to least critical based on analysis of the risk of failure.**
   - Example: Risk of failure is higher for arterial and collector streets with freight and transit

4. **Determine minimum life cycle costs for maintaining, rehabilitating and replacing assets to provide the highest levels of service over time.**
   - Example: Preventive maintenance: Apply the right fix at the right location at the right time

5. **Establish a long-term funding strategy to maintain assets at targeted sustainable levels of service.**
   - Example: Identify new transportation funding
Oversight + reporting

The Asset Management Advisory Committee, led by the Transportation Asset Manager, is a standing committee within PBOT that includes not only senior asset managers but also engineers, operations staff and maintenance, finance and information technology managers. The committee directs, evaluates and oversees efforts to meet the Bureau’s asset management goal. The committee provides leadership and guidance in implementing the Bureau’s asset management framework and best practices. In addition, the committee helps develop a coordinated approach to citywide asset management through the participation of PBOT’s Asset Manager in the City Asset Managers Group.

PBOT annually reports on the status and condition of each asset group to demonstrate long-term stewardship of public infrastructure. By integrating all transportation assets, PBOT customers can see costs and benefits of individual functions, and costs as they impact overall programs and budgets.

The public can then use this information to communicate more clearly to decision-makers the level of infrastructure investment, maintenance and condition they prefer, and decision-makers can use this information to make the decisions they believe reflect the best stewardship of public resources and show continuous improvement.

The PBOT Directors Team has reviewed and endorsed this asset management policy statement. The undersigned agree that the framework and best practices outlined in this statement set the right standard for managing Portland’s transportation infrastructure assets and confirm the Bureau’s commitment to asset management practices that provide cost-effective service to PBOT customers.

“PBOT annually reports on the status and condition of each asset group to demonstrate long-term stewardship of public infrastructure. By integrating all transportation assets, PBOT customers can see costs and benefits of individual functions, and costs as they impact overall programs and budgets.”
The Portland Bureau of Transportation (PBOT) hereby gives public notice that it is the policy of the agency to assure full compliance with Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, Executive Order 12898 on Environmental Justice and related statutes and regulations in all programs and activities. Title VI requires that no person in the United States of America shall, on the grounds of race, color, sex, or national origin, be excluded from the participation in, be denied the benefits of or be otherwise subjected to discrimination under any program or activity for which PBOT receives federal financial assistance. Any person who believes they have been aggrieved by an unlawful discriminatory practice under Title VI has a right to file a formal complaint with PBOT. Any such complaint must be in writing and filed with PBOT’s Title VI Coordinator within one hundred eighty (180) days following the date of the alleged discriminatory occurrence. Contact the Title VI Coordinator at Room 1204, 1120 SW 5th Ave, Portland, OR 97204, or by telephone (503) 823-2559, City TDD (503) 823-6868.