

A GUIDE TO COMPUTATION AND USE OF SYSTEM LEVEL VALUATION OF TRANSPORTATION ASSETS

Quick Start Guide

Asset Valuation

Asset value is used to communicate what assets an agency owns, their extent, and the agency's responsibility for maintaining asset inventory. It demonstrates an agency is managing its assets responsibly and helps illustrate the difference between alternative investment strategies.



While there are many different perspectives that can inform asset value, it is recommended to follow these six steps to calculate it.

The Six Steps to Calculate Asset Value



STEP 1

Define the Analysis Scope

It is important to determine the primary use of the asset value calculation for supporting transportation asset management (TAM). Then it is necessary to review the data available to identify which assets and systems to include and establish whether it is necessary to perform the value calculation for asset components.

STEP 2

Establish Initial Value

Initial asset value is the value of an asset at the start of the analysis period. The initial value may be the value of an asset when it was first acquired, the value at a particular point in time, or the sum of future benefits at a point in time.

STEP 3

Determine Treatment Effects

One must consider what treatments may occur over the life of an asset, and whether any treatments besides the initial acquisition or construction of an asset need to be explicitly considered in the asset value calculation. One must also consider the cost and impact of the treatments.

STEP 4

Calculate Depreciation

Depreciation, or loss of value over time, shows the consumption of an asset's benefits over its life. There are three main approaches to calculate it based on what data is available: Represented as a linear function of asset age, calculated based on condition, or by analyzing the pattern of consumption benefits.

STEP 5

Calculate Value and Supporting Measures

Value calculation can be done for each individual asset or for groups of assets. Other supporting measures can be found as well when calculating the overall value. One may also perform sensitivity analyses to show the degree to which changes in key parameters would impact the results of the analysis.

STEP 6

Communicate and Apply the Results

Once calculated, asset value and related measures can support a range of applications. Asset managers can use this information to evaluate significant changes in asset value, consider the values of supporting performance measures, and inform project spending decisions moving forward.

KEY QUESTIONS THAT ASSET VALUATION CAN HELP ANSWER

1. What is the overall value of the asset inventory?
2. What is the cost to maintain current asset value?
3. How much should we spend on our existing assets?
4. How should different funds be allocated between different assets or networks?
5. What's the best life cycle strategy for our assets?
6. What is the value generated by our assets?



THREE UNIQUE PERSPECTIVES

The guide touches upon three main lenses to view through when calculating asset value: Cost, Market, and Economic. Each of these perspectives aid in explaining certain benefits to different key stakeholders like asset owners, transportation system users, society as a whole, and other market participants.

Cost Perspective. Focuses on the capital costs incurred by the asset owner.

Market Perspective. Focuses on the price of an asset on the open market.

Economic Perspective. Focuses on the benefits generated by an asset.

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ASSET VALUE-RELATED MEASURES

The guide includes a set of supporting measures that are related to asset value.

Cost to Maintain Current Value. Average annual asset preservation, rehabilitation and replacement funding.

Asset Sustainability Ratio. The ratio of annual asset expenditures, excluding improvements, to the cost to maintain current value.

Asset Consumption Ratio. The ratio of current asset value to the initial value of an asset when purchased or constructed.

Asset Funding Ratio. The ratio of asset preservation, rehabilitation and replacement funding planned over a 10-year period to the total funding required over the same period to achieve and maintain the agency's desired state of good repair.

Net Present Value. The difference between total discounted benefits and total discounted costs of an asset or investment.

Check out the full guide at

<https://www.assetvalueguide.com/>

