



# Operations Asset Management

21<sup>ST</sup> CENTURY OPERATIONS USING 21<sup>ST</sup> CENTURY TECHNOLOGIES

## OPERATIONS ASSET MANAGEMENT CHALLENGES

Transportation agencies are faced with growing congestion, reduced resources, and making increasingly complex transportation improvement decisions. Taking into account the uniqueness of each transportation region, its system performance, and customer improvement preferences is challenging for transportation professionals. Under these conditions, it is essential that practitioners have systematic fact-based tools and processes to produce the information decisionmakers need to effectively allocate resources.

Asset management is not a new concept. It is a philosophy that has been expanded to encompass the total array of assets connected with any entity or endeavor. Most people associate the management of assets with an entity's physical infrastructure holdings; however, asset management now takes into account a number of non-physical assets such as people, data, and processes. In relation to transportation, a comprehensive asset management approach will account for all assets, indicate the status of these assets, identify the needs of the systems, and indicate what investments are needed to maintain and improve system performance.

Working and coordinating with the Federal Highway Administration's (FHWA) Office of Asset Management, the Office of Operations is developing and promoting the analytical and procedural foundation for managing operations assets. The Office of Asset Management will lead the development of an overall understanding of asset management and coordinate the development of a decisionmaking process to support transportation asset management. This process will enable the cross comparison of all assets and provide essential information that promotes sound transportation investment through strategic resource allocations. The challenges involve assembling and configuring information about the assets of a transportation agency so that the information can be used to make resource allocations. The approach must be holistic to include:

- Associated goals and objectives
- Linkages between goals, objectives, and performance
- Trade-offs between alternative improvements

- Engineering and economic evaluation results
- Impacts of varying asset life cycle and investment cycle time horizons

Operations asset management and transportation asset management facilitates linking investment decisions—from selection of projects to performance goals. In practice this means that the goals and objectives transportation professionals use to measure the performance of a signal system will be directly linked to the resource allocation information presented to decisionmakers. Keying investments to performance enables transportation professionals to communicate to decisionmakers what resources they need to address congestion and improve system reliability.

## WHAT WE'VE LEARNED

The transportation community is increasing its deployment of operations capability and Intelligent Transportation Systems (ITS) technology. As we move through the 21<sup>st</sup> century, these operational assets need to be managed in concert with infrastructure assets to produce the information that identifies the right mix of resource allocations. Allocating the right mix of resources will allow transportation professionals to maintain, upgrade, or replace assets that contribute to reaching specific transportation system performance goals.

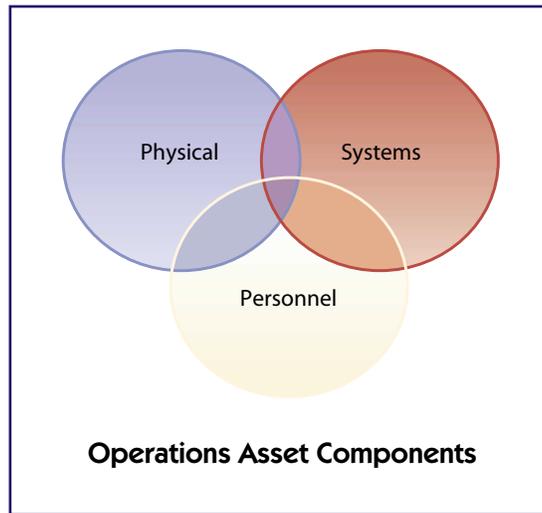
Operations assets will also add a new dimension to transportation asset management. Operations assets consist of physical, system, and personnel components that interconnect in support of a regional operations system. Coordination and evaluation of these components and their overlaps are needed by decisionmakers as they allocate resources. Optimal performance of the operations system requires coordinated resource allocation between assets, asset components, and their interconnections.

## FUTURE DIRECTION

The ultimate objective is the adoption of operations asset management practices by operations professionals and their organizations. Our program goal is to provide the resources necessary for operations professionals to establish operations asset management. The program will concentrate efforts on the following objectives:

The first objective is to establish an analytical foundation through development of analysis capabilities, life-cycle cost analyses, performance measures, and alternative investment scenarios. The analytical foundation will enable transportation professionals to identify and evaluate strategic investment scenarios that enhance the capabilities and performance of operations assets.

The next objective is to create linkages that integrate management of operations asset analysis results into the transportation asset management process. The integration will facilitate the comparison and commingling of operations improvements with infrastructure and safety improvements by transferring and merging goals and results. The outcome will be information important to selecting a sound investment strategy and authorizing appropriate resource allocations.



To obtain the full benefits of transportation asset management, the process and its principles must be embraced by an organization and become the way of doing business. Achieving this third objective requires undertaking an education and outreach initiative. Institutionalizing an operations asset management process within an organization will greatly advance the making of sound investments in operations as well as overall transportation.

To better understand the implications surrounding operations asset components, we have initiated an investigation of signal system asset management practices and characteristics. The investigation's results will be used to develop a full operations asset management program. We

envison producing an operations needs and cost identification tool, life-cycle costing methodology for operations components, and various operations asset management systems.