

Asset Management

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What is Asset Management?

Asset management refers to how Departments of Transportation (DOTs) budget and plan for roadway improvements. With a \$420 billion backlog for those improvements, DOTs need to make sure their asset management is as cost-effective as possible. CSHub has found that that requires a long-term approach.

A Mix of Fixes

Ideally, DOTs should strike a balance between minor and major improvements—what is known as a “mix of fixes.” This allows them to adapt to the future needs of their road network. A “mix of fixes” approach depends on extensively predicting future conditions upfront—but that initial investment pays off. MIT Research has shown that a mix of fixes can achieve the same level of road quality for tens of millions of dollars less.

The Best Material for the Best Outcome

Just as a diverse portfolio of stocks mitigates financial risk, so too does utilizing a diverse set of paving materials: Using a mix of materials allows DOTs to weather future uncertainties in paving material prices and deterioration. A CSHub case study conducted

with the North Carolina Department of Transportation found that the state could save \$50 million annually over 50 years by using a mix of materials.

Greater Investment Yields Better Results

Many DOTs seek to minimize their budgets on a year-to-year basis at the expense of long-term performance and environmental impact. But if they were to expand their planning horizon from 1 year to 20 years, DOTs could attain the same levels of performance and emissions at less than half of the price.

Sustainable in Every Sense

Ultimately, a diversified system is a sustainable one. Through a mix of fixes and materials, agencies can sustain long-term performance at a lower cost—all while reducing emissions. This is critical at a time when our nation’s network faces greater stresses and agencies need more help than ever to achieve sustainability goals.

To learn more about CSHub asset management research, visit <https://cshub.mit.edu/news/topic-summary-network-asset-management>.

