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Life Cycle Cost Analysis (LCCA) is a crucial tool for evaluating transportation projects and assets. It helps make informed decisions by considering all relevant costs associated with a project throughout its lifespan, not just the initial investment. [↗](#)

## What is LCCA?

LCCA is an economic evaluation technique that incorporates both immediate and long-term costs, including agency, user, and other relevant costs. By considering the full life cycle, LCCA enables a total cost comparison of different design or project alternatives, ensuring the best value for investment. [↗](#)

## Benefits of LCCA:

- **Informed Decision Making:** LCCA provides a comprehensive view of the costs, allowing for better-informed decisions on which project or alternative offers the lowest overall cost while meeting performance objectives.
- **Cost Optimization:** By considering all relevant costs, LCCA can help identify potential cost savings in the long run, such as choosing materials with longer lifespans or designs that minimize future maintenance needs.
- **Improved Asset Management:** LCCA can be used to evaluate different asset management strategies and optimize the timing of maintenance, rehabilitation, and replacement activities. [↗](#)

## Applications of LCCA in Transportation:


- **Pavement Design:** LCCA can be used to compare the long-term costs of different pavement types, considering factors like initial construction, maintenance, rehabilitation, and reconstruction.
- **Bridge Construction:** LCCA can help evaluate different bridge designs, considering costs associated with construction, maintenance, and eventual replacement.
- **Vehicle Selection:** LCCA can help fleet managers choose vehicles based on their overall life cycle costs, including purchase price, fuel consumption, maintenance, and resale value.
- **Infrastructure Projects:** LCCA can be applied to a wide range of transportation infrastructure projects, including highways, bridges, tunnels, and transit systems. [↗](#)

## Key Considerations in LCCA:

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