Fehr & Peers

Understanding Project Benefits

A Comprehensive Approach to Benefit-Cost Analysis for Transformative Investments

Mike Wallace | May 28, 2025

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Why Quantify Benefits?

Value drives action.

By quantifying community value, we not only justify investment but also pave the way for successful project implementation through increased stakeholder support.

Enable Informed Decisions

Quantifying benefits provides a structured and comparable basis for evaluating different project options, leading to well-informed investment choices.

Standardize Diverse Impacts

Expressing varied project outcomes (e.g., safety, time savings, environmental improvements) in monetary terms allows for direct and meaningful comparisons.

Demonstrating Project Worth

Clearly articulating the monetary benefits of a project helps demonstrate its value to the community, fostering buy-in and providing the compelling justification needed to secure the necessary funding for successful implementation.

Identifying Primary Project Impacts

The most visible and measurable changes resulting from a project's implementation.

Safety

Reduction in number and severity of crashes.

Mobility/Efficiency

Improved travel time reliability, reduced congestion, increased travel speeds.

Emissions

Reduction in tailpipe emissions (GHG, NOx, PM) due to smoother flow or mode shift.

Operating Cost

Savings in vehicle operating costs (fuel, maintenance) and/or facility operating cost (repairs).

Tracing Downstream Benefits

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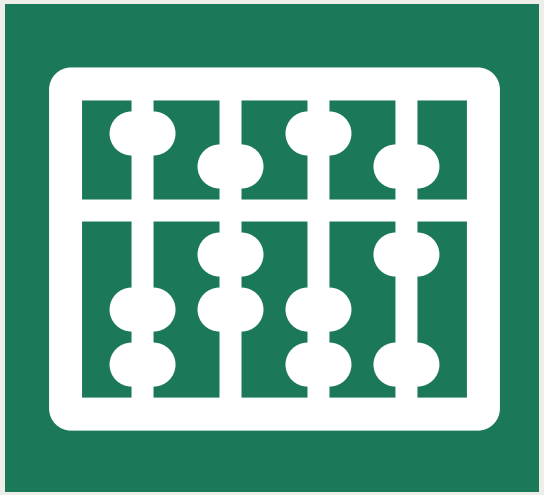
Quantifying Primary & Downstream Benefits

Project - Specific Data

Traffic patterns, crash history, demographics, mode share

Current conditions → projected changes → measurable impacts



Analysis Methods & Tools

Travel demand models

Specialized tools and equations

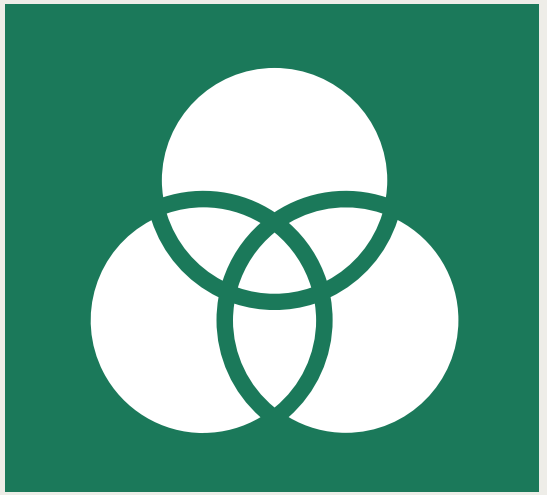
Both quantitative metrics & qualitative assessments

Context Determines Benefits

Urban vs. rural

Facility type

Community characteristics



Connecting Project & Benefits

Project directly addresses issues

Relate primary and downstream benefits

Tell the story of the project

Converting Benefits to Value: Monetization

Example Dollar Values

Fatal Crash: $14,806,000

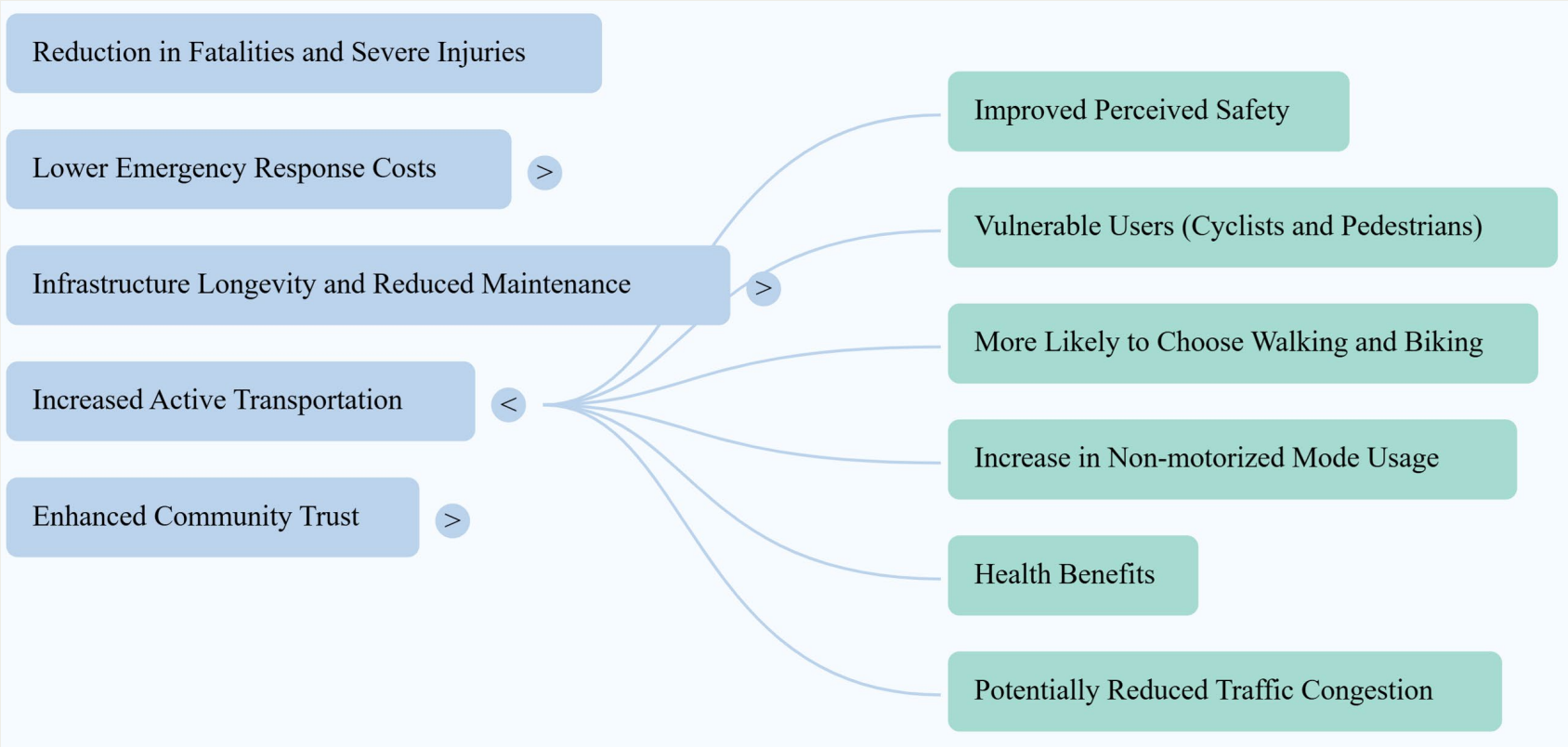
Time Savings (Personal, Local): $27.10/hour

Light Duty Vehicle Operating Cost: $0.56/mile

Commercial Truck Operating Cost: $1.27/mile

Emission Costs (e.g., LDV All Locations): $0.013/mile

Health Benefit from Induced Walking: $8.06 per induced trip (Ages 20 - 74)



Understanding Project Tradeoffs

Balancing Competing Priorities

Speed vs. Safety

Higher speeds → Reduced travel time but increased crash severity

Lower speeds → Improved safety but potential congestion.

Traveler Type

Commuters → Value reliability and reduced travel time

Commercial → Need loading zones and reliable delivery routes

Mode Prioritization

Vehicle focus → Improved automobile travel but possible barriers for others

Complete streets → Enhanced multi-modal access but reduced vehicle capacity

Timeline

Quick fixes → Immediate benefits but potentially shorter lifespan

Comprehensive solutions → Longer-term payoff with broader benefits

External Factors & Uncertainty

Developing a robust project

Vital in project evaluation and economic analysis to ensure a comprehensive, realistic, and robust assessment of potential outcomes, costs, and benefits, leading to more informed and resilient decisions.

External Factors

- Global Supply Chain Disruptions
- Societal Health Trends
- Regulatory Changes
- Demographic Shifts
- Climate Change Impacts
- Public Opinion
- Land Use and Zoning Decisions

Project Actions

- Scenario Planning
- Sensitivity Analysis
- Adaptive Management
- Stakeholder Engagement
- Monitoring & Evaluation
- Pilot Programs/Phased Implementation
- Cross- Sectoral Collaboration

Any Questions?

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