

Benefit-Cost Analysis (BCA)

Applicants must submit BCAs as an appendix to the project narrative for each submitted application. The BCA must be consistent with [49 U.S.C. § 22907\(e\)\(1\)\(B\)](#). The BCA is a systematic process for identifying, quantifying, and comparing the expected economic benefits and costs of a proposed infrastructure project. The BCA provides a useful benchmark from which to evaluate and compare potential transportation investments. A qualitative assessment of expected benefits and costs of a proposed infrastructure project may be sufficient for project applications that do not include construction funding. Applicants should review the Department's [Benefit Cost Analysis Guidance for Discretionary Grant Programs](#).

Construction Projects

Applicants seeking funding for Construction should quantify and document project benefits and costs. Estimates of benefits should be presented in monetary terms whenever possible; if a monetary estimate is not possible, the applicant should provide a quantitative estimate (in physical, non-monetary terms, such as crash or employee casualty and injury rates, ridership estimates, etc.). Project benefits, both quantified and unquantified, should be clearly tied to the expected outcomes of the project. While benefits should be quantified wherever possible, applicants may also describe other categories of benefits in the BCA that are more difficult to quantify and/or value in economic terms. The complexity and level of detail in the BCA prepared for applications submitted under this NOFO should reflect the scope, scale, and design stage of the proposed project.

For applications seeking funding for Construction, there should be two BCA files included in the application: (1) a narrative description of the BCA; and (2) an unlocked spreadsheet that shows the underlying calculations. The BCA narrative should document the assumptions and methodology used to produce the analysis, including a description of the baseline, the sources of data used to project the outcomes of the project, and the values of key input parameters. The BCA narrative should include, at a minimum, a description of the benefits and costs to be monetized. The BCA spreadsheet file should present the calculations in sufficient detail and transparency to allow the analysis to be reproduced by FRA evaluators. Applicants may use DOT's [BCA Spreadsheet Template for Discretionary Grant Programs](#). Please ensure any BCA spreadsheet submitted is unlocked to allow review.

Project Planning, Project Development, Final Design or a Non-Capital Project

Applicants should include a qualitative analysis detailing the project's proposed benefits and costs. The applicant may quantify benefits and costs and provide a BCA spreadsheet, if feasible. While Project Planning, Project Development and Final Design projects may not yield a full Capital Project, the submitted qualitative BCA should be for the underlying project, not the system planning or PE/NEPA work alone.

Grade Crossing Improvements

For applicants proposing grade crossing improvement(s), FRA developed [GradeDec](#), a highway-rail grade crossing investment analysis tool, to provide grade crossing investment decision support. GradeDec provides a full set of standard benefit-cost metrics for a rail corridor, a region, or an individual grade crossing. Model output allows a comparative analysis of grade crossing alternatives that are designed to mitigate highway-rail grade crossing accident risk and other components of user costs including highway delay and queuing, air quality, and vehicle operating costs. GradeDec is not a replacement for the BCA but can be used by the applicant in developing the BCA.

Benefit-Cost Analysis Rating

FRA will evaluate the BCA and consider a project’s benefits as compared to its costs and assign a BCA Rating. To the extent possible, the Department will rely on quantitative, evidence-based and data-supported analysis, including an assessment of the project’s estimated benefit-cost ratio (BCR) based on the applicant-supplied BCA. For Construction applications, based on the FRA’s assessment, the Department will assign a BCA Rating of high, medium-high, medium, medium-low, or low according to the following table:

BCA Rating	Description
High	The project’s benefits will exceed its costs, with a benefit-cost ratio of at least 2.0
Medium-High	The project’s benefits will exceed its costs
Medium	The project’s benefits are likely to exceed its costs
Medium-Low	The project’s costs are likely to exceed its benefits
Low	The project’s costs will exceed its benefits

For Project Planning, Project Development, Final Design, and Non-Capital projects, based on FRA’s assessment, the Department will assign a BCA Rating of positive or negative, according to the following table:

BCA Rating	Description
Positive	The project is likely to yield positive net benefits
Negative	The project is likely to yield negative net benefits