District 7 Policy

Number: DP-96

Effective Date: July 30, 2013

Supersedes: NEW

TITLE Use of Life Cycle Cost Analysis in Project Decision Making

POLICY

Caltrans uses life cycle cost analysis to determine the alternatives with the combined lowest initial and future costs and lowest impact to the travelling public through user delay costs. Effective immediately, all new construction, reconstruction, widening, and rehabilitation projects (excluding CAPM) shall perform life cycle cost analysis.

BACKGROUND

Deputy Directive 107 dated June 30, 2010 states, " The California Department of Transportation (Department) ensures investments in California's transportation system are cost effective and efficient from the initial capital expenditure to the later maintenance and operations expenditures. The Department uses Life-Cycle Cost Analyses (LCCA) to ensure that the costs over the life of a facility are considered when making project decisions."

The Federal Moving Ahead for Progress in the 21st Century (MAP-21) Act passed and approved by Congress and the President in July 2012 places greater emphasis on the use of life cycle cost analysis in determining the most cost efficient practices for building highway assets, particularly for pavements and bridges.

The Division of Engineering Services has an internal process for life cycle cost analysis for bridges. Caltrans has developed policies and procedures for performing and using life cycle cost analysis during the development of Project Initiation Documents, Project Reports, and during PS&E if there is a change in scope to determine most cost effective pavement types, life, and strategies which are found in:

Project Development Procedures Manual, Chapter 8 and Appendix O-O
Highway Design Manual, particularly Topics 612 and 619.
Life Cycle Cost Procedures Manual.

Caltrans and the District consider both concrete and asphalt as equitable and viable alternatives to be investigated using life cycle cost analysis for new construction, reconstruction, and rehabilitation of freeways, highways, streets, and ramps. For widening, pavement type should typically match the pavement type of the existing facility, unless a life cycle cost analysis for maintaining the existing pavement shows that a different pavement type would be more cost effective and District Deputy for Design and District Director agree.

When the lowest life cycle cost alternative is not selected, it must be documented in the respective PID, PR, or change control document and agreed to by the District Director as prescribed in the Project Development Procedures Manual Appendix O-O. In some instances as outlined in Highway Design Manual Topic 612, Headquarters Pavement Program approval is required as well.

INTENDED RESULTS

To assure the most efficient use of current and future transportation resources.

RESPONSIBILITIES

- District Design Deputy: Ensure that District policy and practices is consistent with Federal and State laws, policies, and procedures.

- Office Chiefs and Branch Managers: Ensures staff is aware of, trained, and in compliance with life cycle cost analysis policies and procedures. Ensures that life cycle cost analysis are independently checked and verified

- District Materials Engineer: Provides: both concrete and asphalt pavement options to designers and planners to be used for life cycle cost analysis as proscribed in the Highway Design Manual and Life Cycle Cost Analysis Procedures Manual. This will typically involve a 40 year concrete alternative and 20 and 40 year asphalt alternatives. .Ensures alternatives provided represent the lowest cost for that pavement type while still meeting statewide standards for pavement design and performance as outlined in the Highway Design Manual.

- Designers and Planners: Performs or independently checks life cycle cost analysis in accordance with current statewide policies and procedures.
  Ensures results and recommendations represent lowest cycle cost alternative or provided sufficient justification and agreement from District as prescribed in this policy and where specified in the Highway Design Manual, Headquarters Pavement Program.

APPLICABILITY

Amarjeet S. Benipal
AMARJEET S. BENIPAL
Acting Deputy District 7 Director, Design

July 30, 2013
Date Signed

References:

1. Deputy Directive 107 - http://admin.dot.ca.gov/bfams/admin_svcs/sw_policy/dd/dd_107.pdf
2. Highway Design Manual Chapter 610 (see Topics 612 and 619) – http://www.dot.ca.gov/hq/oppd/hdm/pdf/english/chp0610.pdf
3. Project Development Procedures Manual (see Chapter 8 and Appendix O-O) – http://www.dot.ca.gov/hq/oppd/pdpm/pdpmn.htm
4. Life Cycle Cost Analysis Procedures Manual – http://www.dot.ca.gov/hq/maint/Pavement/Offices/Pavement_Engineering/LCCA_index.html