

 <p style="text-align: center;"><b>STATE OF ALASKA</b> <b>DEPARTMENT OF TRANSPORTATION</b> <b>AND PUBLIC FACILITIES</b></p> <p style="text-align: center;"><b>Policy and Procedure</b></p>	POLICY AND PROCEDURE NUMBER <b>07.05.100</b>	PAGE  1 of 5
	EFFECTIVE DATE June 21, 2021	
SUBJECT <b>Highway Twice Damaged Assets Evaluation</b>		SUPERSEDES <b>NEW</b>
CHAPTER <b>Maintenance and Operations</b>		SECTION <b>Highways</b>
APPROVED BY Signature on File		

## PURPOSE

This formalizes the policy and procedure (P&P) of the department to require an evaluation of alternatives on projects that include twice damaged assets (TDAs) prior to their inclusion in the Statewide Transportation Improvement Program (STIP).

The Federal Highway Administration (FHWA), under 23 CFR 667, requires state transportation departments to conduct evaluations to determine if there are reasonable alternatives to roads, highways, and bridges that have required repair and reconstruction activities on two or more occasions due to emergency events. Federal regulations require extra analysis and documentation for repair and reconstruction projects to encourage solutions that avoid future use of emergency relief (ER) funding for twice damaged assets.

## POLICY

The department will update evaluations of twice damaged assets on both the National Highway System (NHS) and non-NHS systems on a four-year cycle. Evaluation includes both the identification and inventorying of these assets as well as performing an alternatives evaluation for each. These evaluations must be completed during transportation planning and must be completed prior to including a project in the STIP.

## Definitions

**Alternatives Evaluation (AE):** An engineering evaluation of alternatives to determine the best solution to recurring damage at the location of a twice damaged asset. The AE is documented in an Alternatives Evaluation Report (AER).

**Catastrophic Failure:** The sudden failure of a major element or segment of a road, highway, or bridge due to an external cause and not primarily attributable to gradual and progressive deterioration or lack of proper maintenance.

*Evaluation:* An analysis that includes identification and consideration of any alternative that will mitigate, or partially or fully resolve, the root cause of the recurring damage, an estimate of the costs of achieving a solution, and the likely duration of the solution. The evaluation shall consider the risk of recurring damage and cost of future repair under present and future environmental conditions. These considerations are a part of the planning and project development process.

*Emergency Event:* A natural disaster or catastrophic failure resulting in an emergency declared by the Governor of the State or an emergency or disaster declared by the President of the United States.

*Reasonable Alternatives:* Options that could partially or fully achieve the following:

1. Reduce the need for federal funds to be expended on emergency repair and reconstruction activities;
2. Better protect public safety and health and the human and natural environment; and
3. Meet transportation needs as described in the relevant and applicable federal, state, local, and tribal plans and programs. Relevant and applicable plans and programs include the Long-Range Statewide Transportation Plan, STIP, Metropolitan Transportation Plan(s), and Transportation Improvement Program(s) that are developed under 23 CFR 450.

*Repair and Reconstruction:* Work on a road, highway, or bridge that has one or more reconstruction elements. The term includes permanent repairs such as restoring pavement surfaces, reconstructing damaged bridges and culverts, and replacing highway appurtenances, but excludes emergency repairs as defined in 23 CFR 668.103.

*Roads, Highways and Bridges:* Defined in 23 U.S.C. 101(a)(11). A highway, including bridges, railroad crossings, tunnels, drainage structures, and protective structures, that is open to the public and eligible for financial assistance under title 23, U.S.C.; but excludes tribally owned and federally owned roads, highways, and bridges.

*Twice Damaged Assets (TDAs):* Assets that have been damaged on two or more occasions since January 1, 1997.

## **PROCEDURE**

The following procedures are provided for identification and evaluation of twice damaged assets.

### **A. Identification of Twice Damaged Assets**

The Statewide Transportation Geographic Information Section (TGIS) maintains an inventory of public roadways through its mapping database. TGIS includes a GIS layer in its database to locate twice damaged assets. The database will contain, at a minimum, the following information:

1. Date of the event
2. Governor or presidential emergency declaration
3. Location where the damage happened by route ID and beginning/end mile points
4. Description of the event or disaster
5. Temporary repairs completed (if applicable)
6. Physical completion date (not financial close out) of the repair/reconstruction
7. Description of the repair/reconstruction
8. Cost of the repair/reconstruction
9. AEs, if completed.

Each region is responsible for on-going evaluations of new TDA locations. The TGIS Section will prepare a report that identifies new statewide TDA locations. The regions must prepare an AE on each new TDA location on a four-year cycle.

The TGIS Section will prepare both annual and four-year reports based on information supplied by Program Development and department regional offices. The annual report will summarize all new and repaired TDA locations for the period from Jan. 1 to Dec. 31, with the annual report published on Jan. 31. The initial annual report, published Jan. 31, 2022, will include all TDA locations from Jan. 1, 1997 to Dec. 31, 2021. The four-year report will cover the period from Jan 1, 2022 through Dec. 31, 2025 and continue on a quadrennial basis thereafter. The quadrennial report is published on Jan. 31 following a four-year period.

This report will highlight the following:

- New TDA locations added during the reporting period
- TDA locations no longer requiring future AE due to a repair project that addressed the root cause of the repeated damage in accordance with the recommendation of the AE.
- TDA locations that required additional ER funding
- TDA locations that have updated AEs

## B. Alternative Evaluation for Twice Damaged Assets

Each TDA requires an AE prior to spending federal aid funding (excluding emergency relief funding) at the same location. The AE is documented in an AER and includes reasonable alternatives. The AER should follow this general format:

### 1. Asset Characterization

- a. description of existing assets
- b. summary of any critical assets
- c. summary of previous improvements to mitigate future impacts

### 2. Threats and Consequences

- a. description of previous emergency events (the event, damage, and cost to repair)
- b. probability of emergency event recurrence
- c. impacts of a recurring emergency event
  - i. probable asset losses
  - ii. economic impacts
  - iii. possible injuries or fatalities

### 3. Alternatives Evaluation

- a. Analyze the following Alternatives:
  - i. Do nothing. This alternative does not meet the definition of a Reasonable Alternative, but a no build alternative is necessary from the NEPA evaluation standpoint.
  - ii. Replace as-is.
  - iii. Reconstruct. Reconstruction alternatives look to eliminate or substantially reduce the probability of future emergency repairs. A reconstruction is to a condition better than existed prior to the emergency event. It is not required to look at more than one reconstruction alternative, but it may be prudent.
- b. For each Alternative:

- i. Provide a cost estimate. There can still be a cost for the do nothing option: that cost being the probability of another emergency event times the cost of emergency repairs.
  - ii. Quantify the monetary and public risk of future emergency events.
  - iii. Provide a cost-effective analysis for the replace as-is and each proposed reconstruction alternative. A benefit/cost approach may be used. Benefits would be the reduction of risk and costs associated with future repairs. Use a 10- to 20-year life cycle in the analysis.
4. Preferred Alternative recommendation and cost estimate.

#### **AUTHORITY**

23 CFR Part 667

#### **IMPLEMENTATION RESPONSIBILITY**

Chief Engineer, Regional Directors, Regional Preconstruction Engineers, Regional Maintenance and Operations, Regional Planning Chiefs, TGIS, and Program Development.

#### **DISTRIBUTION**

All department employees via the DOT&PF website