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| **DDIR/DSR Number:** | |  |
| **Disaster Number:** | |  |
| **Route Name, Number and Mile Post(s):** | |  |
| **Functional Classification** | |  |
| **NTTFI or NFLTFI Number:** | | **Instructions:**  Federal Land Management Agencies need to identify if the facility is on the NTTP or NFLTF Inventory. |
| **Latitude/Longitude (beginning and end)** | |  |
| **Describe past damage and repairs including dates** | | ***Example:***  *a) Twice in the past 20-years (provide dates) damage similar to the current damage has occurred.*  *b) Damage has not occurred here in the past.*  *c) Rock fall frequently requires periodic removal from traveled way in this area.*  *d) 10-years ago the road failed due to impinging flow and was re-located away from the river.* |
| **Describe current damage and cause of damage.** | | ***Example:***  *a) The inlet of a 10-foot diameter culvert inlet plugged with logs and debris. Water overtopped the road and scoured out 1000 CY of embankment and the culvert was a total loss.*  *b) Flood waters that exceeded the Q100 (USGS Sta. No.XXX) scoured out 5,000 CY of the bridge approach embankment.*  *c) Saturated soils and high pore water pressure resulted in a large embankment failure with a 15-foot high head scarp at road centerline.*  *d) Historic slide moved significantly during this event. The road profile dropped 24-inches for 1,000-feet.* |
| **Repair in-kind Alternative** | **Description of Repair in-kind Alternative** | ***Instructions:***  *a) For isolated damage, repair in-kind or repair to "as-built" condition. For extensive damage, reconstruct to current standards for the type and volume of traffic the facility will receive over its design life.*  *b) Document engineering design standards for repair or reconstruction.* |
| **Estimated cost of the Repair in-kind Alternative** | **Instructions:**  a) Provide lump sum dollar amount here.  *b) Provide in a separate attachment a preliminary detailed cost estimate that includes Preliminary Engineering (NEPA, environmental clearance, design, and contract preparation), Construction, and Construction Engineering. Provide estimated quantities and unit prices for all major construction items.*  *c) Use attached Preliminary Cost Estimate form.* |
| **Describe future damage and estimate repair costs for the Repair in-kind Alternative after future events** | ***Instructions:***  *a) Historic Approach: Provide a description of damage and estimated cost to repair.*  *b)HEC 17 Approach: Provide a description of damage and estimated cost to repair (25-year, 50-year, 100-year, and 200-year Event/Flood Frequency).*  *c) Use attached (or similar) Preliminary Cost Estimate form.* |
| **Justification for selection of Service Life and Analysis Period** | ***Instructions:***  *a) Justify the selection of the Service Life. This is generally based on the service life of the major element of the project and may be influenced by frequency of expected major damage.*  *b) Justify the selection of the Analysis Period. This is generally based on the AASHTO classification and the Discount Rate, to ensure the investment is clearly economically justified.* |
| **Betterment Alternative** | **Description of Betterment Alternative** | ***Instructions:***  *a) Describe the project scope of work.*  *b) Describe engineering design criteria and expected design life.* |
| **Describe design features of the Betterment Alternative that will reduce future damage** | ***Example:***  *a) The road surface will be elevated 3-feet above the 100-year flood elevation which includes an allowance for debris to prevent over topping.*  *b) A debris rack and over flow culvert will be added to prevent plugging the culvert and overtopping the road.* |
| **Estimated cost of the Betterment Alternative** | **Instructions:**  a) Provide lump sum dollar amount here.  *b) Provide in a separate attachment a preliminary detailed cost estimate that includes Preliminary Engineering (NEPA, environmental clearance, design, and contract preparation), Construction, and Construction Engineering. Provide estimated quantities and unit prices for all major construction items.*  *c) Use attached (or similar) Preliminary Cost Estimate form.* |
| **Describe future damage and estimate repair costs for the Betterment Alternative after future events** | ***Instructions:***  *a) Historic Approach: Description of damage and estimated cost to repair after future events*  *b) HEC 17 Approach: Description of damage and estimated cost to repair after future events (25-year, 50-year, 100-year, and 200-year Storm/Flood Frequency).*  *c) Use attached (or similar) Preliminary Cost Estimate form.* |
| **Justification for selection of Service Life and Analysis Period** | ***Instructions:***  *a) Justify the selection of the Service Life. This is generally based on the service life of the major element of the project and may be influenced by frequency of expected major damage.*  *b) Justify the selection of the Analysis Period. This is generally based on the AASHTO classification and the Discount Rate, to ensure the investment is clearly economically justified.* |
| **Justification for Discount Rate used** | | ***Instructions:***  *a) Justify the selection of the Discount Rate. This is generally the same as the rate normally used by the agency on economic justifications and is usually 3 to 5%.* |
| **Is ROW needed or Utility relocation?** | | ***Instructions:***  *a) Describe the aspect of the project that requires ROW or Utility relocation and the extent of the ROW and Utility relocation.* |
| **Environmental or socioeconomic issues that are a part of the project** | | ***Instruction:***  *a) List known environmental constraints, economic impacts, and public interest in the project.* |
| **Sustainability of the route including interconnectivity with other routes** | | ***Instructions:***  *a) Describe long term sustainability issues of the route as a whole. Is route re-location or are other measures needed to provide a sustainable route?* |
| **SUMMARY** | | Instructions:  a) Summarize the results of the economic justification.  b) Provide signature and date of responsible official. |

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| **Preliminary Cost Estimate** | | | | |
| Fill-in estimates for appropriate items. Add items as needed. Use Current Unit Prices. | | | | |
| **Quantity** | **Item** | **Unit Price** | **Unit** | **Total** |
|  | Temporary Erosion Control |  | Lump Sum |  |
|  | Temporary Traffic control |  | Lump Sum |  |
|  | Clearing and Grubbing |  | Acres |  |
|  | Removal of Structures and Obstructions |  | Lump Sum |  |
|  | Roadway Excavation |  | Cubic Yards |  |
|  | Imported Borrow |  | Cubic Yards |  |
|  | Sub-Excavation |  | Cubic Yards |  |
|  | Rip Rap & Slope Protection |  | Cubic Yards |  |
|  | Retaining Walls |  | Square Feet |  |
|  | Roadway Aggregate |  | Cubic Yards |  |
|  | Asphalt concrete pavement |  | Tons |  |
|  | Bridges |  | Square Feet |  |
|  | Minor Culverts |  | Each |  |
|  | Major Culverts |  | Each |  |
|  | Underdrain |  | Linear Feet |  |
|  | Re-vegetation |  | Acres |  |
|  | Roadside Safety (barriers, guardrail) |  | Linear Feet |  |
|  | Traffic Control |  | Lump Sum |  |
|  | Utility Relocation |  | Lump Sum |  |
| **Subtotal** | | | |  |
|  | Mobilization (As percentage of Sub-Total) | | Lump Sum |  |
|  | Contingencies (As percentage of Sub-Total) | | Lump Sum |  |
| **Total Estimated Construction Cost** | | | |  |
| Estimated Preliminary Engineering Costs (As a percentage of the Total Estimated Construction Cost) | | | |  |
| Estimated Right of Way Costs | | | |  |
| Estimated Construction Engineering Costs (As a percentage of the Total Estimated Construction Cost) | | | |  |
| **Sub-Total** | | | |  |
| **Total Project Costs** | | | |  |