

## EXECUTIVE SUMMARY

### Overview

The Municipality of Anchorage Project Management and Engineering (MOA PM&E) has contracted with R&M Consultants, Inc. (R&M) to provide professional services to evaluate bridge alternatives for the replacement of the Eklutna River Bridge and upgrading the Old Glenn Highway from Thunderbird Drive to Eklutna Lake Road. This project is being done in partnership with the Alaska Department of Transportation & Public Facilities Bridge Section for bridge-related design. The bridge approach road is the Old Glenn Highway, a two-lane, east-west rural collector without shoulders or pedestrian facilities.

The objectives of the Eklutna River Bridge Replacement project are:

- Remove and replace the existing 78 year-old Eklutna River Bridge with a new 254 foot long bridge that will accommodate vehicle, pedestrian and bicycle traffic;
- Upgrade the roadway to current municipal road standards;
- Provide pedestrian and bicycle facilities in the roadway corridor;
- Upgrade access to the Chugach State Park Thunderbird Falls day-use parking lot including relocating parking stalls and landscape boulders and adding an interpretive kiosk near the trail entrance;
- Increase safety by:
  - Improving horizontal and vertical geometry;
  - Separating vehicles from pedestrians and bicyclists;
  - Reconnecting emergency vehicle access to Thunderbird Falls Subdivision;
  - Improving sight distance by clearing vegetation with the Right-Of-Way (ROW);

The proposed roadway improvements will be designed to current municipal standards for a Rural Collector, upgrade access to Thunderbird Falls day-use parking lot and provide pedestrian and bicyclist safety within the project area.

Design challenges associated with this project are:

- MOA standard typical section for a rural collector is approximately 74 feet, wider than the existing 60' Public Use Easement (PUE) along the roadway. Acquiring additional PUEs along the Old Glenn Highway will be necessary to upgrade to current design standards.
- Drainage and pedestrian access between the Chugach State Park Thunderbird Falls Trailhead parking lot and the roadway. The parking lot is typically full during peak hours. Overflow parking is along the roadway.

## Evaluation Process

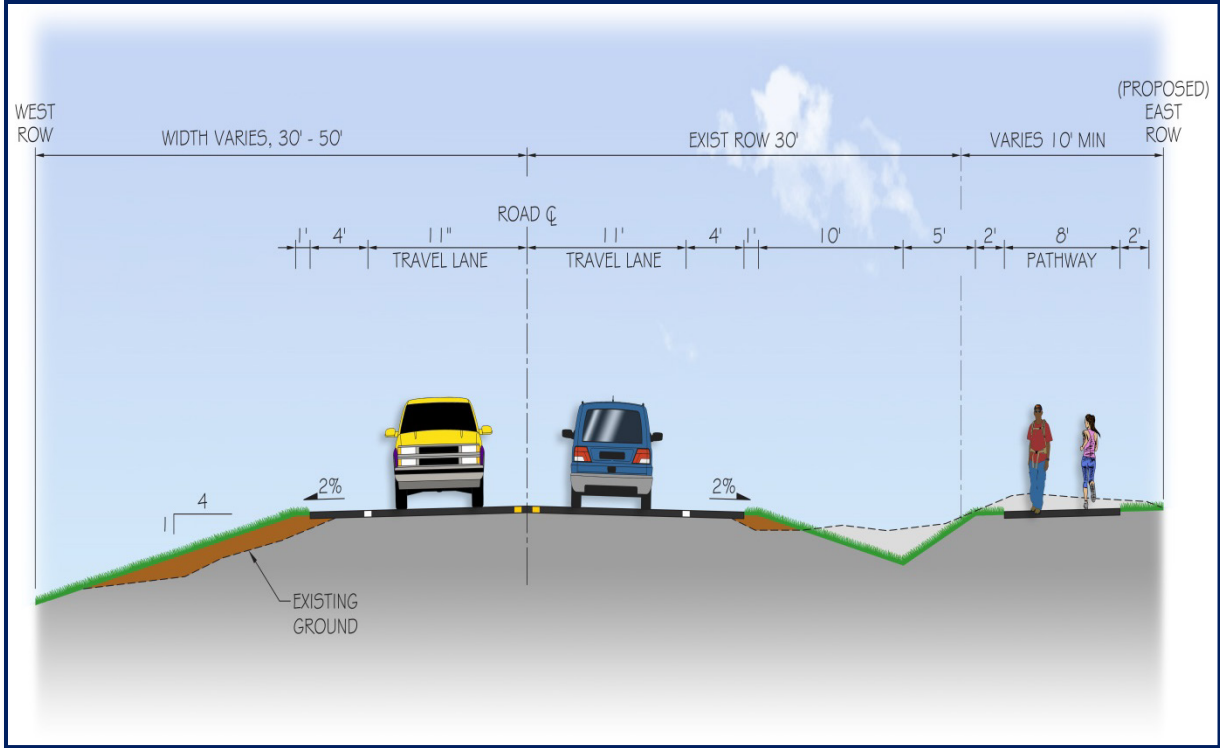
Project development for the Eklutna River Bridge Replacement project followed the MOA Context Sensitive Solutions (CSS) process and involved agency and public stakeholders. Selection of a preferred roadway and bridge alternative was an iterative process based on engineering judgment and stakeholder input. Analysis of the roadway alternatives was limited by constraints such as the existing roadway alignment, substructure and existing ROW in the form of a PUE. Four bridge structure types were considered during the concept design process; 1.) two-span bulb-tee girders; 2.) single-span cast-in place (CIP) box girder; 3.) single-span steel plate girder; and 4.) open spandrel steel arch. Stakeholder input was solicited at a public open house, agency meeting, mailings, project web page and e-newsletters. The bridge alternatives were analyzed to evaluate cost, constructability, construction methods, impacts, timeframe, and long term maintenance costs.

## Recommended Alternatives

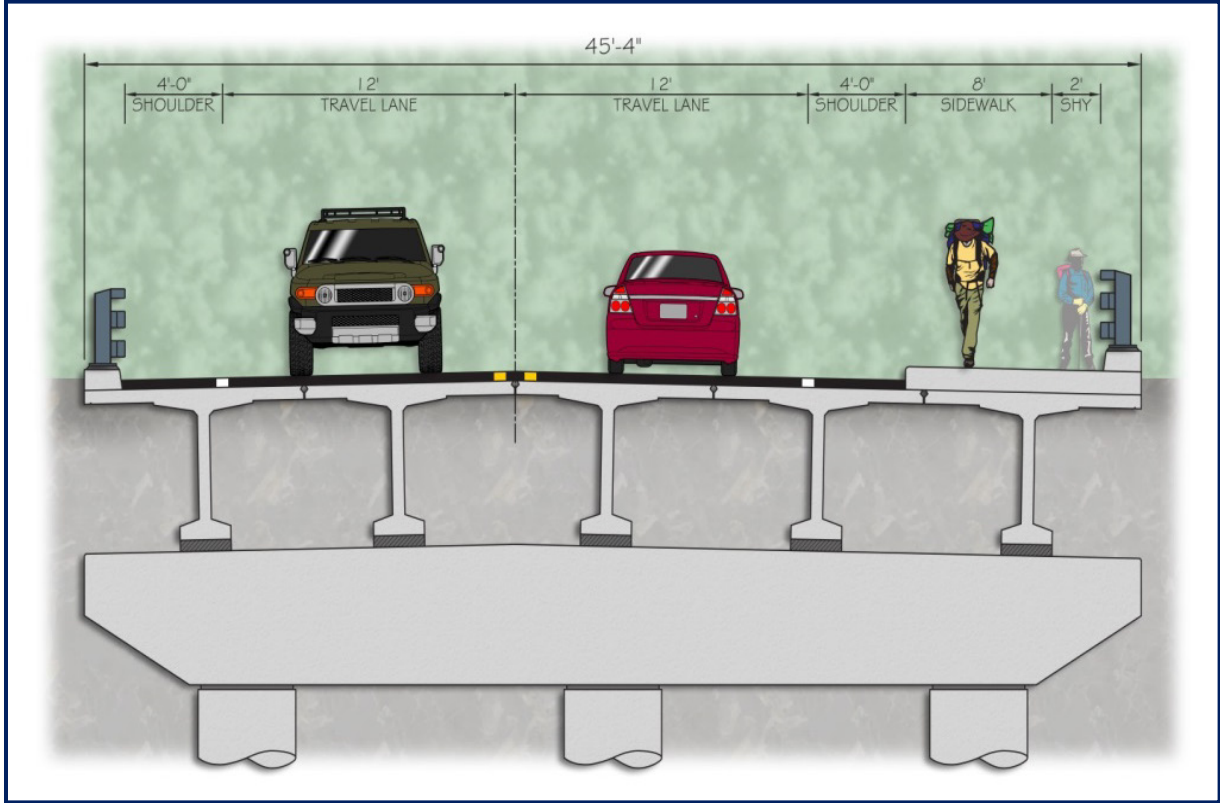
Based on the evaluation criteria, the *Two-Span Bulb-Tee Girder Bridge Alternative* and the *Separated Multi-Use Pathway Typical Section* were identified as the Preferred Alternatives. Each Alternative is described in more detail in the Design Study Report (DSR), but the Two-Span Bulb-Tee Girder Alternative and the Separated Multi-Use Pathway Typical Section were generally preferred because:

- Roadway typical section meets current MOA design standards.
- Bridge alternative is least expensive, requires very little maintenance, bridge type is commonly constructed within the state, can be quickly built and requires the least amount of cast-in-place concrete, satisfying the project objectives.

The figures on the following page summarize graphically the preferred road and bridge typical sections.



**Figure 0.1 Recommended Old Glenn Highway Typical Section**



**Figure 0.2 Recommended Eklutna River Bridge Typical Section**

The estimated costs for the preferred alternative are summarized in the table below:

**Table 0.1 Estimated Total Project Costs**

<b>DESCRIPTION</b>	<b>ITEM</b>	<b>CALCULATION</b>	<b>ESTIMATED COST</b>
Design, Project Management, Public Involvement & Overhead	A		\$1,900,000
Roadway, Pathway, Parking Lot Construction	B		\$1,800,000
Bridge Construction	C		\$4,500,000
Subtotal Construction (Basic Bid)	D	A+B +C	\$8,200,000
Contingency	E	30% of D	\$2,460,000
Construction Engineering	F	20% of D+E	\$2,132,000
Subtotal	G	D+E+F	\$12,792,000
Utilities	H		\$30,000
Right-of-Way Acquisition	I		\$250,000
<b>Total Project Cost (rounded)</b>	<b>J</b>	<b>G+H+I</b>	<b>\$13,072,000</b>