

# Courthouse Wash Bridge near Arches National Park

## Project Summary

Arches National Park is experiencing a large increase in tourism that is expected to continue growing. Current conditions in the park put tourists at risk because only one paved access point exists for the entire park. If this access point had to be closed for any reason, there would be no vehicular access into Arches. A second access point into Arches National Park is currently being evaluated by the FHWA to promote safety, provide better connectivity, and create a redundant traffic system that would continue to allow access into and out of Arches if one route had to be closed. This project specifically focuses on alternatives for spanning the Courthouse Wash, a dry wash located near Willow Springs Campground between Arches and US 191. The recommended alternative for spanning this wash is a bridge, which will cost approximately \$5.2 million



Figure 1. Existing bridge in Arches National Park

## Alternatives



**Bridge.** Long lasting structure that provides constant access, however the bridge is the costliest alternative.



**Box Culvert.** Structure that would control the direction of the flow and easy to construct and install. Frequent maintenance is required to keep structure safe and effective.



**Low Water Crossing.** Allows for water to pass under or over the structure. During high hydrologic events access is temporarily severed.



**No Build.** Preserves the natural environment and there are no added cost; however, safety would not improve.

## Criteria and Decision Matrix

Parameters and weighting were given by the client.

**Safety:** Increasing emergency vehicle access to the park.

**Connectivity:** Creating a redundant system between Arches National Park and Highway 191

**Mobility:** Reducing congestion and queueing inside and around Arches National Park

**Recreation:** Providing new recreational opportunities for park visitors.

**Longevity:** Ensuring the solution will be enduring and require minimal maintenance and closures.

**Environmental:** Reducing the human impact on the local ecosystem.

**Cost:** Selecting an economical project that meets safety needs.

**Aesthetics:** Contributing a solution that is visually pleasing and blends into the natural environment.

## Selected Alternative

The bridge alternative was selected as the recommended alternative because it is the safest option for spanning the Courthouse Wash. The cost of this alternative is the most expensive alternative; however, the three-span bridge best provides consistent connection between Arches and Highway 191. The connectivity allows for safe and uninterrupted access for visitors and emergency vehicles. The bridge will best help reduce congestion within Arches National Park.

Parameter	Weight	Bridge	Box Culvert	Low Water Crossing	Do-nothing
Safety	30%	4	3	2	1
Connectivity	15%	3	3	2	1
Mobility	15%	4	3	2	1
Recreation	10%	4	1	2	4
Longevity	10%	4	3	2	1
Environmental	10%	1	2	3	4
Cost	5%	1	2	3	4
Aesthetics	5%	3	2	2	4
<b>Total Score</b>	<b>100%</b>	<b>3.35</b>	<b>2.6</b>	<b>2.15</b>	<b>1.9</b>

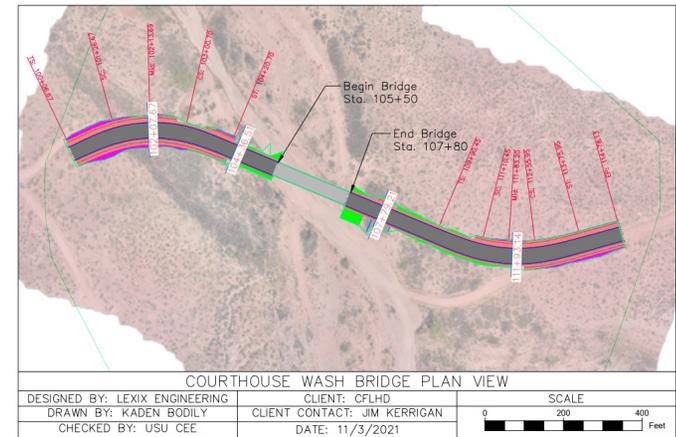


Figure 2. Plan view of the roadway alignment

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