

// EXECUTIVE SUMMARY

# BOOK CLIFFS TRANSPORTATION CORRIDOR STUDY

DECEMBER 2015



PARSONS  
BRINCKERHOFF

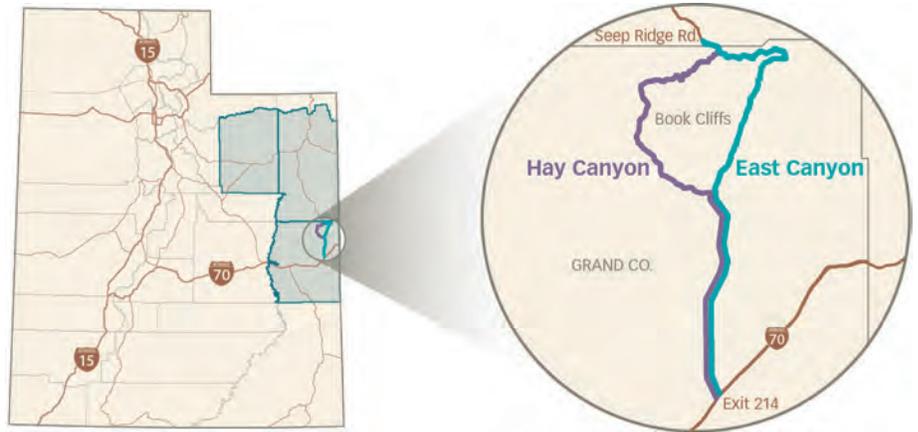
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# Background

## Study Purpose

The Book Cliffs Transportation Corridor Study (study) investigated the economic desirability and impacts of constructing a transportation corridor (study corridor) linking Seep Ridge Road in southern Uintah County, Utah to Interstate 70 (I-70) in Grand County, Utah. The study is part of a process to help ensure that future decisions regarding the study corridor consider the best interests of all stakeholders.

The study considered economic impacts to Grand, Duchesne, and Uintah counties, as well as general impacts to the state of Utah. The study evaluated corridor-related economic impacts to tourism and energy industries.



## Corridor Description

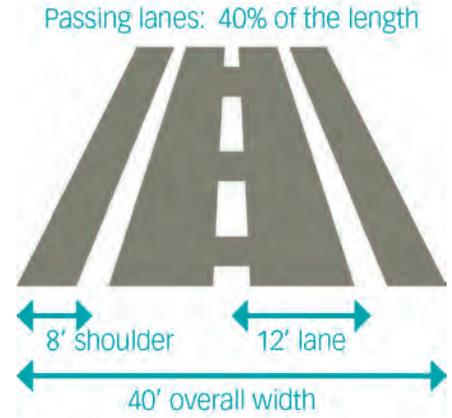
The study considered two separate route alternatives, Hay Canyon and East Canyon. These route alternatives follow a common path from I-70 to the Book Cliffs mountain range, and separate paths from there to Seep Ridge Road. Through the Book Cliffs mountain range, the separate paths generally follow the existing dirt (unpaved) roads through Hay Canyon and East Canyon, respectively. South of the Book Cliffs mountain range, the routes travel along the same path in a north/south direction and connect with I-70 at the existing Cisco/Danish Flat interchange (I-70 Exit 214). The Hay Canyon and East Canyon route alternatives are 42 and 41 miles long, respectively. Both route alternatives would travel through U.S. Bureau of Land Management (BLM), Utah School and Institutional Trust Lands Administration (SITLA), and private property.



# Roadway Description

The study corridor could accommodate multiple modes for moving people, goods, and utilities. In fact, the existing study corridor currently accommodates energy pipelines. However, this study focused on the economic impacts of constructing a paved roadway through the study corridor. Although alternate modes of transportation were considered, this study did not evaluate their economic impact.

The improved study corridor would accommodate vehicular traffic through a paved two-lane roadway with passing lanes for approximately 40 percent of the corridor length. The roadway would include roadside safety features consisting of paved shoulders, guardrail, cable barrier, concrete barrier, and crash attenuators.



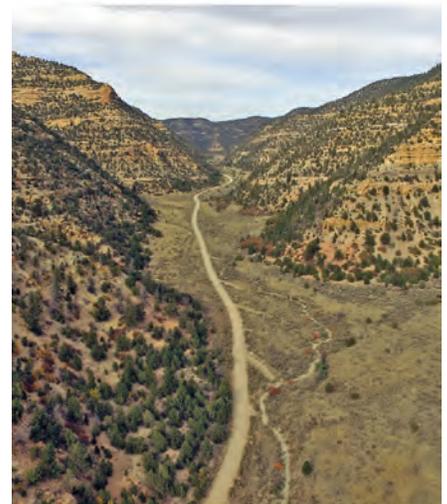
# Roadway Cost

This study evaluated construction and maintenance cost estimates for each study route alternative. The construction cost estimates were based on recent cost information for comparable projects and are cited in present day values. Construction bid tabulations for the Seep Ridge Road project were primarily used as the basis for the construction cost estimates. Seep Ridge Road was selected as a comparable project because it is located adjacent to the study corridor and its construction was completed in 2014.

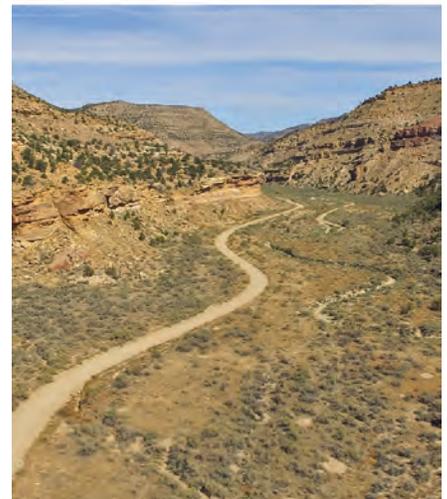
Maintenance cost estimates for a 20 year period were based on a typical hot mix asphalt pavement maintenance cycle and recent cost information for comparable maintenance activities. The maintenance cycle includes annual striping, crack sealing, sign and delineator replacement, guardrail repair, drainage structure cleaning, snow removal, and pot hole patching. Additionally, a chip seal coat and emulsified asphalt would be required at 5-year intervals and resurfacing via milling and paving would be required after 20 years.

Possible construction of a paved roadway must be preceded by a National Environmental Policy Act (NEPA) study. A NEPA study could consider multiple modes of transportation for the study corridor, including roadways, pipelines, and utilities. The cost for such a study could reach an estimated \$5 million, but could vary depending on project and NEPA process variables.

## Hay Canyon EXISTING DIRT ROAD



## East Canyon EXISTING DIRT ROAD



	Hay	East
<b>NEPA STUDY</b> 	\$5M	\$5M
<b>DESIGN ENGINEERING</b> 	\$12M	\$12M
<b>CONSTRUCTION &amp; ROW</b> 	\$133M	\$132M
<b>CONSTRUCTION ENGINEERING</b> 	\$13M	\$13M
<b>TOTAL CONSTRUCTION COST</b> 	\$158M	\$157M
<b>MAINTENANCE (20 YEARS)</b> 	\$28M	\$27M



## Connectivity: Tourism

The improved connectivity of the study corridor would make destinations in eastern Utah better connected and more accessible. It would make regional travel quicker and more convenient. Many recreational destinations in eastern Utah rely on and benefit from through traffic traveling to major national parks north and south of the Book Cliffs. The study corridor would provide time and distance savings for travel between these destinations. The study considered the connectivity benefits to national and state parks in eastern Utah, including those shown on page 3.

The study corridor provides a link that could facilitate a “Grand Corridor of Parks” similar to Utah’s “Grand Circle of National Parks”, but would focus on eastern Utah parks stretching between Lake Powell and Flaming Gorge or possibly extend from Grand Canyon National Park to Yellowstone National Park. The study corridor could also provide improved connectivity to additional outdoor recreational destinations in eastern Utah, such as mountain biking in Moab, Book Cliffs, and McCoy Flats near Vernal, and other outdoor activities in the Book Cliffs and Uinta mountains.

## Connectivity: Energy

The study corridor would also provide shorter route alternatives between energy extraction activities in the Uinta Basin and destinations for energy products. Travel times and distances between oil extraction in the Book Cliffs and refineries would be shortened by providing more direct access to freeway, pipeline, or railway transportation infrastructure along I-70. Compared to Salt Lake City refineries, travel savings are more impactful for transport to out of state refineries that can be accessed through the I-70 corridor.

Overall travel impacts of the study corridor for Grand, Uintah, and Duchesne counties were estimated using the Utah Statewide Travel Demand Model (USTM). With the improved connectivity of the study corridor, the USTM estimated a 2040 reduction of 74,000 energy related heavy vehicle (truck) miles traveled per day.

## Connectivity: Environment

This study provided a high-level review of culturally sensitive sites and air quality for each corridor route alternative. However, this study did not provide an assessment of environmental impacts for the corridor. Possible implementation of an improved study corridor must be preceded by an environmental study that considers environmental impacts and follows the NEPA process.

Roadway improvements to the study corridor would result in a projected reduction of 118,000 daily vehicle miles traveled for the region and an average increase of 2,700 daily vehicle trips for the study corridor itself. Therefore, the study corridor is not expected to cause significant air quality impacts and would provide some dust particulate reduction as a result of roadway paving. Based on a review and analysis of previous cultural resource surveys, a small number of unrecorded archaeological sites are likely to be encountered within the study corridor route alternatives.



35-45 Minutes	30-40 Miles
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Time and distance saved traveling between Vernal and Moab, via the improved study corridor.



40 Minutes	10 Miles
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Time and distance saved traveling the improved corridor vs. the existing dirt road.



120 Minutes	110 Miles
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Time and distance saved traveling between the Basin and a railroad, via the improved corridor.



Hay 22	East 20
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Expected number of culturally sensitive sites.

Hay 2	East 1
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Expected number of unrecorded culturally sensitive sites.

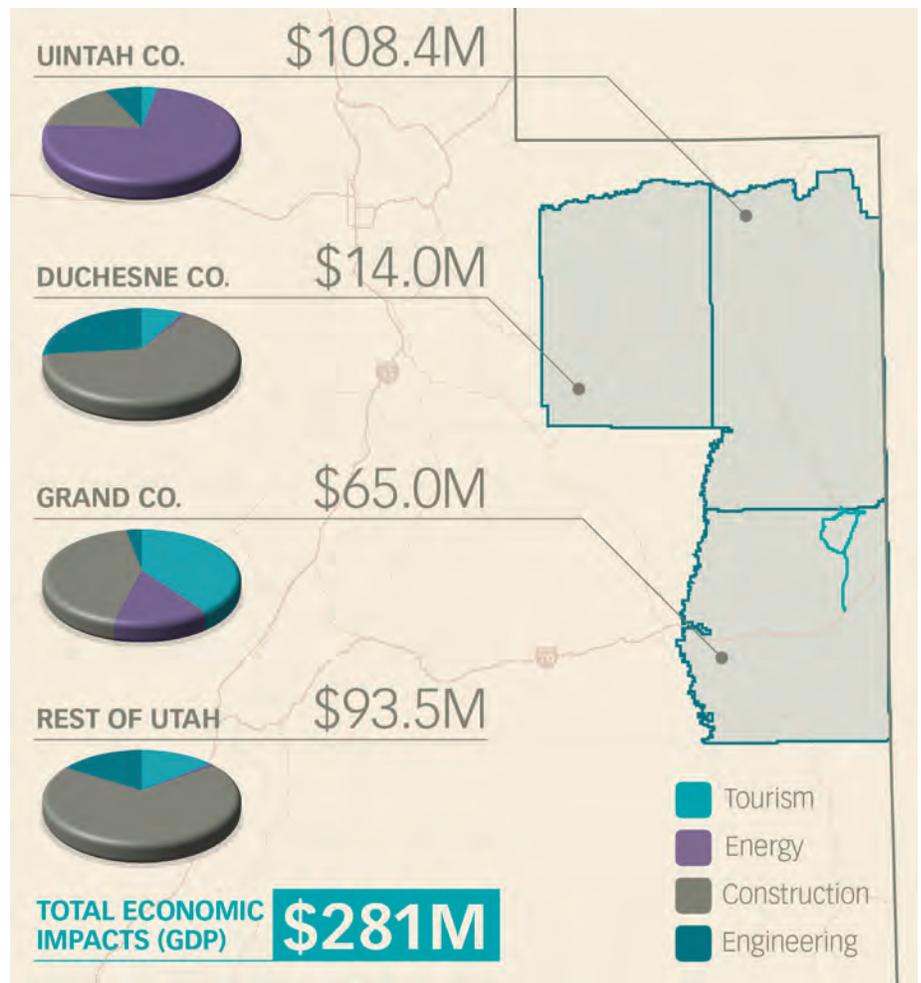
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# Economic Impacts

## Overview

Enhanced transportation infrastructure, including new and improved roadways, can foster increased economic activity. The travel savings of the improved study corridor would create opportunities for new, incremental economic activity. The incremental economic activity for tourism and recreation, energy production, and roadway construction industries is estimated to be \$281 million in gross domestic product (GDP) and \$557 million in total output through the year 2040. This potential incremental activity includes direct, indirect, and induced economic activity resulting from the construction of a paved roadway along the study corridor.

Spending for each industry occurs at different proportions among Grand, Duchesne, and Uintah counties. In turn, the economic impacts have varying degrees of effect in each county. The adjacent charts present the breakdown of the GDP impacts by county and industry.

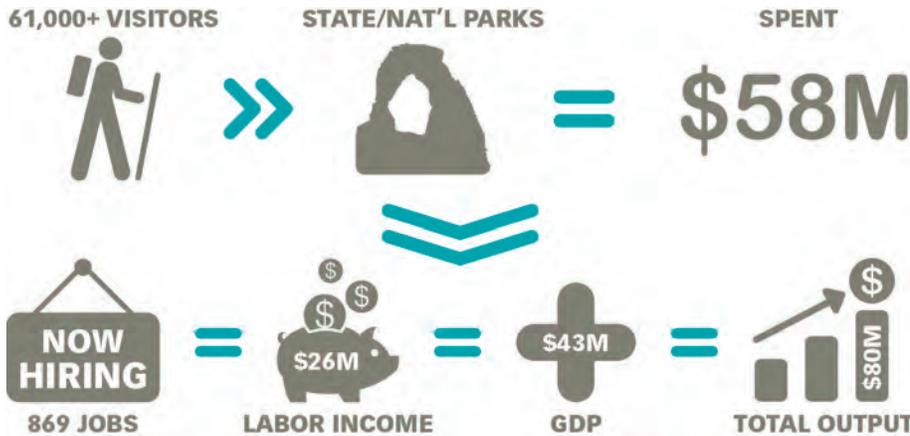


## Economic Impacts: Tourism

The travel and tourism sector is currently the main economic driver of the local economy in Grand County and is a growing component of the economy in Uintah and Duchesne counties. Tourism spending spans several categories of goods and services such as lodging, restaurants, travel costs, and admission fees. By improving access to the region, the study corridor would decrease the travel costs to national and state parks as well as other outdoor recreational destinations. The decreased costs would in turn increase the demand for tourism, increasing the spending associated with tourism industries.

It is estimated that by 2040, the travel time savings created from improving the study corridor would increase tourism visitations by over 61,000 annually. This translates into an estimated \$58 million of incremental tourism spending through the year 2040. This incremental spending would spur economic impacts beyond those directly occurring in the tourism industry with an overall economic impact of \$43 million in GDP.

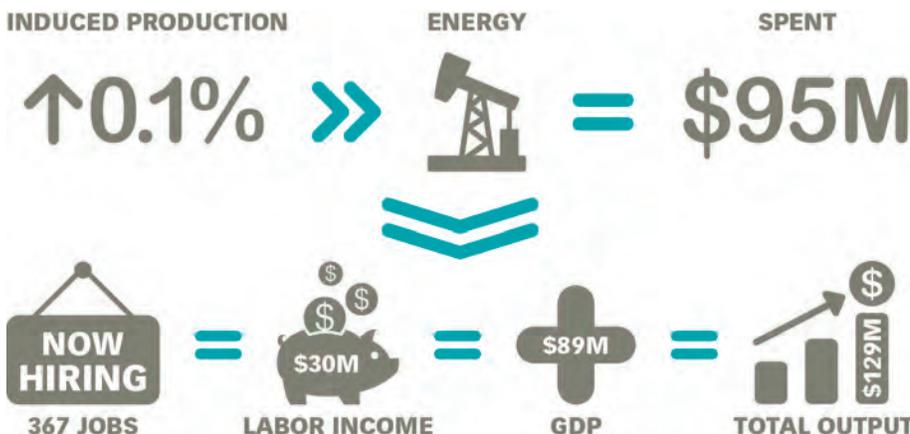
This study did not consider potential increased tourism economic impact derived from additional marketing or promotion of the region with easier travel and better connectivity.



## Economic Impacts: Energy

By improving access to the Uinta Basin, the study corridor would reduce travel costs associated with the production of crude oil, natural gas, oil sands, and oil shale. These reduced travel costs would decrease the total cost of production and induce incremental production.

It is estimated that the improved study corridor would create \$95 million of incremental oil and gas production spending through the year 2040. This incremental spending represents an increase of approximately one-tenth of one percent of the energy production in Uintah and Grand counties. This incremental spending would spur economic impacts beyond those directly occurring in the energy industry with an overall economic impact of \$89 million in GDP.



## Benefit/Cost Analysis

Whereas the economic impacts consider how the economy might change incrementally because of the improved study corridor, a benefit-cost analysis (BCA) considers the overall economic contribution of the corridor. Instead of considering the incremental activity resulting from travel time savings, the BCA considers the travel time saving itself as an economic benefit. The potential benefits considered by the BCA include:

- Fuel Savings
- Travel Time Savings
- Vehicle Operating Cost Savings
- Pavement Maintenance Savings
- Accident Cost Savings
- Emission (GHG) Cost Savings

These benefits were quantified based on results of the USTM, monetized using methods consistent with the latest guidance from the US Department of Transportation, and then evaluated against the initial (capital) and ongoing (operating and maintenance) costs. The net present value (NPV) of the benefits and costs of the improved study corridor were estimated to be \$1.8 billion. The resulting benefit-cost ratio (BCR) for the improved study corridor is 14.8. These NPV and BCR results reflect a highly favorable overall contribution to the economic welfare of the region.

**NPV: \$1.8B**

**BCR: 14.8**



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