Memorandum

SRF No. 15249

To: Linda Antell, Tribal Transportation Director
Standing Rock Sioux Tribe

From: Jeff Knudson, PE, PTOE

Date: April 11, 2022

Subject: BIA3 Resurface Project – Benefit-Cost Analysis Memorandum

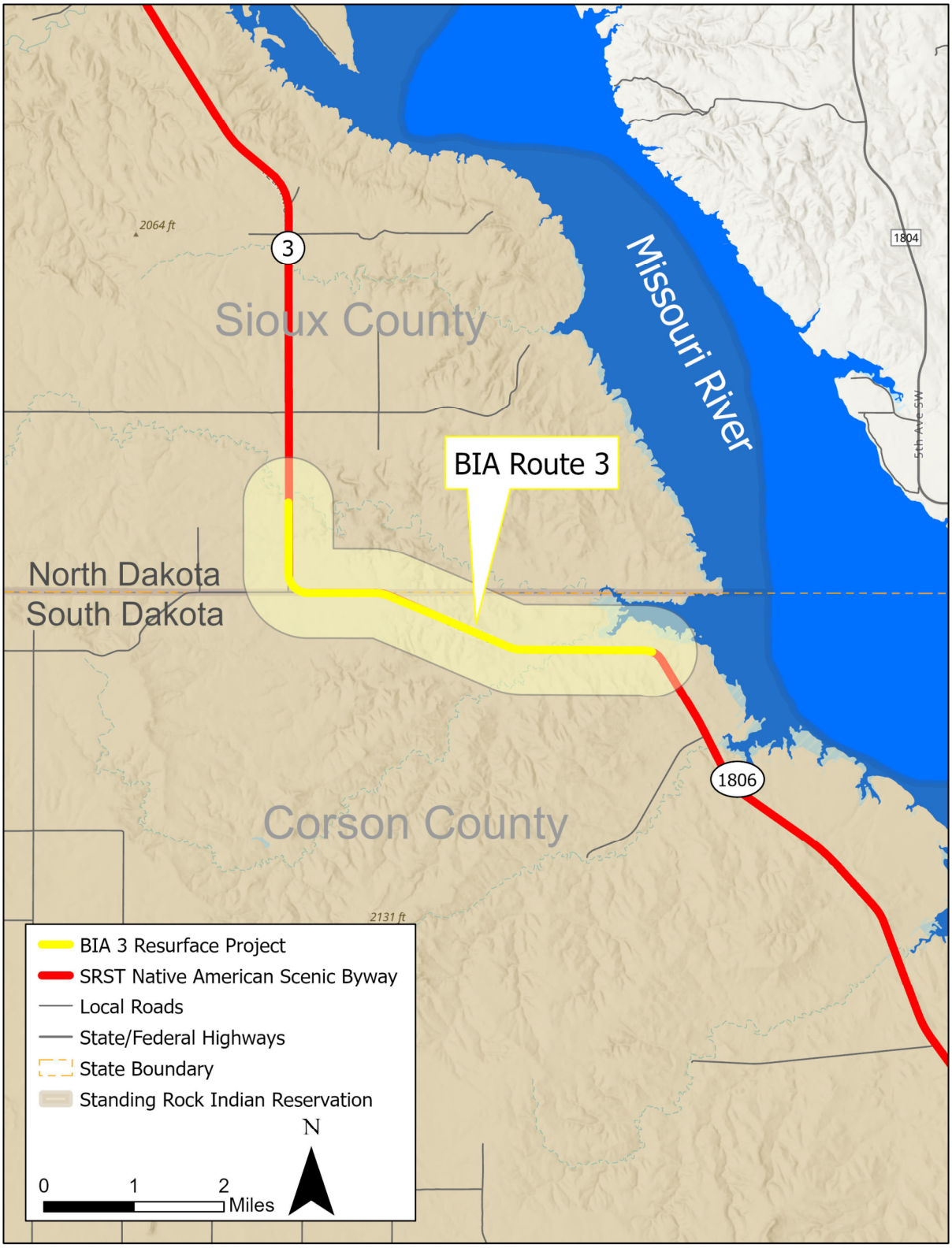
Introduction

This memorandum summarizes the assumptions, methodology and results developed for the benefit-cost analysis of the No Build and Build Alternatives evaluated as part of the BIA 3 Resurface project. The objective of a benefit-cost analysis (BCA) is to bring all the direct effects of a transportation investment into a common measure (dollars), and to account for the fact that benefits accrue over an extended period while costs are incurred primarily in the initial years. The primary elements that can be monetized for this project are travel time, changes in vehicle operating costs, capital costs, and maintenance costs. The benefit-cost analysis can provide an indication of the economic desirability of an alternative, but decision-makers must weigh the results against other considerations, effects, and impacts of the project.

This project is of critical importance to the Standing Rock Sioux as BIA 3 serves as a connection between North Dakota Highway 1806 and South Dakota Highway 1806 within the boundaries of the 2.3 million-acre Standing Rock Indian Reservation. This segment of BIA 3 is in an area of persistent and concentrated poverty, in a historically disadvantaged community, in one of the poorest areas in the nation with severely limited access to essentials, including groceries, fuel, and basic health care needs, and has a population with disproportionately high mortality rates. A map of the project study area can be found in Figure 1: Project Location Map.

The proposed project will resurface approximately 4.5 miles of BIA 3 through an area where the roadway surface has reached the end of its useful life.

Figure 1: Project Location Map



Description of Alternatives

For the purpose of this analysis, a No Build and Build Alternative were under consideration.

No Build Alternative

The No Build Alternative includes leaving the BIA 3 in its state. Intensified maintenance activities would continue to keep assets operational until it is no longer feasible to keep them in a paved condition, at which time the roadway would be converted to a gravel surface.

Build Alternative

The Build Alternative consists of milling and resurfacing the roadway.

BCA Methodology

Value of time, vehicle operating costs, emissions costs and quality of life benefits were obtained from the Benefit Cost Analysis Guidance for Discretionary Grant Programs, dated March 2022 (Updated)[1]. The following methodology and assumptions were used for the benefit-cost analysis:

1. **Main Components**: The main components analyzed included:
   - Travel time/delay
   - Vehicle operating costs
   - Initial capital costs: Capital costs were expected to be incurred in year 2023
   - Operating and maintenance costs

2. **Analysis Years**: This analysis assumed that the Build Alternative would be constructed in 2023. The present value of all benefits and costs was calculated using 2020 as the year of current dollars.

3. **Economic Assumptions**: Value of time and vehicle operating costs were obtained from the *Benefit Cost Analysis Guidance for Discretionary Grant Programs*, dated February 2021[2]. Per-mile operating costs associated with additional impacts of pavement roughness were derived using values from NCHRP Report 720 - "Estimating the Effects of Pavement Condition on Vehicle Operating Costs"; Table 7-5[3]. The analysis was completed using an assumed discount rate of seven percent.

4. **Development of Vehicle Miles Traveled (VMT) and Vehicle Hours Traveled (VHT)**: Year 2019 and year 2039 VMT and VHT were developed using existing and forecast AADTs and travel time and route lengths that were obtained using Google Maps. Year 2019 and

[1] https://www.transportation.gov/sites/dot.gov/files/2022-03/Benefit%20Cost%20Analysis%20Guidance%202022%20%28Revised%29.pdf
[2] https://www.transportation.gov/sites/dot.gov/files/2021-02/Benefit%20Cost%20Analysis%20Guidance%202021.pdf
[3] http://www.trb.org/Publications/Blurbs/166904.aspx

forecast year 2039 corridor AADTs, and existing corridor length data were obtained from the project sponsor.

Posted speed limits were used for determining travel time changes during construction. It was assumed that posted speed would be decreased from 55 mph to 35 mph in work zones, and that construction would take place during a two-month period. Differences in travel times were quantified for each phase of the project and considered a disbenefit for the Build Alternative.

Travel times and trip distances were applied to year 2019 and year 2039 daily traffic volumes to determine VHT and VMT, respectively. Benefits for the years between 2024 and 2043 were interpolated using the annual growth rate of the sponsor-supplied data. Total user costs per alternative is the sum of all user costs for the period from 2022 to 2043 (i.e., includes construction years and 20 years after last project opening). Benefits due to change in VMT and VHT were calculated using costs per mile and per hour that account for vehicle occupancy and different vehicle types.

5. **Vehicle Occupancy and Vehicle Types**: The composite cost per mile used in the benefit-cost analysis accounted for the percentage split of autos and trucks in the travel area. The composite cost per hour accounted for vehicle occupancy ratios, and the percent split of autos and trucks traveling in the area. Key assumptions for these areas included:
   - The corridor-wide truck percentage used in the analysis was five percent and was based on count data provided by the project sponsor.
   - Vehicle occupancy that was used in the analysis is consistent with values provided by *Benefit Cost Analysis Guidance for Discretionary Grant Programs*, dated February 2021. The analysis assumed occupancy of 1.67 people per automobile and 1.00 people per truck.
6. **Vehicle Operating Costs:** Improving pavement condition along BIA 3 is a primary objective of this project. The pavement condition is anticipated to degrade to a level that cannot be maintained as a paved surface, at which time the roadway will be converted into a gravel road. This analysis assumes additional user costs associated a gravel road compared to a facility with sufficient pavement quality. A gravel road will require the speed limit to be reduced from 55mph to 35mph.
7. **Operating and Maintenance Costs**: Changes in annual roadway maintenance costs are expected due to intensified maintenance that will be required to keep the No Build Alternative serviceable compared to what will be required on new infrastructure under the Build. Anticipated costs for the No Build and Build Alternatives were provided by the project sponsor, as shown in the BCA Workbook.
8. **Factors Not Quantified**: Several factors were not quantified as part of the analysis that could potentially add to the benefits assumed in the BCA. These factors include the following:
   - Increased travel time reliability in the study area due to a reduction in crashes from enhanced pavement condition.
   - Safety benefits of a paved roadway surface when compared to a gravel surface.

- Maintenance costs savings of improved roadway between construction year and year of conversion to gravel surface.

BCA RESULTS

The benefit-cost analysis provides an indication of the economic desirability of a scenario, but results must be weighed by decision-makers along with the assessment of other effects and impacts. Projects are considered cost-effective if the benefit-cost ratio is at least 1.0. The larger the ratio number, the greater the benefits per unit cost. Results of the benefit-cost analysis are shown in Table 1. See Attachment A for the complete benefit-cost analysis workbook.

Table 1 – Total Project Results

	Initial Capital Cost (2020 Dollars)	Project Benefits (2020 Dollars)	Benefit-Cost Ratio (7% Discount Rate)	Net Present Value (2020 Dollars)
No Build vs. Build	$1,780,750	$2,527,628	1.42	$746,878

Attachment A

Benefit-Cost Analysis Worksheets

Table 1 - Analysis Timeframe Assumptions

Year of Analysis Dollars $	2020
Year of Construction [1]	2023
Duration of Construction [1]	1
Benefit-Cost First Year of Benefit [1]	2024
Expected Service Life [6]	20
Benefit-Cost Final Year of Benefit	2043
Forecast Traffic Year [2]	2039

Table 2 - Network Assumptions

	No Build
Percent Autos [2]	95.0%
Percent Trucks [2]	5.0%
Auto Occupancy [3]	1.67
Truck Occupancy [3]	1.00

Table 3 - Global Assumptions and Factors

Number of Days in a Year [4]	365
Value of Time [3] - All-Purpose Travel	$17.80
Value of Time [3] - Truck Travel	$32.00
Cost per Mile [3] - Auto	$0.45
Cost per Mile [3] - Truck	$0.94
Composite Cost per Hour	$29.84
Composite Cost per Mile	$0.47
Discount Rate	7.0%

Table 4 - Traffic Volume (AADT)

2019	715
2039	790

NOTES:

1) For the purpose of this analysis it was assumed that the project would begin construction in year 2023. Project construction was assumed to be completed in the same year construction began. The analysis primarily focused on annual benefits for the twenty-year period from 2024 to 2043.

2) Existing and 20-year forecast daily traffic volumes were obtained from the project design plans cover pages. Average travel time per vehicle data was obtained from google maps. Year 2019 and 2039 VHT and VMT for each alternative were calculated using AADT information, average corridor travel time per vehicle, and an assumed 365 analysis days in a year.

3) Value of time, vehicle operating costs, and vehicle occupancy ratios were obtained from the Benefit Cost Analysis Guidance for Discretionary Grant Programs, dated March 2022 (Updated) .

4) This analysis assumes 365 days per year.

BCA SUMMARY: Standing Rock Sioux Tribe BIA 3

BENEFITS

	Economic Competitiveness			State of Good Repair			
Analysis Year	Detour Travel Time Savings	Construction Travel Time Savings	Operating Cost Savings	Operation and Maintenance Savings	Remaining Capital Value	Total Cost Savings ($2020 - Undiscounted)	7% Discount Total
2022	$0	$0	$0	$0	$0	$0	$0
2023	$0	($63,152)	$0	$0	$0	-$63,152	($51,551)
2024	$0	$0	$0	$18,000	$0	$18,000	$13,732
2025	$0	$0	$0	$18,000	$0	$18,000	$12,834
2026	$0	$0	$0	$18,000	$0	$18,000	$11,994
2027	$0	$0	$0	$18,000	$0	$18,000	$11,209
2028	$0	$0	$0	$18,000	$0	$18,000	$10,476
2029	$0	$0	$0	$18,000	$0	$18,000	$9,791
2030	$392,537	$0	$64,267	$396,000	$0	$852,804	$433,522
2031	$394,484	$0	$64,585	$18,000	$0	$477,069	$226,652
2032	$396,430	$0	$64,904	$18,000	$0	$479,334	$212,830
2033	$398,376	$0	$65,223	$18,000	$0	$481,599	$199,847
2034	$400,323	$0	$65,541	$18,000	$0	$483,864	$187,651
2035	$402,269	$0	$65,860	$18,000	$0	$486,129	$176,196
2036	$404,216	$0	$66,179	$18,000	$0	$488,395	$165,436
2037	$406,162	$0	$66,497	$18,000	$0	$490,660	$155,330
2038	$408,109	$0	$66,816	$18,000	$0	$492,925	$145,839
2039	$410,055	$0	$67,135	$18,000	$0	$495,190	$136,924
2040	$412,002	$0	$67,453	$18,000	$0	$497,455	$128,552
2041	$413,948	$0	$67,772	$18,000	$0	$499,720	$120,689
2042	$415,895	$0	$68,091	$18,000	$0	$501,985	$113,305
2043	$417,841	$0	$68,409	$18,000	$0	$504,251	$106,370
							$2,527,628

Analysis Year	Capital Costs	7% Discount
2022	$0	$0
2023	$2,181,495	$1,780,750
2024	$0	$0
2025	$0	$0
2026	$0	$0
2027	$0	$0
2028	$0	$0
2029	$0	$0
2030	$0	$0
2031	$0	$0
2032	$0	$0
2033	$0	$0
2034	$0	$0
2035	$0	$0
2036	$0	$0
2037	$0	$0
2038	$0	$0
2039	$0	$0
2040	$0	$0
2041	$0	$0
2042	$0	$0
2043	$0	$0
	Total Cost	$1,780,750

SUMMARY

	7% Discount Rate
Benefits	$2,527,628
Costs	$1,780,750
B/C Ratio	1.42
NPV	$746,878

ECONOMIC COMPETITIVENESS - USER BENEFIT CALCULATION OF REGIONAL TRAVEL TIME CHANGE - CONSTRUCTION

Analysis Year	No Build Annual VHT [5]	Build Annual VHT [5]	No Build Travel Time Cost	Build Travel Time Cost	Travel Time Cost Savings	7% Discount
2022	0	0	$0	$0	$0	$0
2023	3,704	5,820	$110,516	$173,668	($63,152)	($51,551)
2024	0	0	$0	$0	$0	$0
2025	0	0	$0	$0	$0	$0
2026	0	0	$0	$0	$0	$0
2027	0	0	$0	$0	$0	$0
2028	0	0	$0	$0	$0	$0
2029	0	0	$0	$0	$0	$0
2030	0	0	$0	$0	$0	$0
2031	0	0	$0	$0	$0	$0
2032	0	0	$0	$0	$0	$0
2033	0	0	$0	$0	$0	$0
2034	0	0	$0	$0	$0	$0
2035	0	0	$0	$0	$0	$0
2036	0	0	$0	$0	$0	$0
2037	0	0	$0	$0	$0	$0
2038	0	0	$0	$0	$0	$0
2039	0	0	$0	$0	$0	$0
2040	0	0	$0	$0	$0	$0
2041	0	0	$0	$0	$0	$0
2042	0	0	$0	$0	$0	$0
2043	0	0	$0	$0	$0	$0
					Total Benefit	($51,551)

Table 1 - Per-person hour Travel Time Cost by Mode

All-Purpose Travel Time Cost	$17.80
Truck Travel Time Cost	$32.00

Table 2 - Fleet Composition [2]

Auto Percentage	95.0%
Truck Percentage	5.0%

Table 3 - Vehicle Occupancy [3]

Auto Vehicle Occupancy	1.67
Truck Vehicle Occupancy	1.00

Table 4 - Per-hour Travel Time Cost

Aggregate Travel Time Cost	$29.84

Table 5 - Vehicle Hours Traveled

Year	No-Build	35mph Work Zone
2019	21,765	34,203
2039	24,048	37,790

During resurfacing project

NOTES:

1) User travel time costs for years 2019 and 2039 were valued in accordance with the Benefit Cost Analysis Guidance for Discretionary Grant Programs, dated March 2022 (Revised): https://www.transportation.gov/sites/dot.gov/files/2022-03/Benefit%20Cost%20Analysis%20Guidance%202022%20%28Revised%29.pdf

2) Truck percentage was obtained from the project plan set cover sheet.

3) Vehicle occupancy ratios were obtained from Federal Highway Administration Highway Statistics and are consistent with Benefit Cost Analysis Guidance for Discretionary Grant Programs, dated March 2022 (Revised): https://www.transportation.gov/sites/dot.gov/files/2022-03/Benefit%20Cost%20Analysis%20Guidance%202022%20%28Revised%29.pdf

4) Existing and 20-year forecast daily traffic volumes were obtained from the project plan set cover sheet. Average travel time per vehicle data was determined by google maps. VHT and VMT for each alternative were calculated using AADT information, average corridor travel time per vehicle, and an assumed construction schedule of five months out of the year.

5) No Build and Build VHT for intermediate years were interpolated based on a linear annual growth rate. Build VHT assumes the work zone speed is reduced from 55mph to 35mph for the duration of construction. Construction is assumed to be 2 months long.

ECONOMIC COMPETITIVENESS - USER COST CALCULATION OF REGIONAL TRAVEL TIME CHANGE IF PROJECT WAS NOT CONSTRUCTEI

Analysis Year	No Build Annual VHT [5]	Build Annual VHT [5]	No Build Travel Time Cost	Build Travel Time Cost	Travel Time Cost Savings	7% Discount
2022	0	0	$0	$0	$0	$0
2023	0	0	$0	$0	$0	$0
2024	0	0	$0	$0	$0	$0
2025	0	0	$0	$0	$0	$0
2026	0	0	$0	$0	$0	$0
2027	0	0	$0	$0	$0	$0
2028	0	0	$0	$0	$0	$0
2029	0	0	$0	$0	$0	$0
2030	36,176	23,021	$1,079,477	$686,940	$392,537	$199,546
2031	36,355	23,135	$1,084,830	$690,346	$394,484	$187,416
2032	36,535	23,249	$1,090,183	$693,753	$396,430	$176,020
2033	36,714	23,363	$1,095,535	$697,159	$398,376	$165,312
2034	36,893	23,478	$1,100,888	$700,565	$400,323	$155,252
2035	37,073	23,592	$1,106,241	$703,971	$402,269	$145,801
2036	37,252	23,706	$1,111,594	$707,378	$404,216	$136,922
2037	37,432	23,820	$1,116,946	$710,784	$406,162	$128,581
2038	37,611	23,934	$1,122,299	$714,190	$408,109	$120,745
2039	37,790	24,048	$1,127,652	$717,597	$410,055	$113,384
2040	37,970	24,163	$1,133,005	$721,003	$412,002	$106,469
2041	38,149	24,277	$1,138,358	$724,409	$413,948	$99,974
2042	38,328	24,391	$1,143,710	$727,816	$415,895	$93,873
2043	38,508	24,505	$1,149,063	$731,222	$417,841	$88,142
					Total Benefit	$1,917,436

Table 1 - Per-mile Travel Time Cost by Mode

All-Purpose Travel Time Cost	$17.80
Truck Travel Time Cost	$32.00

Table 2 - Fleet Composition [2]

Auto Percentage	95.0%
Truck Percentage	5.0%

Table 3 - Vehicle Occupancy [3]

Auto Vehicle Occupancy	1.67
Truck Vehicle Occupancy	1.00

Table 4 - Per-mile Travel Time Cost

Aggregate Travel Time Cost	$29.84

Table 5 - Vehicle Hours Traveled

Year	No-Build	Build
2019	34,203	21,765
2039	37,790	24,048
		After Resurfacing

Table 6 - Year of Revert to Gravel Due to Poor State

Year	2030

NOTES:

1) The value of time was obtained from the Benefit Cost Analysis Guidance for Discretionary Grant Programs, dated March 2022 (Revised): https://www.transportation.gov/sites/dot.gov/files/2022-03/Benefit%20Cost%20Analysis%20Guidance%202022%20%28Revised%29.pdf

2) Truck percentage was obtained from the project plan set cover sheet.

3) Vehicle occupancy that was used in the analysis is consistent with values provided by Benefit Cost Analysis Guidance for Discretionary Grant Programs, dated March 2022 (Updated). The analysis assumed occupancy of 1.67 people per automobile and 1.00 people per truck.

4) Existing and 20-year forecast daily traffic volumes were obtained from the project plan set cover sheet. Average travel time per vehicle data was determined by google maps. VHT and VMT for each alternative were calculated using project length, AADT information and travel speed. It was assumed at the pavement failure point the roadway would be returned to gravel and thereafter the travel speed would be reduced to 35mph from 55mph.

5) No Build and Build VHT for intermediate years were interpolated based on a linear annual growth rate.

Travel Time Cost Savings

ECONOMIC COMPETITIVENESS - USER COST CALCULATION OF VEHICLE OPERATING COST CHANGE IF PROJECT WAS NOT CONSTRUCTED

Analysis Year	No Build Annual VMT [5]	Build Annual VMT	No Build VMT Cost	Build VMT Cost	VMT Cost Savings	7% Discount
2022	0	0	$0	$0	$0	$0
2023	0	0	$0	$0	$0	$0
2024	0	0	$0	$0	$0	$0
2025	0	0	$0	$0	$0	$0
2026	0	0	$0	$0	$0	$0
2027	0	0	$0	$0	$0	$0
2028	0	0	$0	$0	$0	$0
2029	0	0	$0	$0	$0	$0
2030	736,231	600,791	$349,342	$285,075	$64,267	$32,670
2031	739,882	603,770	$351,074	$286,489	$64,585	$30,684
2032	743,533	606,749	$352,806	$287,902	$64,904	$28,818
2033	747,184	609,728	$354,539	$289,316	$65,223	$27,065
2034	750,834	612,707	$356,271	$290,730	$65,541	$25,418
2035	754,485	615,686	$358,003	$292,143	$65,860	$23,871
2036	758,136	618,665	$359,735	$293,557	$66,179	$22,417
2037	761,786	621,645	$361,468	$294,970	$66,497	$21,051
2038	765,437	624,624	$363,200	$296,384	$66,816	$19,768
2039	769,088	627,603	$364,932	$297,798	$67,135	$18,563
2040	772,739	630,582	$366,665	$299,211	$67,453	$17,431
2041	776,389	633,561	$368,397	$300,625	$67,772	$16,368
2042	780,040	636,540	$370,129	$302,038	$68,091	$15,369
2043	783,691	639,519	$371,861	$303,452	$68,409	$14,431
					Total Benefit	$313,925

Table 1 - Per-mile Operating Cost by Mode

Auto Vehicle Operating Cost	$0.45
Truck Vehicle Operating Cost	$0.94

Table 2 - Per-mile Operating Cost

Auto Vehicle Operating Cost - Gravel	$0.10
Truck Vehicle Operating Cost - Gravel	$0.18

Table 3 - Fleet Composition

Auto Percentage	95.0%
Truck Percentage	5.0%

Table 4 - Per-mile Operating Cost

Aggregate Vehicle Operating Cost	0.47
Additional Vehicle Operating Cost - Gravel	0.11

Table 5 - Vehicle Miles Traveled

Year	No-Build	Build
2019	1,197,092	1,197,092
2039	1,322,661	1,322,661

After Resurfacing

NOTES:

1) Vehicle operating costs were valued in accordance with the Benefit-Cost Analysis Guidance for Discretionary Grant Programs - March 2022(Updated) (https://www.transportation.gov/sites/dot.gov/files/2022-03/Benefit%20Cost%20Analysis%20Guidance%202022%20%28Revised%29.pdf). The alternate route is anticipated in year 2030 when pavements on the highway have zero remaining service life and are deemed to no longer be safely traversable by the public.

2) Truck percentage was obtained from the project plan set cover sheet.

3) Existing and 20-year forecast daily traffic volumes were obtained from the project plan set cover sheet. Average travel distance per vehicle data was determined by google maps. VHT and VMT for each alternative were calculated using AADT information, average corridor travel time per vehicle, and an assumed construction schedule of five months out of the year.

4) No Build and Build VMT for intermediate years were interpolated based on a linear annual growth rate.

5) Per-mile operating costs associated with additional impacts of pavement roughness after the road is converted to gravel were derived using values from NCHRP Report 720 - "Estimating the Effects of Pavement Condition on Vehicle Operating Costs"; Table 7-5. Gravel pavement roughness under the No Build scenario was assumed to fall in the bottom category but this is a conservative estimate.

Operating Cost Savings

STATE OF GOOD REPAIR - OPERATION AND MAINTENANCE COSTS

	Annual Operation and Maintenance Cost ($) [1]			
Analysis Year	No Build	Build	Cost Savings	7% Discount
2022	$22,000	$22,000	$0	$0
2023	$22,000	$22,000	$0	$0
2024	$22,000	$4,000	$18,000	$13,732
2025	$22,000	$4,000	$18,000	$12,834
2026	$22,000	$4,000	$18,000	$11,994
2027	$22,000	$4,000	$18,000	$11,209
2028	$22,000	$4,000	$18,000	$10,476
2029	$22,000	$4,000	$18,000	$9,791
2030	$400,000	$4,000	$396,000	$201,306
2031	$22,000	$4,000	$18,000	$8,552
2032	$22,000	$4,000	$18,000	$7,992
2033	$22,000	$4,000	$18,000	$7,469
2034	$22,000	$4,000	$18,000	$6,981
2035	$22,000	$4,000	$18,000	$6,524
2036	$22,000	$4,000	$18,000	$6,097
2037	$22,000	$4,000	$18,000	$5,698
2038	$22,000	$4,000	$18,000	$5,326
2039	$22,000	$4,000	$18,000	$4,977
2040	$22,000	$4,000	$18,000	$4,652
2041	$22,000	$4,000	$18,000	$4,347
2042	$22,000	$4,000	$18,000	$4,063
2043	$22,000	$4,000	$18,000	$3,797
		Total	$738,000	$347,818

NOTES:

1) Changes in annual roadway maintenance costs are expected due to intensified maintenance that will be required to keep the No Build Alternative serviceable compared to what will be required on new infrastructure under the Build. At pavement failure year, the roadway would be reverted to gravel with a grinding and asphalt binder procedure.

2) Annual maintenance of the existing roadway was estimated by assuming 2.5 employees, 8 hours a day, 5 days a week, for 4 weeks total, plus an annual $10,000 in material costs. A newly resurfaced road was estimated to require 1/3 of the labor to maintain.

CAPITAL COST AND RESIDUAL PROJECT VALUE

	Resurface Segment		Capital Cost	RCV
Analysis Year	Capital Cost	RCV	7% Discount	7% Discount
2022		$0	$0	$0
2023	$2,181,495	$0	$1,780,750	$0
2024		$0	$0	$0
2025		$0	$0	$0
2026		$0	$0	$0
2027		$0	$0	$0
2028		$0	$0	$0
2029		$0	$0	$0
2030		$0	$0	$0
2031		$0	$0	$0
2032		$0	$0	$0
2033		$0	$0	$0
2034		$0	$0	$0
2035		$0	$0	$0
2036		$0	$0	$0
2037		$0	$0	$0
2038		$0	$0	$0
2039		$0	$0	$0
2040		$0	$0	$0
2041		$0	$0	$0
2042		$0	$0	$0
2043		$0	$0	$0
			$ 1,780,750	**$ -**

Table 1 - Project Timelines

Phase	Cost	Service Life	% Life Remaining	RCV
Resurface	$2,181,495	20	0.0%	$0

Table 2 - Project Length

Segment	Miles
Resurface	4.587

Table 3 - Inflation Adjustments - GDP Deflator

Project Cost ($2021)	$2,271,885
Convert Year $2021 to $2020	0.960

NOTES:

1) Project construction was assumed to be complected in the same year construction began.