

2024 Annual Financial Plan Update



**Alaska Department of Transportation
and Public Facilities
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September 2024

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**Sterling Highway Milepost 45 to 60 Project 2023 Financial Plan
LETTER OF CERTIFICATION**

The Alaska Department of Transportation and Public Facilities (DOT&PF) developed an Initial Financial Plan in March 2023 under the new classification as a "Major Project" for the Sterling Highway Milepost (MP) 45 to 60 (45–60) Project. The Federal Highway Administration (FHWA) identifies "Major Projects" as those with estimated costs over \$500 million. Previous annual project cost estimates fell below that threshold. The increased cost of materials and labor, inflation, in combination with expenditures to date, and estimated future costs has resulted in the cumulative project estimate exceeding \$500 million dollars; therefore, a Project Management Plan (PMP) was prepared and submitted to the FHWA on September 12, 2022, for review and was approved on March 14, 2023. The PMP is a living document and shall be reviewed and updated as the project progresses or when significant changes occur.

The project participated in an initial Cost and Schedule Risk Assessment (CSRA) in January 2023. A second CSRA was conducted April 3-5, 2024. The 2024 Annual Financial Plan (AFPU) updates the 2023 AFPU to provide current cost estimates to complete the project and estimates of financial resources needed to fund the project. This plan was prepared pursuant to the requirements of United States Code (USC) Section 106, Title 23, and guidance issued by the FHWA (FHWA 2014).

The cost data in the Financial Plan provides an accurate accounting of costs incurred to date and includes a realistic estimate of future costs based on an engineer's estimate and expected construction costs. While the estimates of financial resources rely upon assumptions regarding future economic conditions and other variables, they represent realistic estimates of available monies to fund the project.

The Financial Plan is a living document. DOT&PF believes that the Financial Plan provides an accurate basis upon which to schedule and fund the Sterling Highway MP 45–60 Project and commits to provide annual updates according to the schedule outlined in the 2023 IFP.

To the best of our knowledge and belief, the Financial Plan, as submitted herewith, fairly and accurately presents the current financial position of Sterling Highway MP 45–60 Project, cash flows, and expected conditions for the duration of project design and construction. The financial forecasts in the Financial Plan are based on our judgment of the expected project conditions and an expected course of action. We believe that the assumptions underlying the Financial Plan are reasonable and appropriate. Further, we have made available all significant information that we believe is relevant to the Financial Plan and, to the best of our knowledge and belief, the documents and records supporting the assumptions are appropriate.

Respectfully Submitted:

DocuSigned by:
A handwritten signature in blue ink, appearing to read "Ryan Anderson".
DE6B08F7F6734C7...

Date: 10/11/2024

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Executive Summary

This is the 2024 Annual Financial Plan Update (AFPU) for the Sterling Highway Milepost (MP) 45–60 Project. It discusses the expenditures as of 30 June 2024, current cost estimates, and project funding as proposed in Amendment #1 2024–2027 Statewide Transportation Improvement Program (STIP) and beyond. Amendment #1 was approved by the Federal Highways Administration (FHWA) and Federal Transit Administration (FTA) on September 27, 2024. In 2022, the Sterling Highway MP 45–60 Project (the Project) was reclassified as a “Major Project” when the estimated total project cost exceeded \$500 million. An Initial Financial Plan (IFP) under the new classification as a Major Project was submitted and accepted by FHWA in March 2023. The prior IFP (2018) and subsequent AFPUs provided baseline information for project scope, schedule, cost estimate, and funding structures to provide reasonable assurance that there will be enough funding available to implement and complete the entire project, or a fundable stage of the project, as planned.

The Project aims to improve transportation, traffic flow, efficiency, and safety on a segment of the Sterling Highway in the greater Cooper Landing area in Southcentral Alaska. The Alaska Department of Transportation and Public Facilities (DOT&PF) is the project sponsor, and FHWA serves as the lead federal agency.

Construction Manager/General Contractor (CMGC) is the current selected project delivery method for a majority of the project. The DOT&PF began project construction in 2020. The 2024 CSRA 70th percentile completion date was calculated to be December 2037 and is based on the project not receiving any additional funding in this STIP or the subsequent STIP. Construction funding will be obligated upon substantial completion of the Juneau Creek Bridge and significant conversion of the project’s current Advance Construction (AC) balance. The funding is anticipated in Federal Fiscal Year (FFY) 2028. This aligns with the 2024 CSRA 20th percentile simulation results. The FHWA has accepted using the 2024 CSRA 20th Percentile for this AFPU, which has a project completion date of October 2034.

The 2020 total project estimate was \$557 million, with an estimated cost to complete of \$488 million. The 2021 project estimate was \$481.5 million, with a \$343.4 million cost to complete. The 2022 project estimate was \$689.9 million, with a cost to complete of \$533.9 million. The 2023 project estimate was \$884.5 million with a cost to complete of \$461.8 million. The total project cost in FFY 2024 was \$893.5 million with an estimated cost to complete of \$412.7 million. The project has an AC balance prior to FFY 2024 of \$182.9 million. Total project obligations to date are \$480.9 million, this includes \$48.8 million that was obligated after 30 June 2024, but before the submittal of this report. An AC Conversion of \$32 million post FFY 2027 is included in the STIP.

An initial Cost and Schedule Risk Assessment (CSRA) was conducted in January 2023. In 2023 the construction completion date was extended, and a second CSRA was conducted in April 2024. Both assessments utilized a Monte Carlo simulation. As more knowledge is obtained through field explorations, and as design advances, the estimate is expected to become more accurate.

This document demonstrates DOT&PF's commitment to complete the project and demonstrates sound financial planning, as required by United States Code Section 106(h) of Title 23, as amended by Section 1503(a)(4) of Moving Ahead for Progress in the 21st Century Public Law 112-141.¹

¹ No updates to financial plan requirements were included in the latest surface transportation act, otherwise known as the Surface Transportation Reauthorization Act of 2021.

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ACRONYMS AND ABBREVIATIONS

| | |
|--------|---|
| AC | Advance Construction |
| ACC | Advance Construction Conversion |
| AFP | Annual Financial Plan |
| AFPU | Annual Financial Plan Update |
| CMGC | Construction Manager/General Contractor |
| CSRA | Cost and Schedule Risk Assessment |
| DOT&PF | Alaska Department of Transportation & Public Facilities |
| DSEIS | Draft Supplemental Environmental Impact Statement |
| EIS | Environmental Impact Statement |
| FFY | Federal Fiscal Year |
| FHWA | Federal Highway Administration |
| HTF | Highway Trust Fund |
| ICAP | Indirect Cost Allocation Plan |
| IFP | Initial Financial Plan |
| MP | Milepost |
| MPDG | Multimodal Project Discretionary Grant |
| NEPA | National Environmental Policy Act |
| NHPP | National Highway Performance Program |
| P3 | Public-Private Partnership |
| PA | Programmatic Agreement |
| ROD | Record of Decision |
| ROW | Right-of-Way |
| SEIS | Supplemental Environmental Impact Statement |
| STIP | Statewide Transportation Improvement Program |
| USC | United States Code |
| VE | Value Engineering |
| YOE | Year of Expenditure |

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1.0 Introduction and Requirements

1.1 Plan Overview and Process

Title 23 United States Code (USC) Section 106 provides guidance and requirements for Federal Highway Administration (FHWA) projects with respect to their anticipated total costs. Projects that involve FHWA funding and have an estimated project cost greater than \$100 million require an Annual Financial Plan (AFP) per 23 USC 106(i). “Major Projects” are subject to additional requirements as detailed in 23 USC 106(h). An Initial Financial Plan (IFP) for the Sterling Highway Milepost (MP) 45–60 Project (the project) was developed in 2017, submitted to FHWA, and appended to the Environmental Impact Statement (EIS) as Appendix H (2018). When the IFP was developed, the project did not meet the \$500 million dollar threshold to be designated a Major Project by the FHWA.

In 2022 expenditures and expected cost to complete, combined, exceeded the \$500 million threshold; therefore, the project meets the criteria of a Major Project. Due to this designation, a review team consisting of the Alaska Department of Transportation and Public Facilities (DOT&PF), project consultants, Construction Manager/General Contractor (CMGC) representatives, and FHWA conducted a Cost and Schedule Risk Assessment (CSRA) workshop January 10–13, 2023, to review the cost, risks, and schedule estimates.

The 2023 IFP for a Major Project was prepared pursuant to the requirements of 23 USC 106(h) and the Financial Plan guidance issued by FHWA. The initial plan and subsequent updates reflect this project’s cost estimate and revenue structure in the year of the report. It is intended to provide reasonable assurance that there will be sufficient financial resources available to complete the project as planned.

In April of 2024 a second CSRA was conducted by a review team consisting of FHWA, DOT&PF, CMGC, and project consultants. This was done to update the YOE estimates due to an extension of the project duration, to evaluate and update the risk register, consider delivery methods, and identify project opportunities. The project design teams, construction contractor, and DOT&PF continue to look for opportunities to reduce costs while still meeting the purpose of the project and delivering a project that adds value to the state transportation system.

Annual updates should be submitted to FHWA no later than 90 days after the end of the reporting cycle (June 30). They should reflect the cost, schedule, phasing, funding changes, risks and mitigation strategies that have occurred since the previous AFPU and should be submitted no later than September 30 of each reporting year.

1.2 Plan Contents

A project that receives FHWA funding that has estimated costs above \$100 million and below \$500 million is classified as “Other Projects” and is required to prepare an AFP that is available to the Secretary for review upon their request. A project estimated to cost over \$500 million is classified as “Major” and requires that a Project Management Plan, IFP, and AFPU (23 USC 106(h)(1) and (3)) be submitted to the Secretary for review.

This annual update followed the guidance provided under 23 USC 106 for the preparation of this 2024 AFPU, and as such contains the following components:

- **Project Description** – provides an overview and history of the project to date.
- **Schedule/Phasing plan** – lists major milestones for completing the project.
- **Project Cost** – provides a detailed estimate of project costs, summarizes the costs to date, and provides detail on key cost-related assumptions.
- **Project Funds** – describes the project’s plan of finance, including the anticipated sources of funds and financing methods.
- **Financing Issues** – issues with the state’s financing facilities are not known or anticipated at this time.
- **Cash Flow** – introduces the expectation that DOT&PF will have sufficient revenues to complete the project.
- **Public-Private Partnership (P3) Assessment** – describes the process used to assess the appropriateness of a P3 to deliver the project.
- **Risk and Response Strategies** – documents the project risks and strategies to minimize identified risks.
- **Annual Update Cycle** –annual update of the Financial Plan.

2.0 Project Description

DOT&PF, in cooperation with FHWA, has developed the Project to bring the highway up to current standards for a rural principal arterial and improve transportation, traffic flow, efficiency, and safety. The Sterling Highway, a Scenic Byway, is located approximately 100 highway miles south of Anchorage in the Kenai Peninsula Borough in Southcentral Alaska. Located in Cooper Landing, the project area includes the western end of Kenai Lake/Skilak Lake Road and follows the Kenai River Valley downstream about 11 miles, nearly to the western edge of the Kenai Mountains/Quartz Creek Road. The Kenai River and its tributary, the Russian River, are popular world-class salmon- and trout-fishing streams. Geographic and land use constraints are considerable. The project area lies within the Chugach National Forest and the Kenai National Wildlife Refuge. Remaining lands are owned by the Borough, the State of Alaska, private citizens, and Cook Inlet Region, Incorporated, the area’s

regional Native Corporation established by the Alaska Native Claims Settlement Act. Figure 1 shows the project location and vicinity.

2.1 Project History

The project history dates to the 1970s. DOT&PF and FHWA published a Draft EIS in 1982 for a MP 37–60 project (8 miles longer than the current segment). They published a second Draft EIS in 1994 but did not publish a Final EIS in either case. FHWA approved a plan to split the project into two functionally independent projects. DOT&PF and FHWA approved the less-complicated MP 37–45 segment. DOT&PF constructed that portion in 2000–2001 and began work on a Draft Supplemental EIS (SEIS) for the more complicated MP 45–60 section in 2000. Scoping meetings occurred between 2000 and 2003, and the Draft SEIS for the Sterling Highway MP 45–60 Project, with four reasonable “build” alternatives and a No Build Alternative, was distributed for review in 2015. In March 2018, a Final EIS and Section 4(f) Evaluation was published. In May 2018, a Record of Decision (ROD) that selected the Juneau Creek Alternative was issued.

2.2 Project Description

The Sterling Highway Milepost 45-60 (Mile Point 8-25) project includes reconstruction of the western end of the existing highway between MP 55.5 and MP 58 and the eastern end from MP 44.5 to MP 46 to meet current rural principal arterial standards. The selected Juneau Creek Alternative also includes construction of approximately 10 miles of new alignment north of the existing Sterling Highway, including a new bridge across Juneau Creek Canyon. The project will construct a tight diamond interchange at the western intersection of the Sterling Highway and the Juneau Creek route, an underpass for United States Forest Service administrative roads west of Juneau Creek; four dedicated underpasses for wildlife; one dedicated overpass for wildlife; pedestrian facilities including separated trails, undercrossings, trailheads; and passing and climbing lanes where necessary. The project will be completed in six stages.

As proposed, the highway would be constructed as a 40-foot-wide paved highway (12-foot lanes with 8-foot shoulders). Passing lanes are included where warranted based on current analysis. Where passing lanes are provided, the road cross-section typically would be three lanes wide.

The proposed Juneau Creek Bridge will span the canyon south of Juneau Creek Falls. To comply with federal guidance and ensure the best value for the project, a Value Engineering study was conducted in January 2022, and the final report was distributed in April 2022. Two bridge alternatives were recommended for consideration and additional development by the DOT&PF Bridge Section. The Steel Plate Girder Bridge was selected as the preferred alternative, which consists of a 928-foot-long structure with a center main span of 440 feet and two single-span approaches at 240 feet long. The bridge deck is 63.5 feet wide and includes three 12-foot travel lanes with 8-foot shoulders and an 8-foot barrier separated pathway. Certification was completed in August 2023, was awarded in Nov

2023, and construction started in spring of 2024. To meet EIS commitments, a pullout will be constructed on the eastern approach, and the bridge deck height must accommodate separated pedestrian and animal trails underneath. Figure 2 shows the general scope of the project, main infrastructure installations, and the Juneau Creek Bridge location.

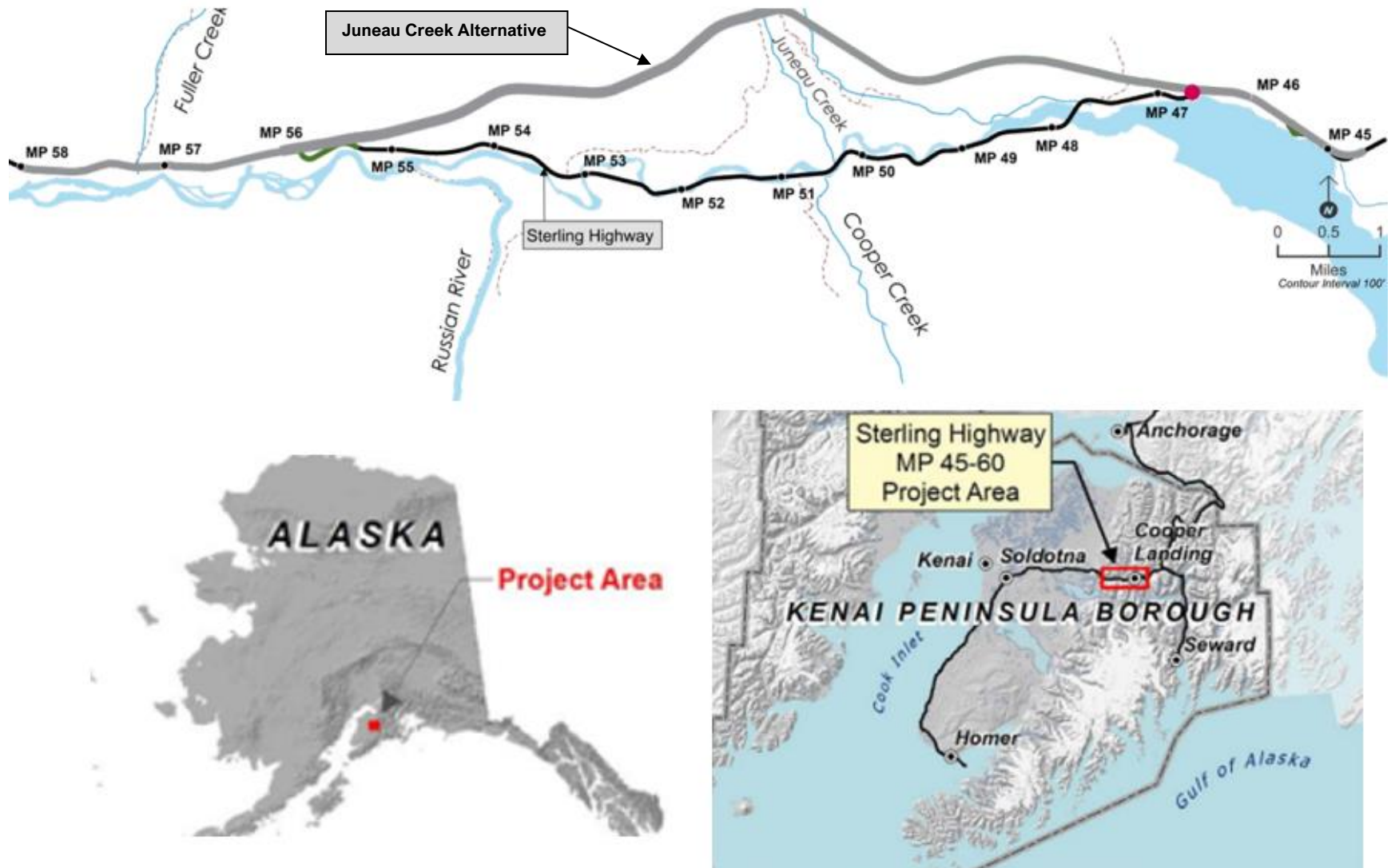


Figure 1: Project Location and Vicinity Map

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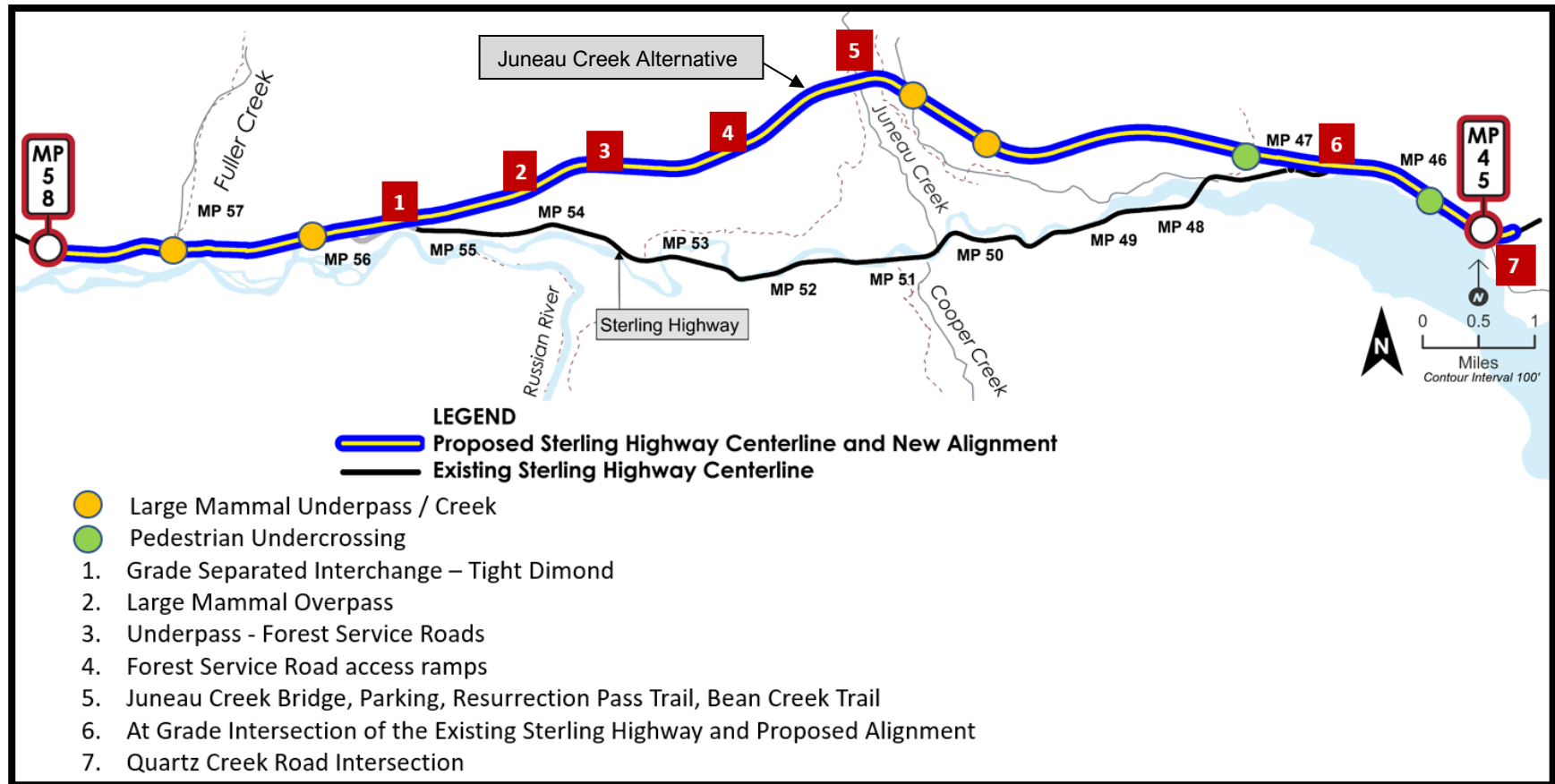


Figure 2: Project Scope and Structure Map

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2.3 Construction Staging Plan

The project was originally proposed to be completed in five (5) stages. The 2023 AFPU included 6 stages. The current schedule for the project proposes seven (7) stages, Stage 7 will construct the Resurrection Pass Trailhead and parking lot. This work was previously included in Stage 2; however, construction of the trailhead and parking lot are not critical to the opening of the roadway and have been rescheduled to after final paving. Table 1 describes and Figure 3 illustrates a design and construction staging approach that would be followed based on the 20th percentile schedule identified in the 2024 CSRA. The 2024 CSRA 20% has a predicted project completion date of October 2034.

The 2024 Construction Management Plan identified construction and design durations. The CSRA included completion dates in the range of results reported from the Monte Carlo simulation. The durations from the CMP were applied to the 20th percentile completion dates to determine the start and end dates for design in Table 1 below.

Current status of project Stages is as follows:

- Stage 1B design was completed in 2023, utility agreements are in development, and this stage is expected to Certify in fall 2024.
- Stage 2 construction has begun; completion and opening of the Juneau Creek Bridge is on schedule to occur in 2028.
- Stage 3 and 4 constructed partial embankments and drainage of the pioneer roads that provide construction access to Juneau Creek Bridge. Stages 3 and 4 have been revised and no longer include final grade, they are considered complete.
- Stages 1B and 5 are expected to generate a significant amount of fill material that has been / will be used to construct the final grades of Stage 3 and 4. Final grade of Stages 3 and 4 have been reallocated to stages 1B and 5 respectively.
- Stages 5 and 6 designs have been extended 2 years. Temporary paving could occur during the duration of the project but could introduce schedule delays due to traffic management requirements. Final paving is included in Stage 6.
- Stage 7 will construct trailheads and parking that are not critical to the roadway opening to the public.

The schedule shown in Table 1 is based on the 2024 CSRA 20th Percentile and is dependent on additional funding availability / commitments. Design, for some stages, is anticipated to be completed before funding for construction may be available. Design completion and construction start dates are dependent on the timing of funding allocations, as project

funding is obligated the expected completion and opening date will be adjusted and reported in subsequent AFPU's.

Table 1: Anticipated Construction Staging Approach

| Stage | Construction Description | Design | Construction Seasons | 2024 CSRA 20% End Date |
|--------------|--|----------------|-----------------------------|-------------------------------|
| 1A | Reconstruct the western existing Sterling Highway between MP 55.5 and MP 58. | 2019–2021 | Completed 2023 | Not evaluated in 2024 CSRA |
| 1B | Reconstruct Sterling Highway between MP 44.5 and approximately MP 46. Final grade of Stage 3 | 2024–2027 | 2028–2030 | 2030 |
| 2 | Construct the Juneau Creek Bridge. Construct “pioneer roads” to access the JCB site to facilitate the movement of bridge construction materials and equipment. | Completed 2023 | 2024–2028 | Not evaluated in 2024 CSRA |
| 3 | Construct partial embankment and drainage for the road from Sterling Highway, MP 46, to the east side of Juneau Creek Bridge. | Completed 2022 | 2022–2024 | 2030 See Stage 1B |
| 4 | Construct partial embankment and drainage for the road from Sterling Highway, MP 55, to the west side of Juneau Creek Bridge. | Completed 2022 | 2022–2024 | 2033 See Stage 5 |
| 5 | Construct the western intersection (tight diamond) of the new and existing Sterling Highway (MP 55 to 56). Final grade of Stage 4 | 2024–2028 | 2030–2032 | 2033 |
| 6 | Final paving, signing, striping, guardrail, rumble strips, trailheads, revegetation, and landscaping. | 2028–2029 | 2032–2034 | 2034 |
| 7 | New Resurrection Pass Trailhead and parking lot | 2024 - 2030 | 2031 - 2032 | 2033 |

Sterling Highway MP 45-60 Construction Staging Schedule

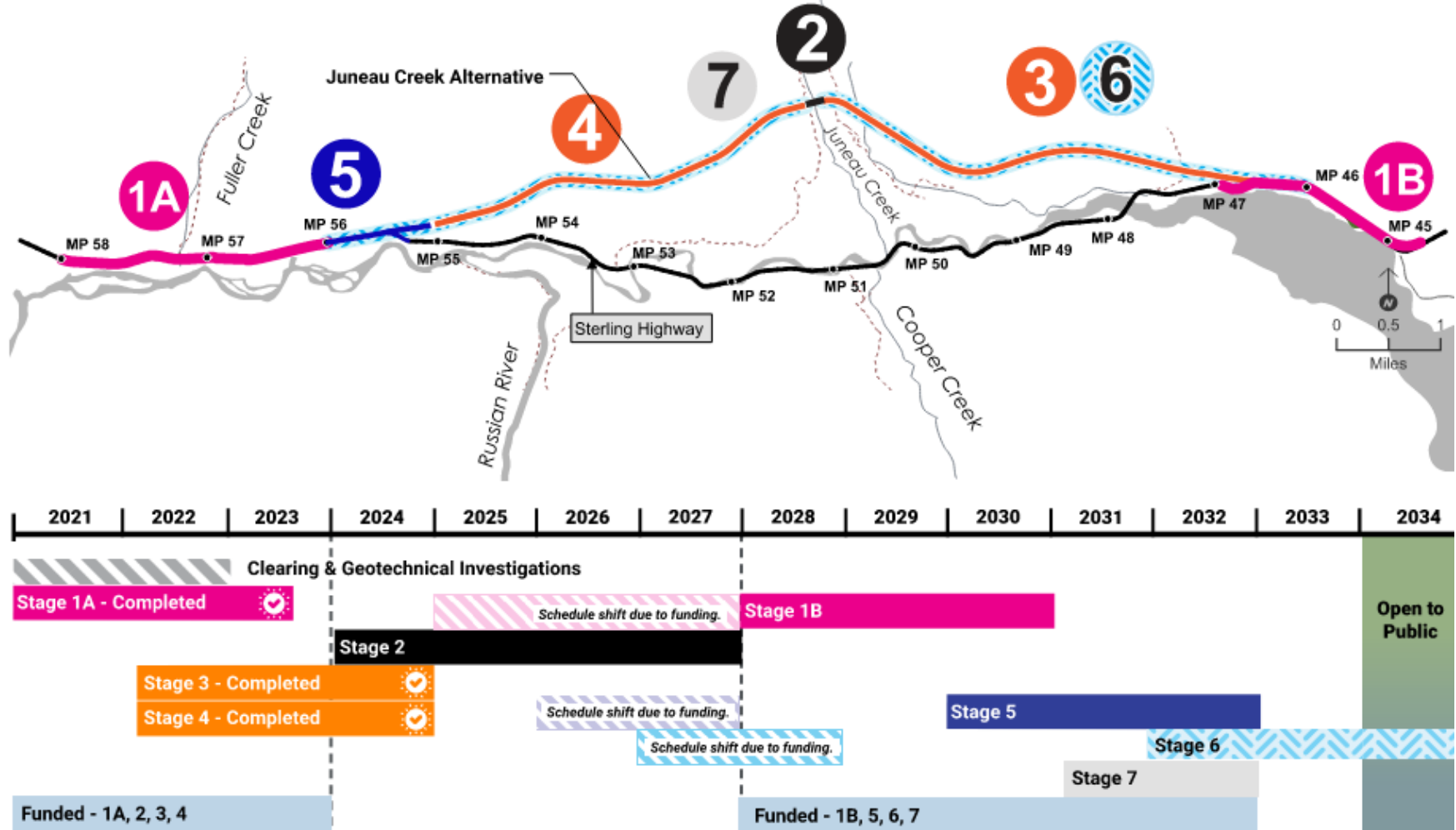


Figure 3: Anticipated Construction Staging Approach

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3.0 Schedule

In 2022, the project exceeded the \$500 million threshold and was classified as a Major Project, an initial CSRA was required and completed in 2023. An additional CSRA was performed in 2024 to reevaluate the impacts of funding shortages on the schedule. Table 2 below represents the schedule, in year of completion, as identified in the 2023 IFP, 2023 AFPU, and 2024 CSRA 20th Percentile. The 20th % was used because it accounts for no project funding being obligated to the remaining stages from 2025 to 2028 and the additional identified schedule risks occurring concurrently, which is more likely, versus consecutively. Stage 7 was added in 2024 and is therefore marked NA in the table below for year 2023. Stage 2, construction of the Juneau Creek Bridge, started in 2023 and was not evaluated in the 2024 CSRA and currently is schedule to be completed in 2028 as indicated. In 2024 the final grade construction of Stages 3 and 4 were consolidated into Stages 1B and 5. The current baseline completion date is 2032 and the 2024 CSRA 70th percentile completion data is 2037, as shown in Table 2 below.

Table 2: Date of Completion Comparison Since 2022 Designation as a Major Project

| STAGE | 2023 IFP | 2023 AFPU | 2024 CSRA 20 th % |
|---------------------------------------|-----------|-----------|---------------------------------|
| 1A: Sterling Hwy west | Completed | | |
| 1B: Sterling Hwy East | 7/2026 | 10/2030 | 5/2030 |
| JCB to MP 46, final | | | 5/2030 |
| 2: Juneau Creek Bridge | 8/2027 | 10/2028 | 2028 Completion |
| 3: JCB to MP 46, initial | 10/2024 | 10/2024 | Completed |
| 4: JCB to MP 55, initial | 10/2024 | 10/2024 | Completed |
| 5: Western Interchange | 10/2026 | 10/2030 | 1/2033 |
| JCB to MP 55, final | | | 1/2033 |
| 6: Final paving, markings, & hardware | 10/2027 | 10/2032 | 10/2034 |
| 7: Resurrection Pass trailhead | NA | NA | 1/2033 |

The project is currently anticipated to be completed and open to the public in 2034, as shown in Table 3. The project is being constructed in multiple stages as described in Section 2.3. The annual construction seasons are typically from April 1 through October 31, with some winter work. Table 3 includes schedule updates before and after the designation as a Major Project in 2022.

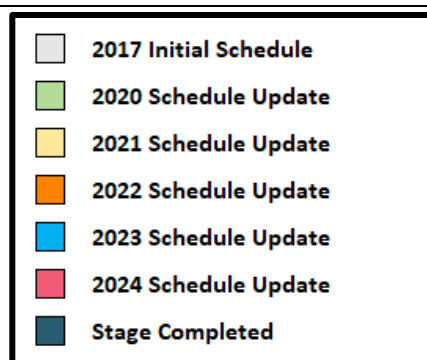


Table 3: Project Schedule and Major Milestones

[illegible]

| Stages / Major Milestones | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 3: JCB east to MP 46 of existing Sterling Hwy. (Final grade incorporated into Stage 1B) | | | | | | | | | | | | | | | | |
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| 4: JCB west to MP 55 of existing Sterling Highway. (Final grade incorporated in Stage 5) | | | | | | | | | | | | | | | | |
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| Ph.5: Final paving / signing/ striping | | | | | | | | | | | | | | | | |
| Ph 5: Western Int & final grade JCB to MP 55 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| Ph 6. Final paving, signing, striping, trailheads | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| Ph 7. Res. Pass & Parking | | | | | | | | | | | | | | | | |
| Estimated opening to Traffic | | | | | | | | | | | | | | | | |
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4.0 Project Cost

In 2022, the project cost estimate exceeded \$500 million, and the project was classified as a Major Project. This new classification warranted that the project must undergo a CSRA review, which was completed in January 2023. The 2022 AFP was updated in March 2023 to incorporate results from the CSRA and was submitted to FHWA as the 2023 IFP for a Major Project. In April 2024 a second CSRA was completed to update forecasted YOY associated with the revised anticipated construction completion dates, evaluate risks and opportunities, evaluate delivery methods, and identify opportunities.

The CSRA workshop used the CMP as a baseline, updated the risk register from 2024, and determined a new range of probabilities from 0 to 100th percentile based on a Monte Carlo Simulation. This AFPU is based on the 20th percentile probability. Typically, the 70th percentile is considered a good basis for budgeting and schedule commitments; however, the 20th percentile was selected for this AFPU because it accounted for no additional funding to the project from 2025 to 2027 and considers that other impacts / risks to the schedule will occur concurrently with this

delay. Should funding be obligated to the project earlier it is expected that the schedule would be accelerated. This section presents the current cost estimate of the overall project, which includes expenditures to date and all estimated remaining costs to complete. The total project cost includes estimates for the preliminary engineering, National Environmental Policy Act (NEPA) compliance, and environmental contingencies (i.e., permitting); right-of-way (ROW); utility relocation; construction; project management; and contingencies.

The cost of each stage as identified in the 2023 IFP, 2023 AFPU, and 2024 CSRA are shown in Table 4 below. Stage 7 was added in 2024 and is therefore marked NA in the table below for year 2023. Stage 2, construction of the Juneau Creek Bridge, was awarded in 2023, is fully funded with an anticipated to be completed (TBC) construction date in 2028, and therefore was not evaluated in the 2024 CSRA. Stages 3 and 4 have been revised and no longer include final grade, they will be considered complete in 2024 and were not considered as separate stages in the 2024 CSRA evaluation. The cost for the final grades for Stages 3 and 4 have been consolidated into Stages 1B and 5.

Based on the 2024 CSRA 20th percentile and funds obligated to date the cost to complete is approximately \$412.7 million.

Table 4: Estimate Comparison by Stage since designation as a Major Project (Millions)

| STAGE | 2023 IFP | 2023 AFPU | 2024 CSRA 20 th % |
|---------------------------------------|-----------|----------------------|---------------------------------|
| 1A: Sterling Hwy West | Completed | | |
| 1B: Sterling Hwy East | \$135.1 | \$144.5 | \$157.0 |
| JCB to MP 46, Final | | | |
| 2: Juneau Creek Bridge | \$142.3 | \$169.7 (Awarded) | |
| 3: JCB to MP 46, Initial | \$131.4 | | |
| 4: JCB to MP 55, Initial | | | |
| 5: Western Interchange | \$116.9 | \$173.1 | \$146.3 |
| JCB to MP 55, Final | | | |
| 6: Final Paving, Markings, & Hardware | \$63.3 | \$91.1 | \$75.2 |
| 7: Resurrection Pass Trailhead | NA | NA | \$32.7 |

4.1 2023 CSRA compared to 2024 CSRA Estimate

During the January 2023 and April 2024 CSRA workshops, project cost estimates were reviewed and updated based on comments received by subject matter experts. A Monte Carlo simulation was used to determine a probability-based total project cost estimate, including prior/fixed costs, and all future stages. The base estimate is the construction/ engineers estimate without contingency or escalation.

The 2023 CSRA Monte Carlo simulation forecasted a total project cost ranging from \$804.5 million (10th percentile) to \$853.3 million (90th percentile) in the Year of Expenditure (YOE). The 70th percentile total project cost was \$840.3 million and was anticipated to have a February 2027 completion date. This represented a project contingency of 8.4% (\$65.1 million) relative to the base project cost without contingency of \$775.02 million (YOE). Annual inflation rates used to determine YOE were 5.0% in 2024, \$4.0% in 2025, and 3.3% for all subsequent years, which resulted in an inflation base cost of \$79.1 million (11.0%).

The 2024 CSRA Monte Carlo simulation forecasted a total project cost ranging from \$909.4 million (10th percentile) to \$1,058 million (90th percentile) in the Year of Expenditure (YOE). The 70th percentile total project cost was \$955 million and was anticipated to have a December 2037 completion date. This represented a project contingency of 13.3% (\$111.7 million) relative to the base project cost without contingency of \$843.2 million (YOE). The 2024 CSRA used a consistent annual inflation rate of 3.4% to determine YOE.

The 2023 AFPU used the 70th percentile for analysis and reporting this AFPU is using the 20th percentile because it more closely represents the expected risk to cost and schedule. The 20th percentile has been included for comparison. The total project cost ranges based on percentile in YOE, and year of completion between the two CSRA workshops are shown in Table 5 below.

Table 5: 2024 and 2023 CSRA Results (Millions \$)

| Percentile | 2023 CSRA | | 2024 CSRA | | Cost Delta (millions \$) | Time Delta (months) |
|------------|-----------|------------|-----------|------------|-----------------------------|------------------------|
| | Estimate | Completion | Estimate | Completion | | |
| Base | \$775.2 | 8/2027 | \$843.2 | 5/2032 | + \$68 | +57 |
| 10th | \$804.5 | 10/2027 | \$909.4 | 10/2033 | + \$104.9 | +72 |
| 20th | \$813.3 | 10/2027 | \$918.3 | 10/2034 | + \$100.0 | + 84 |
| 70th | \$840.4 | 2/2028 | \$ 955.0 | 12/2037 | + \$114.6 | +118 |
| 90th | \$853.3 | 6/2028 | \$1,058 | 01/2040 | + \$204.7 | +139 |

4.2 Updated Cost Estimate

Table 6 depicts the current reported project costs by fiscal year based on the staged construction approach, as described earlier. The 2023 AFPU had final acceptance by FHWA in February of 2024 and included funds that had been obligated through Dec 2023. Stage 2, Phase 4 funds in the amount of \$169.7 million were obligated to the project beyond the June 30, 2023 reporting date but before the final submittal to FHWA of the 2023 AFPU. Funds to date, as shown in the table below include all funds obligated through the 30 June 2024 established reporting period. Funds obligated or anticipated after 30 June 2024 are included in the FFY 2024 column.

The estimated cost to complete by project stage were prepared during the CSRA and were escalated by 3.4% per year to the year of expected expenditure. While not identified in the current STIP the Commissioner’s office has confirmed the following stages will be funding in future STIP’s FFY as follows:

- Stage 1B/3: Funds will be obligated in FFY 2028
- Stage 4/5: Funds will be obligated in FFY 2029
- Stage 6: Funds will be obligated in FFY 2030
- Stage 7: Funds will be obligated in FFY 2031

Table 6 includes the funds obligated to date, funds identified in the STIP, and the estimates developed during the 2024 CSRA. An advance construction conversion of \$31.7 million in post FFY 2027 is planned and has been entered in the table below for FFY 2028. Stages have been escalated by 3.4% per year to the YOE for the FFY committed to by the Commissioner’s office.

Table 6: Total Project Cost Estimate & Cost to Complete by Phase (Millions \$)

| Cost Category | *Funds to Date ^a | FFY ^b 2024 | FFY ^b 2025 | FFY ^b 2026-27 | FFY ^b 2028 | FFY ^b 2029 | FFY ^b 2030 | Total Project *Cost |
|------------------|-----------------------------|-----------------------|-----------------------|--------------------------|-----------------------|-----------------------|-----------------------|---------------------|
| Pre-Construction | \$88.5 | \$48.8 | \$0.0 | \$0.0 | \$31.7 | \$0.0 | \$0.0 | \$137.3 |
| ROW | \$7.9 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$7.9 |
| Utilities | \$0.1 | \$0.0 | \$0.0 | \$0.0 | \$1.5 | \$0.0 | \$0.0 | \$1.6 |
| Construction | \$335.5 | \$0.0 | \$0.0 | \$0.0 | \$157.0 | \$146.3 | \$107.9 | \$746.7 |
| *Total | \$432.1 | \$48.8 | \$0.0 | \$0.0 | \$158.5 | \$146.3 | \$107.9 | \$893.5 |

^a Funds to date include programmed funding up to 30 June 2024^b Federal Fiscal Year (FFY) is October 1 to September 30.

Values shown are in the hundreds of millions of dollars.

Pre-construction includes NEPA/preliminary and design engineering, and environmental permitting.

Construction includes basic roadway, bridge/structure, contingency, and construction engineering.
 Note: Slight discrepancies may occur due to rounding.

Table 7 depicts funding by funding phase and stage. The values presented are based on obligations by phase/stage as of 30 June 2024 and the \$48.8 million that were obligated after the cutoff date but within FFY 2024. The estimates for stages that have not been awarded are based on the estimates prepared during the 2024 CSRA workshop and adjusted to YOE.

Table 7: Project Cost by Stage and Phase (Million)

| Funding Phase | 1A & EWP | Stage 1B / 3 | Stage 2 | Stage 3/4 | Stage 4/5 | Stage 6 | Stage 7 |
|----------------------------|----------|--------------|---------|-----------|-----------|---------|---------|
| Pre-Construction (Phase 2) | | \$137.3 | | | | | |
| ROW (Phase 3) | | \$3.7 | \$4.30 | | | | |
| Utilities (Phase 7) | | \$1.5 | | \$0.10 | | | |
| Construction (Phase 4) | \$165.8 | \$157.0 | \$169.7 | \$128.1 | \$146.3 | \$75.2 | \$32.7 |

Values shown are in the hundreds of millions of dollars.

Pre-construction includes NEPA/preliminary and design engineering, and environmental permitting.

Construction includes basic roadway, bridge/structure, contingency, and construction engineering.

Note: Slight discrepancies may occur due to rounding.

Table 8 displays reported total project cost estimate adjustment between the 2023 IFP and subsequent annual updates. FHWA allowed the 2023 IFP to use the 2022 AFPU total project cost, as shown below, with the understanding that this estimate would be updated based on known estimates and submitted with the 2023 AFPU. The 2024 AFPU total reflects current project estimates escalated for YOE. Before the designation as a Major Project in 2022 the previous project cost estimates for all phases were \$374.1 million in 2017, \$557.8 million in 2020, \$478.0 million in 2021, and \$689.9 million in 2022.

Table 8: Project Cost Net Change (Millions \$)

| Cost Category | 2023 IFP | 2023 AFPU | 2024 AFPU | Net Change Since 2023 IFP |
|------------------|----------------|----------------|-----------------|---------------------------|
| Pre-Construction | \$74.3 | \$130.3 | \$137.30 | \$63.0 |
| ROW | \$11.0 | \$7.9 | \$7.9 | -\$3.1 |
| Utilities | \$2.1 | \$4.1 | \$1.6 | -\$0.5 |
| Construction | \$602.5 | \$742.2 | \$746.7 | \$144.2 |
| Total | \$689.9 | \$884.6 | \$893.50 | \$203.6 |

Note: Slight discrepancies may occur due to rounding.

4.3 Cost Estimate Assumptions

Table 9 presents assumptions for each primary project element.

Table 9: Cost Estimate Assumptions

| Project Element | Inputs/Methodology |
|---|---|
| NEPA documentation; includes preliminary engineering/ pre-construction (NEPA) | These costs include preliminary engineering and design services through the completion of the NEPA process. |
| Engineering | |
| Design engineering | Design engineering is based on current estimates considering current expenditures and anticipated spending rates. The estimate includes current anticipated costs for wetland and Section 106 mitigation. |
| Construction | |
| Bridge and structure subtotal | Construction costs are based on the current awarded construction contract. |
| Construction engineering (10%) | Construction engineering/administration is 10% of the basic roadway and bridge structure costs. |
| ROW & Utilities | |
| Utilities | Utility costs include relocation of power distribution and telephone poles and raising of lines and a line extension to provide power to proposed facilities. |
| ROW | ROW costs estimate the land payment portion only of ROW acquisition. It does not address the other per parcel costs of ROW acquisition. Furthermore, these costs consider only privately owned land impacted by the alternatives. Impacted parcels owned by federal, state, and local agencies are assumed to be acquired by agreement rather than payment. |

Source: Construction cost estimate summary sheets.

Note: The Indirect Cost Allocation Plan (ICAP) has been applied to all costs, except for what has already been obligated. As of July 1, 2024, ICAP is estimated at 5.17% of the combined subtotal of project development and construction. This is generally the standard percentage that DOT&PF typically applies to the base construction estimate for DOT&PF departmental overhead charge.

5.0 Project Funds

5.1 Project Funding Sources

The project is currently being financed with the state’s allocation of National Highway Performance Program (NHPP) funds, AC funds, and State Match. In 2022, the project applied for a Rebuilding

American Infrastructure with Sustainability and Equity (RAISE Grant) and in 2023 the project applied for a Multimodal Project Discretionary Grant (MPDG). The project was not selected as a recipient of either grant; however, the project will continue to apply for grants and explore additional funding opportunities. The project has an AC balance of \$184.3 million. NHPP funds will be directed to the project in STIP 2028-2032 in the following amounts: \$157 million in 2028, \$146.3 million in 2029, \$71.6 million in 2030, and \$32.7 million in 2031 for Stages 1B/3, 4/5, 6, and 7 respectively.

5.2 Project Obligations to Date

Since 2009, the Project has obligated over \$400 million in federal highway funds. There was a redistribution of \$165 million in funds in Aug 2023, the majority was programmed to the construction of Juneau Creek ridge (Stage 2). The 2023 AFPR reported funds that were obligated to the project through end of December 2023. This AFPU is reporting the funding that has occurred from 31 December 2023 to 30 June 2024. The \$48.8 million obligated after the 30 June 2024 date but before the end of FFY 2024 have been included. Funds obligated to the project after FFY 2024 will be included in the 2025 AFPU.

5.2 Statewide Transportation Improvement Program (STIP)

The 2016-2019 DOT&PF STIP was approved November 27, 2017, and included the project as STIP ID 2673 under the name “Sterling Hwy MP 45–60 Sunrise Inn to Skilak Lake Road Construction” and was considered the “Parent Project” in subsequent STIPs. To facilitate project construction phasing several projects were established under the various STIP IDs as “child stages”.

The 2024-2027 STIP Amendment #1 was approved on September 27th, 2024. The funding for the Sterling Highway Milepost 45-60 project is identified in the following IDs:

- **ID 2673:** “Sterling Highway Milepost 45–60 [Parent and Final Construction]” is identified as the “Parent Project”. This includes the initial clearing, environmental mitigation. Project Stage 6, which will include final paving signing, striping, trailheads, and parking and Project Stage 7, construction of Resurrection Pass trailhead and parking lot, have been consolidated under the parent project.
- **ID 32300:** Child Stage 1, Project Stages 1A and 1B. 1A has been completed. 1B includes reconstruction of MP 44.5 to MP 46 and final grade of project Stage 3.
- **ID 33242:** Child Stage 2, Project Stage 2, Juneau Creek Bridge (JCB).
- **ID 32319:** Child Stage 3, Project Stage 5 is the Western Intersection.
- **ID 32683:** Child Stage 4, Project Stage 4/5, JCB west to MP 60
- **ID 32653:** Child Stage 5, Project Stage 1B/3, JCB east to MP 45

The remaining balance of funds needed to complete the project are expected to be identified starting in FFY 2028. Subsequent AFPU’s will report the results of efforts to obtain non-traditional funding and potential amendments to the STIP to demonstrate the states strategies to fully fund the project.

Figure 4 shows the 2024-2027 STIP Amendment #1 project funding plan.

| Additional Project Details | | | | | | | | | |
|-----------------------------|------------|-----------------------------|-----------------------------|---------------------------------------|---------------|---------------------|---------------------|---------------|--------------------------|
| STIP ID # | IRIS Code | Total Project Cost by Stage | Funds Obligated Prior to 24 | FY24-27 Planned Obligations (w/o ACC) | Post 2027 | Start | Finish | AC Balance | Post FY27 AC Conversions |
| 2673-Parent Preconstruction | Z530140000 | \$47,747,066 | \$3,947,066 | \$43,800,000 | \$0 | 45 | 60 | \$6,538,000 | \$0 |
| 32300-Child Stage 1 | CFHWY01018 | \$40,500,708 | \$40,500,708 | \$0 | \$0 | 45-47 | 56-58 | \$1,365,000 | \$0 |
| 33242-Child Stage 2 | CFHWY01060 | \$181,100,857 | \$176,100,857 | \$5,000,000 | \$0 | Juneau Creek Bridge | Juneau Creek Bridge | \$118,002,807 | \$31,700,938 |
| 32319-Child Stage 3 | CFHWY00895 | \$233,033,640 | \$233,033,640 | \$0 | \$0 | 47 | 56 | \$58,392,234 | \$0 |
| 32683-Child Stage 4 | STIP 32683 | \$144,673,478 | \$0 | \$0 | \$144,673,478 | Juneau Creek Bridge | 60 | \$0 | \$0 |
| 32653-Child Stage 5 | STIP 34653 | \$173,100,000 | \$0 | \$0 | \$173,100,000 | Juneau Creek Bridge | 60 | \$0 | \$0 |
| 2673-Parent Final Stage | Z530140000 | \$91,264,103 | \$0 | \$0 | \$91,264,103 | 45 | 60 | \$0 | \$0 |
| 2673-Total Combined | | \$911,419,852 | \$453,582,271 | \$48,800,000 | \$409,037,581 | 45 | 60 | \$184,298,041 | \$31,700,938 |

Figure 4: 2024-2027 STIP Amendment 1, Funding Plan

The STIP also references Advance Construction (AC) funding and Advance Construction Conversion (ACC). AC and ACC allow the use of State funds to fill gaps in available federal funding on a temporary basis until the state can receive reimbursement of those funds with subsequent allocations of NHPP funds. AC and ACC allow the department to continue the project without any interruptions due to the limited annual allocations of NHPP funding. Between FFY 2024-2027, \$152.6 million of AC will be converted leaving a remaining balance of \$31.7 million to be converted post-2027.

5.3 Federal Funds

The Surface Transportation Program provides flexible funding that may be used by states and localities for projects on any federal-aid highway, including the National Highway System and other infrastructure (i.e., bridges, transit). This program is available for projects statewide, and it is a normal practice for DOT&PF to use this funding source for major projects in Alaska. The federal funds ratio for interstates is currently 93.40 percent.

5.4 State Funds

State Match is the state's share of project costs required to match federal program funds. Depending on the federal program requirements, the state's share of the costs will vary, but in Alaska it is most often 9.03 percent. This project has a current state match of 6.60 percent for interstates.

5.5 Local Funds

No local funding sources have been identified for this project.

5.6 Other Funding Techniques

Due to the project’s unanticipated cost increases over the years, and the need to balance project funding requirements in the State of Alaska, other funding techniques were pursued in 2022 and 2023. The project submitted two discretionary grant applications in 2022 but was not a selected recipient. The Project applied for a MPDG to construct Stage 1B of the project in August 2023 but was not awarded the grant. The project team will continue to seek additional funding and financing options as well as future discretionary grant funding opportunities that could assist in accelerating project delivery.

5.7 Proposed Funding Plan

Section 4.2, Table 6, Table 10 below, and Figure 4 in Section 5.2 depict the proposed funding plan by FFY. The plan assumes NHPP funds at 93.40 percent with a State Match covering the remainder.

The FFY 2024-2027 STIP has programmed the following:

- FFY 2024-2027: \$151.2 million ACC
- FFY 2028-2032: \$32.7 million ACC (will be programmed in future STIPs)

Table 10: Proposed Financing Plan by Fiscal Year, (Millions \$)

| | FFY 2024 | FFY 2025 | FFY 2026 | FFY 2027 | Post FFY 2028-2032 | Project Total |
|-------------------|----------|----------|----------|----------|-----------------------|------------------|
| Obligated to date | \$432.1 | | | | | \$432.1 |
| STIP State Match | \$28.5 | | | | \$27.2 | \$55.7 |
| STIP NHPP | \$48.8 | | | | \$385.5 | \$434.30 |
| ACC | \$6.5 | \$0 | \$112.2 | \$32.5 | \$31.7 | |
| Total Funding | \$480.8 | | | | | |
| Proposed Funding | | | | | \$412.7 | |
| Project Total | | | | | | \$922.20 |

Values shown are in the hundreds of millions of dollars.

Note: Slight discrepancies may occur due to rounding.

6.0 Financing

Currently, full project delivery costs will be secured through traditional funding sources with the current cost to complete occurring after 2027. As can be seen in the 2024-2027 STIP, Amendment #1 the Department has had to adjust yearly funding levels to meet Alaska’s overall fiscal constraint requirements. The Department intends to identify funding in the 2028-2032 STIP. However,

recognizing the unanticipated cost increase for this single project, and the need to balance funding with other important projects across Alaska, the Department will continue to seek discretionary grants, bonds, and other funding opportunities that may be available to expedite project completion. If additional funding is not obtained to supplement traditional funding the project may need to be extended to allow the Department to allocate available funds over a greater duration. The CSRA included funding risks in the Monte Carlo Simulation and included a 3.4% per year cost escalation to identify a range of possible total project costs.

7.0 Cash Flow

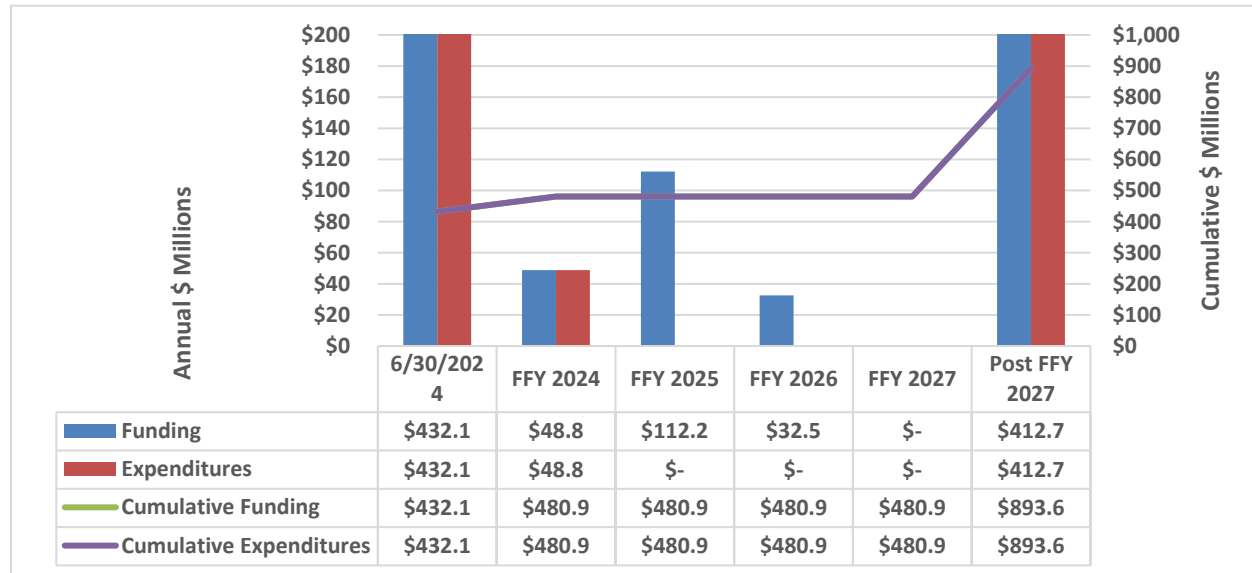
DOT&PF, with the support of federal funding expects to have sufficient revenues to complete the project. The project has obligated \$480.8 million dollars to date and intends to identify the funds to complete the project in the 2028-2032 STIP as described and shown in Sections 4.2 and 5.7 of this AFPU.

Project Obligations since the 2023 IFP are as follows:

- 2023 IFP, March 2023: Obligated as of 30 June 2023 was \$262 million
- 2023 AFPU, Feb 2024: Obligated as of December 2023 was \$422.7 million
- 2024 AFPU, September 2024: Obligated as of September 2024 is \$480.8 million

Figure 5 depicts the current expected cash flow to complete the project and open the road to the public in 2034. Due to limited revenue, the 2024-2027 STIP, Amendment #1, did not identify additional funding in 2025-2027. The project will continue to pursue discretionary grants and supplemental non-traditional funding opportunities to accelerate project delivery. There is a current AC balance of \$184.3 million. The cumulative funding shown in Table 5 includes ACC in the amounts of \$ 112.5 million in FFY 2025 and \$32.5 million in FFY 2026. Utilizing Advance Construction as a funding technique to advance projects using state funds with the potential to be converted to federal funds later continues to be implemented. Funding and expenditures (blue and red bars) are read against the left axis, while cumulative funding and expenditures are read against the right axis.

Figure 5: Annual & Cumulative Cash Flow Based on 2024-27 STIP, Amd #1 (Millions \$)



8.0 Public-Private Partnership (P3) Assessment

The P3 is a funding mechanism that allows the advancement of a project that otherwise might have been delayed due to fiscal constraints. The project management team used the FHWA’s published P3-Screening tool in October 2022 to evaluate a P3 opportunity. This delivery method was assessed but was unlikely to result in a successful private sector partnership, additionally the CMGC contract had been awarded and was underway. The conclusion of the evaluation was that it is unlikely the Department would be successful in developing a P3 for the project.

9.0 Risk and Response Strategies

9.1 Project Risks

The CSRA workshop in January 2023 utilized the risk register, which identified both threats and opportunities, to conduct an in-depth assessment of the project. The most significant risks identified during that assessment, in approximate ranked order, with consideration of potential impacts to both cost and schedule for the duration of the project are as follows:

1. CMGC price negotiations
2. Scope adjustments
3. Embankment material specifications
4. Cultural resource discoveries
5. Utility relocation delays
6. Extending the cultural resource programmatic agreement
7. Temporary water use authorization delay
8. Delayed completion of land swap agreement

Since the 2023 CSRA workshop an effort to balance funding across all the project needs in the State has required an extension to the construction schedule due to funding delays and has been identified as a new project risk. See Section 9.2.9 for additional information associated with this risk. To have a better understanding of the risks associated with the project and identify any opportunities to accelerate schedule and/or reduce costs a second CSRA was held in April 2024.

The April 2024 CSRA updated the risk register. The most significant risks, having a value of \$3 million or greater, identified during that assessment, in approximate ranked order, with consideration of potential impacts to both cost and schedule for the duration of the project are as follows:

1. Temporary roadway on alignment by 2027
2. Inadvertent archaeological discovery during construction
3. Cultural site expansion
4. Risk of Indirect Cost Allocation Plan (ICAP) changing
5. Quartz Creek Frontage Road
6. Cultural / Programmatic Agreement mitigation
7. Archaeological monitoring / construction monitoring scope increase
8. CMGC contracting method
9. Inadvertent discovery during construction
10. Insufficient funding in future years

Funding for this project is under review at all levels of government—federal, state, and local. Approximately half of the financial commitments for the project have not been approved, and significant sources of funding have not been finalized. It is also possible that a national funding crisis could result in Congress discontinuing federal program funds. Table 11 lists high-level project funding assumptions and risks. This AFPU addresses grants as a potential funding source and the risks associated due to their competitive nature.

Table 11: Major Funding Assumptions and Risks

| Funding Source | Assumptions | Risks |
|-----------------------|---|---|
| Federal | Federal-aid Highway Program funds are authorized periodically by Congress in multi-year laws to assist the States in providing for construction, reconstruction, and improvement of highways and bridges on eligible federal-aid routes and for other special-purpose programs and projects. The Bipartisan Infrastructure Law establishes or | FHWA could direct funding toward other projects. The HTF faces recurring funding shortfalls due to an imbalance between revenues and spending. The lack of agreement on a structural fix to this imbalance |

| Funding Source | Assumptions | Risks |
|-----------------------------|--|--|
| | continues FHWA programs and authorizes funding for those programs from the Highway Trust Fund (HTF). | creates periodic funding crises that put the infrastructure system at risk. |
| State | State general fund money will be used to match HTF money through the standard STIP process. | This will require approval by the Legislature and Governor for future budget appropriations. |
| Federal Discretionary Grant | This project is eligible and competitive for several federal discretionary grants, such as the Wildlife Crossings Pilot Program. Grants would cover discreet funding needs as components of the overall project. | Grants are highly competitive and successful applications require investment of time and funding. Grants have set obligation and expenditure deadlines that might or might not work well with project timelines. Most grants also require non-federal match. |

9.2 Response Strategies

9.2.1 Temporary Roadway on Alignment by 2027

The CSRA team evaluated the impacts of allowing the traveling public onto the JCB alignment in advance of Stage 6 construction due to funding challenges delaying the roadway opening. It was determined that this was a risk to the project and had high potential to result in additional delays and an overall increase in cost. An interim opening would require temporary pavement, signing, and striping. Temporary roads may not meet current standards in the same capacity that final construction which can decrease safety to the traveling public. Current construction is not impeded by required traffic maintenance. Construction of temp surfaces that then must be removed to continue building grade result in significant amounts of rework which adds time and cost to projects. Construction is not only more efficient but also safer as they are not contending with traffic and other components that can delay project completion and introduce safety considerations. To mitigate this risk the project should either allocate additional funding and/or delay the opening of the JCB alignment until after Stage 6 is complete.

9.2.2 Inadvertent Archaeological Discovery During Construction

There is currently a nationwide shortage of archaeological data recovery personnel which is introducing risk of potential delays either due to staffing shortages and/or discoveries that result in expanded recovery areas. The project has a dedicated team of archeologists and monitors allocated to the pre-construction side of project delivery. When discoveries are made during construction the pre-construction recovery staff are re-allocated to support construction. Inadvertent discoveries

will cause delay to the project either by causing construction stoppages or reallocation of staff from pre-construction to construction which results in other project Stages being delayed. To mitigate this risk additional data recovery staff could be hired, but with the shortage of availability mitigating this risk is outside the project delivery teams control.

9.2.3 Cultural Site Expansion

The risks associated with cultural site expansion are similar to Section 9.2.2 above. When discoveries are made that require expanding data recovery boundaries this delay cannot be anticipated by the project delivery team. The recommended mitigation would require bringing additional qualified data recovery personnel / archeologists to the project site; however, due to the current shortage this is likely to result in a schedule delay and subsequent increased project costs. This risk is outside the project delivery teams control and mitigation measures are impacted by the number of qualified personnel nationwide.

9.2.4 ICAP Changes

The rate assessed on total project costs is evaluated, established on an annual basis, and typically approved by FHWA annually. The rate is applied from July of the existing year to June 30 of the subsequent year. Rate increases will result in a cost risk to the project and rate decreases will result in a cost opportunity. The 2022 rate was 4.64%, the 2023 rate was 7.18%, the 2024 rate was 6.35%. At the time of the CSRA workshop the FY 2025 rate was unknown and ICAP changes were identified as a risk. The FY 2025 rate published June 28, 2024, that will be applied to projects from July 1, 2024 to June 30, 2025 is 5.17%. This is a 1.18% decrease from the previous year and a 0.45% decrease from the 5-year average. ICAP rates are outside the project delivery teams control. This has been a cost opportunity to the project this year; however, fluctuations in ICAP continue to be a project risk in the event they increase again.

9.2.5 Scope Increase / Quartz Creek Frontage Road

The potential for scope adjustments is decreased each year as design and construction advances. Scope adjustment is expected to be low during construction, as geophysical assessments during design were comprehensive to reduce the risk of unknowns. New adjacent developments requiring adjustment to the scope may be outside the control of the Department / project team. Quartz Creek Frontage Road is required as there are plans for community development and a frontage will be required to not allow direct access to the primary roadway. There are also planned commercial developments that will potentially require project modifications and access through the project area which may introduce conflicts, require additional mitigation, and delays.

9.2.6 Cultural Resources Programmatic Agreement

The Programmatic Agreement (PA) was amended and signed in July 2023 and expires in July 2028. The project is currently scheduled to have a completion date of 2034 and the PA will need to be amended again. If the Signatories were unable to reach a consensus and did not allow data recovery to continue while negotiating the amended PA this could delay the construction schedule. To mitigate this risk a robust communication protocol is in place to keep all signatories aware and involved in data recovery and documentation. Efforts include monthly meetings that provide a project status, current monitoring strategies, field locations where recovery is occurring, and future efforts. In addition, daily monitoring memos are prepared and available. The Signatories can request that the PA be amended at any time during the project and request additional mitigation. Due to signatories being consistently informed as data recovery progresses the risk that Signatories would be unwilling to sign an amended PA agreement in 2028 is considered low at this time. The Department has incorporated this risk into the Project risk register.

9.2.7 Archaeological Monitoring / Construction Monitoring

The risks associated with Archaeological and Construction Monitoring are similar to Sections 9.2.2 and 9.2.3 above. Stage 5 of the project has been identified as one of the project areas with the highest sensitivity. The CSRA risk register identified the likelihood that Stage 5 would require additional monitoring at 90%. The project is expected to have additional costs and possibly delays associated with this risk. Mitigating this risk will be difficult as discoveries, expanding scope, and availability of data recovery and monitoring personnel are outside the control of the project team.

9.2.8 CMGC Contracting Method

The CMGC contract delivery method was selected to identify, mitigate, and properly assign risks and to deliver a cost-effective project. Implementing the CMGC contracting method will allow constructability input and schedule management by a contractor. This method will also enable the use of early work packages to advance the project prior to final design.

In March 2022, DOT&PF entered the current CMGC contract to provide preconstruction services that include working with the design firms and DOT&PF to identify risks, estimate costs, schedule development, and assist in the development of design plans.

The contractor will be required to provide expertise on constructability, sequencing, means and methods, cost estimating, and material availability and to assist in finding ways to improve the value of the project over traditional design-bid-build methods of project delivery. The CMGC contractor provides the following to reduce risk:

1. Conduct constructability reviews of the design deliverables. Develop construction means and methods sufficient to determine construction feasibility.
2. Review and evaluate cost estimates.

3. Develop a targeted maximum price for each stage and/or segment of the project that includes all labor, materials, subcontractor costs, general conditions costs, self-performed work costs, contingencies, and allowances necessary to build a fully functioning stage.
4. Develop a bid package strategy and schedule to support the design and construction schedule.

There is possibility that the CMGC contracting method is resulting in increased construction costs, however traditional design, bid, build methods would likely result in a significant extension to the delivery schedule. At this time the potentially higher construction cost associated with CMGC delivery is less than the additional cost of extending the schedule. Extending the schedule results in a much higher cost in YOE, keeps the door open on additional mitigation being requested, and additional unknowns.

9.2.9 Inadvertent Discovery During Construction

This continues to be a cost and schedule risk to the project. The risks associated with Inadvertent Discovery During Construction are similar to Sections 9.2.2, 9.2.3, and 9.2.7 above. A large and accelerated effort was undertaken in 2023 to advance data recovery to completion. However, data recovery and the possibility of an inadvertent discovery will remain a risk until ground disturbing construction is completed. Stage 5 is expected to conclude construction in 2032. The need to extend data recovery will continue to be beyond the control of the project management and delivery team. Contributing factors include the following:

- Changing project footprints that have contributed to delays in data recovery
- An abundance of recovered artifacts
- A nationwide shortage of Secretary of Interior-qualified archaeologists

Continued data recovery and subsurface testing within the project footprint will reduce the risk of inadvertent discoveries, although this risk cannot be eliminated completely.

9.2.10 Insufficient Funding in Future Years

Not identifying funding in the 2028 STIP could result in construction delays which, in turn, could result in cost increases due to inflation, changes in ICAP, and other new risks being introduced. The Department did not identify funding to the project in the previous STIP, FFY 2025-2027, because of the funding needs of competing projects in the State. The project was also pursuing grant funds in 2023 to supplement the project and keep the delivery schedule as identified in the 2023 CSRA. This effort was unsuccessful, and the schedule needed to be extended. The project conducted another

CSRA to evaluate the impacts. If the project were to be omitted from the 2028 STIP there would be cost and schedule delays to the project.

9.3 Previous Project Cost and Schedule Risks

As the project advances some of the risks associated with early project development and design have been resolved. The following risks have been mitigated and no longer require mitigation measures or response strategies:

- Temporary Water Use Authorization: The permits needed to temporarily divert water across the project have been obtained.
- Land Swap Agreement: The land swap has been completed
- Water table elevation: The vertical alignment has been revised to avoid impacts to/from the elevation of the water table.
- ROW Acquisitions: The ROW needed for the project has been obtained. Temporary Construction Permits (TCP's) may still be needed for the project, but these are considered minimal to no risk to the project and do not require a mitigation plan and/or response strategy.
- Juneau Creek Bridge: The construction contract has been funded and awarded. The contractor has begun construction.

Material quantities for a project this size would ordinarily be a project risk as the need to procure and transport materials on a project can significantly add to cost, increase disruptions to the traveling public, add wear on haul routes, and impact schedule. Material balancing has been a priority for this project, and stages have been adjusted to realize mass balance opportunities. The schedule of excavation on Stages 1B and 5 were adjusted and the material generated on site has been used to complete the construction of preliminary embankments on Stages 3 and 4. Utilizing materials generated on site continues to be an opportunity to save funds and maintain schedule for this project. Currently, as designed, the project does not anticipate needing any material from outside the project limits.

Construction has inherent risks associated with unknown and/or unanticipated conditions. Every effort is being made to identify risks as early as possible so that measures to mitigate or avoid project delays can be developed or unexpected costs can be avoided. The list below includes previously identified, but not quantified, project risks that could impact cost and schedule. The following list has been updated for this AFPU to include risk identification and mitigation strategies:

- Utility Relocation Delays: New utility owner in the project area
 - Risk: Schedule, this risk continues to be low, as utilities relocations are a part of only Stage 1B and do not apply to other stages.
 - Mitigation: There is sufficient time for the new owner to become familiar with the project without delaying the project

- Construction:
 - Risk: Cost and schedule.
 - Mitigation: See Sections 9.2.1, 9.2.2, 9.2.7, 9.2.8, and 9.2.9
- Archaeological data recovery:
 - Risk: Cost and schedule.
 - Mitigation: See Sections 9.2.2, 9.2.3, and 9.2.9
- Environmental permitting:
 - Risk: Cost and schedule.
 - Mitigation: The project will continue to be proactive in identifying permits early on to avoid impacts to schedule and cost.
- Weather (winter shutdown):
 - Risk: Schedule.
 - Mitigation: This is outside the control of the project delivery team. Paving and other activities are weather- and temperature-dependent.
- Impacts to the traveling public:
 - Risk: Project support and schedule.
 - Mitigation: See Section 9.2.1.
 - Mitigation: The contractor is responsible for the development of traffic control plans that reduce delays to the traveling public and consider holidays, weekends, and other events that are expected to result in higher traffic volumes on the roadway.
- Delayed decision making:
 - Risk: Cost and schedule.
 - Mitigation: DOT&PF has identified a team to work on this project to make sure the right decisions are made in a timely manner. It is also imperative that the NEPA document and the mitigation outlined in the NEPA document are thoroughly identified and implemented with as few changes as possible.
- Change in project delivery method:
 - Risk: Cost and schedule.
 - Mitigation: See Section 9.2.8.
 - Mitigation: Currently, CMGC is being used to deliver the project. Design-bid-build has been used on other stages. The Department is utilizing the project delivery method that best suits each stage of the project to improve the delivery schedule and reduce construction costs as much as possible.

- Contractor access and staging:
 - Risk: Schedule and cost.
 - Mitigation: See Section 9.2.1
 - Mitigation: The Department has partnered with the contractor to identify several locations for staging and access to the project. Examples include Tract C as well as the development of two pioneer roads. This risk has been minimized.
- Delays in material procurement:
 - Risk: Schedule and cost.
 - Mitigation: Post-pandemic delays continue to impact material availability, delivery times, and cost. This is outside the control of the project delivery team. The contractor is identifying materials that may have long lead times and procuring these materials well in advance of when they are expected to be required on the project.
 - Mitigation / opportunity: Cut material in Stages 1B and 5 have been tested and meet DOT&PF specifications and are being used on site as fill material.
- Market conditions:
 - Risk: Schedule and cost.
 - Mitigation: Buy America and post-pandemic material shortages continue to elevate prices. Oil and gas prices have not returned to pre-pandemic levels.
- Contractor non-performance:
 - Risk: Cost, schedule, and quality.
 - Mitigation: In the earlier stages of the project, there was an issue with non-performance. The contract with that CMGC contractor was terminated. To date, the current CMGC and consultant contractors have been performing to expectations. Should non-performance be an issue in the future, the Department will terminate contracts and reissue them. This is not considered a high risk at this time.
- Political/Policy changes:
 - Risk: Cost, schedule, and quality.
 - Mitigation: 2024 is an election year and therefore this risk is currently higher than in other years. The project continues to have significant impacts on the overall Surface Highway Transportation Program for the State of Alaska, causing re-consideration for cost savings in the project as well as schedule impacts associated with deferring mitigation or entire stages of work.
- Stakeholder and other agency involvement:
 - Risk: Schedule.
 - Mitigation: See Section 9.2.6
 - Mitigation: The risk at this time is considered lower than when the project was in its earlier stages. Well-developed working relationships have been established through

consistence and regularly scheduled communication, resulting in low risk associated with stakeholder and agency involvement.

- Cash flow restrictions:
 - Risk: Schedule and cost.
 - Mitigation: See Section 9.2.10. This risk would be mostly mitigated by establishing full funding for the project in the 2024–2027 STIP. If funding is not obligated and/or non-traditional funding is not obtained it would affect both the total cost and overall schedule.

10.0 Annual Update Cycle

Financial Plans must be updated annually (23 USC 106(h)). The submission dates and reporting periods (data “as of” dates) are proposed in the IFP. The annual update should be submitted to FHWA no later than 90 days after the end of each reporting period. For major projects with phasing plans (such as proposed for this project), annual updates should be submitted each year until the entire project is complete.

The effective date for annual updates will be June 30 of each year. Data included in the annual report will be from June 30 of the prior year to June 30 of the current year. Annual updates will be submitted to FHWA for approval on or before September 30 (within 90 days) of the effective date.

This AFPU reflects the changes that have occurred since the submittal of the 2023 AFPU. It includes the funding expenditures as of June 30, 2024, and the state’s plan to fund and monitor the project. Subsequent AFPUs will occur annually and reflect changes that have occurred within the standard reporting period.

11.0 Summary of Cost Changes Since Last Year’s Financial Plan

The project was not selected to receive grant funding which could have supplemented the project at a time when balancing project funding needs across the state continues to be challenging. An update to the 2023 CSRA risk register was conducted in April of 2024. The 2024 CSRA prioritized risks that had a value of \$3 million or more and included mitigation strategies in this AFPU. Utilizing a Monte Carlo simulation, it was determined that the total project cost ranges from \$909.4 to \$1,058 million (10th to 90th percentile) in YOE. This is an increase of \$ 104.9 to \$204.7 million (10th to 90th percentile) over the YOE estimate of the 2023 CSRA. Stage 2, construction of the JCB, was awarded to the CMGC contractor for a total cost of \$169.7 million, this was \$1.7 million over the 2023 CSRA cost estimate of \$168 million. Having this contract awarded reduces risk to the project cost as steel continues to be a high price commodity. The delay of funding will continue to drive the schedule and increase overall project cost.

12.0 Cost and Funding Trends Since Initial Financial Plan

Economic factors resulting from the pandemic are likely still impacting the project budget. Buy America provisions continue to keep steel and other roadside hardware prices high. Inflation rates have recently returned to the traditional expected rate of approximately 3.3% from the 2023 rate of 6.0%. ICAP rates have continued to decrease since the IFP and present a cost savings to the project. ICAP was 7.18% in 2023 and the current rate as of July 1, 2024, is 5.17%, which is 0.45% lower than the 5-year average. As construction and design advance and knowledge of conditions is gained, it is anticipated that costs will continue to be refined. Balancing the cost of transportation projects with available funding continues to be a challenge across the state. Non-Traditional funding is being sought to supplement traditional funding, but to date grant applications have been unsuccessful. The 2024-2027 STIP indicates that the remaining funds needed to construct the project will be post 2027. Costs have increased and previously anticipated funding was not programmed to this project. The non-programming of funding has pushed out the schedule and further increased costs.

13.0 Summary of Schedule Changes Since Last Year's Financial Plan

The project schedule continues to be impacted by funding availability. A second CSRA was conducted in April 2024 to reestablish the schedule when the project was not selected to receive grant funding that was needed to continue funding construction. Table 3 includes schedule updates before and after the designation as a Major Project in 2022.

Table 3 in Section 0 shows the project schedule changes since the project was designated a major project in 2022. Table 3 in Section 3 shows the current and previous planned schedules by stage for the project. The 2024 CSRA determined that the project year of completion ranged from 5/2032 to 01/2040 (10th to 90th percentile). This is an increase of 72 to 139 month (10th to 90th percentile) over the estimated completion dates identified in the 2023 CSRA.

Archeological data recovery, and the continued risk of inadvertent discoveries, continues to have schedule implications. The project added Stage 7 and included features, such as trailheads and parking lots, that are not critical to the roadway opening to the public so that the facility opening is delayed as little as possible. The JCB is expected completion has been extended from 2027 to 2028. The date that the project will open to the public has been extended from 2029 to 2034.

14.0 Schedule Trends Since Initial Financial Plan

The schedule has been updated and includes adjustments to the initiation and duration of some Stages; see Table 3 includes schedule updates before and after the designation as a Major Project in 2022.

Table 33 in Section 3.0. The IFP (2023) included six construction stages and expected completion in 2027. The 2023 CSRA updated the completion date based on risks and opportunities and had a completion date ranging from 10/2027 to 5/2028. Archaeological data recovery and funding continue to impact the schedule. The risk of additional scope being added and/or additional mitigation being requested as the schedule is extended due to adjacent development continues to be a risk to the project schedule. The 2024 CSRA and this AFPU includes seven construction stages and an estimated completion date ranging from 12/2032 to 4/17/2037. The date that the project is expected to be completed and open to the public, with Stage 7 being constructed after opening, has been extended from 2029 to 2034.