

D R A F T

MEMORANDUM

Date: September 30, 2003

To: Miriam Tanaka, P.E., Project Manager DOT&PF

From: Mark Dalton, Project Team Leader, HDR Alaska, Inc.

RE: Recommendations from the *Evaluation Criteria and Alternatives Analysis* for the Sterling Highway Supplemental Draft Environmental Impact Statement Process

INTRODUCTION

The Alaska Department of Transportation and Public Facilities (DOT&PF) has identified 10 preliminary build alternatives to address transportation improvement needs from milepost (MP) 45 to 60¹ on the Sterling Highway. These alternative concepts are based on technical studies, engineering analysis, public and agency input, and the objectives in the purpose and need statement for the project. The *Evaluation Criteria and Alternatives Analysis* document (HDR 2003) contains an analysis of the 10 build alternatives and the No Build Alternative, and establishes a basis for determining which alternatives are not reasonable and therefore should be eliminated from further evaluation.

This recommendations memorandum presents the evaluation of the 10 preliminary build alternatives. The build alternatives not recommended for elimination, along with the No Build Alternative, will be assessed further in the Supplemental Draft Environmental Impact Statement (SDEIS). The requirement to comply with NEPA results from the anticipated federal funding for the project.

BACKGROUND

Built in the mid-1930s, the Sterling Highway is the only road connecting Southcentral Alaska and the western portion of the Kenai Peninsula. Constrained by the rugged mountain topography of the area, the road was built in the narrow Kenai River valley; in many places, the highway is immediately alongside the river. Since its construction, the communities and services connected by the highway have grown. The number and size of trucks and tractor-trailer rigs hauling freight to these communities have also increased, as has the number of tourists, many driving recreational vehicles.

The MP 45 to 60 section of the Sterling Highway under investigation by the DOT&PF is overwhelmed by the amount of traffic that travels over it; the highway operates at a current level of service (LOS) of E in this area during the summer. The Sterling Highway was designated by Congress as a National Highway System (NHS) route and by

¹ While the project limits are referred to as MP 45 to 60, the actual project covers proposed improvements in the corridor from MP 45 to the highway's intersection with Skilak Lake Road at approximately MP 58.

DOT&PF as a State rural principal arterial. This segment of the highway needs to be expanded and upgraded to provide consistent system linkage with other parts of the NHS, which requires an effective flow of through-traffic. Improving the flow of through-traffic is a priority for proper function of this transportation system. The portion of the Sterling Highway from MP 45 to 60 also needs upgrades and improvements to meet current design standards for rural principal arterials.

No Easy Solution

There is no easy way to improve this section of road. All of the alternatives considered, including taking no action, would have impacts. As mentioned above, the road alignment traverses a rugged mountainous area, and provides access to one of the most popular recreation areas in the state. Between MP 45 to 60, the road passes through the Chugach National Forest, the community of Cooper Landing, the Kenai National Wildlife Refuge, and provides access to major trails and campgrounds such as the Resurrection Pass National Recreation Trail, the Russian Lakes Trail, the Cooper Creek Campgrounds, and the Russian River Campground. The Sterling Highway is also the only road access to the world-famous fishing areas of the Kenai and Russian Rivers, including the Kenai Lake, Sportsman's Landing, and Jim's Landing boat launches. To the north of the road, within the Chugach National Forest, lie fish and wildlife conservation lands, and further removed is the backcountry management area. South of the road is the Chugach National Forest fish, wildlife, and recreation management area. Farther south, and along the Russian River is the Kenai Peninsula brown bear core area, a special wildlife management area. In addition, the area between MP 45 to 60 is rich in historic and prehistoric properties. Economic impacts to current Cooper Landing residents and businesses and the lower Kenai Peninsula are also important to consider.

Alternatives Development and Preliminary Evaluation

The alternatives for improving MP 45 to 60 of the Sterling Highway were developed through agency and public scoping, technical studies, and engineering analysis that included highway design requirements. The *Evaluation Criteria and Alternatives Analysis* document (HDR 2003) was developed to provide a detailed comparison of 10 preliminary alternatives: Kenai River Walls Alternative, Kenai River Alternative, Cooper Creek Alternative, Russian River Alternative, the "G" Alternatives (two), the Juneau Creek "F" Alternatives (two), and the Juneau Creek Alternatives (two), along with the No Build Alternative. The document contains the project team's evaluation of alternatives based on criteria of purpose and need, physical environment, social environment, transportation criteria, as well as cost factors. The evaluation criteria are based on NEPA impact categories. Table 1 of the *Evaluation Criteria and Alternatives Analysis* document lists each criterion and provides the relevant information for each alternative. Additional factors and details specific to individual alignments are also included.

Agency and Public Input

The *Evaluation Criteria and Alternatives Analysis* document was made available for agency and public comment through early July 2003. From that review, 104 comments (letters, email, comment forms) were received (see Summary of Public Comments May

2003 – June 2003.). Concerns have been voiced about harm to the Kenai and Russian Rivers from roadway and bridge construction in or around these waters and from potential spills of hazardous materials (e.g., gasoline, diesel, chemicals) from roadway accidents on sections of the existing highway in close proximity to the Kenai River. Other concerns have been voiced about the potential impacts to wildlife and recreation and wilderness designated lands. Development of new road alignment in previously undisturbed areas has the potential to fragment wildlife habitat, with the brown bear habitat being of special concern, and increase vehicle/wildlife collisions.

IDENTIFICATION OF REASONABLE ALTERNATIVES

The information provided in the *Evaluation Criteria and Alternatives Analysis* document and public and agency comments provide the basis for selecting the reasonable alternatives to be considered further in the Supplemental Draft Environmental Impact Statement (SDEIS) for the Sterling Highway MP 45 to 60. This recommendations memorandum relies on all of the preliminary technical information contained in various technical reports prepared for this project, which are listed in the references section (Section 6.0) of the *Evaluation Criteria and Alternatives Analysis*. The impacts were carefully weighed and the alternatives were evaluated for “reasonableness.” NEPA considers reasonable those alternatives that are practical or feasible from a technical and economic standpoint and using common sense.² Thus, reasonable means those alternatives that, when considered relative to each of the evaluation criteria, are worthy of further evaluation in the SDEIS being prepared for this project. Reasonable does not mean to imply that any one alternative is more preferable than any other. That determination will be made in the SDEIS, and will entail a more detailed evaluation of the reasonable alternatives brought forward from this selection process.

The 10 build alternatives and the No Build Alternative were screened using the information presented in the *Evaluation Criteria and Alternatives Analysis* document, taking into consideration all public and agency comments received to date, to identify which alternatives are reasonable and which are not. Each alternative was evaluated for: (1) consistency with the purpose and need for the project, (2) potential physical and social environmental effects, (3) transportation related effects,³ and (4) life cycle costs.

Evaluation Criteria

This section briefly summarizes the criteria evaluated in detail in the *Evaluation Criteria and Alternatives Analysis* document as an aid to the reader. For more detail, see the individual section in that document.

Purpose and Need Criterion

Build alternatives are evaluated on specific measures to help determine their consistency with the project purpose and need. The project purpose and need helps to establish which build alternatives should be studied further in the environmental document while not

² Council on Environmental Quality: 40 Most Asked Questions Concerning CEQ’s NEPA Regulations; 46 Fed. Reg. 18026, as amended, 51 Fed. Reg. 15618.

³ The traffic portion of the technical analysis used forecasts for the design year 2025.

proscribing a specific course of action. The purpose and need for the Sterling Highway MP 45 to 60 Project is as follows:

The DOT&PF has identified a need to improve the Sterling Highway in the Cooper Landing and Kenai River area (MP 45 to 60) to “rural principal arterial” standards. The purpose is to serve through-traffic, local community traffic, and traffic bound for recreation destinations in the area efficiently and safely, now and in the future. The DOT&PF recognizes the need to serve the traveling public while doing its part to protect the Kenai River corridor.

Specifically, the proposed project improvements would address the following three interrelated problems:

Capacity and Demand. The Sterling Highway between MP 45 to 60 should operate at LOS C or better in the design year 2025.

Highway Characteristics. It is the goal of DOT&PF to bring Alaska’s segments of the NHS up to current design standards; for the Sterling Highway, this would be the design standards for rural principal arterials.

System Linkage. The NHS serves as the essential connector between the population centers, economic centers, military bases, and intermodal centers (such as airports, shipping ports, and ferry terminals) of the state. Consistent system linkage requires an effective flow of through-traffic. Through-traffic flow can be enhanced by upgrades that would meet current highway standards. Each alternative is evaluated on how well it contributes to improved traffic flow and, therefore, system linkage (consistency with the intent of the NHS) on a regional scale.

Physical and Social Environmental Criteria

Natural Resources Impacts from Construction. These were determined in terms of impacts on the Kenai River (including drainages and tributaries), wetlands, fish and wildlife habitat (including anadromous streams), and vegetation.

Natural Resources Impacts from Operation. This factor addresses maintenance and long-term use of the project facilities and considers the effects of highway storm water runoff and the physical presence of on-land and in-water structures with respect to fish and wildlife habitat. The types of impacts assessed include migration interruption, displacement, and increased human access and disturbance. Because of the vulnerability of the project area and its resources to vehicular accidents and releases of hazardous materials, the potential for toxic spills is also considered as a criterion.

Historic and Archaeological Properties. Impacts to historic properties are based on the potential effect of the alternative on such resources identified during preliminary literature reviews, field surveys, and agency coordination. The numbers of known

historic properties adjacent to or potentially directly affected by an alternative were identified.

Recreational, Public Park, and Wildlife and Waterfowl Refuge Properties. Impacts to publicly owned recreational, public park, and wildlife and waterfowl refuge properties were assumed if an alignment crosses such properties.

Impacts to Land Use and Community Facilities, and Local, Regional, Statewide, and Federal Plans. Other factors, such as impacts to existing land uses; visual quality; community facilities; and local, regional, statewide, and federal plans, were also considered. The criteria used in measuring these impacts included number of residential and business relocations, community facilities within alignment right-of-way, and consistency with local regional, statewide, and federal plans.

Economics. The impacts to the local economy, both in Cooper Landing and on the Kenai Peninsula, were evaluated based on the results from the *Origin-destination Survey, Sterling Highway Project MP 45 to 60* (DOT&PF, 2001).

Subsistence. Impacts were considered in terms of whether an alternative would affect known areas currently used for subsistence, based on feedback received during recent project scoping efforts.

Transportation Criteria

The Purpose and Need Criterion (above) details the transportation criteria relating to capacity and demand, highway characteristics, and system linkage. Additional measures include:

Vehicular Traffic Impacts During Construction and Operation: These are impacts during construction to vehicle travel in the vicinity of the alternatives. Impacts to vehicular traffic are based on existing average daily traffic along the affected portion of the Sterling Highway.

Freight Movement: Each alternative was evaluated based on factors critical to the movement of freight on the Kenai Peninsula. Highway characteristics, travel speed, and the mix of freight compared to recreational and local traffic were considered.

Life Cycle Costs

These costs represent the total expected expenditures over the 20-year design life of the project. These costs include design, construction, operation and maintenance costs in 2005 dollars.

Other Factors

Engineering Feasibility: Certain alternatives depend on the construction of improvements that may require work in areas that are geotechnically unstable and pose a risk to the surrounding area should they fail. In particular, the feasibility of constructing walls immediately adjacent to the Kenai River, while also maintaining use of the existing highway during their construction, may be infeasible. The requirement to dispose of an unusually large amount of excess material or the long-term risk of failure posed by a structure is considered. The extent to which an alternative involves engineering measures in challenging conditions or locations was considered in the evaluation.

EVALUATION SUMMARY

This section presents a summary of the findings presented in the *Evaluation Criteria and Alternatives Analysis* that support the determination of whether a build alternative is reasonable or not. A short description and a narrative of the evaluation are given for each alternative, followed by a discussion of the reasonableness of the alternative.

No Build Alternative

The No Build Alternative assumes that no construction takes place. While the existing bridges may be replaced as part of the normal bridge replacement program, such replacement is not reasonably foreseeable at this time. In accordance with NEPA and for comparative purposes, the No Build Alternative will be brought forward for evaluation in the SDEIS.

Kenai River Walls Alternative

The entire length of this alternative is adjacent to the Kenai River within the existing highway corridor. The alternative involves the construction of engineered walls up to 180 feet high to stabilize the hillside.

The alternative would operate at LOS D or worse along 68% of its length in the design year 2025. The new roadway would meet current design standards and would provide consistency with the National Highway System designation for the Sterling Highway.

The Kenai River Walls Alternative would affect natural resources as a result of widening the roadway, building retaining walls, and reconstructing existing bridges on the Kenai River and Cooper Creek. Highway traffic would remain largely within the existing highway footprint. This alternative would substantially impact the Cooper Creek South Campground by shifting the highway south of the existing alignment onto the existing campground. Up to half of the existing number of campsites could be lost from this alternative. The alternative would potentially require acquisition of right of way from 46 private properties in the area and require the relocation of 7 residences. There are 19 known historic or archaeological properties adjacent to or within the proposed construction right-of-way. The high walls would be visible from many areas on the north side of the Kenai River valley as well as from the Kenai River itself. Changed or limited access to local businesses resulting from eliminating driveways or parking area access, coupled with increasing traffic, may deter travelers from stopping for goods and services. Restricting access to existing properties would also limit the movement of local traffic.

The life cycle cost of the Kenai River Walls Alternative is estimated to be \$104 million. Preliminary technical investigations have given rise to substantial engineering feasibility concerns, including the risk of failure of the high walls. Such failure could threaten the Kenai River and the traveling public. Other engineering challenges are associated with the potentially unstable materials in areas where there would be large cuts and major wall construction. Maintaining use of the existing highway during construction poses a substantial challenge. Also, there is a lack of material disposal sites for the approximately 1.5 million cubic yards of excess material that would result from excavation for this alternative.

The Kenai River Walls Alternative is considered unreasonable because of the unusual engineering challenges, high life cycle costs, potential impacts to the Kenai River and associated natural resources and recreational uses, impacts to cultural resources and private properties, and its relatively poor level of service for traffic in the design year 2025. This alternative is not recommended for further analysis in the SDEIS.

Kenai River Alternative

This alternative is adjacent to the Kenai River for its entire length. It would require four new bridges over the Kenai River and one new bridge over Juneau Creek near its mouth. Approximately 2 miles of new roadway would be constructed.

The new roadway would operate at LOS D or worse along 68% of its length in the design year 2025. The new roadway would meet current design standards and would provide consistency with the National Highway System designation.

New bridges would affect aquatic habitats along the Kenai River and Juneau Creek as a result of instream construction, alteration of flow around bridge piers, shadowing from bridge structure, and increased risk of spills into these waters. Undeveloped habitats and wildlife travel corridors along the 2 miles of new roadway would be affected, particularly the lower Juneau Creek delta area that ADF&G has identified as a Kenai Peninsula brown bear concentration area.

The alternative would potentially require the acquisition of right of way from 47 private properties in the area and require 7 residential relocations. There are 21 known historic or archaeological properties adjacent to or within proposed construction right-of-way. The visual quality of the Kenai River valley, particularly those floating the river, would be affected due to the addition of four new bridges across the Kenai River. Changed or limited access to local businesses resulting from eliminating driveways or parking area access, coupled with increasing traffic, may deter travelers from stopping for goods and services in Cooper Landing.

The life cycle cost of the Kenai River Alternative is estimated to be \$67 million.

The Kenai River Alternative is considered unreasonable because of the impacts associated with the new bridges over the Kenai River and Juneau Creek, impacts to

cultural and private properties, impacts to the lower Juneau Creek delta, and its relatively poor level of service for traffic in the design year 2025. This alternative is not recommended for further analysis in the SDEIS.

Cooper Creek Alternative

The Cooper Creek Alternative improves 10.3 miles of the existing highway and stays predominately within the “developed” footprint of the community of Cooper Landing. This alternative includes 3.5 miles of new alignment.

The new roadway would operate at LOS D along 47% of its length. The Cooper Creek Alternative would meet current design standards and would provide consistency with the National Highway System designation for the Sterling Highway.

The majority of this alternative is located within the developed area of Cooper Landing or south of the existing highway corridor. In undeveloped areas, however, previously unaffected wildlife habitats would be affected by the presence of the new transportation corridor. This alternative would require construction of a new bridge crossing of Cooper Creek. The new bridge could affect wildlife travel corridors along Cooper Creek canyon and cause wildlife displacement, habitat fragmentation, and migration route disruption.

This alternative would potentially require the acquisition of right of way from 39 private properties, including the required relocation of 6 residences. There are 16 known historic or archaeological properties adjacent to or within proposed construction right-of-way. The visual quality of the Kenai River valley, particularly from the Kenai Princess Lodge and Bean Creek Road area, would be affected due to the new roadway and large bridge crossing the Cooper Creek drainage. Economic impacts may be felt in the community due to the removal of through-traffic from a segment of the existing road. This alternative would indirectly affect the Cooper Creek South Campground by traversing an area that currently serves as a forested hillside backdrop.

The life cycle cost of the Cooper Creek Alternative is estimated to be \$85 million. The alternative poses engineering challenges that result from potentially unstable materials along the Cooper Creek valley where there would be large cuts and major bridge reconstruction.

The Cooper Creek Alternative is recommended for study in the SDEIS because it provides improved LOS of C or better over 53% of its length and would be consistent with the National Highway System designation. Although this alternative has a relatively low LOS, would affect a high number of private properties, and would be located in shadow much of the year it is recommended for further study in the SDEIS because it maximizes use of the existing highway and the existing highway footprint.

Russian River Alternative

The Russian River Alternative includes 8 miles of new alignment, and requires the construction of one new bridge over the Kenai River, one new bridge over the Russian

River, and one new bridge over Cooper Creek. There has been minimal agency or public support for the Russian River Alternative.

The new roadway would operate at LOS D or worse along 41% of its length in the design year 2025. The Russian River Alternative would meet current design standards and would provide consistency with the National Highway System designation.

Impacts to natural resources would occur as a result of constructing the new alignment in previously unaffected wildlife habitats. Adverse impacts would also occur from reconstruction of the Cooper Landing Bridge and building a new bridge across each of the Kenai River, Russian River, and Cooper Creek. This alternative would affect both the Cooper Creek and Russian River campgrounds: it would affect the Cooper Creek South Campground by traversing an area that currently serves as a forested hillside backdrop, and it would require the relocation of a portion of the Russian River Campground access road and would affect other developed facilities such as interpretive facilities along the access road. The alternative would traverse an area that currently serves as a forested hillside backdrop for the Russian River Campground. The new alignment would also cross the Russian Lakes Trail and the Russian River, which is a heavily used recreational fishing area.

This alternative would potentially require acquisition of right of way from 39 private properties in the area and require 6 residential relocations. The Russian River Alternative would have extensive impacts to historic properties, as it would traverse and adversely impact a rich archaeological resource area. The Russian River Alternative would substantially impact the Squilantnu Archeological District, particularly in the area from the Russian River crossing west to its intersection with the existing highway. The visual quality of the Kenai River valley, particularly from the Kenai Princess Lodge, the Bean Creek Road area, the Resurrection Pass National Recreation Trail, and the Sportsman's Landing area, would be affected due to the new roadway and large bridge crossings of Cooper Creek and the Russian River. Adverse economic effects may be felt in the community due to the removal of through-traffic from approximately seven miles of the existing road.

The life cycle cost of the Russian River Alternative is estimated to be \$109 million. This alternative poses engineering challenges that result from potentially unstable materials in the Cooper Creek and Russian River drainages where there would be large cuts and major bridge construction.

The Russian River Alternative is considered unreasonable because of the high life cycle costs; potential impacts to the Kenai River, Russian River, and Cooper Creek, their associated natural resources, and recreational uses particularly the Russian River Campground and Sportsman's Landing area; and substantial impacts to cultural resources, particularly the Squilantnu District. Notably, this alternative lacks any public and agency support. This alternative is not recommended for further analysis in the SDEIS.

“G” South Alternative and “G” North Alternative

The “G” South and “G” North alternatives would include 6 miles of new alignment north of the Kenai River. These alternatives require the construction of new bridges across the Kenai River, Juneau Creek, and Bean Creek.

The new roadways would operate at LOS D or worse along 56% (“G” South) and 61% (“G” North) of their length in the design year 2025. They would meet current design standards and would provide consistency with the National Highway System designation.

New bridges crossing the Kenai River, Juneau Creek, and Bean Creek would affect aquatic habitats as a result of instream construction, alteration of flow around bridge piers, shadowing from bridge structure, and increased risk of spills into these waters. Undeveloped habitats and wildlife travel corridors along the 6 miles of new alignment would also be affected, particularly the lower Juneau Creek delta area that ADF&G has identified as a Kenai Peninsula brown bear concentration area. In addition, the “G” alternatives would adversely impact the Bean Creek Trail. Notably, the G alternatives avoid crossing the Resurrection Pass National Recreation Trail and avoid impacting Wilderness lands in the Kenai National Wildlife Refuge.

These alternatives would potentially require acquisition of right of way from four private properties, but there would not be any residential relocations. There are 17 known historic or archaeological properties adjacent to or within proposed construction right-of-way. The new bridges across the Kenai River and Juneau Creek would affect the visual quality from the south side of the Kenai River and from the Bean Creek Road area. Adverse economic effects may be felt in the community due to the removal of through-traffic from approximately six miles of the existing road.

The estimated life cycle cost of each of these alternatives is \$92 million. Both alternatives pose engineering challenges that result from potentially unstable materials along the east side of the Juneau Creek Valley in areas where there would be large cuts and major bridge construction.

The “G” South Alternative and “G” North Alternative both avoid the Resurrection Pass National Recreation Trail and Wilderness designated lands in the Kenai National Wildlife. While these alternatives have relatively high life cycle costs, relatively low level of service for traffic in the design year, and involve new crossings of the Kenai River, Juneau Creek, and Bean Creek, their avoidance of the Resurrection Pass National Recreation Trail and Wilderness is a compelling reason to consider further study of these alternatives. In this case, the “G” South Alternative is recommended for further study in the SDEIS because it has a better level of service for traffic in the design year (56%) than “G” North (61%).

Juneau Creek “F” Wilderness Alternative

The Juneau Creek “F” Wilderness Alternative provides 9 miles of new roadway alignment north of the existing alignment. This alternative includes one new bridge: a crossing of Juneau Creek.

The new roadway would operate at LOS C or better for 100% of its length in the design year 2025 (it is not projected to operate at LOS D for any segment). The new roadway would meet current design standards and would provide consistency with the National Highway System designation for the Sterling Highway.

Impacts to natural resources would occur as a result of constructing the new alignment in previously unaffected wildlife habitats, including wetlands and wildlife travel corridors (Kenai Peninsula brown bear and other species). Recreation impacts would occur where the new alignment crosses existing hiking trails, including the Resurrection Pass National Recreation (which is crossed by the bridge over Juneau Creek) and Bean Creek Trails. This alternative would traverse Wilderness designated lands in the Kenai National Wildlife Refuge.

The alternative would potentially require the acquisition of right of way from four private properties, but it would not require any residential relocations. There are 7 known historic or archaeological properties adjacent to or within proposed construction right-of-way. The new bridge across Juneau Creek would affect the visual quality from the south side of the Kenai River and from the Juneau Creek Falls area. Adverse economic effects may be felt in the community due to the removal of through-traffic from approximately eleven miles of the existing road.

The Juneau Creek “F” Wilderness Alternative has a life cycle cost of \$70 million. The alternative poses engineering challenges that result from potentially unstable materials along the Juneau Creek Valley where there would be major bridge construction.

The Juneau Creek “F” Wilderness Alternative meets the purpose and need for LOS C over the entire alignment, is consistent with the National Highway System designation, meets current design standards, avoids direct impact to the Resurrection Pass National Recreation Trail, and avoids impacts to the Sportsman’s Landing small boat launch and Russian River Ferry. This alternative is recommended for further study in the SDEIS.

Juneau Creek Wilderness Alternative

The Juneau Creek Wilderness Alternative includes 10 miles of new roadway alignment north of the existing alignment. The alternative includes one new bridge across Juneau Creek.

The new roadway would operate at LOS D or worse over 28% of its length. The Juneau Creek Wilderness Alternative would meet current design standards and would provide consistency with the National Highway System designation for the Sterling Highway.

Impacts to natural resources would occur as a result of constructing the new alignment in previously unaffected wildlife habitats, including wetlands and wildlife travel corridors (Kenai Peninsula brown bear and other species). Recreation impacts would occur where the alternative crosses existing hiking trails, including the Resurrection Pass National Recreation Trail, and an area specifically withdrawn for recreation purposes

encompassing the area around Juneau Creek Falls. This alternative would traverse Wilderness designated lands in the Kenai National Wildlife Refuge.

The alternative would potentially require acquisition of right of way from four private properties in the area, but it would not require any residential relocations. There are 6 known historic or archaeological properties adjacent to or within proposed construction right-of-way. The Juneau Creek Alternative would affect the visual quality from the Juneau Creek Falls area. Adverse economic effects may be felt in the community due to the removal of through-traffic from approximately eleven miles of the existing road.

The life cycle cost of the Juneau Creek Wilderness Alternative is estimated to be \$52 million.

The Juneau Creek Wilderness Alternative provides improved LOS of C or better over 72% of its length and meets National Highway System design standards. However, it crosses a recreation withdrawal around the Juneau Creek Falls, crosses the intersection of the Resurrection Pass and Bean Creek trails, and locates the new roadway highest in the Juneau Creek Valley, an area that is relatively undisturbed by settlement or logging disturbances that can be found further south. In addition, it operates at a substantially lower level of service than the Juneau Creek “F” Alternative that is largely located on the same alignment. This alternative is not recommended for further study in the SDEIS.

Juneau Creek “F” and Juneau Creek Forest Alternatives

The Juneau Creek “F” and Juneau Creek Forest Alternatives include 9 and 10 miles, respectively, of new roadway alignment north of the existing alignment. Agency and public input has shown minimal support for the forest alternatives due to substantial concerns regarding the intersection with Sportsman’s Landing.

Both Juneau Creek “F” and Juneau Creek Forest alternatives would operate at LOS D or worse along 29% and 40% of their length, respectively, in the design year 2025. Of note, neither alternative would meet current design standards for grade for approximately two and a half miles of their alignment.

The proposed intersection of the alternative alignments with the existing highway (at Sportsman’s Landing) would have adverse impacts to the Kenai River, the Kenai National Wildlife Refuge, and recreational activities. Configuration of the intersection of these alternatives with the existing road would result in unavoidable impacts to the Sportsman’s Landing boat launch and Russian River Ferry. Adverse impacts to natural resources would occur as a result of constructing the new alignment in previously unaffected wildlife habitats, including wetlands and wildlife travel corridors (Kenai Peninsula brown bear and other species). Recreation impacts would occur where the alternatives cross existing hiking trails, including the Resurrection Pass National Recreation and Bean Creek Trails.

The Juneau Creek “F” and Juneau Creek Forest alternatives would potentially each require acquisition of right of way from four private parcels, but would not require any

residential property relocations. There are 6 and 5 known historic or archaeological properties adjacent to or within proposed construction right-of-way, respectively. The Juneau Creek “F” and Juneau Creek alternatives would affect the visual quality from the Juneau Creek Falls area. Adverse economic effects may be felt in the community due to the removal of through-traffic from approximately ten miles of the existing road.

The Juneau Creek “F” Forest Alternative would have a life cycle cost of \$70 million. The alternative poses engineering challenges that result from potentially unstable materials along the Juneau Creek Valley where there would be major bridge construction. The Juneau Creek Forest Alternative would have a life cycle cost of \$52 million.

The Forest Alternatives for Juneau Creek “F” and Juneau Creek are considered unreasonable because of the impacts at the intersection near Sportsman’s Landing and their inability to meet current design standards for grade. While the Forest alternatives avoid Wilderness, the “G” South Alternative provides a north side Wilderness avoidance alternative. In addition, these alternatives have received little agency and public support, largely because of the impacts to Sportsman’s Landing. These alternatives are not recommended for further analysis in the SDEIS.

RECOMMENDED ALTERNATIVES

The alternatives recommended for further consideration in the SDEIS are:

- No Build Alternative
- Cooper Creek Alternative
- “G” South Alternative
- Juneau Creek “F” Wilderness Alternative

Further and more detailed analysis of these alternatives will occur in the SDEIS.