

CHAPTER 5.0

ALTERNATIVES ANALYSIS

5.1 INTRODUCTION

The purpose of the alternatives analysis in an EIR is to describe a range of reasonable alternatives to a project and evaluate the comparative merits of the alternatives. The range of reasonable alternatives for the proposed Hyampom Road Improvements Project Post Mile 6.8-8.3 would include the No-Project Alternative: continued maintenance but no rehabilitation, reconstruction, widening or realignment; Alternative B: relocating this segment of Hyampom Road to a more stable alignment; and Alternative C: increasing the design speed to 50 km/h, 30 mph.

This section is intended to evaluate the proposed alternatives and their comparative merits to determine the environmentally superior alternative. For each project alternative, the environmental impacts of the alternative that would differ from those discussed in **Chapter 4.0** for the proposed project are identified. **Table 5-1** rates the impacts of each alternative relative to those of the proposed project. If the alternative project has less impact in that area than the proposed project, it receives a positive score. If the alternative would result in more adverse environmental impact than the proposed project, it receives a negative score. Only one positive or negative point is assigned to each impact. Because temporary (construction related) impacts differ significantly from permanent impacts for the proposed project and all alternatives, temporary and permanent impacts are rated separately (see Table 5-1).

5.2 ALTERNATIVE A: NO-PROJECT ALTERNATIVE

Consideration of the No-Project Alternative is specifically required by Section 15126(d)(4) of the *CEQA Guidelines*. The purpose of evaluating this alternative is to compare the impacts of the proposed alternatives with the impacts that could occur without implementation of the project. Discussion of the “No-project Alternative” requires consideration not only of the existing environment as it exists currently, without the project, but also what would be reasonably expected to occur in the foreseeable future if the project were not built. (CEQA Guidelines Section 15126.6(e)(2)).

Under the No-project Alternative, the improvements discussed in **Chapter 3.0** for the proposed project would not be completed. The road would remain in its present condition, and existing routine maintenance practices would continue. Although there would be no immediate costs or environmental impacts from this alternative, it would not provide a long-term solution for the safety impacts and traffic

disruption that currently take place along Hyampom Road due to slope failure and localized flooding. Maintenance costs would continue to be incurred by the County at a gradually increasing rate, as the road continued to degrade. Erosion of the roadbed, fill slopes and cut banks would continue.

GEOLOGY, SOILS, AND SEISMICITY

Disturbance of geologic and topographic features from construction and grading activities would not occur under this alternative. Therefore, construction-related increases in soil erosion would not occur. However, erosion would continue to occur at the present rate, or possibly at an increased rate over time, as roadway degradation continued to occur. Isolated slope failures would not be corrected or prevented by retaining walls and rock slope protection, and would continue to occur. Existing culverts conveying ephemeral drainages or roadside runoff would not be replaced with culverts designed to handle the 100-year flow, and the culvert at James Creek would not be replaced with a bridge. Therefore, the potential for culvert plugging or overtopping and resulting potential erosion of the overlying road prism and/or road surface would remain uncorrected.

HYDROLOGY, WATER QUALITY, AND STORMWATER RUNOFF

Construction-related water quality impacts to Hayfork and James Creeks would not result under the No-project Alternative, since ground disturbance and vegetation removal would not occur and construction equipment and materials such as petroleum products, paint, drilling muds and concrete would not be used on site. However, as discussed in the project description, one of the project objectives is to improve water quality by reducing slope failure and erosion and by removing the road surface from the 100-year floodplain. This objective would not be met by the No-project Alternative. The existing aging road structural section and surface, undersized culverts and aging lead-based paint on Nine Mile Bridge would remain. The road surface and fill slopes would still encroach into the flood plain, and periodic flooding of the road surface would continue to entrain roadway pollutants (petroleum products and heavy metals) into flood flows. The road would remain immediately adjacent to Hayfork Creek in some places, with only a narrow, sparsely vegetated riparian buffer.

An ephemeral drainage at Post Mile 7.3 is currently diverted and conveyed along the roadside via an inboard roadside drainage ditch. This drainage would remain diverted along the ditch, instead of being returned to its drainage of origin. Other ephemeral drainages would remain in undersized, aging culverts. Roadside drainage would still travel for long distances along the road before being discharged to Hayfork Creek in ditch relief culverts. Lead-based paint chips would continue to drop into Hayfork Creek from Nine Mile Bridge.

HAZARDS, HAZARDOUS WASTE AND MATERIALS

There would not be routine four-hour closures of the road to interfere with response to wildland fires and other emergencies. However, the existing potential for unexpected road closures due to slope failures and flooding would continue. These would not occur as often as construction-related road closures, and would not be likely to occur during fire season. The No-project Alternative would therefore have less impact on emergency response in the short term than the proposed project. In the long term, the benefits of having two full lanes and roadside turnouts would not be realized, as the road would remain in its existing condition.

Because no ground-disturbing activities would occur, the No-project Alternative would not result in a potential for public exposure to contaminated soils or groundwater. No hazardous materials such as petroleum products, solvents and paint would be brought to the site. No sandblasting and painting would go on over Hayfork Creek. However, the existing hazard of deteriorating lead based paint on the bridge would not be abated.

AIR QUALITY

The No-project Alternative would not temporarily alter the air quality in the project area. Construction-generated fugitive dust and hydrocarbon emissions would not temporarily increase under this alternative. In the long term, air quality impacts for this alternative would be roughly equivalent to the proposed project.

NOISE

Noise levels would not temporarily increase within the project area as they would during the construction of the proposed project. In the long term, noise impacts would be the same as for the proposed project, as the same traffic would travel on roughly the same alignment.

BIOLOGICAL RESOURCES

The No-project Alternative would not result in removal of vegetation or the disturbance of wildlife within the project area. Riparian habitat would not be removed. Direct mortality or temporary disturbance of listed and other special-status plants, mollusks, amphibians, reptiles, fish or other wildlife would not occur. There would be no discharge of fill material to “waters of the U.S.” Existing populations of noxious weeds would not be spread by construction equipment or have the opportunity to invade disturbed areas.

However, as mentioned above, the No-project Alternative would allow erosion and sedimentation of Hayfork Creek to continue, and portions of the road surface would remain in the flood plain. The road would remain close to Hayfork Creek, with only a thin, sparse riparian buffer. The culvert at James Creek would remain a barrier to fish migration into that tributary of Hayfork Creek.

CULTURAL RESOURCES

Under the No-project Alternative, no accidental destruction of previously undiscovered archaeological or historical resources would occur.

LAND USE AND RECREATION

As with the proposed project, the No-project Alternative would not result in land use conflicts or changes in land uses of surrounding areas including Hayfork, Hyampom or the surrounding National Forest. The No-project Alternative would be inconsistent with adopted plans and policies that promote motorist safety and emergency vehicle access (such as Policy 1.4.A of the Circulation Element), support economic development and tourism (such as Policy 1.13.A of the Circulation Element), and maintain and upgrade existing roads to prevent costly deterioration and ensure efficiency (such as Goal 3 of the Circulation Element).

There would be no disruption of access to recreational sites in Hyampom or in the National Forest. The Eight Mile Trailhead would not be modified, but the associated improvement to hiker safety would not occur.

PUBLIC SERVICES, UTILITIES AND ENERGY

As with the proposed project, changes in public service or utility needs would not occur within the project area under the No-project Alternative. No construction-related delays in emergency response would occur under the No-project Alternative. However, in the long term the road would still be subject to flooding and slope failure, which could interfere with rescue and evacuation, particularly during a flood or severe winter storm when alternate routes may not be available. The road would not be widened, so no new roadside turnouts or staging areas would be provided.

No construction waste requiring disposal would be generated, and no additional energy would be consumed by implementation of the No-project Alternative.

TRAFFIC AND CIRCULATION

Under the No-project Alternative, short-term impacts associated with road closures and construction vehicle traffic would not occur. However, the No-project Alternative would not provide a long-term solution for the traffic disruption due to slope failure and localized flooding. Nor would it enhance traffic

safety within the project area. Unexpected road closures would continue within the project area under this alternative, due to continued slipouts, embankment failures, rockfalls and flooding. Temporary road closures would also occur more often for road maintenance.

VISUAL RESOURCES

The No-project Alternative would not result in changes to the visual environment within the project area.

5.3 ALTERNATIVE B: NEW ROADWAY ALIGNMENT

This alternative would involve relocating this segment of Hyampom Road to a more stable alignment. The exact location of the more stable alignment is undetermined. It would presumably be upslope, away from Hayfork Creek. The fate of the existing alignment is also undetermined. It could be physically removed, maintained as is, or maintenance could be terminated. Since the proposed project is only rehabilitation of the segment of Hyampom Road between Post Miles 6.8 and 8.3, this analysis will assume that the proposed new alignment would tie into the existing Hyampom Road at or near the end points of the segment proposed for rehabilitation (i.e. near James Creek and Nine Mile Bridge). The purpose and need of the project could be met under this Alternative. However, the environmental effects could be much greater than those expected under the proposed project.

GEOLOGY, SOILS, AND SEISMICITY

Disturbance of geologic and topographic features during construction and grading would be greater than disturbance resulting from the proposed project, since the new roadway would be located on previously undisturbed ground. Because all of the surrounding terrain is characterized by steep slopes, the large disturbed areas and probable large cuts and fills would be highly prone to erosion until revegetation was established. Since the new roadway would be placed in a more stable area, it can be expected that slope instability and seismic hazards would be reduced under this alternative, provided the geotechnical assessment and resulting design were successful in achieving the project objective. However, there are no deep-seated slope failures along the segment of Hyampom Road to be repaired by the proposed project (Taber Consultants, 1999; FHWA, 2001). Therefore, relocating this segment of roadway to a “more stable” alignment in steep terrain could turn out to be infeasible. Unexpected pockets of unstable earth could be encountered during construction that could cause chronic problems for the new alignment that are as bad, or worse, than the known geotechnical problems on the existing alignment.

HYDROLOGY, WATER QUALITY, AND STORMWATER RUNOFF

Presumably the more stable alignment would be located further away from Hayfork Creek. Therefore, it is likely that direct water quality impacts to Hayfork Creek would not result under this alternative. However, impacts to other water features, including tributaries to Hayfork Creek, could occur. Building a

road through the surrounding terrain would require crossing deep ravines carrying tributary drainages with either bridges or culverts with deep fills. This would require removal of riparian vegetation and other aquatic habitat, and cause sedimentation, at least until revegetation was established. To tie in to the existing alignment of Hyampom Road, a new bridge across Hayfork Creek would have to be built, unless the alignment tied in east of the existing bridge. Likewise, a new crossing of James Creek would probably be necessary.

Slightly increased groundwater impacts would result from an increase in impermeable surfaces due to the construction of a new roadway. The new roadway would not be placed within a 100-year floodplain, so the potential for flooding impacts would not occur.

HAZARDS, HAZARDOUS WASTE AND MATERIALS

Construction of the roadway on a new alignment would not require closure of Hyampom Road and would not cause delays for emergency response. There may be an increased risk of wildland fire during or after construction, because of vehicles operating in previously undisturbed, densely vegetated forest habitat. In the long term, the road would provide more reliable emergency access to Hyampom and National Forest lands, as would the proposed project.

The risk of release of hazardous materials used during construction would be similar to that of the proposed project, but it may occur over a longer period of time, since construction of a new roadway would likely take longer than rehabilitation of the existing road. The new road would probably be placed in an undisturbed area, the potential for public exposure to contaminated soils or groundwater during construction would be extremely small, as with the proposed project.

This alternative would not involve sanding and painting Nine-Mile Bridge. Any new bridges installed would arrive on site already painted with modern, non-lead-based materials. The existing Nine-Mile Bridge would either be removed, repainted (without widening) or left in its present condition.

AIR QUALITY

As with the proposed project, this alternative would result in increases in fugitive dust, equipment emissions, and other hydrocarbon emissions during construction. It is likely that increases in fugitive dust would be greater for this alternative than for the proposed project since a greater area would be disturbed.

NOISE

Noise impacts could be greater than those expected under the proposed project, if the alignment were placed closer to sensitive receptors. This would apply to both construction noise and operational noise.

BIOLOGICAL RESOURCES

This alternative would result in greater impacts to biological resources since the new alignment would be placed within currently undisturbed habitats. Direct mortality and disturbance of listed and other special-status plant, mollusk, and wildlife species, general plants and wildlife, and “waters of the U.S.” would result from disturbance of large areas of earth and vegetation and new water crossings. Noise during and after construction and the presence of new human activity would likely cause a permanent change in nesting, breeding and foraging locations for most wildlife. Direct impacts on salmonids in Hayfork Creek would be reduced, assuming the new alignment was further from the creek. Indirect impacts due to sedimentation may increase in the short-term, due to the much larger area of disturbed earth, larger cuts and fills and new fills in tributary drainages.

CULTURAL RESOURCES

Depending upon the location of the new roadway, impacts to cultural resources could be greater or less than what is expected under the proposed project, depending on whether the new alignment were to pass through a site eligible for listing on the NRHP. If a site were present, it would probably be more intact, and therefore more significant, because it would be located away from Hayfork Creek and the existing road.

LAND USE AND RECREATION

Depending upon the location of the new alignment, this alternative could result in land use conflicts. It could be located closer to existing residences, and would take more right-of-way from public or private landowners. This alternative would not interfere with access to recreational sites during construction. The Eight Mile Trail would likely not be modified, and the resulting increase in hiker safety would not occur. On the other hand, if the existing road were removed or maintenance was terminated, there may no longer be access to Eight Mile Trail or other recreation sites along the existing road. Other Forest Service trails may be crossed by the new road.

If the new road were to be constructed through private property, rather than Forest Service property, it could result in new land uses and patterns of growth and development. New residences may eventually develop along the new road alignment. If the existing road was closed, or maintenance was terminated, private development that now relies on the existing road for access may have to relocate.

PUBLIC SERVICES, UTILITIES AND ENERGY

No temporary disruption of emergency services would occur under this alternative, since closures of Hyampom Road would not be necessary during construction. The new road would presumably be more reliable for emergency access during both the fire season and the winter storm season. No long-term changes in public services or utility needs would result, unless significant development was to occur

along the new alignment. As with the proposed project, construction waste requiring disposal would be generated, and energy would be consumed during construction.

TRAFFIC AND CIRCULATION

As with the proposed project, short-term impacts associated with additional construction vehicle traffic would occur. However, closures of Hyampom Road would not be necessary during construction of this alternative, so fewer traffic impacts would result. In addition, if the road were realigned to a more stable alignment outside of the floodplain, fewer future traffic disruptions due to slope failure or flooding would occur. With a brand new road, maintenance would be reduced for a time, requiring fewer road closures.

VISUAL RESOURCES

This alternative could result in significant changes in the visual character of a previously undisturbed area. Depending upon the location of the alignment, impacts to sensitive visual receptors such as residences adjacent to the new roadway could occur.

5.4 ALTERNATIVE C: INCREASED DESIGN SPEED

Under this alternative, the County would realign Hyampom Road between PMs 6.8 and 8.3, straightening tight-radius curves to meet AASHTO standards for a 50 km/h (30 mph) design speed. This alternative would also include the widening of the roadway to two 3.6-m (12-foot) lanes with paved shoulders. Because of the constraints of the surrounding area topography, this alternative would result in extensive cut slopes, some over 30 m (98 ft) high. This alternative would have a significantly higher cost associated with the improvements. In addition, this alternative would result in greater adverse impacts on the environment, due to the increased impact area and greater earth disturbance on steep terrain adjacent to Hayfork Creek.

GEOLOGY, SOILS, AND SEISMICITY

This alternative would involve larger cut slopes than the proposed project. It would probably also require larger fills to widen the roadway. Disturbance of geologic and topographic features during construction and grading would therefore be greater than disturbance resulting from the proposed project. The roadway would remain in its existing general location, although it would be realigned to a greater degree than for the proposed project, in order to straighten the curves.

Exposure of people or property to seismic hazards could increase under this alternative, if the larger cuts encounter materials that are less stable than the existing cut slopes.

HYDROLOGY, WATER QUALITY, AND STORMWATER RUNOFF

This alternative would result in larger cuts and fills in the same general location as the proposed project, adjacent to Hayfork and James Creeks. The roadway would still have to be removed from the flood plain, as well as straightened and widened. The larger cuts and fills would result in greater erosion hazards, until revegetated, resulting in greater potential for sediment discharge to Hayfork Creek. The wider roadway and paved shoulders would increase the area of impermeable surfaces, and paved ditches would speed the flow of runoff in roadside ditches. This could result in minor groundwater impacts, in addition to potential scour and erosion. The wider road prism may require more retaining walls or rock slope protection, or the fill slopes may encroach into the floodplain, riparian area or the Ordinary High Water line of Hayfork Creek. The risk of release of pollutants used during construction would be similar to that of the proposed project.

HAZARDS, HAZARDOUS WASTE AND MATERIALS

Construction of a wider, straighter roadway would still require closure of Hyampom Road during construction, and so would still cause delays for emergency response. In the long term, the road would provide a faster alignment and wider shoulders for vehicles to turn out on to yield to emergency vehicles, slightly increasing response time.

The risk of release of hazardous materials used during construction and the potential for public exposure to contaminated soils or groundwater during construction would be similar to that of the proposed project. Sanding and painting of Nine-Mile Bridge would still occur.

AIR QUALITY

As with the proposed project, this alternative would result in increases in fugitive dust, equipment emissions, and hydrocarbon emissions during construction. It is likely that increases in fugitive dust would be greater for this alternative than for the proposed project since a greater area would be disturbed.

NOISE

Noise impacts of construction and operation of this alternative would be the same as for the proposed project.

BIOLOGICAL RESOURCES

This alternative could result in slightly greater impacts to biological resources because of the larger cuts and fills required and the possible encroachment into the riparian zone of Hayfork Creek. To achieve a consistent roadway width, the Nine-Mile Bridge would have to be widened even more, resulting in more concrete work adjacent to Hayfork Creek and more fill discharged to “waters of the U.S.”. Direct mortality and disturbance of listed and other special-status plant, mollusk, and wildlife species and

general plants and wildlife would be slightly greater due to the larger area of disturbed earth, more vegetation removal and larger cuts and fills.

CULTURAL RESOURCES

Impacts to cultural resources could potentially be greater, if previously undisturbed artifacts or remains were to be found in the larger cut slopes. However, the cultural resources surveys performed for the proposed project revealed no evidence of such artifacts in these locations.

LAND USE AND RECREATION

This alternative would not result in land use conflicts. There are no residences along this segment of Hyampom Road that would be affected by this alternative, any more than by the proposed project. Although the design speed would be increased slightly, it would not be significant enough to cause an increase in the number of people moving to Hyampom and commuting to Hayfork or Weaverville.

This alternative would still interfere with access to recreational sites during construction. The Eight Mile Trail would probably still be modified, but the modifications may be different. Realignment of the curve at that location could result in greater modification to the trailhead, and could also affect the parking area across Hyampom Road.

PUBLIC SERVICES, UTILITIES AND ENERGY

Temporary disruption of emergency services would still occur during construction of this alternative, for approximately the same duration as the proposed project. The straighter alignment would have a faster design speed and wider lanes, allowing quicker response times for emergency vehicles. As with the proposed project, no long-term changes in needs for public services or utilities would result. Approximately the same amount of construction waste requiring disposal would be generated as by the proposed project, and approximately the same amount of energy would be consumed during construction.

TRAFFIC AND CIRCULATION

As with the proposed project, short-term impacts associated with additional construction vehicle traffic and lengthy closures of Hyampom Road would occur during construction of this alternative. The straighter alignment and wider lanes and shoulders would increase safety on Hyampom Road to a greater degree than the proposed project would. Greater width and design speed would increase the level of service of the road. However, the higher design speed could also increase the risk of a serious accident, especially considering the steep terrain and dense trees adjacent to the road.

VISUAL RESOURCES

This alternative would result in changes in the visual character of Hyampom that are similar to the proposed project. Visual changes would be slightly greater, however, due to larger cuts and fills. In addition, a straighter alignment would be more visually inconsistent with the surroundings, introducing a foreign, linear element to the visual character of the area.

5.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that an EIR identify the “environmentally superior alternative” where such an alternative exists. **Table 5-1** summarizes the relative impacts of the various alternatives considered in detail, including the No-Project Alternative.

In the short term, the No-Project Alternative would be considered the environmentally superior alternative, since the ground disturbance, noise disturbance, road closures and other temporary impacts expected to result during construction of the proposed project would not occur. However, in the long term, erosion and slope failures would continue to occur. The road would still cause sedimentation of Hayfork Creek, and portions of the road surface would continue to be inundated in a 100-year flood. Safety problems and periodic interruptions of traffic would continue to occur, and the No-Project Alternative fails to meet the long-term project objectives or objectives in the Trinity County General Plan, particularly the Circulation Element.

The *CEQA Guidelines*, Section 15126.6(e)(2) states, “If the environmentally superior alternative is the “no-project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.” Review of **Table 5-1** clearly indicates that the environmentally superior alternative, other than the no-project alternative, would be the proposed project. The proposed project is also environmentally superior to the No-project Alternative in the long term.

With the implementation of the mitigation measures discussed in this EIR, the proposed project would avoid or reduce the expected significant adverse short-term environmental impacts to less than significant levels. In the long term, the proposed project would reduce environmental impacts that the No-Project Alternative would leave unaddressed. Results of this alternatives analysis indicate that the proposed project would provide the most effective means to achieve the project goals, minimize environmental impacts, and realize the benefits of the Hyampom Road Improvements Project, PM 6.8-8.3.

**Table 5-1
Comparative Impacts of Alternatives**

	Alt. A. No-Project Alternative		Alt. B. New Roadway Alignment		Alt. C. Increase Design Speed	
	Temporary	Long-Term	Temporary	Long-Term	Temporary	Long-Term
Geology, Soils, Seismicity	+	-	-	+	-	-
Hydrology, Water Quality, Stormwater Runoff	+	-	-	+	-	-
Hazards, Hazardous Waste/Materials	+	-	+	0	0	+
Air Quality	+	0	-	0	-	0
Noise	+	0	0	-	0	0
Biological Resources	+	-	-	-	-	0
Cultural Resources	+	+	-	-	-	-
Land Use and Recreation	+	-	+	-	0	0
Public Services, Utilities and Energy	+	-	+	-	0	0
Traffic and Circulation	+	-	+	0	0	0
Visual Resources	+	+	0	-	0	-
Total Score	+11	-5	-1	-4	-5	-3

Legend: + Superior to proposed project (less adverse impact) Score +1

 - Inferior to proposed project (more adverse impact) Score -1

 0 Same as the proposed project Score 0

 Total score: The highest positive score = the environmentally superior alternative

The alternatives are ranked relative to the proposed project. The Proposed Project score is zero for both temporary and permanent impacts.