

State Route 20 Safety Improvement Project Realign and Widen



Initial Study/Environmental Assessment

State Route 20
Nevada County West of Penn Valley
03-NEV 20 KP 0.0/6.6
(PM 0.0/4.1)
03-1A530

April 2004



General Information About This Document

What's in this document?

The Department of Transportation (Department) and the Federal Highway Administration (FHWA) have prepared this Initial Study/Environmental Assessment, which examines the potential environmental impacts of the alternatives being considered for the proposed project located in Nevada County, California. The document describes why the project is being proposed, alternatives for the project, the existing environment that could be affected by the project, potential impacts from each of the alternatives, and the proposed avoidance, minimization and/or mitigation measures.

What should you do?

- Please read this Initial Study/Environmental Assessment.
- We welcome your comments. If you have any concerns regarding the proposed project, please send your written comments to Caltrans by the deadline. Submit comments via regular mail to Caltrans, Attn: Jean L. Baker, Environmental Management, P.O. Box 911, Marysville, CA 95901; submit comments via email to jeannie_baker@dot.ca.gov.
- Submit comments by the deadline: May 10, 2004

What happens after this?

After comments are received from the public and reviewing agencies, Caltrans may (1) give environmental approval to the proposed project, (2) undertake additional environmental studies, or (3) abandon the project. If the project were given environmental approval and funding were appropriated, Caltrans could design and construct all or part of the project.

For individuals with sensory disabilities, this document could be made available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Jean L. Baker, Environmental Management, P.O. Box 911, Marysville, CA 95901; (530) 741-4498 Voice, or use the California Relay Service TDD line at 1-800-735-2929.

SCH #
03-NEV 20, KP 0.0/ 6.1
(PM 0.0/4.1)
EA: 03-1A5300

Safety Improvement Project on State Route 20 in Nevada County to Realign and Widen
From Yuba/Nevada County Line Extending East 4.1 miles (6.6 Kilometers)
KP 0.0/6.6 (PM 0.0/4.1)

**INITIAL STUDY/ENVIRONMENTAL ASSESSMENT
With Proposed Negative Declaration (ND) and
Findings of No Significant Impact (FONSI)**

Submitted Pursuant to: (Federal) 42 USC 4332(2)(C)
(State) Division 13, Public Resources Code

US DEPARTMENT OF TRANSPORTATION
Federal Highway Administration, and
THE STATE OF CALIFORNIA
Department of Transportation

Date of Approval

John D. Webb
Chief, Office of Environmental Services
California Department of Transportation

Date of Approval

Division Administrator
Federal Highway Administration

Proposed Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose to realign and widen State Route 20 (SR 20), in order to improve safety to the public. On SR 20, the project extends from kilometer (KP) 0.0 to 6.6/ Post Mile (PM) 0.0 to 4.1 in Nevada County. The project will improve the horizontal and vertical alignment, widen shoulders, and add left turn lanes. In addition, from KP 4.2 to 6.2 (PM 2.6 to 3.9), a truck-climbing lane will be added in the eastbound direction.

Determination

Caltrans has prepared an Initial Study, and determines from this study that the proposed project would not have a significant effect on the environment for the following reasons:

- The project will have no effect on air quality, land use, noise levels, population and housing, recreation, public services, transportation, traffic patterns, and utilities.
- Cultural resources will be protected by avoiding sites and designating Environmentally Sensitive Areas (ESAs).
- The proposed project will have no significant effect on floodplains, farmlands, visual resources, water quality, geology, soils, hydrology and and hazardous waste.
- No hazardous waste or sources have been identified in the project area.
- Potential impacts to riparian vegetation will be mitigated by replanting.
- Potential impacts to federally threatened Valley Elderberry Longhorn Beetle (VELB) habitat will be avoided by fencing or flagging during construction.
- Migratory birds will be protected in accordance with the Migratory Bird Treaty Act by establishing a work window for tree removal from September 1 through March 1.
- Impacts to wetlands will be mitigated by purchasing credits and by designating ESAs (resulting in no loss to wetlands).

John D. Webb, Chief
North Region Environmental Services
California Department of Transportation

Date

Table of Contents

Cover Sheet	i
Proposed Negative Declaration	iii
Table of Contents.....	v
List of Figures.....	vi
List of Tables	vi
Chapter 1 Proposed Project	1
1.1. Project Description.....	1
1.2. Project Purpose and Need.....	1
1.3. Project Alternatives.....	3
1.4. Alternative Considered and Withdrawn	4
1.5 Permits and Approvals Needed	7
Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization and/or Mitigation Measures.....	9
2.1 Human Environment.....	9
2.1.1 Land Use	9
2.1.2 Growth	10
2.1.3 Farmlands/Timberlands.....	10
2.1.4 Community Impacts.....	11
2.1.5 Utilities/Emergency.....	18
2.1.6 Traffic Transportation/Pedestrian and Bicycle Facilities.....	19
2.1.7 Visual/Aesthetics	20
2.1.8 Cultural Resources	22
2.2 Physical Environment	26
2.2.1 Hydrology and Floodplains.....	26
2.2.2 Water Quality and Stormwater Runoff.....	28
2.2.3 Hazardous Waste/Materials	31
2.2.4 Air Quality	34
2.2.5 Noise	37
2.3 Biological Environment	41
2.3.1 Natural Communities	41
2.3.2. Wetlands and Other Waters	43
2.3.3. Plant Species.....	45
2.3.4 Animal Species.....	45
2.3.5 Threatened and Endangered Species.....	49
2.3.6. Invasive Species.....	52
2.4 Cumulative Impacts	53
2.4.1 Regulatory Setting	53
Chapter 3 Comments and Coordination	56
Chapter 4 List of Preparers.....	57
Chapter 5 Distribution List	59
Appendix A California Environmental Quality Act Evaluation.....	61
Appendix B Title VI Policy Statement.....	73
Appendix C Impacts, Minimization, and Mitigation Summary.....	75
Appendix D Glossary of Terms.....	77
Appendix E List of Technical Studies	79

List of Figures

Figure 1-1 Project Vicinity Map	5
Figure 1-2 Project Limits Map	6
Figure 2.1 Residences	12
Figure 2.2 Residences	13
Figure 2.3 Business	13
Figure 2.4	14
Census Tract and Block Group Identification.....	14

List of Tables

Table 1.1 Latest 3-Year Accident Data (From 1/01/98 to 12/31/00)	2
Table 2.1 Racial and Ethnic Composition	15
Table 2.2 Income Comparisons	16
Table 2.3 Poverty Level Comparisons	17
Table 2.4 Aerially Deposited Lead	32
Table 2.5 Attainment Status of Northern Sierra Air Quality Management District.... State and Federal Standards	35
Table 2.6 Activity Categories and Noise Abatement Criteria (NAC)	38
Table 2.7 List of Measured and Modeled Noise Levels (Leqv2)	40
Table 2.8 Projects Considered in Cumulative Effects Evaluation	55

Chapter 1 Proposed Project

1.1. Project Description

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) are proposing to improve traffic safety along State Route 20 (SR 20), which is currently a two-lane conventional highway facility. The project limits extend from Kilometer (KP) 0.0 to 6.6/Post Mile (PM) 0.0 to 4.1, west of Penn Valley in Nevada County. The project will improve the horizontal and vertical alignment, widen shoulders, and add left turn lanes on SR 20. In addition, from KP 4.2 to 6.2 (PM 2.6 to 3.9), a truck-climbing lane will be added in the eastbound direction (Figure 1-2).

1.2. Project Purpose and Need

The purpose of this project is to improve a segment of SR 20, in an effort to reduce the number and severity of accidents. The latest 3-year accident data depicts the total accident to be 83% higher than the statewide average. The fatal and injury rate for this segment of the SR is 159% higher than the statewide average. The majority of accidents that occurred in this segment were run-off-road and hit objects or overturns. There is also a pattern of accidents where vehicles stop on SR 20 to make left turns and are rear-ended.

These accidents are susceptible to correction by improving the horizontal and vertical alignment, widening shoulders, installing left turn pockets. A truck-climbing lane is also proposed, as they are a type of improvement considered for funding with the safety program. Before and after studies of past truck climbing lane projects have shown an average 30 percent reduction in overall accidents. Table 1.1 depicts three years of accident data from January 1998 to December 2000. The accident rate is based on a calculation using Accidents per Million Vehicle Miles (ACCS/MVM) traveled.

**Table 1.1
Latest 3-Year Accident Data (From 1/01/98 to 12/31/00)**

KP (PM)	NUMBER OF ACCIDENTS				ACCIDENT RATE					
	Total	Fatal (F)	Injuries (I)	F + I	Actual			Average		
					F	F+I	Tot	F	F+I	Tot
0.0/6.3 (0.0/3.9)	66	2	43	45	0.070	1.58	2.32	.029	0.61	1.27

The existing horizontal alignment and shoulder widths do not meet current Caltrans design standards. The minimum design speed based on existing horizontal alignment is 65 kilometers per hour (km/h)/40 miles per hour (mph). Restricted horizontal sight distance at various locations further reduces design speed to less than 50 km/h/30 mph.

The existing vertical alignment follows steep rolling terrain from Houghton Ranch Road (KP 4.2/PM 2.6) to the top of Pet Hill (KP 5.6/PM 3.5). Eastbound operating speed for typical heavy trucks is reduced by 50 km/p (30 mph). A common criteria for all types of highways is to consider the addition of a truck-climbing lane where the running speed of trucks falls 15 km/h (9 mph) or more below the running speed of remaining traffic. Without a truck climbing lane, the proposed addition of a left turn pocket at Poker Flat Road (KP 4.7/PM 3.0) will eliminate the only passing opportunity from KP 0.2 to 6.4 (PM 0.12 to 4.0).

The project limits were identified based on the location of the accident concentrations. The Caltrans Project Development Team determined that the project design would include asphalt overlay concrete and minor grading to begin at the Yuba/Nevada County line (KP 0.0/PM 0.0) to provide a smooth transition into the first curve correction (KP 0.19/ PM 0.12), which is approximately 200 m/ 655 ft from the KP 0.0 (PM 0.0).

1.3. Project Alternatives

The following alternatives are under consideration:

Proposed Build Alternative

A “build alternative” was developed as a result of design features that were refined to avoid and minimize impacts to environmentally sensitive areas such as wetlands and archeological sites within the project area.

Widen & Realign

The existing alignment will be improved to obtain a design speed of 90 km/h (56 mph), and the roadway shoulders will be widened to 4 m (8.0 ft). Along specific areas on SR 20, design alignments were taken into account to avoid environmental resources as follows.

- From KP 1.1 to 3.2 (PM 0.7 to 2.0), widening of the existing SR is proposed to the south to avoid archeological sites identified to the north.
- From KP 3.2 to 4.8 (PM 2.0 to 3.0), widening of the existing SR is proposed on the north side to avoid wetlands that are located on the south side of the road.

Culverts

Two culverts exist where SR 20 crosses Slacks Ravine. These culverts will need to be extended. The proposed alignment will cross Slacks Ravine with a short bridge at the first crossing and a bridge or arch culvert at the second crossing.

Turn Lanes/Pockets

Left turn pockets will be added at Houghton Ranch Road (KP 4.1/PM 2.6), Poker Flat Road (KP 4.6/PM 2.9) and Penn Valley Drive (KP 5.3/PM 3.3).

Truck Climbing Lane

From KP 4.1 to 6.1 (PM 2.6 to 3.9), a truck-climbing lane (eastbound) will be added.

Borrow Site

This alternative is approximately balanced in regard to soil that will be removed from one location of the project to another, thus no soil will be removed and transported off site to disposal sites.

Right-of-Way and Utilities

The project proposes to acquire Right-of-Way (R/W) and would require relocation of overhead electrical and telephone lines. Neither businesses nor residents will be relocated. Portions of the Nevada Irrigation District (NID) ditch will require relocation.

No-Build Alternative

The no-build alternative is not recommended because it will not meet the need of reducing the number and severity of collisions within the project limits and increase safety to the traveling public. Nationwide studies have shown that improvements such as realignment, shoulder widening, and trucking-climbing lanes can reduce accidents up to 50%.

1.4. Alternative Considered and Withdrawn

From KP 1.1 to 3.2 (PM 0.7 to 2.0), an alternative to realign the existing SR 20 to the north side instead of the south (proposed build alternative) was considered and withdrawn for the following reasons:

- Multiple cultural sites protected under federal and state law were identified. If these sites were impacted, project costs and delays would increase.
- An additional 80,000 cubic meters (m) more excavation with associated haul and disposal issues would be required.
- Increased traffic control, more inconvenience to the traveling public, and increased working days for construction.
- Horizontal alignment is not as straight and is expected to be less aesthetically pleasing, increasing visual impacts.
- Cost is approximately \$1.5 million more than the build alternative.

Figure 1-1 Project Vicinity Map

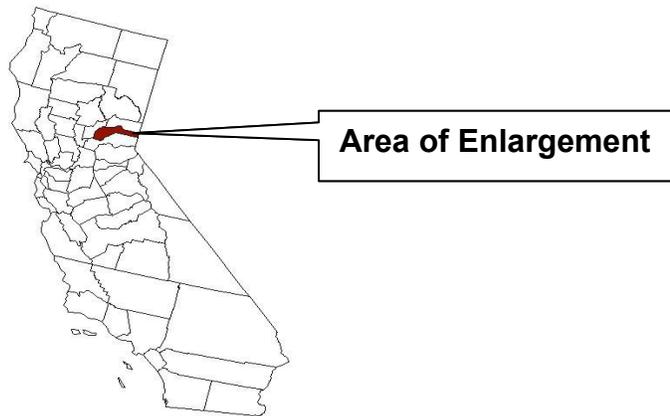
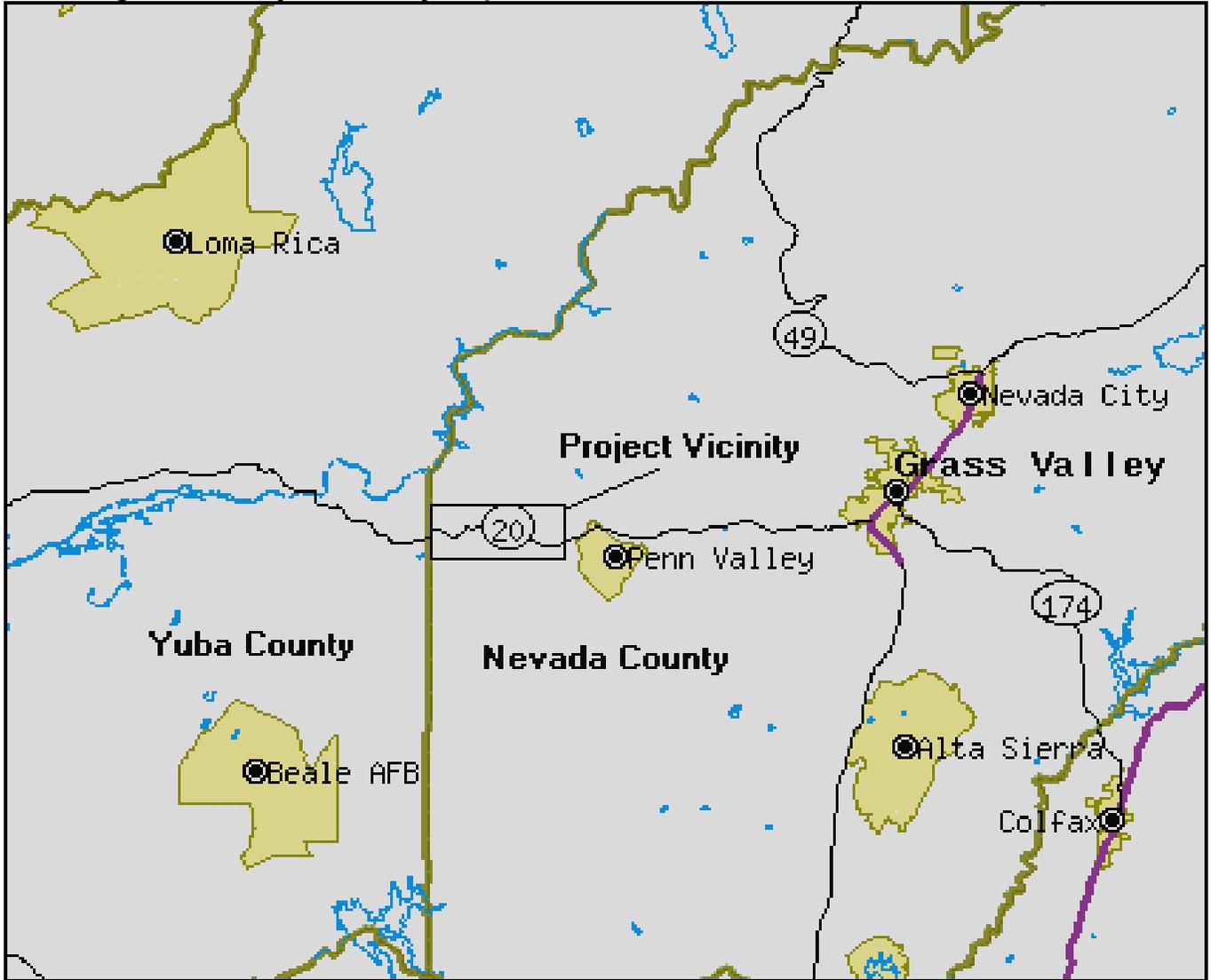
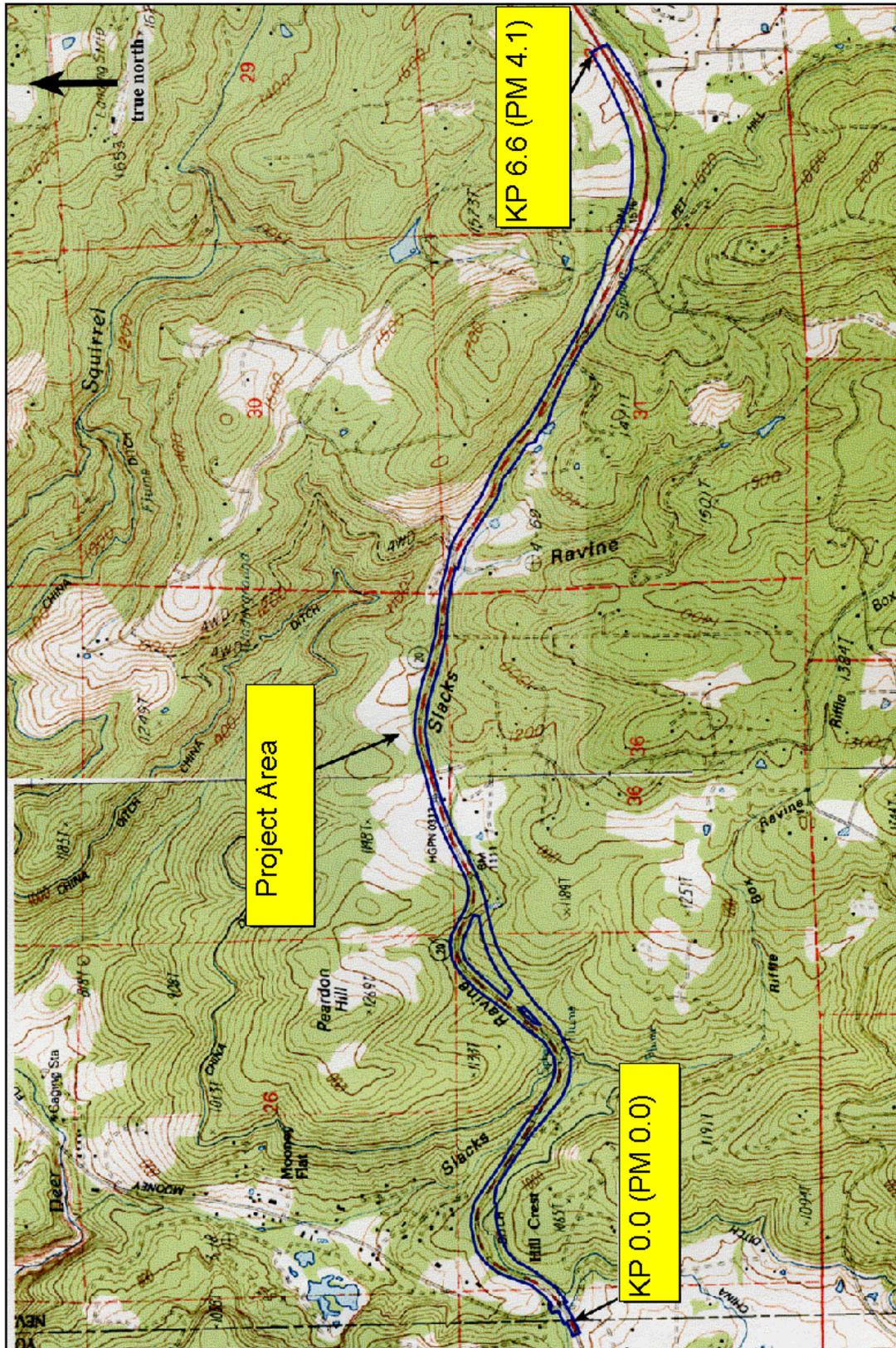


Figure 1-2 Project Limits Map



1.5 Permits and Approvals Needed

The impacts identified in this document would require the following permits/approvals:

- Section 1601 Streambed Alteration Agreement from California Department of Fish and Game (CDFG).
- Section 401 Water Quality Certification from the Central Valley Regional Water Quality Control Board (CVRWQCB).
- A wetland delineation report submitted to the US Army Corps of Engineers (ACOE) for wetland and waters verification.
- Section 404 permit from US ACOE for work in jurisdictional waters and wetlands.

These permits and approvals may contain restrictions or additional mitigation measures that would be incorporated into the project.